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USAID
FROM THE AMERICAN PEOPLE

JUN 09 2016

TRANSMITTED VIA EMAIL
john@greenewald.com

Mr. John Greenewald, Jr.
[REDACTED]
[REDACTED]

Re: FOIA Request No. F-00151-16
First Interim Response

Dear Mr. Greenewald:

The United States Agency for International Development (USAID) regrets the delay in responding to your Freedom of Information Act (FOIA) request. Unfortunately, USAID is experiencing a backlog of FOIA requests. Please know that USAID management is very committed to providing responses to FOIA requests and remedying the FOIA backlog.

This is the first interim response to your FOIA request to USAID, dated March 6, 2016, and received by this office on March 7, 2016. You requested a copy of all reports pertaining to the administration, status, and accomplishments of the Pandemic Influenza and Other Emerging Threats (PIOET) program of USAID. The time frame for the requested documents was January 1, 2010 to March 7, 2016.

For your information, Congress excluded three (3) discrete categories of law enforcement and national security records from the FOIA. See 5 U.S.C. § 552(c) (2006 & Supp. IV (2010)). This response is limited to those records that are subject to the requirements of the FOIA. This is a standard notification that is given to all of our requesters and should not be construed as an indication that excluded records do, or do not, exist.

USAID conducted a comprehensive search of the Bureau for Global Health (GH) for documents responsive to your request. This first interim response has yielded a total of 2,198 pages. Of those pages, we have determined that all 2,198 pages of the records are releasable in their entirety.

You have the right to appeal this first interim response. Your appeal must be received by USAID no later than 30 days from the date of this letter. In order for it to be considered an official appeal, please address and send directly to the FOIA Appeal Officer:

Director, Office of Management Services
U.S. Agency for International Development
1300 Pennsylvania Avenue, NW
Ronald Reagan Building, Room 2.12.010
Washington, DC 20523

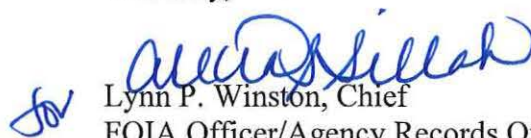
If you wish to fax your appeal, the fax number is (202) 216-3369. Both the appeal and envelope should be marked "**FOIA APPEAL**." Please include your tracking number F-00151-16 first interim response in your letter.

Please be advised that this is not our final response as we are still processing records from the respective program. We will continue to provide you with interim releases until such time all records have been evaluated. There is no charge for this FOIA request.

If you need to contact our office again about this request, please refer to the tracking number cited above. You may contact Theresa Morris on (202) 712-0286 or at thmorris@usaid.gov.

Thank you for your interest in USAID and continued patience.

Sincerely,


Lynn P. Winston, Chief
FOIA Officer/Agency Records Officer
Bureau for Management
Office of Management Services
Information and Records Division

Enclosures: Responsive Records (2,198 pages)

Global Health Program Impact

Pandemic Influenza and Other Emerging Threats

USAID has been a major leader in the global response to the dangers posed by emerging pandemic threats. In today's globalized world, the speed with which newly emergent diseases can surface and spread, as illustrated by the H1N1 2009 pandemic virus, raises serious public health, economic, security and development concerns. It also underscores the need for the global community to act pre-emptively and systematically to improve individual countries' abilities to identify early and mitigate quickly health threats arising within their borders. That we are now in an era of new, re-emerging and recurring global health threats that have their origins in animals argues for a longer-term, more strategic approach to global health security.

Pandemic Influenza and Other Emerging Threats

Since 2005, the dual goal of USAID's Pandemic Influenza and Other Emerging Threats (PIOET) program has been to (1) minimize the global impact of existing pandemic influenza threats such as H5N1 avian influenza and (2) pre-empt the emergence and spread of future pandemic threats. USAID's work in this programmatic area started in 2005 as H5N1 avian influenza began rapidly spreading from Southeast Asia to other regions. Investments in preparedness and pandemic planning, animal and human surveillance, outbreak containment and case management, communications and risk reduction, and provision of key commodities (e.g. diagnostics, supplies for disinfection of farms and markets, and personal protective equipment) were largely successful and by 2008 the emergency phase for H5N1 avian influenza was ending. Recognizing that the majority of new diseases in humans (including HIV/AIDS and H5N1 avian influenza) since 1940 have been zoonotic (i.e. originated in animals), USAID began to broaden its avian influenza program in 2008 to focus on detecting and responding to other emerging diseases of animal origin that posed significant public health threats. This expansion was necessary since the rate of zoonotic disease emergence has been increasing over time and this trend is expected to continue for the foreseeable future as the frequency of animal-human interactions increases due to land use changes and increases in animal production, both of which are a direct consequence of growing human populations.

Since 2005, USAID has been a major leader in the global response to the dangers posed by emerging pandemic threats. Through its sizeable technical, budgetary, and research inputs, USAID has led efforts to strengthen in-country capacities related to animal and human health (a.k.a. "One Health") to proactively detect and respond to new threats before they become entrenched in the human population. This represents a dramatic shift away from traditional public health approaches that react to threats (e.g. HIV/AIDS) after they have fully emerged, making them much more difficult and expensive to address. The H1N1 2009 pandemic virus clearly demonstrated that, in today's globalized world, the speed with which newly emergent diseases can surface and spread can have serious public health, economic, security, and development consequences. It also underscores the need for the global community to act pre-emptively and systematically to improve individual countries' abilities to identify early and mitigate quickly health threats arising within their borders. That we are now in an era of new,

re-emerging and recurring global health threats that have their origins in animals argues for a longer-term, more strategic approach to global health security.

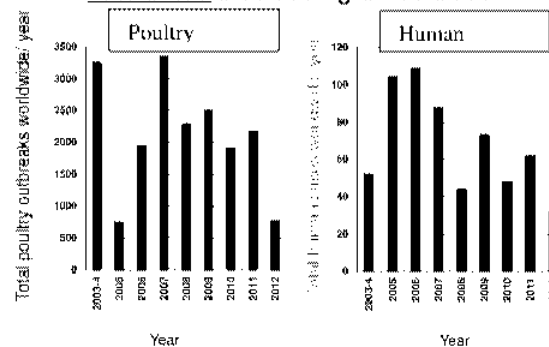
The effectiveness of each of the three main areas of focus by the PIOET program (H5N1 Avian Influenza, H1N1 2009 pandemic virus, and Emerging Pandemic Threats) are described below.

H5N1 Avian Influenza: Since mid-2005, USAID has strengthened the capacities of more than 50 countries for monitoring the spread of HPAI among wild bird populations, domestic poultry, and humans, to mount a rapid and effective containment of the virus when it is found, and to assist countries prepare operational capacities to mount a comprehensive response in the event a pandemic capable virus emerges.

USAID's efforts have contributed to dramatic downturns in reported poultry outbreaks and human infections, and a dramatic reduction in the number of countries affected. At the peak of its spread in 2006, HPAI had been reported in 53 countries across three continents. By 2012, only 11 countries were affected. Five of these countries (Indonesia, Vietnam, China, Bangladesh and Egypt) are the primary reservoir of the virus and accounting for more than 95% of all reported outbreaks involving either poultry or humans. The following summarizes this progress:

- (1) *The overall pandemic threat caused by H5N1 avian pandemic has diminished, with reported numbers of poultry outbreaks and human cases having decreased since peaking in 2006.*

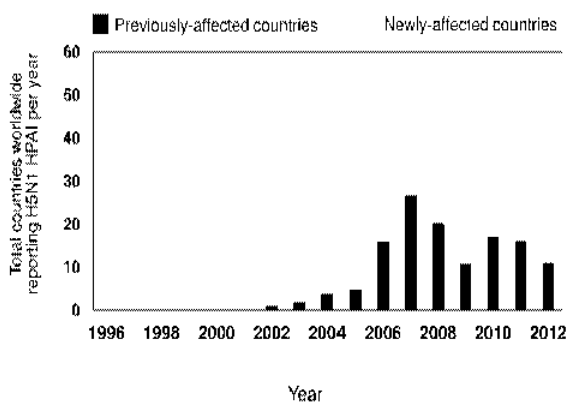
Reported Poultry Outbreaks and Human Cases Worldwide Decreasing Since 2003



Sources: OIE, FAO, and WHO

After the initial spread of H5N1 avian influenza between 2003 and 2006, the total numbers of poultry outbreaks and human cases reported globally have decreased. Similar trends have been seen in highly-affected countries such as China, Indonesia, Thailand, and Vietnam following the application of aggressive surveillance and/or effective control measures such as mass poultry vaccination.

Countries Reporting H5N1 Avian Influenza



Sources: OIE, FAO, and WHO. Total affected countries indicated by outbreaks, either poultry, and both poultry and humans.

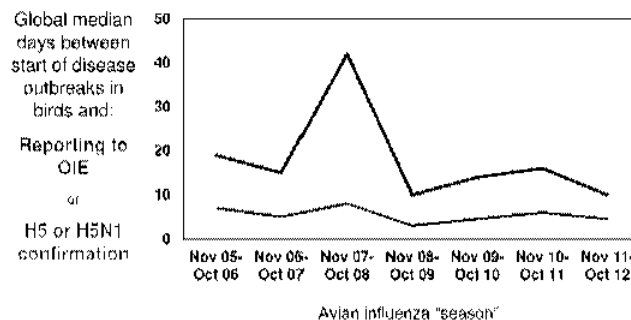
- (2) *H5N1 appears to have not only stopped spreading to new countries, but there has also been a dramatic contraction of its geographic range.*

Following the explosive spread of the H5N1 virus from Southeast Asia to

Europe, the Middle East, South Asia, and Africa in 2005-2006, the virus appears to have stopped spreading to new countries, at least for now. Of the 11 countries affected in 2012, five of them (Bangladesh, China, Egypt, Indonesia, and Vietnam) account for more than 95% of all reported H5N1 poultry outbreaks and human cases.

(3) Affected countries have strengthened their capacities to identify and respond to future poultry outbreaks.

Strengthening Overall Detection and Reporting Capacity



Combined country data from OIE. Does not include Indonesia after Aug 2008 and Egypt after Jun 2008.

To contain the H5N1 virus, USAID has focused on strengthening the capacity of affected countries in three key areas: early identification of H5N1 infections in both poultry and people; promotion of timely and effective response to contain and eliminate the virus; and education of the general population to reduce risk of infection. All of these are key capacities that are applicable to other emerging zoonotic diseases.

Although these successes are significant, H5N1 avian influenza remains a serious threat and sustained vigilance is required since the virus continues to spread in poultry, the mortality rate among infected humans remains above 60%, and the virus may only be a few mutations away from being easily transmitted from person to person. Mindful of the need for continued vigilance, USAID has focused its efforts in recent years on consolidating its programs where H5N1 avian influenza poses the highest immediate risk.

2009 H1N1 Pandemic Influenza virus: In FY 2009 USAID supported three lines of H1N1-related work:

- deployment of more than 40 million doses of the H1N1 vaccine and related ancillary materials (syringes, needles, etc.) to more 60 countries;
- support for a global laboratory network to monitor impact of the H1N1 virus as it spread around the world, with a special focus on upgrading the surveillance and laboratory capacities of 26 countries in West and Central Africa and Central and South America – where such capacities were previously non-existent; and,
- support for heightened community-level readiness to mitigate through non-pharmaceutical interventions the effects of the pandemic virus in 28 countries in Africa

and Asia using a coalition of the International Federation of Red Cross Societies, UN partners, military authorities, the private sector and NGOs.

Fortunately the H1N1 pandemic virus proved to be less virulent than feared, with limited global health consequences. However, USAID's ability to quickly and effectively mobilize its technical, programmatic, and financial resources in support of the H1N1 pandemic response underscores the value of the having capacities in place (as a consequence of efforts to control of the threat posed by the H5N1 avian influenza virus) that can be adapted for new threats.

Emerging Pandemic Threats: The on-going threat from recently emerging infections such as H5N1 (avian) influenza, the H1N1 pandemic influenza virus and the more recent threats posed by the novel H7N9 avian influenza virus and the Middle East Respiratory Syndrome (MERS) coronavirus has raised awareness of the global interdependence of human and economic security and the need for a more systematic effort to identify and respond to sudden global public health emergencies. That nearly 75 percent of all new, emerging, or re-emerging diseases affecting humans at the beginning of the 21st century have been documented to have originated in animals (zoonotic diseases) underscores the need for the development of comprehensive disease detection and response capacities that span the traditional domains of animal health, public health, ecology and conservation.

In 2009, USAID launched the Emerging Pandemic Threats program - a suite of capacity building investments designed to give earlier insight into the emergence of new public health threats and enhance country-level capacities to mitigate their potential impact. In collaboration with CDC, Department of Defense, WHO, and Food and Agriculture Organization, USAID has expanded surveillance to monitor wildlife and domestic animals for potential pandemic threats; enhanced pre-service training for public health, animal health, and related programs; strengthened in-service field epidemiological training; strengthened laboratory capability to address common infectious disease threats in animals and people; broadened ongoing efforts to prevent transmission of H5N1 avian influenza and other pandemic threats; and strengthened national capacities to prepare for the emergence and spread of a pandemic.

The EPT portfolio initially drew heavily from the experiences and lessons acquired from efforts to address the threats posed by H5N1 avian influenza – and as such reflects a strategic approach that (1) builds on the understanding that the future well-being of humans, animals and the environment are inextricably linked, (2) promotes a “One Health” approach that spans the animal health, public health, environmental and conservations communities, (3) targets promotion of those policies and the strengthening of those skills and capacities critical for both minimizing the risk of new disease emergence and the ability to limit their social, economic and public health impact, and (4) uses a “risk” based approach to target investments where the likelihood of disease emergence is greatest. At the country level, the EPT partners have been working with governments and other key in-country and regional partners to enhance the understanding of viral distribution and key drivers of disease emergence—from deforestation and land use change to wildlife trade and livestock product demands. This information, along with other EPT investments to strengthen country-level capacities for routine infectious disease detection and outbreak response, are being used to improve surveillance and response as well as risk-mitigation strategies. Over its life, EPT has significantly refined our understanding of the “drivers” that

underlie disease emergence and established important new partnerships and platforms for even more timely and effective detection, control and prevention of future threats.

The success of USAID's Pandemic Influenza and Other Emerging Threats program has been validated by the rapid response to H7N9 avian influenza in China following its emergence in 2013. In the case of the latter, China was able to quickly respond contain the H7N9 virus within a few months and prevent it from spreading throughout the country and to neighboring nations by using capacities, platforms, and partnerships that USAID had helped develop for H5N1 avian influenza. In contrast, the general lack of these capacities, platforms, and partnerships in the Middle East has slowed efforts to contain MERS-CoV since it emerged in 2012.

Pandemic Influenza and Other Emerging Threats



July 30, 2013
Emerging Threats Program

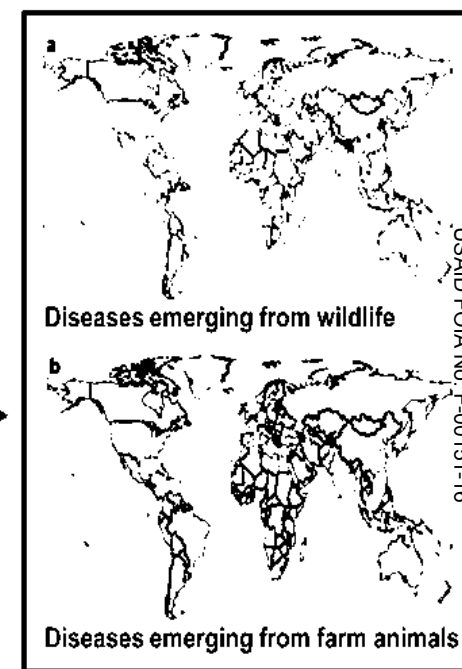
Problem – Past Spillover of Animal Diseases

Steady stream of animal diseases spilling over into people

→ *Most countries not prepared to deal with new threats*

1. Analysis of disease emergence (1940 to 2004*):

- Most new microbes from animals, particularly wildlife such as bats, rodents, primates
- Many of the new microbes are viruses
- Emergence concentrated in specific geographic regions with favorable conditions →
- Some spillovers have resulted in pandemics



2. Impact of zoonotic diseases**

- Mortality – varies (few cases to tens of millions)
- Economic – can be significant, e.g. >\$200 billion in direct and indirect costs over the past decade

* Global Trends in Emerging Infectious Diseases, Jones, et al., 2008, *Nature*, 451:990-994.

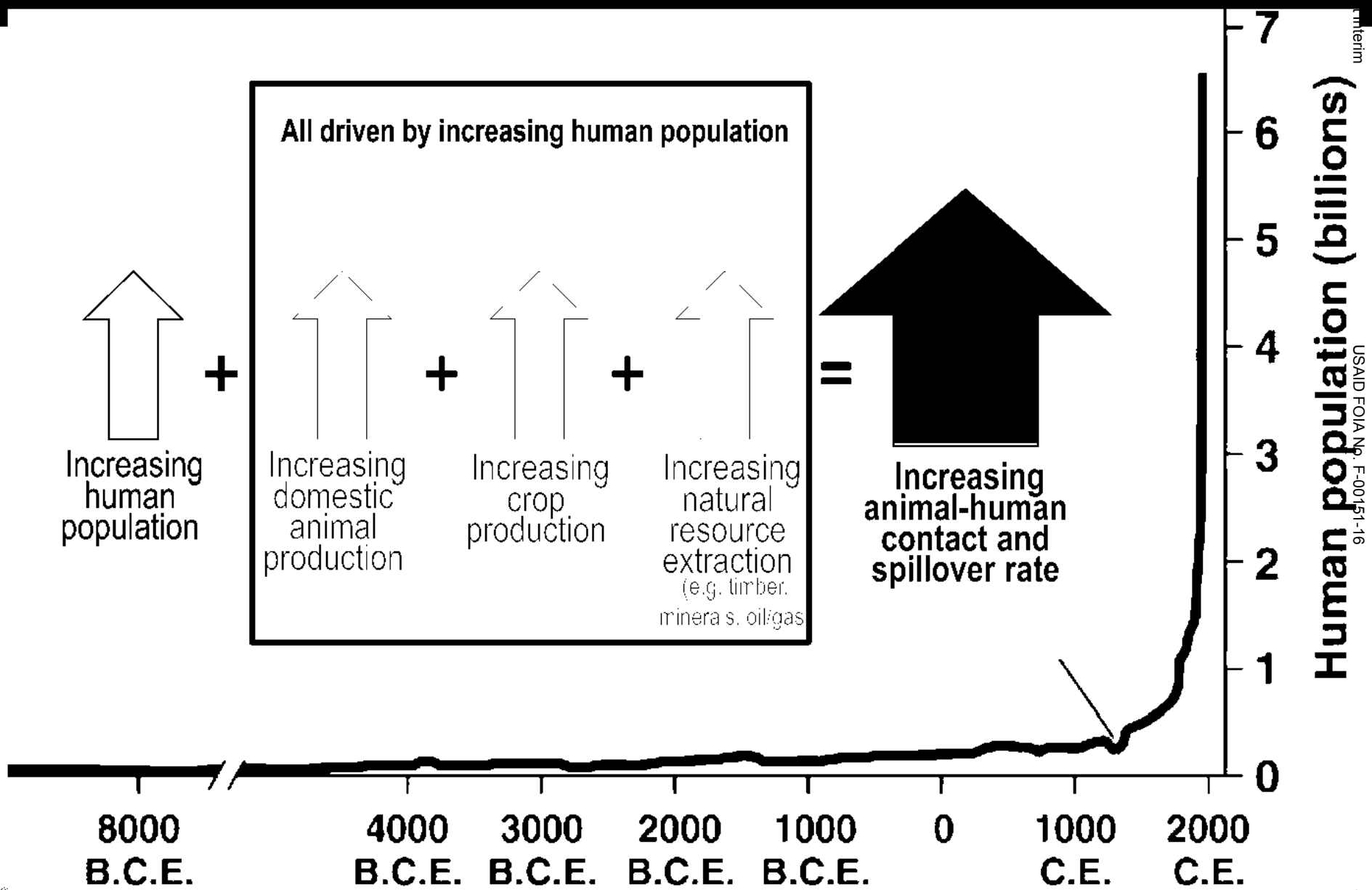
** People, Pathogens and Our Planet – Volume 1: Towards a One Health Approach for Controlling Zoonotic Diseases, World Bank.



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Emerging Threats Program

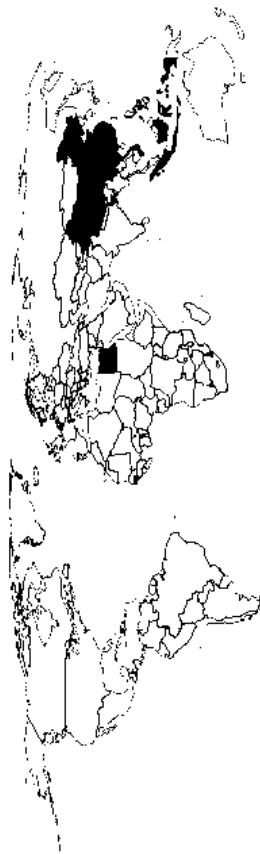
Problem – Future Trends



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Emerging Threats Program

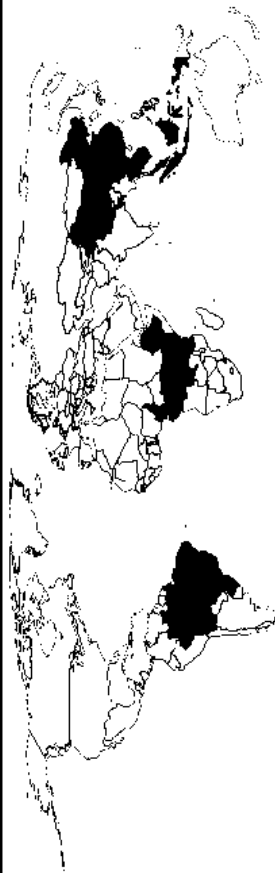
PIOET Platforms



Avian Influenza



Pandemic Preparedness



Emerging Pandemic Threats



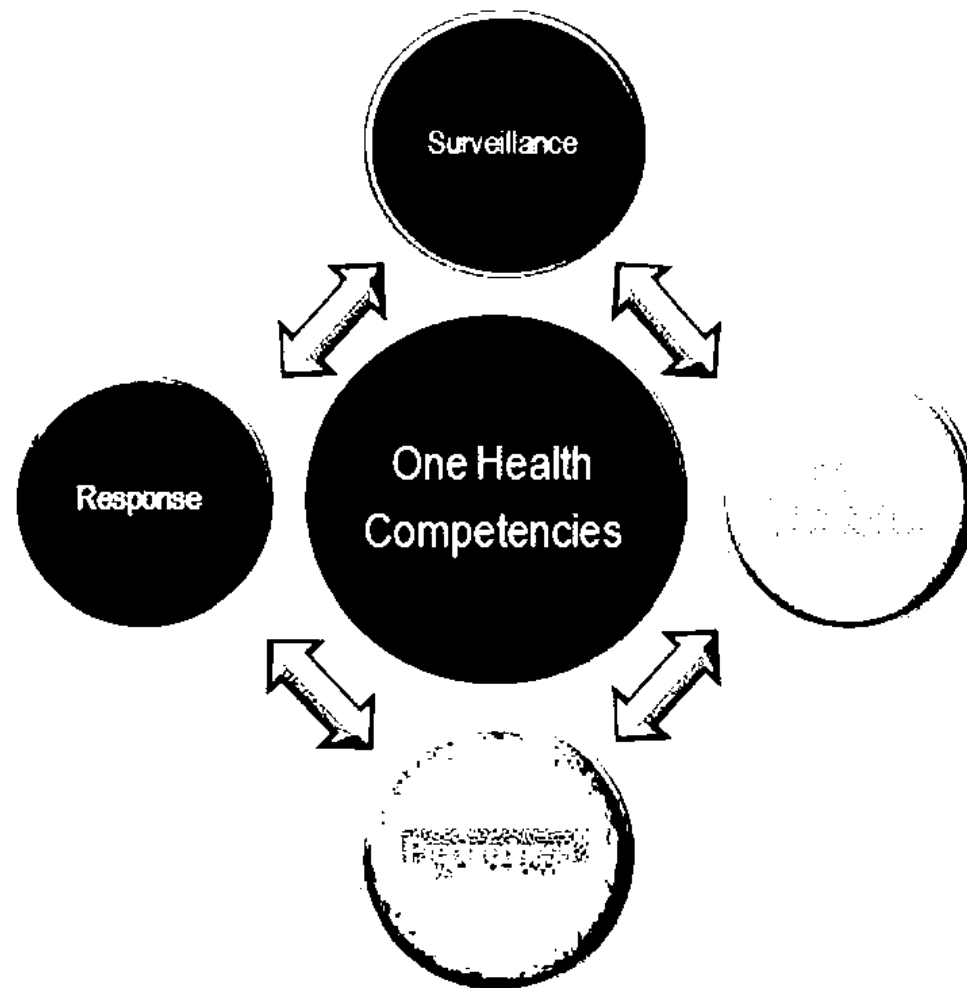
EPT *plus*

□ = secondary focus ■ = primary focus



Emerging Threats Program

Programmatic and Strategic Focus



Target geographic “hot spot” areas with a history of disease emergence

→ *East/Central Africa, South and Southeast Asia*

Focus on 20+ viral families associated with human disease

→ *includes influenzas, Ebola, Marburg, Nipah, Coronaviruses, others*

Focus on animal taxa associated with disease spillover

→ *includes bats, rodents, non-human primates*

Focus on specific animal-human interfaces associated with disease spillover

→ *includes hunting, extractive industry, markets, wild animal farms*



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Program Areas: Avian Influenza

Expected result: decreased public health risk from H5N1 AI

Target: contain/reduce virus in Bangladesh, China, Egypt, Indonesia, and Vietnam and prevent spread to neighboring countries

Activity areas:

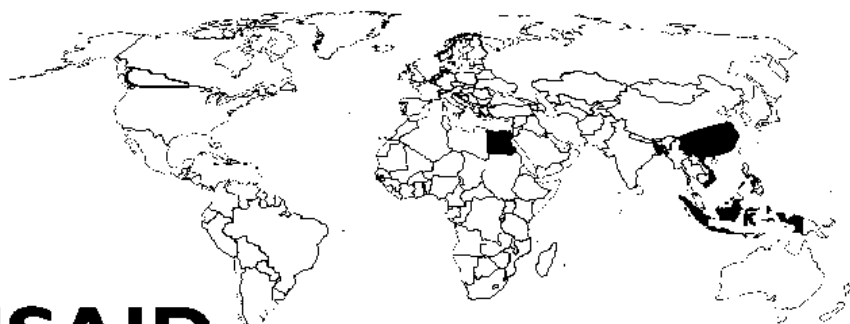
- monitor H5N1 AI virus in birds and humans*
- mount rapid and effective containment*
- identify risk factors associated with spread and promote prevention measures

Partners: FAO, WHO, UNSIC, (USAID bilaterals)

Progress since 2005-2006:

- median detection and reporting times for bird outbreaks in developing countries decreased 36% and 47% respectively
- reported poultry outbreaks and human cases worldwide decreased by about 75%
→ including in high-burden countries
- number of affected countries decreased from 51 to 11**
→ allowed USAID to further focus its resources

** 5 endemic countries and 6 neighbors



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* Support reporting requirements of *International Health Regulations* and OIE

Avian Influenza Success Story – Indonesia

Background:

- 30 of 33 provinces affected at some point after 2004
- global leader in poultry outbreaks (11,000) and human infections (192)

Key USAID inputs since 2005:

- public-sector AI surveillance system in high-risk districts to routinely monitor for poultry infections in villages and live bird markets
- research to determine efficacy of approximately 20 poultry vaccines

Outcome/Impact:

- with vaccine efficacy information, commercial poultry producers more-effectively used own resources to protect flocks
- between 2007 and 2012, number of reported poultry outbreaks and birds testing positive at markets decreased by >50%
- similar decrease seen in reported human cases
- *reduced AI infections in poultry and people have decreased the opportunities for the virus to further evolve into a pandemic-ready form*



Program Areas: Pandemic Preparedness

Expected result: enhanced readiness to address pandemic threats in Africa and Asia

Target: improve planning in 35 countries in Africa and Asia

Activity areas:

- refine country-level “whole of society” pandemic plans to include training and simulations
- develop a regional plan for pandemic preparedness in Asia (through ASEAN)

Partners: WHO, UNDP, WFP, UNSIC, DOD, PREPARE, (USAID bilaterals)

Progress since 2007:

- 30 countries established national coordinating bodies for preparedness
- 25 countries developed “first order” pandemic preparedness plans
- Military authorities in 32 countries developed “civ:mil” preparedness response plans
- USAID-led global “lessons learned” exercise held in Rome in 2011
 - *included case studies looking at the complexities and benefits of preparedness*



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Program Areas: Emerging Pandemic Threats

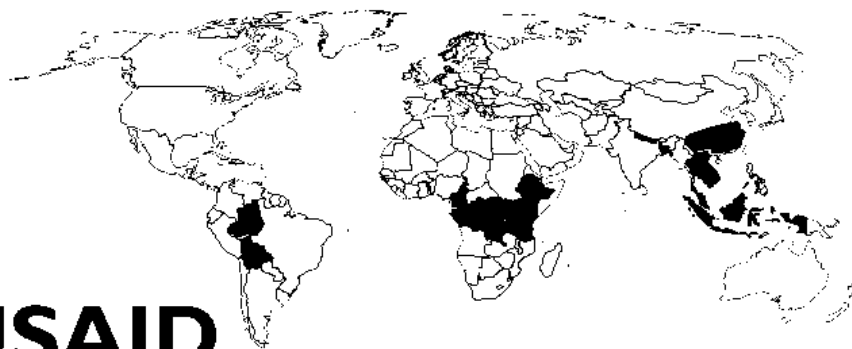
Expected result: decreased public health risk from emerging viruses with pandemic potential

Target: strengthen capacity in 18 countries to identify and respond to “normal” and new infectious diseases

Activity areas:

- monitor wildlife, people for known/novel viruses*
- strengthen lab diagnosis for common diseases*
- identify high-risk groups and factors associated with spillover and improve predictive models
- develop/test plans for outbreak response*
- strengthen regional/national capacities for training on outbreak investigation and response*
- promote risk mitigation among high-risk populations

Partners: CDC, FAO, WHO, OIE, PREDICT, PREVENT, IDENTIFY, RESPOND, Universities, Chatham House



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* Support reporting requirements of *International Health Regulations* and OIE

Progress since 2009:

- 20 of 33 targeted labs begun screening wildlife samples for viral families; >200 novel viruses discovered
- “hot spot” models for disease emergence further refined
- bush meat trade, wildlife farming, consumption of wild animals, and behaviors/practices being mapped to better quantify risk
- safe sample handling, diagnosis, and reporting of major endemic diseases improved in 70 labs in 25 countries
- “One Health” university networks started in C/E Africa and SE Asia
- risk assessment/mitigation tool developed for extractive industry

Program Areas: EPT+

Expected result: decreased public health risk from influenza viruses

Target: strengthen capacity in China, Vietnam and Bangladesh to identify and characterize influenza viruses circulating in farm animals

Activity areas:

- conduct surveillance for influenza viruses in poultry and swine populations*
- identify risk factors associated with spread of influenza viruses among farm animals

Partners: FAO

Progress since 2012:

- surveillance and lab protocols developed with international and in-country partners
- agreements reached with in-country authorities and labs
- first round of surveillance conducted
- lab testing initiated



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* Support reporting requirements of *International Health Regulations and OIE*

PIOET Response to Recent Emerging Events

Rapid use of PIOET platforms and expertise for new threats:

1. H1N1 influenza pandemic (2009-2010)*

- detailed technical and logistics experts to WHO to assist in planning distribution of vaccine and ancillary equipment
- deployed >70 million doses of H1N1 pandemic vaccine (including U.S. donation) and injection equipment to >60 countries
- upgraded H1N1 surveillance and laboratory capacities in 26 countries in Africa and Latin America

H7N9

(2013)

MERS-CoV

(2012)

H1N1

(2009)

2. Novel coronavirus (2012-2013)*

- genetic sequence comparison used to target surveillance
- surveillance and lab protocols used to identify animal source

H5N1

(2005)

SARS

(2002)

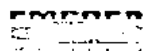
3. H7N9 avian influenza (2013)*^

- surveillance and lab protocols used to identify animal source and other potential threats circulating in animals

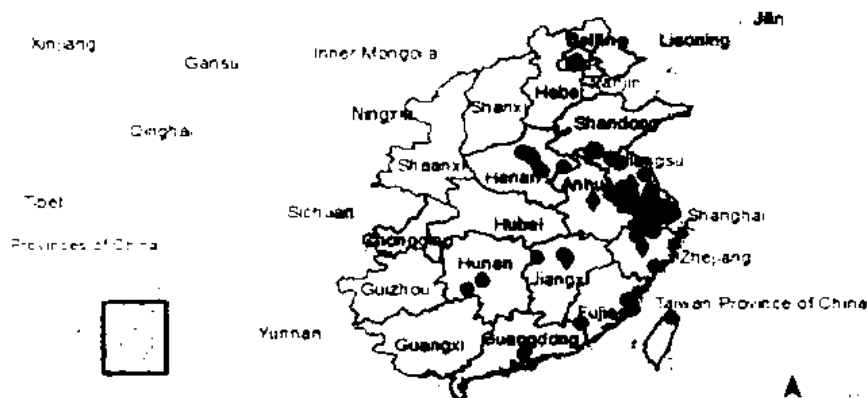
Animal and human
infectious disease
programs

Influenza A/H7N9

February–July 2013



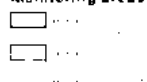
Avian influenza A(H7N9) human cases and positive findings in birds and the environment, mainly in live bird markets / vendors



Avian influenza A(H7N9)



Monitoring areas



Poultry density (heads per km²)

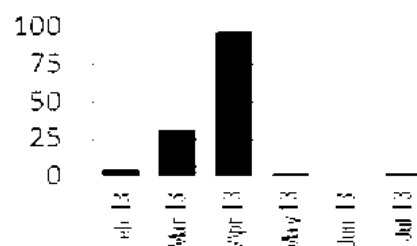


Summary of confirmed human infections^a

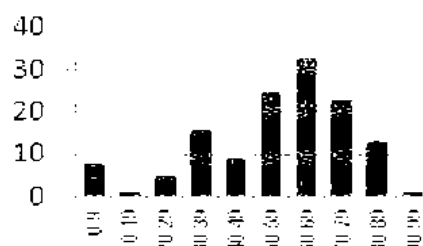
- Average age = 58 years (range 4-91)
- 74% cases male
- Apparent case fatality rate = 32%
- Cases in clusters (2 or more) = at least 6%
- Cases with connections to China = 100%
- Cases with likely contact with poultry = 17%
- Cases involving health workers = 0%
- Cases with basic data^b = 27%

Sources: ^a World Health Organization, Food and Agriculture Organization, OIE, ProMed, Eurosurveillance, and scientific publications through 7/20/13; ^b may be biased towards more-severe cases that are more easily recognized. Includes age, gender, location, illness outcome, and dates for symptom onset, hospitalization, death, if applicable.

Reported human cases by month (n=134)



Reported human cases by age group (n=134)



Reported human cases by outcome (n=134)



Reported human cases by province (n=134)



^a Guangdong 4, Beijing 2, Fujian 5, Hubei 1, Henan 4, Hunan 2, Jiangxi 3, Shandong 2, Taiwan 1



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Middle East Respiratory Syndrome– Coronavirus (MERS-CoV)

March 2012-July 2013

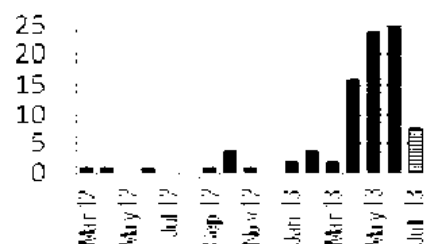


Summary of confirmed human infections*

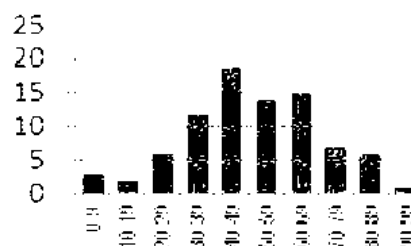
- Average age = 51 years (range 2-94)
- 62% cases male
- Apparent case fatality rate = 50%
- Cases with comorbidities = at least 56%
- Cases in clusters (2 or more) = at least 77%
- Cases with connections to Saudi Arabia = at least 94%
- Cases involving health workers = 16%
- Cases with basic data** = 32%

Sources = World Health Organization, ProMed, and scientific publications through 7/26/13. *may be biased towards more-severe cases that are more-easily recognized. **includes age, gender, location, clinical outcome, and dates for symptom-onset, hospitalization, death, if applicable

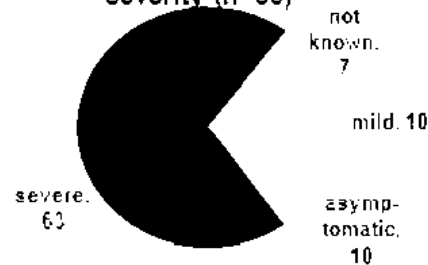
Reported human cases by month (n=90)



Reported human cases by age in years (n=85)



Reported human cases by severity (n=90)



Reported human cases by country (n=90)

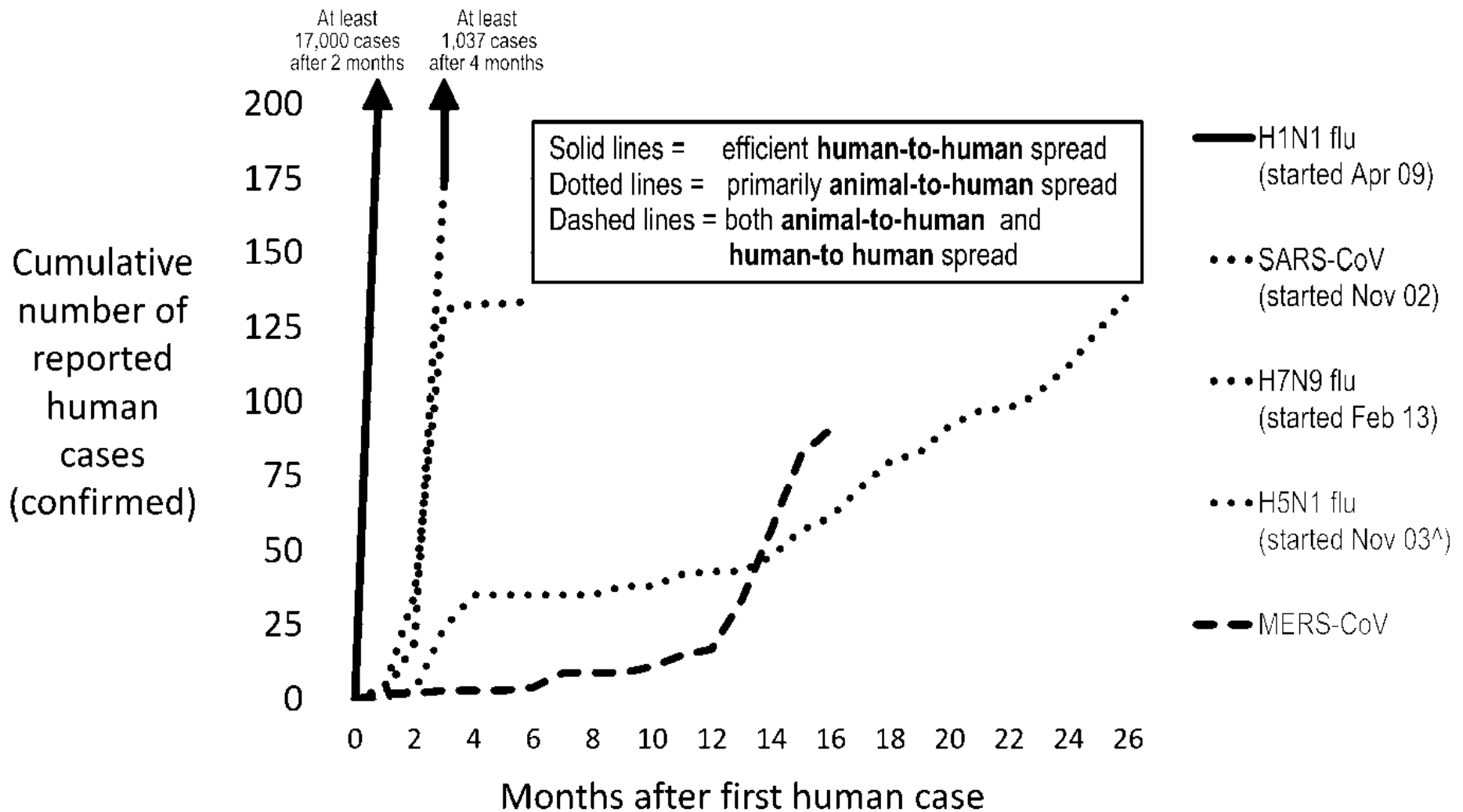


*1 Qatar case detected in Germany; 1 Qatar and 1 UAE case detected in UK



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Early stages of human infections with 5 “new” viruses*



1st Interim

USAID FOIA No. F-00151-16

* Based on symptom onset data from WHO (H5N1, H7N9, Middle East Respiratory Syndrome-Coronavirus [MERS-CoV]), WHO case counts (H1N1), and Molecular Evolution of the SARS Coronavirus During the Course of the SARS Epidemic in China, Science, 12 March 2004, 303, pp. 1666-1669. ^ November 2003 used for H5N1 since this was the beginning of this virus' continued spillover into human populations in multiple countries.



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Comparison of the Response to MERS-CoV and H7N9

Indicator	MERS-CoV*	Influenza A/H7N9
Primary region affected	Middle East	East Asia
Months since first known human <u>illness</u>	16	5
Months since first human case <u>reported</u>	10	4
Number lab-confirmed human cases	91	134
Apparent case fatality rate (confirmed cases)	51%	32%
Number of other probable cases	15	2
Number of countries with human cases	9 [#]	1 ^{##}
GNI PPP per capita (US\$)^ for affected countries	Average = 26,223	Average = 7,640
Time from symptom onset in humans to WHO report	Average = 27 days Median = 13 days	Average = 11 days Median = 9 days
Percent of confirmed human cases in clusters	76%	6%
Number of genetic sequences publicly available	9 (human only)	88 (animal + human)
Time from WHO report to <u>human</u> sequences being publicly available	Average = 52 days Median = 37 days	Average = 15 days Median = 14 days
Previous experience with emerging zoonoses	Limited (H5N1 for 1-2 years)	Extensive (SARS; H5N1 for >10 years)
International experts^^ invited to participate	Yes, but limited	Yes
Animal host identified	No	Yes
Animal-human interface identified	No	Yes
"One Health" collaboration	Weak	Strong
Status of outbreak	On-going (Apr = 16; May = 24; Jun = 25; Jul = 9)	Contained/Seasonal? (Apr = 100; May = 2; Jun = 0; Jul = 1)

1st Interim

USAID FOIA No. F-00151-16

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Sources: WHO, FAO, GenBank through 7/29/13; * Middle East Respiratory Syndrome-Coronavirus. ^ Gross National Income in Purchasing Power Parity; ^^ WHO, CDC, FAO, NAMRU, USAID, etc. # France, Germany, Italy, Jordan, Qatar, Saudi Arabia, Tunisia, UAE, UK. ## China.

H7N9: Preparedness and Response



Targeted "high risk" countries: China, Vietnam, Laos, Myanmar, Thailand, Cambodia, Bangladesh, Bhutan, Nepal, Indonesia

H7N9 Package of Actions

Goal: Disrupt spread of virus beyond China during upcoming "AI season"

Strategy: Build on existing platforms for AI and other emerging diseases

Actions - targeting "high risk" countries

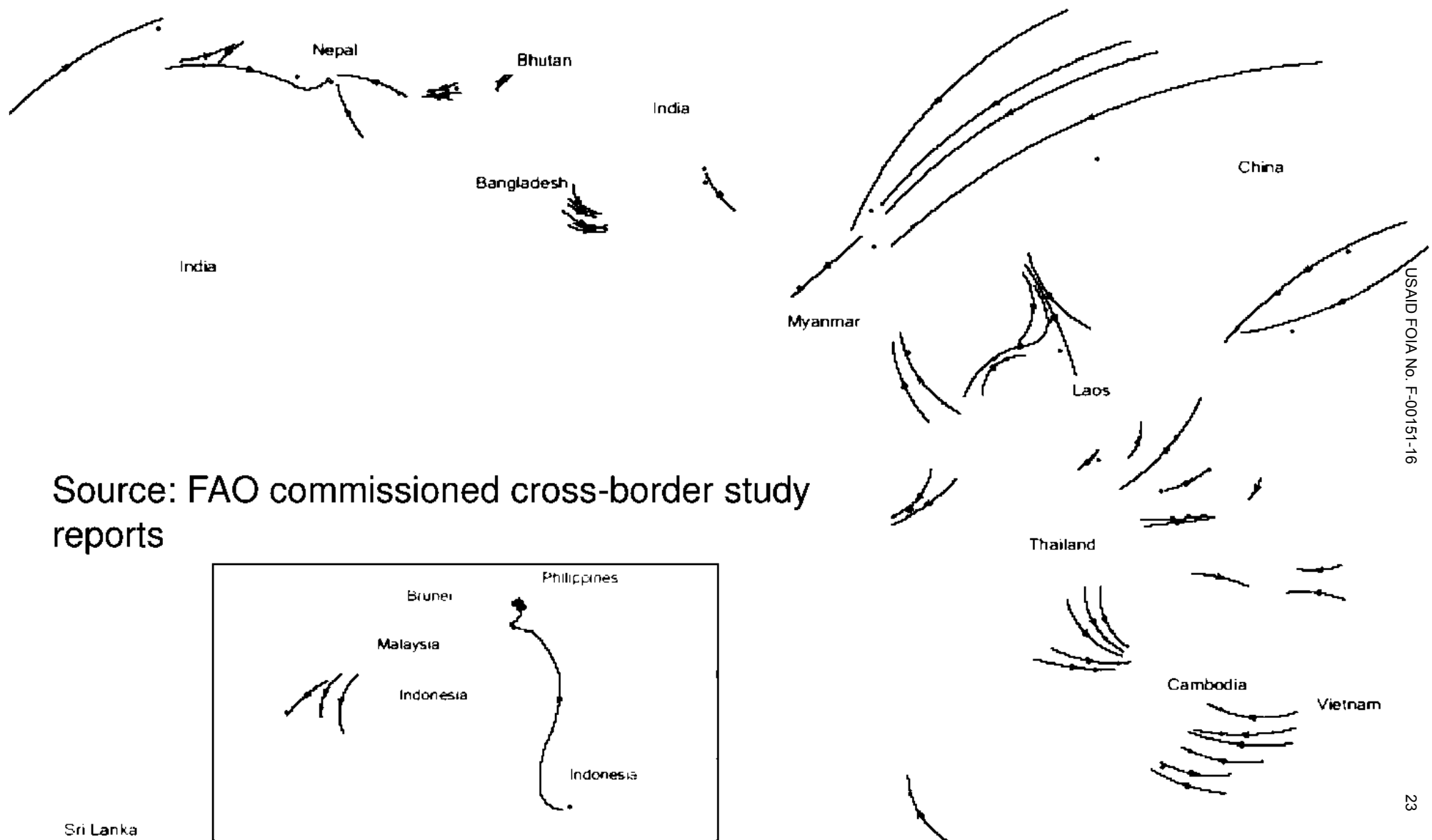
- Laboratory capacities for rapid diagnosis of H7N9 virus
- Intensified surveillance for spread of H7N9 via poultry "value chain" (begun in May)
- Parallel surveillance for human infections via ILI/SARI platforms
- Targeted control measures where virus found
 - Market closures/cleaning
 - Targeted "depopulation"
 - Supportive communication



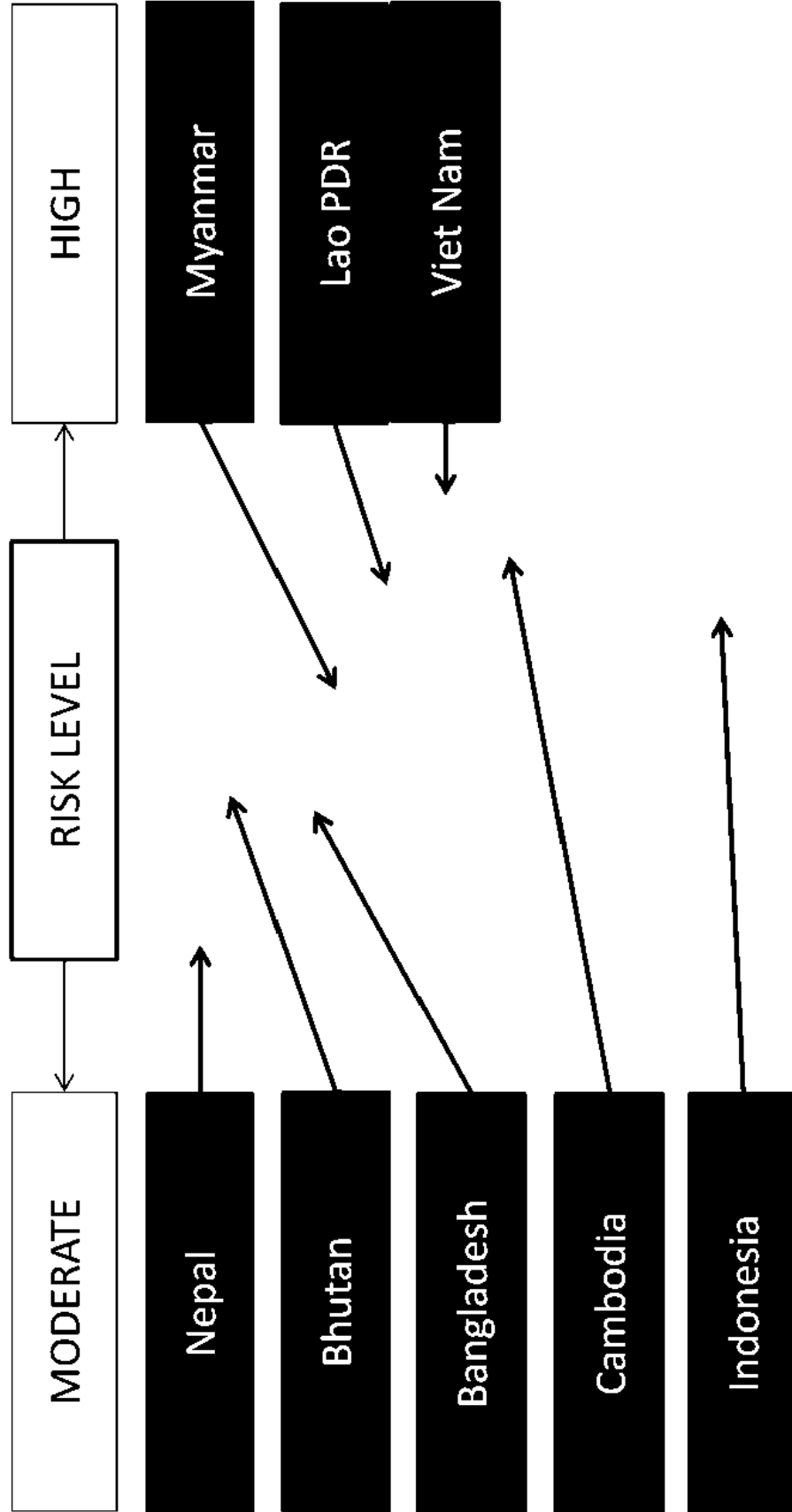
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Emerging Threats Program

Regional cross-border poultry trade

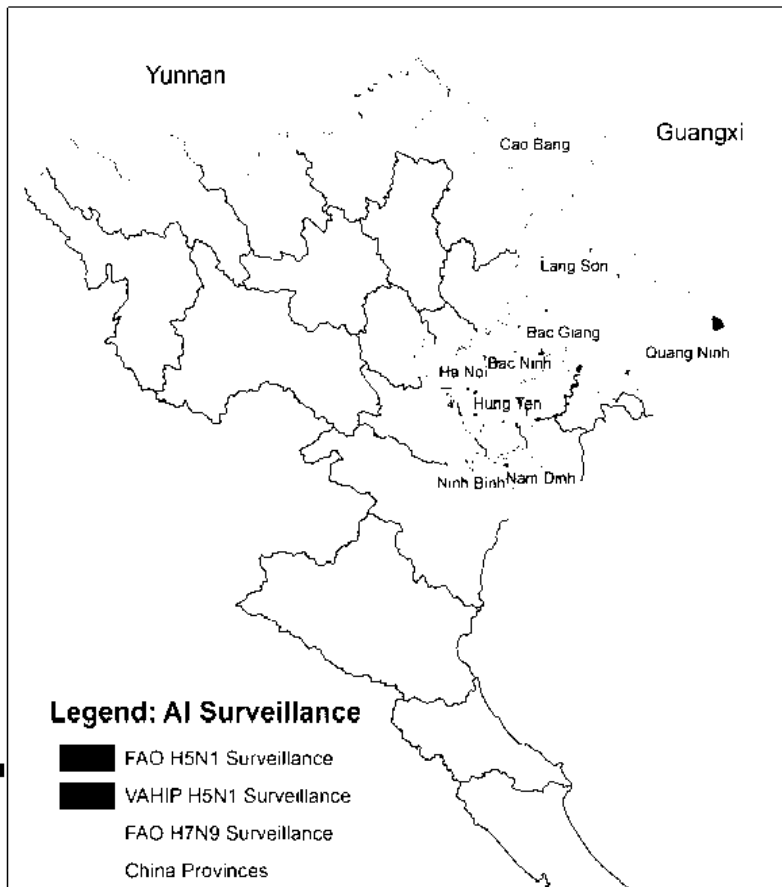


Surveillance Design



Viet Nam

1st Interim



Samples	n	Remark
Previously collected (frozen/stored) influenza A positive samples from active surveillance programs in live bird markets (ducks), spent hens, and past outbreaks and other non-FAO archived project samples	500	All negative for H7N9
Influenza A samples, stored in RAHO 1-7 (break down needed)	200	All negative for H7N9
Testing of swine samples from EPT+ project	100	All negative for H7N9
Weekly H7N9 surveillance in 60 markets in the North (so far only 5 Provinces)	18 000	1150 samples from Hanoi Bac Ninh, Nam Dinh, Bac Giang and Ninh binh have been collected, test results pending

USAID FOIA No. F-00151-16

Retrospective: ducks, spent hens and past outbreaks, pigs from EPT+
Prospective: Chicken and environmental samples

MERS-CoV – Preparedness and Response



Targeted “high pilgrim” Country	Expected Hajj Pilgrims	Planned Budget (USD)	Partner
Bangladesh	148,000	\$145,000	CDC
Egypt	80,000	\$100,000	Bilateral
Afghanistan	29,000	\$100,000	WHO/EMRO
Pakistan	178,000		
Indonesia	200,000	\$355,000	WHO/Indonesia
Ethiopia	28,000		
Mali	12,000		
Niger	15,000		
Nigeria	75,000	\$500,000	WHO/AFRO
Senegal	12,000		
N/S Sudan	30,000		
Tanzania	13,000		
TOTAL		\$1.2 million	

MERS-CoV Package of Actions

Goal: Disrupt spread of virus outside of Arabia Peninsula (AP) during upcoming Hajj

Strategy: Build on existing influenza and other platforms

Actions – Targeting “high pilgrim” countries

- “Traveler Advisory” materials on importance of “personal hygiene” during travel to AP and recognition of “signs/symptoms” and appropriate actions upon return
- Laboratory capacities for rapid diagnosis of MERS-CoV
- Intensified surveillance for severe “respiratory” symptoms with recent travel to AP at ILI/SARI platforms
- Increased attention to “infection control protocols” in referral hospitals



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Emerging Threats Program

H7N9 and MERS-CoV: Their “pandemic potential”

Recent research have offered up the following insights:

H7N9

- The virus can spread by droplets in animal models
- The virus causes extensive infection of surface (epithelial) cells - by comparison, H5N1 infects only some cells
- The virus is particularly efficient in infecting human respiratory tissues and cells on par or exceeding pH1N1

MERS-CoV

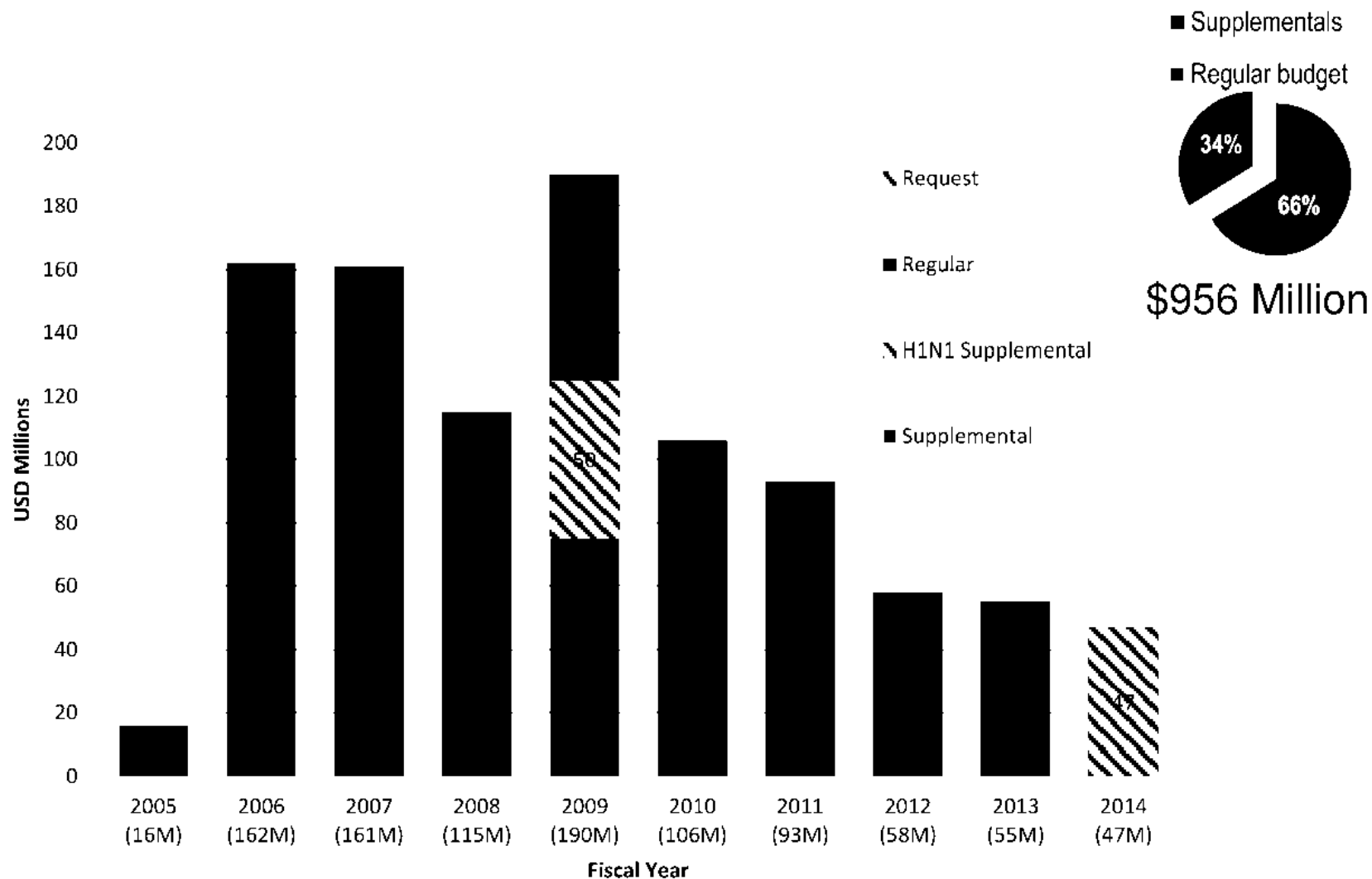
- Less “infectious” than its “cousin” SARS-CoV – this reflected in its “binding receptor” profile
- Current modeling puts R_0 at <1 (little pandemic potential)
- Appears relatively (genetically) stable



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Emerging Threats Program

PIOET Appropriations

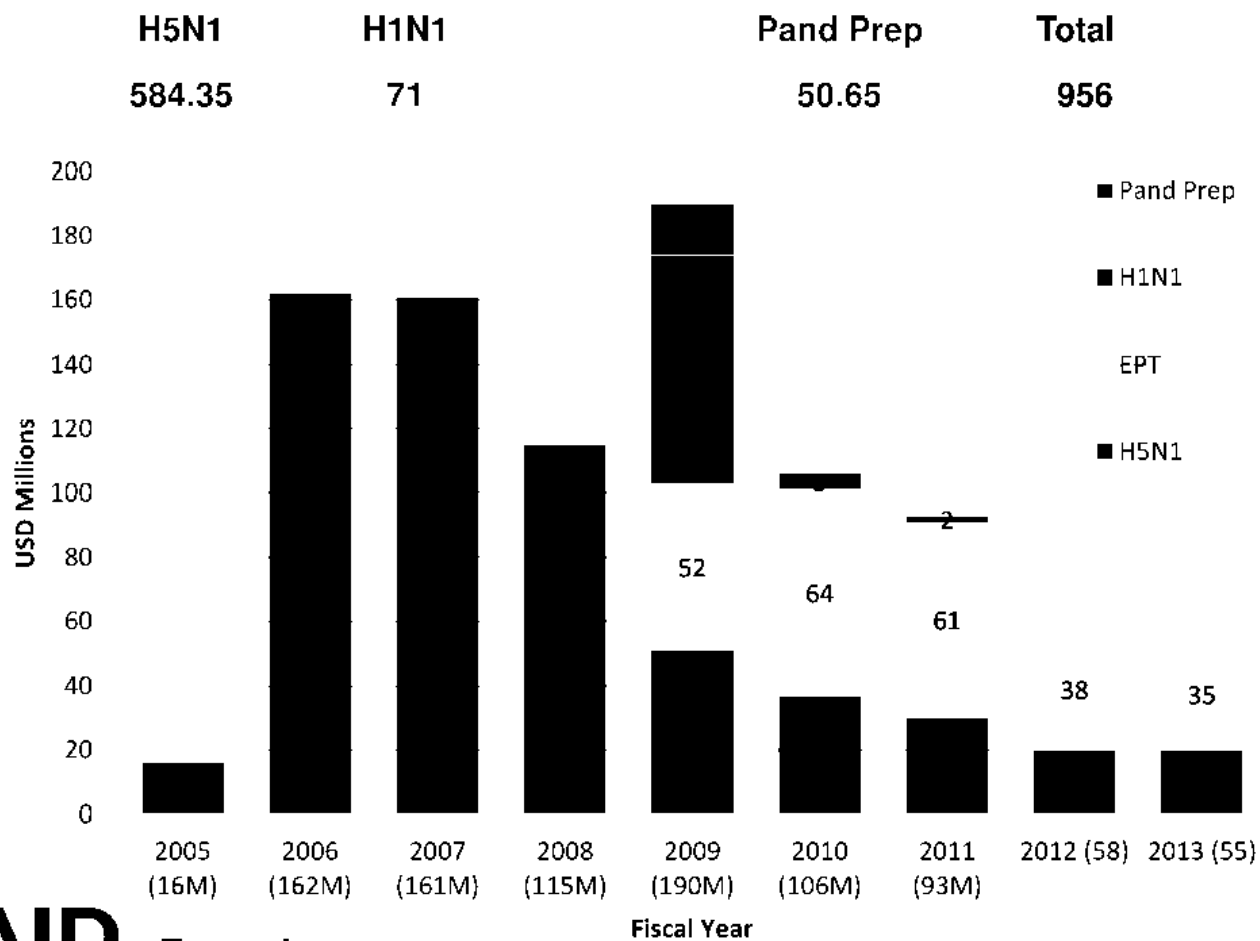


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Emerging Threats Program

PIOET Budgets

Aggregate money appropriated to USAID's PIOET Unit (USD Millions)



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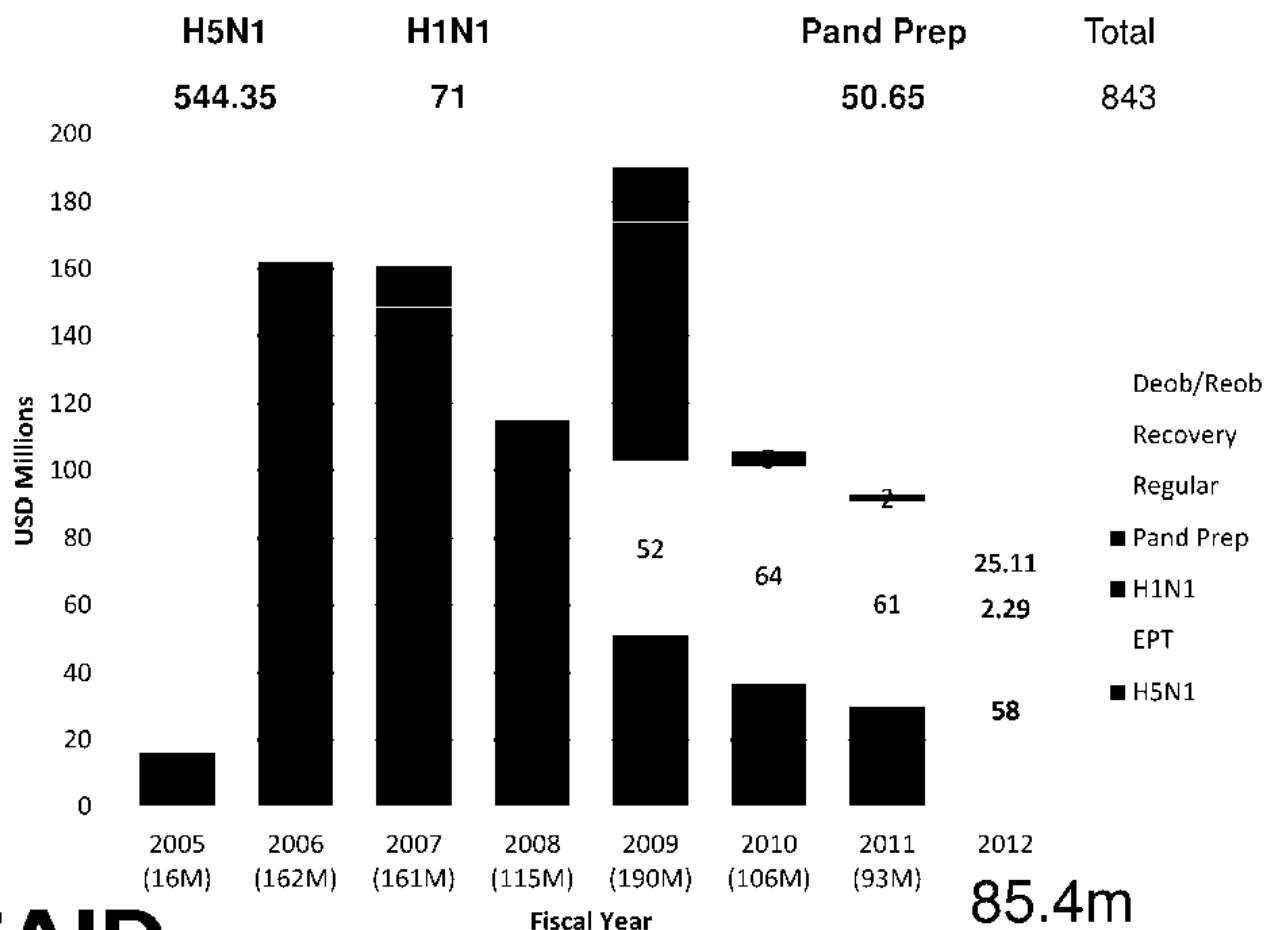
Emerging Threats Program

PIOET Programming

1
term

Aggregate money appropriated to USAID's PIOET Unit (USD Millions)

As of September 30, 2011



USAID FOIA No. F-00151-16



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Emerging Threats Program

30

Global Health Program Effectiveness

Pandemic Influenza and Other Emerging Threats

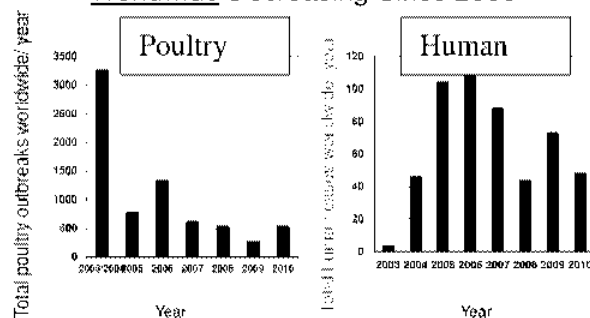
USAID has been a major leader in the global response to the dangers posed by emerging pandemic threats. The dual goal of USAID's Pandemic Influenza and Other Emerging Threats (PIOET) program is (1). to minimize the global impact of existing pandemic influenza threats, particularly from the H5N1 high path avian flu (HPAI) and the H1N1 2009 pandemic viruses, and (2). pre-empt the emergence and spread of future pandemic threats. The effectiveness of each of the three main areas of focus by the PIOET program: H5N1 Avian Influenza, H1N1 2009 pandemic virus, and Emerging Pandemic Threats are described below

H5N1 Avian Influenza: Since mid-2005, USAID has strengthened the capacities of more than 50 countries for monitoring the spread of HPAI among wild bird populations, domestic poultry, and humans, to mount a rapid and effective containment of the virus when it is found, and to assist countries prepare operational capacities to mount a comprehensive response in the event a pandemic capable virus emerges.

USAID's efforts have contributed to dramatic downturns in reported poultry outbreaks and human infections, and a dramatic reduction in the number of countries affected. At the peak of its spread in 2006, HPAI had been reported in 53 countries across three continents. As of now the number of countries affected had shrunk to 9; with five of these countries (Indonesia, Vietnam, China, Bangladesh and Egypt) as the primary reservoir of the virus, accounting for more than 95% of all reported outbreaks involving either poultry or humans. The following summarizes this progress:

(1) The overall magnitude of the H5N1 avian pandemic has diminished, with reported numbers of poultry outbreaks and human cases having decreased since their peak in 2006.

Reported Poultry Outbreaks and Human Cases Worldwide Decreasing Since 2006



→ Decrease in poultry outbreaks and human cases in 2007 and 2008 after apparent peaks in 2006

Sources: OIE, FAO, and WHO

Over the past five years, the total numbers of reported poultry outbreaks and human cases have decreased. In 2006, nearly 1,500 H5N1 outbreaks in poultry were reported, compared to 600 in 2007 and 500 in 2008, with these low levels being maintained up to the beginning of 2011.

Similarly, while more human cases were reported between November 2005 and October 2007 than in the previous three-year period, the number of human cases has been on the decline since as illustrated. In addition, there has been an 81% reduction in human

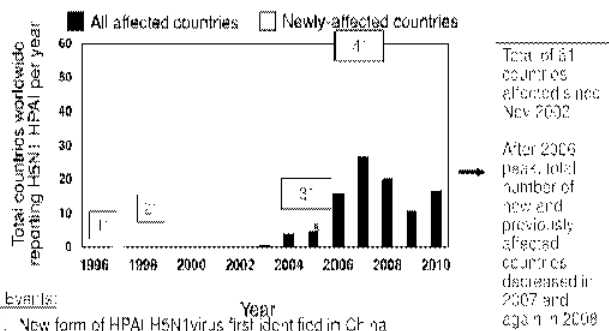
cases during the peak influenza period of November 2010 to February 2011 compared to November 2007 to February 2008.

Progress has been particularly significant in Thailand and Vietnam, two of the most affected countries. Between December 2003 and December 2005, both countries accounted for a total of 3,447 reported H5N1 outbreaks in poultry, or 86% of the global total. After an aggressive package of control measures was introduced in both countries in 2005, total poultry outbreaks between January 2006 and June 2008 fell to 182, with these low levels being maintained through 2010. On the human-health side, results have been equally remarkable. During the same 2003–2005 period, both countries reported 115 human cases, or 78% of the global total. Since 2006, there have been 20 human cases in both countries (through February 2011).

(2) H5N1 appears to have not only stopped spreading to new countries, but there has also been a dramatic contraction of its geographic range.

H5N1 appears largely to have stopped spreading to new countries, at least for now. Between

Number of H5N1 Affected Countries Increased Rapidly Through 2006 then Decreased Since



Source:

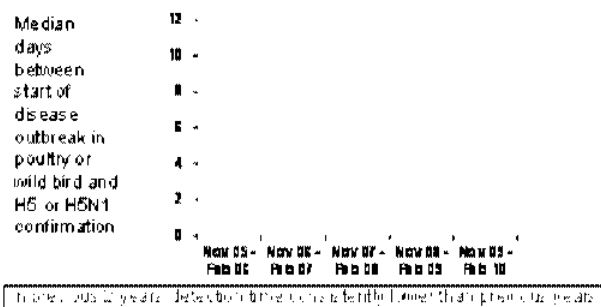
1. New form of HPAI H5N1 virus first identified in China
2. Poultry outbreaks and human cases in Hong Kong; a poultry cull
3. New H5N1 genotype emerges and spreads across Southeast Asia
4. Additional H5N1 genotypes identified in China; clade 2.2 virus spreads to Eurasia, Europe, Near East, Africa, South Asia

Sources: WHO, OIE reports through 2010. Each shaded cell denotes at least 1 outbreak or case reported in birds or humans.

2003 and mid-2005, nine countries in Southeast Asia reported H5N1 outbreaks. Beginning in late 2005, there was an explosive movement of the virus outside of Southeast Asia to Europe, the Middle East, South Asia, and Africa. At the height of the poultry pandemic in 2006, a total of 53 countries had reported outbreaks. By the end of 2010, the number of countries affected shrank to 9, with five of these countries (Bangladesh, China, Egypt, India, and Vietnam) accounting for more than 95% of all reported outbreaks.

(3) Affected countries have strengthened their capacities to identify and respond to future poultry outbreaks.

Comparison of Recent AI Seasons: All Developing Countries Worldwide



Data from OIE and WHO Reports through 2010. Poultry outbreak data from Indonesia and Cambodia complete, respectively. China data includes Hong Kong.

USAID has focused on strengthening the capacity of affected countries in three key areas: early identification of H5N1 outbreaks involving the H5N1 virus in both poultry and people, promotion of timely and effective response in containment and elimination of the virus, and education of the general population on the risks associated with avian influenza and steps they can take to protect themselves. These investments have led to improved capacities in early-warning surveillance for HPAI

outbreaks in domestic poultry, wild birds, and humans, have strengthened capacities of veterinary and human health laboratory diagnosis of the H5N1 virus, and have established rapid response teams involving veterinary and public health professionals trained in core principals of field epidemiology. All of these are key capacities that could prove the backbone of any effort to address the larger threats posed by emerging zoonotic diseases. Per the adjacent figure, a comparison of recent AI seasons (November through February) indicates that the average number of days between the start of disease outbreak in poultry or wild birds and H5 or H5N1 confirmation has fallen from in excess of eight days (in November 2005-February 2006) to four days (during the 2009-2010 season). This is a strong indicator that the worldwide response to HPAI outbreaks has dramatically improved.

Although these successes are significant, HPAI remains a serious threat and sustained vigilance is required: it continues to spread in poultry, the mortality rate among infected humans remains above 70%, and with the emergence of the H1N1 pandemic virus the potential exists for a new and more deadly genetic variant to emerge and again spread rapidly across the globe. Over the past year a new genetic variant of the H5N1 virus has spread from China to Vietnam where it has begun to rapidly replace earlier variants. Initial reports indicate that this “new” mutated virus is not susceptible to existing vaccines raising concerns that it will spread more widely among poultry in the coming months; it also suggests that current H5N1 vaccines stockpiled for human use in the event the H5N1 virus becomes an efficient human-human transmitter may be no longer efficacious. Mindful of the need for continued vigilance USAID has focused its efforts over the past year to build on its successes in HPAI and H1N1 and further consolidate our programs in the highest risk countries.

H1N1 Pandemic 2009 virus: In FY 2009 the PIOET programmed a total of \$85 million to address the H1N1 virus. These funds were used to support three lines of H1N1 related work:

- deployment of more than 40 million doses of the H1N1 vaccine and related ancillary materials (syringes, needles etc) to more 60 countries;
- supporting a global laboratory network to monitor impact of the H1N1 virus as it spread around the world, with a special focus on upgrading the surveillance and laboratory capacities of 26 countries in West and Central Africa and Central and South America – where such capacities were previously non-existent; and,
- supporting heightened community-level readiness to mitigate through non-pharmaceutical interventions the effects of the pandemic virus in 28 countries in Africa and Asia through a coalition of the International Federation of Red Cross Societies, UN partners, military authorities, the private sector and NGOs.

Fortunately the H1N1 pandemic virus proved to be less virulent than feared, with limited global consequences. However, USAID’s ability to quickly and effectively mobilize its technical, program and financial resources in support of the H1N1 pandemic response underscores the value of the significant capacities that have been put in place as a consequence of efforts to control of the threat posed by the H5N1 avian influenza virus.

Emerging Pandemic Threats: The on-going threat from recently emerging infections such as H5N1 (avian) influenza, the H1N1 pandemic influenza virus and the earlier threat

posed by severe acute respiratory syndrome (SARS), has raised awareness of the global interdependence of human and economic security and the need for a more systematic effort to identify and respond to sudden global public health emergencies. The speed with which these diseases can surface and spread, as illustrated by the H1N1 pandemic virus, presents serious public health, economic, security and development concerns. Further, it underscores the need for the global community to act pre-emptively and systematically to improve individual countries' abilities to identify and mitigate the severity of health threats arising within their borders. That nearly 75 percent of all new, emerging, or re-emerging diseases affecting humans at the beginning of the 21st century have been documented to have originated in animals (zoonotic diseases) underscores the need for the development of comprehensive disease detection and response capacities that span the traditional domains of animal health, public health, ecology and conservation.

USAID's approach to reducing the threat posed by new emergent diseases is based on a strategic approach that (1) builds on the understanding that the future well-being of humans, animals and the environment are inextricably linked, (2) promotes cross-sectoral coordination that spans the animal health, public health, environmental and conservations communities, (3) targets promotion of those policies and the strengthening of those skills and capacities critical for both minimizing the risk of new disease emergence and the ability to limit their social, economic and public health impact, (4) uses a "risk" based approach to target investments to those places, populations, times and situations where the likelihood of disease emergence is greatest.

USAID's emerging pandemic threats (EPT) strategy is guided by the following assumptions:

- All populations are vulnerable to new diseases emerging in other countries; it is in our collective interest to strengthen the capacity of all high-risk countries to prevent the emergence and spread of these new disease threats.
- Deadly zoonotic disease threats will increase steadily in the coming decades driven by population growth and expanded interactions between people, animals and the environment.
- Measures are currently available that if properly deployed could greatly reduce the risk of new disease emergence and their impact.
- It is possible, in the event of new disease emergence, to minimize its potential economic and public health impact through enhanced surveillance and early deployment of control measures.
- Enhanced coordination across animal, human, conservation, and environmental sectors will contribute to reduced risk of new disease emergence and lead to early and effective control minimizing their impact should they emerge.

USAID's EPT strategy has two overarching goals: the prevention of new zoonotic disease emergence, and the timely and effective control of any disease should it emerge. Towards these

ends USAID's Emerging Pandemic Threats Program addresses those events that occur (1) exclusively within animal populations, wild and domestic, that could facilitate disease emergence, spread and possible amplification; (2) at the "animal-human interface" which enable the transfer of a potential new microbial threat from animals (domestic and wild) to humans; and, (3) exclusively within human populations that could further spread and amplify a novel pathogen resulting in heightened threat to public health. The objectives of USAID's EPT program are:

- **Early discovery of new, emergent disease threats:** The most effective approach for minimizing the risk of new disease threats is to be able to "discover" these new microbial "threats" at their point of emergence, or even better to be able accurately forecast their emergence *before they emerge*. Advances in genomics and informatics allow for investing in longitudinal data-bases that track changes in select microbes for the purpose of developing reliable "predictive" models for pathogen emergence. This capability would allow for the earliest possible introduction of interventions designed to pre-empt the spread of the new pathogen beyond its initial point of emergence.
- **Obtain timely and reliable data on "known" zoonotic threats:** For those pathogens which have already emerged and are "known" to infect humans having the capability to systematically monitor for their spread among populations of animals and humans, and any related genetic and epidemiologic changes, allows for the mobilization of earlier and more timely control interventions.
- **Adoption of effective "biosecurity" measures to minimize the spread of zoonotic pathogens:** The routine application of currently available "biosecurity" measures has been demonstrated to be highly effective in protecting livestock from zoonotic and other animal infections and by extension exposure of humans to possible infection. Even when a new zoonotic disease may emerge in wildlife, if livestock are raised and marketed under proper biosecurity, then the opportunity for the amplification and further spread of the pathogen among animals and to humans will be greatly diminished.
- **Minimize human practices and behaviors that contribute to disease spread across the animal-human interface:** Human behaviors are key to enabling new zoonotic disease threats to cross the animal-human interface. These behaviors or practices may be associated with institutions, such as the those linked with the extractive industry and related encroachment on wildlife domains; they may be more communal and linked how communities rear livestock proximal to wildlife domains; and they may be more of an individual nature, such as those associated with the exposures of hunters to wildlife. Understanding those practices and behaviors and their relative "risk" is a critical step to being able to formulate and implement risk mitigation interventions.
- **Enhanced capacities for effective control of disease outbreaks among animals and humans:** While "risk mitigation" may decrease the frequency with which new diseases emerge, capabilities still need to be in place to be able to identify early and mount timely and effective responses to new outbreaks. This will require broad cross-sectoral investments to strengthen diseases surveillance, laboratory diagnostics, case management, and outbreak response measures.

In implementing its EPT program USAID is guided by the following principles to ensure efficiency and effectiveness:

- Strengthen and leverage key multilateral organizations, global partnerships and private sector engagement that are focused on strengthening the normative capacities across animal and human health sectors in surveillance, training and disease control.
- Work in close coordination and partnership with other efforts by the United States Government, particularly the *Global Health Initiative* and the *Countering Biological Threats Program*
- Focus on those new disease threats that originate in animals and have potential for efficient human infection via either human-to-human or vector-borne transmission.
- Exploit advances in risk-based modeling for forecasting new zoonotic diseases to target interventions to those places, populations, times and situations where risk of disease emergence is greatest.
- Institutionalize a “one health” approach across objectives.
- Contribute directly to those capacities required for the effective implementation of the International Health Regulations
- Increase impact through strategic coordination and integration
- Encourage country ownership and invest in country-led plans

Over the past two years USAID’s EPT program has taken significant steps to adapt the early warning surveillance and response programs built to address HPAI and H1N1 to be able to address the broader dynamic that has given rise to a stream of new and increasingly deadly diseases to develop a global early warning system for emergent pandemic threats. These efforts have focused on four main lines of work: (1) expand our H5N1 monitoring of wild birds to more broadly address the role played by wildlife in facilitating the emergence and spread of other new pathogens; (2) broaden our training partnerships with schools of public health in Africa to include new “One Health” alliances/networks with schools of veterinary medicine, human medicine, and environment in central and east Africa, as well as southeast Asia; (3) enhance our support for animal- and public-health diagnostic laboratories to more fully address a broader array of infectious disease threats; and, (4) broaden ongoing behavior change and communications efforts to prevent H5N1 transmission from poultry to humans to include potential transmission of other emergent wildlife pathogens. The Agency’s focus is on delivering this package in geographic “hotspots” for the emergence of new infectious disease threats originating from animals (the Amazon region, the Congo Basin, the Gangetic Plain, and Southeast Asia).

Update on FY10 supplemental funding for Avian Influenza and other Emerging Threats
May 9, 2011

Summary: The availability of the \$45 million FY10 supplemental funds¹ has enabled USAID to provide uninterrupted program support to: (1) consolidate the gains made controlling the threat posed by the highly pathogenic H5N1 virus over the past five years, (2) monitor for possible mutations involving the H1N1 pandemic virus and the H5N1 avian flu virus, and (3) further enhance country and regional capacities across the Congo basin and SE Asia to address the continuing threats posed by newly emergent infectious diseases of major public importance.

Background: USAID has been a major leader in the global response to the dangers posed by emerging pandemic threats, including highly pathogenic avian influenza (HPAI) and the pandemic 2009-H1N1 virus. Since mid-2005, USAID has strengthened the capacities of more than 50 countries for monitoring the spread of HPAI among wild bird populations, domestic poultry, and humans, to mount a rapid and effective containment of the virus when it is found, and to assist countries prepare operational capacities to mount a comprehensive response in the event a pandemic capable virus emerges.

USAID's efforts have contributed to dramatic downturns in reported poultry outbreaks and human infections, and a dramatic reduction in the number of countries affected. At the peak of its spread in 2006, HPAI had been reported in 53 countries across three continents. As of now, however, the number of countries affected had shrunk to 9; with five of these countries (Indonesia, Vietnam, China, Bangladesh and Egypt) as the primary reservoir of the virus, accounting for more than 90% of all reported outbreaks involving either poultry or humans.

Although these successes are significant, HPAI remains a serious threat and sustained vigilance is required: it continues to spread in poultry, the mortality rate among infected humans remains above 70%, and with the emergence of the H1N1 pandemic virus the potential exists for a new and more deadly genetic variant to emerge and again spread rapidly across the globe. Over the past year a new genetic variant of the H5N1 virus has emerged and has begun to rapidly replace earlier variants across SE Asia. Initial reports indicate that this "new" mutated virus is not susceptible to existing vaccines raising concerns that it will spread more widely among poultry in the coming months; it also suggests that current H5N1 vaccines stockpiled for human use in the event the H5N1 virus becomes an efficient human-human transmitter may be no longer efficacious. Mindful of the need for continued vigilance USAID has focused its efforts over the past year to build on its successes in HPAI and H1N1 and further consolidate our programs in the highest risk countries.

¹ NOTE: Consistent with the language of the FY10 Supplemental these funds have been programmed as part of our FY11 OP: "The Committee recommends \$45,000,000 for Global Health and Child Survival, which is \$45,000,000 above the request, for USAID's Avian Influenza and Other Emerging Threats program to minimize the global impact of pandemic influenza, particularly from the H5N1 and H1N1 viruses, and to pre-empt the emergence and spread of future pandemic threats. The Committee notes that the fiscal year 2011 request significantly reduces funding for pandemic preparedness and response and believes such a decrease ignores the continuing threats from such deadly diseases in many geographic regions."

Update: FY 2010 supplemental funding has enabled uninterrupted program support for pandemic prevention in priority “hot spot” regions of and the “highest risk countries” of Indonesia, Bangladesh, Vietnam, China, Pakistan and Egypt. During this time USAID has been able to continue its efforts to adapt the early warning surveillance and response programs built to address HPAI and H1N1 to be able to address the broader dynamic that has given rise to a stream of new and increasingly deadly diseases to develop a **global early warning system for emergent pandemic threats**. This latter effort includes four main lines of work: (1) expand our current H5N1 monitoring of wild birds to more broadly address the role played by wildlife in facilitating the emergence and spread of other new pathogens; (2) enhance support for field epidemiological training of relevant animal and human health teams beyond HPAI and H1N1 to more broadly address the threat posed by other newly emergent zoonotic diseases; (3) enhance our support for animal- and public-health diagnostic laboratories to more fully address a broader array of infectious disease threats; and, (4) broaden ongoing behavior change and communications efforts to prevent H5N1 transmission from poultry to humans to include potential transmission of other emergent wildlife pathogens. The Agency’s focus is on delivering this package in geographic “hotspots” for the emergence of new infectious disease threats originating from animals (the Amazon region, the Congo Basin, the Gangetic Plain, and Southeast Asia)

Program highlights enabled by this funding during FY 11 include:

- Sponsoring a meeting of Vietnamese and Chinese influenza experts to share information and experiences for controlling the H5N1 virus. This exchange is part of a larger effort by USAID to coordinate the control of avian flu among the remaining six endemic countries. Given the emergence of the latest mutant strain of H5N1 maximizing information sharing and coordination of activities is critical.
- Enhanced “risk” mapping across 14 countries in Central Africa and South/Southeast Asia of the geographic and species distribution of targeted pathogens including: monkey pox, Nipah virus, Ebola virus, Marburg virus, simian foamy virus and their genetic “nearest neighbors”. This mapping is allowing for better monitoring and targeting of resources against high risk pandemic threats
- Fostering a network of 14 schools of African public health/medicine and veterinary medicine across eastern and central Africa (Ethiopia, Kenya, Rwanda, Uganda, Tanzania, DR Congo) as part of our larger effort to build enhanced capacities for investigating and controlling disease threats. A similar network is being established in Southeast Asia linking institutions in Vietnam, Thailand, Malaysia and Indonesia
- Laying the groundwork for a technical partnership with Chinese experts to assess the risk posed by the dramatic expansion of Chinese mining and logging operations in the Congo basin of triggering exposures to and spreading of new emergent diseases threats.
- Targeting 32 regional and 32 country public health and veterinary laboratories in Africa and Southeast Asia for enhanced capacities in the diagnosis of “diseases of international importance”.
- Broadening support for the development of “all of society” pandemic preparedness plans in across Africa and Asia. This effort involves linking our congressionally directed pandemic preparedness investments of militaries in Africa and Asia via DOD’s PACOM and AFRICOM and our ongoing support for the development civilian national pandemic preparedness plans.

**The Rising Threat of Zoonotic Diseases
The Use of "Risk-Based" Strategies to Build a Global Early Warning
System for Surveillance and Response
A Strategic Framework for Action**

Dennis Carroll, PhD
Director, Avian Influenza and other Emerging Threats Program
U.S. Agency for International Development

Summary

We are now in an era of new, re-emerging and recurring global health threats that argue for a longer-term, more strategic approach to global health preparedness. The on-going threat from recently emerging infections such as severe acute respiratory syndrome (SARS), H5N1 (avian) influenza and, most recently the H1N1 pandemic influenza has raised awareness of the global interdependence of human and economic security and the need for a more systematic effort to identify and respond to sudden global public health emergencies. The 2005 revision of the International Health Regulations (IHRs) under the auspices of W.H.O. and their entry into force in 2007 signaled a normative shift in the responsibility of states to build their internal capacities to monitor and report emerging disease threats, intended in part to help reduce the risk of inter-state spread of health threats.

The speed with which these diseases can surface and spread, as illustrated by the H1N1 pandemic virus, presents serious public health, economic, security and development concerns. It also underscores the need for the global community to act pre-emptively and systematically to improve individual countries' abilities to identify and mitigate the severity of health threats arising within their borders. That nearly 75 percent of all new, emerging, or re-emerging diseases affecting humans at the beginning of the 21st century have been documented to have originated in animals (zoonotic diseases) underscores the need for the development of comprehensive disease detection and response capacities that span the traditional domains of animal health, public health, ecology and conservation.

Over the past decade, in response to the threats posed by SARS, H5N1 avian influenza, and the H1N1 pandemic influenza virus the United States Government has significantly increased its support in partnership with other nations and institutions to build global capacities related to zoonotic disease emergence, including disease surveillance, detection, diagnosis, reporting, and control, while simultaneously supporting efforts to mitigate the risk of emergence.

This paper is intended to guide future investments by USAID in the development a global surveillance and response capacities to pre-empt or combat new naturally emergent diseases of pandemic potential. With its focus on emerging pandemic threats this *Strategy* is intended to complement and support the United States Government's *Global Health Initiative Strategy*, which is focused on addressing the threats posed by existing international health challenges, such as HIV and malaria, and the *National Strategy for Countering Biological Threats*, which addresses the threats posed by the intentional use of biological agents to cause harm.

Background

The recent emergence of the H1N1 pandemic virus and the earlier emergence of the highly pathogenic avian influenza (HPAI) H5N1 virus in the mid-1990s are part of a broader dynamic that has given rise to a stream of new and increasingly deadly zoonotic diseases (1). Over the past several decades, many previously unknown human infectious diseases have emerged from animal reservoirs, including agents such as human immunodeficiency virus (HIV), Ebola Hemorrhagic Fever virus, Nipah virus, and Hanta virus. In fact, more than three-quarters of new, emerging, or re-emerging human diseases at the beginning of the 21st century have been caused by pathogens originating from animals or animal products (2). These newly emergent threats, such as the Ebola and Marburg outbreaks in Central Africa (3) or the 2003 outbreak of SARS in East Asia (4), frequently appear suddenly and spread quickly, and after a brief time they often disappear almost as quickly as they appeared. Other newly emergent diseases, such as the HIV virus, have emerged less dramatically and have

proven far more robust in their ability to survive and infect over long periods of time.

The convergence of people, animals and the environment has led to a growing consensus among the scientific and public health communities that the emergence of new, deadly zoonotic disease threats will increase steadily in the coming decades (1). As evidenced by the H1N1 pandemic virus and SARS before it, the speed with which these diseases can spread across the globe puts a premium on identification and launch of rapid containment and response as early as possible when new diseases emerge. Driven by these growing concerns public- and animal-health professionals, conservationists and ecologists have recently formulated a new global health paradigm, called "One World One Health" (OWOH) (5), which identifies the future well-being of humans, animals and the environment as inextricably linked.

Multiple factors contribute to the emergence of new zoonotic infectious diseases, particularly the increased interaction between human and animal populations driven by growth in human population, new trends in animal production practices, changing patterns of wildlife populations, human intrusion on new ecosystems, and trans border mobility of humans, animals, food and feed products (1). A wide variety of animal species, both wild and domesticated, can serve as reservoirs for these pathogens. While new global markets have created unprecedented economic opportunities and growth, the health risks of our increasingly interconnected world continue to grow.

Over the past century, notable reminders of just how vulnerable the world is to the growing risk of emerging zoonotic diseases include the 1918 influenza pandemic, which was caused by an influenza virus that initially jumped from birds to humans and killed over 50 million people (6) globally; HIV, which originated as a simian virus and now infects more than 33 million individuals (7); and the more recent threats posed by SARS and the HPAI H5N1 virus. Increasingly, all populations are vulnerable to new diseases emerging in other countries; it is in

our collective interest to strengthen the capacity of all high-risk countries to prevent the emergence and spread of these new disease threats.

Recent studies suggest that in a global pandemic caused by a virus similar to the one that caused the 1918 pandemic, a quarter of the world's population would be infected and between 51-81 million people would die, with the toll in the United States exceeding 400,000 casualties (8). Related studies also forecast that the toll on the world's economy would exceed \$4 trillion and result in a five percent loss of GDP in the United States (9). Even short-lived and geographically focused outbreaks of recent zoonotic diseases have been devastating; SARS in 2003, for example, cost the economies of East Asia an estimated \$50 billion (10). Having in place capacities for early detection of and rapid response to new emergent disease threats will be central to minimizing their potential impact on our social and economic well-being.

Emerging Infectious Diseases and the Threat Posed by "Zoonotics"

Among the 1,461 pathogens recognized to cause diseases in humans, nearly 60% are of animal origin (11). An analysis of the more than 300 infectious diseases that have emerged since 1940 (2), shows that 75% were caused by zoonotic pathogens. Of these new infectious diseases, nearly three-quarters have emerged from a limited number of agents of wildlife origin, with bats (the Corona virus, responsible for SARS, and the Nipah virus), rodents (Hanta virus) and non-human primates (HIV) serving as the most frequently implicated hosts for spread of new infectious agents to humans.

The other major source of zoonotic pathogens, domestic animals, has been shown to account for approximately 20% of all new zoonotic diseases (2). Viral pathogens, especially avian RNA viruses like H1N1 and HPAI H5N1, were the principal pathogens identified. Due to their often high rates of nucleotide substitution, poor mutation error-correction ability, and their higher capacity to adapt to new hosts, including humans, they have proven particularly deadly.

While the emergences of new zoonotic infectious diseases are difficult to forecast, a strong enough pattern has been established to instill confidence that the regular appearance of new infectious diseases or syndromes is virtually inevitable. Recent studies have indicated that the number of new zoonotic diseases has been steadily increasing over the past several decades (12). As such, unless measures are put in place for more effective detection and control of new emerging disease threats, their economic and human toll over the coming decades could prove unprecedented.

“Drivers” of Emergence

Until recently our understanding of the process of diseases emergence has been limited. Advances in understanding the risk factors for their emergence and the environmental factors that drive them, however, has led to the following observations (13): the risk for emergence of new zoonotic agents from wildlife depends largely on three factors, 1) the diversity of wildlife microbes in a region (the “zoonotic pool”); 2) the effects of environmental change on the prevalence of pathogens in wild populations; and 3) the frequency of human and domestic animal contact with wildlife reservoirs of potential zoonoses.

The emergence of a successful zoonotic pathogen such as SARS or HIV requires 3 steps (13). First the pathogen must be successfully transmitted between a wild reservoir and humans or their domestic animals. Several recently emerging zoonoses have achieved this stage without further transmission, e.g. Hendra virus. Second, the pathogen must be directly transmitted between humans. Finally, the pathogen must move from a local epidemic into the global population. Understanding and predicting the global emergence of pathogens require knowledge of the drivers of each of these steps.

Evidence suggests that many pathogens are transmitted between their animal reservoirs and humans but fail to be transmitted efficiently from human-to-human. However, there is some concern that repeated transmission of nonhuman viruses to humans, such as the H5N1 virus, most of which results in no human-to-human transmission, will increase the diversity of viruses and

sequence variants moving into humans (13). This situation, could in turn, increase the probability of transmission of a pathogen that can successfully replicate, and ultimately increase the ability of a human-adapted virus to emerge. Minimizing the opportunity for repeated transmission of nonhuman viruses to humans will be critical to pre-empting the emergence of new zoonotic pathogens.

One example of how wildlife is increasingly a source of new infections comes from the consumption of “bush meat” in sub-Saharan Africa (14). In this region, people are increasingly turning to wild animals to meet their nutritional needs, particularly in the face of growing food insecurity. In the Congo Basin, this trend has fueled an increase in outbreaks of zoonotic diseases such as Ebola Hemorrhagic Fever. Ebola, like the HIV virus that causes AIDS, passes into the human population through contact with blood from infected primates, such as gorillas and chimpanzees, which regularly form part of the bush-meat trade. The consumption of bush meat is particularly acute across west and central Africa where there are still large equatorial forests with up to five million tons of bush meat consumed annually. The multi-billion dollar bush meat industry is a key contributor to local economies throughout the developing world. It is also among the most immediate threats to tropical wildlife.

In contrast, the emergence of zoonotic diseases from domesticated animals is predicted by a combination of animal population density, farming practices, human population density and human population growth. The explosion in poultry produced across Asia since the 1970s has been a key factor in the rapid spread of HPAI virus among domesticated animals in recent years. China typifies the dramatic changes in poultry production. In 1969, an estimated 500 million poultry were being raised in China to feed a population of 750 million. To meet the growing human population, increased household wealth, and a corresponding rise in demand for animal protein, the number of poultry had risen to 15 billion (15) by 2000. In China, this dramatic increase in poultry farming has taken place largely on non-industrial farms following traditional animal husbandry practices, particularly those involving the informal animal-production sector of “backyard farmers”. This sector is largely unregulated and biosecurity is low.

High human and poultry population densities, coupled with the employment of poor farming practices, have proven a lethal combination in facilitating the rapid spread of poultry diseases such as HPAI over the past few years, not only in China but also in other countries and regions with similar profiles. As a consequence, new zoonotic threats of domestic animal origin, such as HPAI and the more recent H9N2 avian influenza virus, have arisen with increasing frequency. Given that the demand for animal-based protein is expected to increase by 50% by 2020 (16), there is a greater risk for past trends to continue, further fueling conditions for increased emergence of new disease threats.

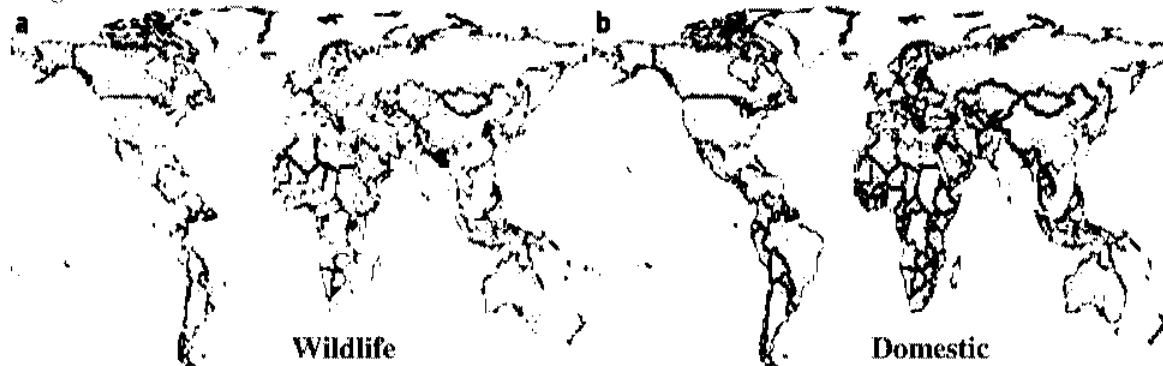
Using Risk-based Forecasting for Early Detection of Rare Events

Even as the risk of new zoonotic diseases is increasing their emergences remain relatively rare events whose occurrences have proven difficult to predict. One of the biggest obstacles to early detection of these diseases is the lack of sufficient, sensitive surveillance capacity geared toward rapid and reliable detection of highly unusual pathogens. Traditional disease-surveillance approaches tend to assume disease risks are relatively homogenous across populations or geographic areas; applying traditional disease surveillance to monitoring for rare events, such as emergent diseases, however, would be exceedingly cost- and infrastructure prohibitive. However, recent advances in the understanding of factors that drive the emergence of zoonotic diseases have led to the development of risk-based models for forecasting new zoonotic diseases, thereby opening opportunities to bring greater focus to emergent-disease surveillance. The origins of newly emergent diseases have been found to strongly correlate with “high risk” geographic areas, animal hosts, microbial agents, and people.

Geographic “Hot Spots”: In a retrospective analysis of outbreaks of new diseases over the past 50 years, zoonotic pathogens (2) from wildlife were found to be most concentrated in lower-latitude regions of tropical Africa, Asia and Latin America, with high risk foci in eastern China, the Gangetic and Indus River plains of the India sub-continent, Congo Basin, and the neighboring Rift Valley regions

of East Africa, the Niger delta of West Africa, and the northwest region of South America (Figure 1a). Wildlife host-species richness was shown to be a significant predictor for the emergence of zoonotic diseases. Significantly, this study showed a substantial risk of wildlife zoonotics originating at lower geographical latitudes where there are very limited surveillance and response capacities.

Figure 1



In this same study, zoonotic pathogens from domestic animals were found to be highly concentrated in eastern China, the Gangetic plain of the India sub-continent, and along the Nile River in Egypt. Not surprisingly, these are the same areas where the HPAI virus is principally concentrated (Figure 1b).

While retrospective studies can provide important insight into the general distribution of past zoonotic “hot spots”, the maps illustrated in figure 1, do not necessarily serve as predictors for where future diseases might emerge. Another study (Figure 2), (17) which used ecologic niche modeling of outbreaks and sporadic cases of filovirus-associated hemorrhagic fever, provides the first large-scale “predictive map” on the most likely geographic and ecologic distributions of Ebola (2a) and Marburg virus (2b). The significance of predictive modeling is that it provides greater insight into where emergent pathogens may be circulating but are undetected; they also highlight geographic areas that may currently be free of a particular pathogen but possess the requisite ecological risk factors to make them highly vulnerable to its introduction. Most importantly, predictive

models allow for more strategic focusing of resources for monitoring for the emergence and spread of zoonotic threats.

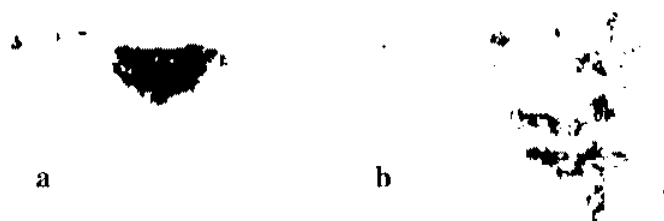


Figure 2

High-risk host species: There are an estimated 50,000 vertebrate species that are potential reservoirs for viruses, bacteria, and other pathogens that could potentially infect humans (18). Very few of these species, however, will ever have the kind of direct or even indirect contact with people or domestic animals that allow for the transfer of animal pathogens to humans, with the “hot spots” representing some of the most remote and least-accessed regions of the earth. Yet, over the past several decades, there has been an almost exponential growth in the frequency of these contacts as new human settlements and roadways increasingly infringe on once-pristine wildlife domains.

The frequency of interaction, therefore, is a critical factor in weighing the risk specific animal hosts pose to transferring potentially dangerous new microbial agents to humans. Animal host-to-human and animal host-to-domestic animal interactions provide ideal circumstances for pathogens that initially affect only animals to evolve first into agents that can cause primary infections in humans through direct animal-to-human contact to agents that can cause limited outbreaks through both human-to-human contact and animal-human contact (19). The numbers of species that have accounted for the majority of past transfers, however, have been limited; rodents have proved highly adaptive in their ability to spread pathogens to humans, such as Hanta virus through their feces and urine. Conversely, bats have infected people with Nipah virus directly through contaminated fecal droppings and indirectly by infecting pigs that are later consumed by humans. In the case of the Ebola and Marburg viruses,

infected non-human primates (which were most likely infected by bats) have been the source of human infections when consumed as bush meat (20).

While other species of wild animals have undoubtedly been involved in either the direct or indirect infection of humans with novel animal pathogens, there is an emerging consensus that it is the limited sub-set of infected wildlife that has frequent interactions with humans that poses the greatest risk for enabling the infection of humans with potentially new and deadly pathogens. This suggests that these “high-risk host species” should be prioritized for monitoring for the emergence and spread of potential microbial threats.

High-Risk microbial agents: Wildlife is a reservoir of an extraordinarily deep and diverse pool of microbial agents. There are an estimated 1 million different viruses, alone, circulating among wildlife of which 99% have yet to be recorded (18). Even considering such overwhelming diversity, the actual numbers of microbial agents that have been reported to infect humans and cause disease are limited. RNA viruses, such as retro-viruses (AIDS) and influenza A viruses (influenza), Corona viruses (SARS), and Filoviruses (Ebola and Marburg) are examples of families of pathogens that have proven capable of human-to-human transmission. As such, families of viruses with demonstrated capacities to infect humans provide a first, but not exclusive, line for focused monitoring and surveillance. By tracking their movement within and among animal species, including domestic animals and humans, and monitoring for key genetic changes can prove a critical tool for an early identification of emergent threats. As illustrated less than ten years ago by the Corona virus, however, new disease threats can emerge from families of viruses that previously have not been known for posing threats to humans. It will be important to monitor other microbes circulating within the “high-risk” animal hosts for their ability to diversify their host range or for changes in their epidemiologic profile.

High-Risk populations: Ultimately, the key event in the transfer of a novel animal pathogen is either direct or indirect exposure of an individual to an infected animal host. Individuals and populations with frequent exposure to wild animals

or their products, such as hunters and related butchers of wild game, bush meat traders and consumers, as well as those whose economic activities lead to incursions in wild life areas, such as loggers, miners and road builders are at particular risk of infection of new microbial threats (21). In addition, domestic animals that live in close proximity to wildlife habitats can act as an intermediary source of infection; for example, the infection of domesticated pigs by bats or the hunting/scavenging of wild game by domesticated dogs. It is likely that monitoring of population settlements where human and domestic animals have high levels of exposure to wild animals will provide the earliest insight into events involving the transfer of a new microbial threat from a wild animal host.

Together, these observations about the relationship between “risk” and geographic “hot spots”, animal hosts, microbial agents, and vulnerable populations demonstrate that the emergence of new zoonotic diseases strongly correlates with socio-economic, environmental, genetic, biological, and ecological factors. Importantly “risk-based” intervention strategies can be used to provide the basis for a highly cost-effective and strategic allocation of resources to pre-empt or combat the first stages of disease emergence. In effect, risk-based interventions allow the use of knowledge about the heterogeneity of risk to target disease detection to those places, populations, times or situations where risk of disease is greatest and the likelihood of finding it is highest. The result is more efficient use of limited resources in detecting a rare “emergent” event.

A Strategic Approach

Reducing the threat posed by new emergent diseases requires a strategic approach that (1) builds on the understanding that the future well-being of humans, animals and the environment are inextricably linked, (2) promotes cross-sectoral coordination that spans the animal health, public health, environmental and conservations communities, (3) targets promotion of those policies and the strengthening of those skills and capacities critical for both minimizing the risk of new disease emergence and the ability to limit their social, economic and public health impact, (4) uses a “risk” based approach to target

investments to those places, populations, times and situations where the likelihood of disease emergence is greatest.

This *Strategy* provides a framework for future USAID investments intended to reduce both risk of emergence of new diseases of animal origin and their potential economic and human toll. At the heart of this *Strategy* is a recognition that to be effective the USAID cannot be successful on its own and must partner with a range of other USG, multi-lateral, bi-lateral, national, non-governmental, and private sector players. This Strategy is guided by the following assumptions:

- All populations are vulnerable to new diseases emerging in other countries; it is in our collective interest to strengthen the capacity of all high-risk countries to prevent the emergence and spread of these new disease threats.
- Deadly zoonotic disease threats will increase steadily in the coming decades driven by population growth and expanded interactions between people, animals and the environment.
- Measures are currently available that if properly deployed could greatly reduce the risk of new disease emergence and their impact.
- It is possible, in the event of new disease emergence, to minimize its potential economic and public health impact through enhanced surveillance and early deployment of control measures.
- Enhanced coordination across animal, human, conservation, and environmental sectors will contribute to reduced risk of new disease

emergence and lead to early and effective control minimizing their impact should they emerge.

Expected Strategic Results

This *Strategy* has two overarching purposes: the prevention of new zoonotic disease emergence, and the timely and effective control of any disease should it emerge. Towards these ends the *Strategy* addresses those events that occur (1) exclusively within animal populations, wild and domestic, that could facilitate disease emergence, spread and possible amplification; (2) at the “animal-human interface” which enable the transfer of a potential new microbial threat from animals (domestic and wild) to humans; and, (3) exclusively within human populations that could further spread and amplify a novel pathogen resulting in heightened threat to public health. The *Strategy* is particularly focused on:

- **Early discovery of new, emergent disease threats:** The most effective approach for minimizing the risk of new disease threats is to be able to be able to “discover” these new microbial “threats” at their point of emergence, or even better to be able accurately forecast their emergence *before they emerge*. Advances in genomics and informatics allow for investing in longitudinal data-bases that track changes in select microbes for the purpose of developing reliable “predictive” models for pathogen emergence. This capability would allow for the earliest possible introduction of interventions designed to pre-empt the spread of the new pathogen beyond its initial point of emergence.
- **Obtaining timely and reliable data on “known” zoonotic threats:** For those pathogens which have already emerged and are “known” to infect humans having the capability to systematically monitor for their spread among populations of animals and humans, and any related genetic and epidemiologic changes, allows for the mobilization of earlier and more timely control interventions.

- **Adoption of effective “biosecurity” measures to minimize the spread of zoonotic pathogens:** The routine application of currently available “biosecurity” measures has been demonstrated to be highly effective in protecting livestock from zoonotic and other animal infections and by extension exposure of humans to possible infection. Even when a new zoonotic disease may emerge in wildlife, if livestock are raised and marketed under proper biosecurity, then the opportunity for the “spillover”, amplification and further spread of the pathogen among animals and to humans will be greatly diminished.
- **Minimizing human practices and behaviors that contribute to disease spread across the animal-human interface:** Human behaviors are key to enabling new zoonotic disease threats to cross the animal-human interface. These behaviors or practices may be associated with institutions, such as the those linked with the extractive industry and related encroachment on wildlife domains; they may be more communal and linked how communities rear livestock proximal to wildlife domains; and they may be more of an individual nature, such as those associated with the exposures of hunters to wildlife. Understanding those practices and behaviors and their relative “risk” is a critical step to being able to formulate and implement risk mitigation interventions.
- **Enhancing capacities for effective control of disease outbreaks among animals and humans:** While “risk mitigation” may decrease the frequency with which new diseases emerge, capabilities still need to be in place to be able to identify early and mount timely and effective responses to new outbreaks. This will require broad cross-sectoral investments to strengthen diseases surveillance, laboratory diagnostics, case management, and outbreak response measures.

Implementation of the Strategy

In implementing this *Strategy* the USAID will be guided by the following principles:

- Strengthen and leverage investments across USAID, by other USG agencies, key multilateral organizations, global partnerships and private sector engagement that are focused on strengthening the normative capacities across animal and human health sectors in surveillance, training and disease control.
- Work in close coordination and partnership with other efforts by the United States Government, particularly the *Global Health Initiative* and the *Countering Biological Threats Program*
- Focus on those new disease threats that originate in animals and have potential for efficient human infection via either human-to-human or vector-borne transmission.
- Exploit advances in risk-based modeling for forecasting new zoonotic diseases to target interventions to those places, populations, times and situations where risk of disease emergence is greatest.
- Institutionalize a "one health" approach across objectives.
- Contribute directly to those capacities required for the effective implementation of the International Health Regulations
- Increase impact through strategic coordination and integration
- Encourage country ownership and invest in country-led plans

- Build on the USAID's existing H5N1 (avian) influenza control platforms so as to: (1) expand our current monitoring of wild birds for H5N1 to more broadly address the role played by wildlife in facilitating the emergence and spread of new pathogens; (2) enhance support for field epidemiological training of relevant animal and human health teams beyond avian influenza to more broadly address the threat posed by other newly emergent zoonotic diseases; (3) enhance our support for animal- and public-health diagnostic laboratories to more fully address a broader array of infectious disease threats; (4) broaden ongoing behavior change and communications efforts to prevent H5N1 transmission from poultry to humans to include potential transmission of other emergent wildlife pathogens.

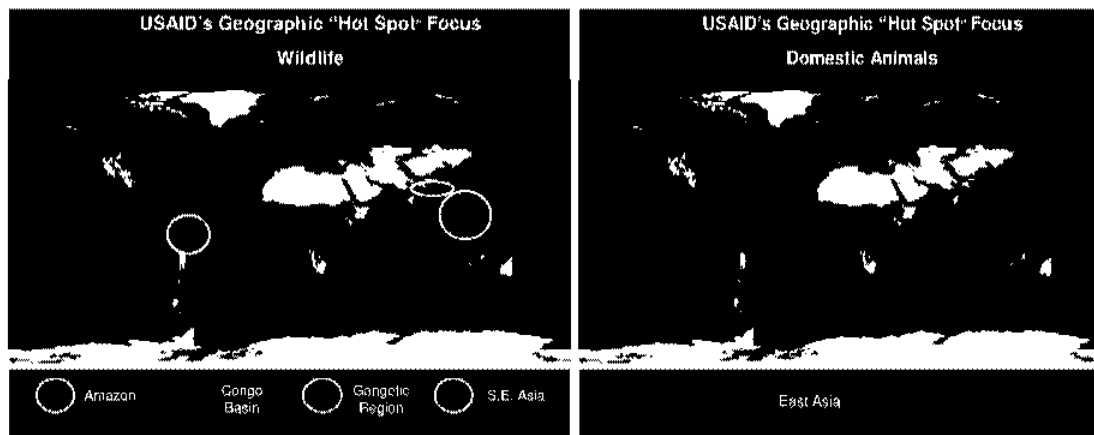
A "Four Part Package" for Control of Emergent Zoonotic Threats: Building on USAID's HPAI Control Platforms

Over the past several years, USAID's Highly Pathogenic Avian Influenza (HPAI) program has focused on building capacities for monitoring the spread of the H5N1 virus among wild bird populations, domestic poultry and humans, and to mount rapid and effective containment of the virus when found. The successes in Africa, Europe and Eurasia and large parts of Asia in containing the spread of the HPAI virus have begun to signal the opportunity to begin rethinking our current exclusive "emergency" focus on the HPAI virus in favor of a transitional strategy to address the broader threats of other emergent diseases of animal origin.

In this section the basis for a comprehensive **emerging pandemic threats program** is described. The program description draws from the strategic framework already described, and uses risk-based modeling to target a package of highly cost-effective surveillance and response interventions. Importantly, this effort builds on USAID's ongoing HPAI control platforms.

To address the rising threat posed by new emergent diseases, USAID will build on its current HPAI portfolio to develop a global early warning system for disease emergence and response that includes four main lines of work: (1) expand our current monitoring of wild birds to more broadly address the role played by wildlife in facilitating the emergence and spread of new pathogens; (2) enhance support for One Health competency training of relevant animal and human health teams beyond HPAI to more broadly address the threat posed by other newly emergent zoonotic diseases; (3) enhance our support for animal- and public-health diagnostic laboratories to more fully address a broader array of infectious disease threats; (4) broaden ongoing behavior change and communications efforts to prevent H5N1 transmission from poultry to humans to include potential transmission of other emergent wildlife pathogens. Using risk-based modeling, our focus will be on delivering this package in geographic “hotspots” for the emergence of new infectious disease threats originating from both wild animals (the Amazon region, the Congo Basin, the Gangetic Plain, and Southeast Asia) and domestic animals (East and Southeast Asia) (Figure 3)).

Figure 3



1. Expanded Risk-Based Surveillance for Emergent Zoonotic Threats: A key part of USAID's HPAI program has been the monitoring of both wild bird populations and domestic poultry for HPAI. These investments have allowed for

the tracking of movement of the virus within communities and among regions and for the formulation of predictive models for where the virus might spread; related outcomes have been key to guiding where investments are made in combating the threat from the HPAI virus. Both streams of monitoring -- in wild birds and domestic poultry -- provide important platforms for an expanded response to the broader threat from emerging zoonotic diseases

a. Monitoring Wildlife: Through the wild bird monitoring program USAID has supported, a global surveillance network involving wildlife conservation groups, governments, and the United Nations (U.N.) has been established in over 34 countries. This network has improved the collection, coordination, and laboratory evaluation of viral samples from wild birds. As a consequence, this program has been instrumental in identifying geographic locations of avian influenza viral strains, characterizing genetic changes in virus isolates, enhancing links with wild bird distribution and migration information, and providing an early-warning system for global spread of the HPAI virus.

In considering the possible emergence and spread of other new zoonotic threats, the trends over the last half-century have clearly indicate that wildlife will be the single largest source of animal pathogens threatening humans. The experience from the avian influenza wildlife surveillance program highlights the benefits of an effective global network for monitoring possible animal pathogens.

Proposed Actions: Modify the scope of our current wild-bird surveillance program to include the monitoring for the emergence of new infectious diseases in high-risk wildlife (e.g. bats, rodents, and non-human primates) that could pose a major threat to human health. Particular focus would be placed on establishing an enhanced wildlife monitoring capacity in those geographic "hotspots" that pose a particular risk for the emergence of new infectious disease threats. The monitoring would include wildlife in their natural habitats, market trade of wildlife, wildlife products and foods, including characterizing the risks associated with "bush meat".

b. Monitoring Domestic Animals: In the case of the HPAI virus, domestic poultry have proven to be the major reservoir for the virus and the primary source of infections in humans. Working closely with the U.N.'s Food and Agricultural Organization (FAO), the World Health Organization, and with host-country ministries of agriculture and health, USAID has invested significantly in strengthening veterinary and public health capacities, including laboratory diagnostic capacities, to monitor for HPAI in domestic poultry. These efforts have contributed to a dramatic increase in the early detection of the virus and the mobilization of a rapid containment response – two factors which have proven key to achieving the successful reductions in the numbers of poultry and humans reported to have been infected with the virus over the past year. The threat posed by the H5N1 is not unique. Poultry and other domestic animals, such as pigs, have proven to be a significant source of new zoonotic diseases, particularly other influenza viral threats. Figure 1b shows that the emergent zoonotic pathogens from domestic animals have been highly concentrated in eastern China, the Gangetic Plain of the India sub-continent, and along the Nile River in Egypt. Not surprisingly, these are the same areas where the HPAI virus is principally concentrated and are the locations of the highest concentrations of domestic animals in the world.

Proposed Actions: Modify the scope of our current programs with FAO, WHO and national governments supporting veterinary and public-health teams monitoring suspect H5N1 outbreaks to be able to address the broader threat posed by other novel emergent pathogens. Particular focus would be brought to geographic “hot spots” areas of East and Southeast Asia for newly emergent threats arising from domestic animals. For example, in the past decade the RNA virus H9N2 (a close relation of the HPAI H5N1 virus) has been evolving and acquiring characteristics that raise concerns it may become more transmissible among humans – and as such a candidate for unleashing a global influenza pandemic. Emphasis would be placed on training veterinary and public health surveillance teams to recognize signs and symptoms indicative of novel disease threats including and beyond H5N1.

Expected Results: As a consequence of an expanded program for monitoring wildlife and domestic animals, it is expected that at the end of five years:

- Identification and characterization of “high-risk” animal hosts and microbial agents
- Identification of “high-risk” human populations and characterization of their “risky” behaviors
- Characterization and mapping of market trade of wild animals and animal products
- Refined predictive models allowing for an early determination of which animal hosts and emergent pathogens from wildlife and domestic animals might pose a new and deadly threat to humans
- Enhanced networks of early-warning surveillance in up to 12 “hot spot” countries in the greater Congo Basin of Central Africa, eight countries in Asia, and five countries in the Amazon region of South America covering animal wildlife, domestic animals, and humans would be able to detect quickly the emergence of any new infectious diseases from animal reservoirs that could pose a significant risk to humans.
- Use these predictions to more strategically focus efforts to prevent the possible emergence of a new and deadly pathogens and contain its spread should it emerge,

2. Enhanced Capacity for Outbreak Investigation and Response: Much of the recent success in controlling HPAI can be attributed to dramatic improvements in the capacities of national programs to mount rapid and highly targeted responses to confirmed outbreaks of the virus in both animals and humans. The spread of the HPAI virus in 2005 and 2006 across large parts of the world where disease surveillance and response capacities were severely lacking put a premium on ramping up the training of cohorts of veterinary and public-health workers in correct methods for the collection and analysis of outbreak data and their use in mounting a rapid and effective response. Over the past two years, significant investments have been made in “high- priority HPAI” countries across Africa, Asia, and the Middle East in dramatically expanding these capacities. New

training programs in field epidemiology developed in concert with a coalition of U.S. and developing country schools of public health have been established, and expanded support for their field operations has given rise to new capacities in disease outbreak investigation and response. These new training and field operations platforms, while initially conceived to respond to the immediate threat posed by the spread of the HPAI virus, could if broadened to more fully embrace meeting the needs of a comprehensive One Health competencies could prove the backbone for mounting an effective response to the emergence and spread of any of the new emergent zoonotic threats.

Proposed Actions: Modify the scope of the current investments made in partnership with academic institutions, the U.N. system, development partners, and other U.S. government (USG) agencies to include expanded One Health related training and provision of field operations support. The training strategies would focus on providing a combination of long in-depth courses related to One Health competencies to senior leadership from ministries responsible for of health, agriculture, and wildlife and short-courses targeting provincial and district veterinary and human-health teams for training in the core principles of disease outbreak investigation and response. Linked to this training would be investments in upgrading the capacities of veterinary and human-health laboratories in related diagnostic capacities. The geographic scope of this expanded effort would be directed to those zoonotic “hotspots” of wildlife and domestic animal origins illustrated in figures 1a and 1b. Particular priority would be given to areas where there is strong geographic overlap involving the risk posed by the HPAI virus.

Expected Results: The expected results from these investments after five years would be:

- A network of academic institutions spanning the targeted “hotspot” countries with programs supporting One Health curriculum providing advance degrees to mid- and senior-level public health, veterinary health and wildlife professionals
- Enhanced ability to isolate and contain the onset of a confirmed outbreak of new and/or existing pathogens in up to 12 “hot spot” countries in the

greater Congo Basin of Central Africa, eight countries in Asia, and five countries in the Amazon region of South America

- Expanded capacity of central-level leadership in up to 12 countries in the greater Congo Basin of Central Africa, eight countries in Asia, and five countries in the Amazon region of South America to plan, strategize, and execute effective programs in disease surveillance, outbreak investigation, and response
- Enhanced capacities of provincial and district-level teams in up to 12 “hot spot” countries in the greater Congo Basin of Central Africa, eight countries in Asia, and five countries in the Amazon region of South America to monitor early for introduction or spread of new disease pathogens and to quickly and effectively mount appropriate outbreak investigations and response actions.
- Enhanced capability to predict which newly emergent animal pathogens might pose a new and deadly threat to humans,
- Increased readiness of global/national communities to respond to both the health and non-health aspects of a pandemic should a novel and deadly pathogen emerges and spread across the world.

3. Enhanced Regional Networks of Integrated Animal and Public Health

Diagnostic Laboratories: Central to the successes recorded in HPAI control has been the dramatic decrease in the time between onset of HPAI outbreaks and their confirmation. The ability to quickly confirm the cause of an outbreak has enabled increasingly rapid and highly targeted responses. USAID’s HPAI strategy has been to direct its investments to lead to the quickest upgrade in confirmation capacities, from supporting the use of rapid diagnostics for field confirmation of H5 to upgrading laboratories with full H5N1 confirmation capacities. In considering the challenge of “pre-empting or combating the first stages of a zoonotic disease emergence – at its source”, rapid characterization of suspected emergent diseases among animals and people will be key. There is a substantial risk of wildlife zoonotics originating in the very regions of the world where surveillance, and in particular laboratory, capacities are weakest; as noted

earlier, the emergence of a new disease is inherently a rare event. To build a network of diagnostic laboratories in these resource-poor regions of the world that would focus on monitoring for rare emergent diseases, however, would be both cost- and infrastructure-prohibitive. Additionally prohibitive would be to invest separately in animal- and human-health laboratories. An alternative and more sustainable approach would be to build integrated networks of animal- and human-health laboratories in each of the targeted “hot spots” that would be fully capable of diagnosing what the International Health Regulations refer to as “notifiable diseases” – those most common causes of animal and human infections in each region – and, when faced with a “un-diagnosable” agent, would be responsible to transferring it quickly to international reference laboratories for further characterization.

Proposed Actions: Modify the scope of our current agreements with WHO, FAO/ the World Organization for Animal Health (OIE) and key USG partners to develop enhanced regional networks in each of the targeted “hot spots” of integrated animal- and public-health diagnostic laboratories. A critical step in this effort will identification by WHO, FAO and OIE of candidate laboratories spanning the animal- and human-health sectors in each of the “hot spot” regions that would serve as the platform for these integrated diagnostic networks.

Expected Results: The expected results from these investments after five years would be:

- Integrated networks of veterinary and human-health laboratories covering the “hot spots” serving up to 12 countries in the greater Congo Basin of Central Africa, eight countries in Asia, and five countries the Amazon region of South America are in place
- These laboratory networks are fully capable of rapidly diagnosing and reporting on IHR/ “notifiable diseases” for animal and human diseases
- An international reference laboratory network is in place for full characterization of “un-diagnosable” agents

4. Enhanced Capacity in Prevention of Emergent Disease Transmission: A critical part of USAID's HPAI program has been the use of behavioral change/communication strategies for the dual purpose of identifying behaviors and/or practices that increase the risk of H5N1 infection of either poultry or people and the use of communications and public outreach activities to generate public awareness and promote behaviors that help reduce risk for disease transmission. Working closely with U.N. partners (UNICEF, FAO, WHO), national governments, community groups, non-governmental organizations and the private sector, USAID has made significant investments in strengthening the behavioral change/communications capacities in more than 54 HPAI affected or at-risk countries. These efforts have contributed to a dramatic increase in awareness of risks and adoption of new "safe" practices by poultry farmers, market vendors, and consumers that have directly contributed to dramatic reductions in the spread of the HPAI virus. Public awareness campaigns targeting journalists, as well as community and political leaders, have proven instrumental in the adoption of new policies and regulations for the prevention of HPAI.

In considering the nature of the threat posed by other zoonotic diseases, both those originating among domestic and wild animals, the behaviors of and practices of farmers, traders and consumers will prove critical to enabling the transmission of novel agents among animals and potentially people. Characterizing those "risky" behaviors and promotion of their change, however, will need to be understood in the context that infection by novel agents will be inherently "rare" events. Traditionally, behavior change/communications strategies have been formulated to address public-health issues and are generally understood to be relatively common occurrences; they include promotion of the benefits of hand washing to avoid enteric diseases, immunization for common childhood illness, and family planning. Our experience with HPAI, however, has underscored that traditional approaches toward promoting behavior change are not effective for what are "rare" epidemiological events. As a result, novel communication strategies that are specifically tailored

to address rare and highly infrequent events, such as the emergence of a new disease, will need to be developed.

Proposed Actions: Modify the scope of our HPAI behavior change/communications program to address other disease threats of animal origin, including supporting efforts to characterize "high-risk" practices that increase the potential for new disease threats from wildlife or wildlife products to spread and infect people; identify high-risk groups that need to be targeted for communication/behavior change messages; and formulate behavior change/communication strategies and interventions that are consistent with meeting the challenges posed by "rare" events, such as the emergence of a new infectious disease.

Expected Results: The expected results from these investments after five years would be:

- A field validated communication/behavior change strategic approach for "rare" infectious disease events
- Characterization of "high-risk" practices that enable transmission of novel pathogens from animal hosts to people, and among people
- Identification of "high-risk" groups that are particularly vulnerable to being exposed to and infected by novel pathogens from animal hosts
- Field validation of effective communication/behavior change interventions that reduce the risk of human infection by novel pathogens of animal origin
- Elevated awareness among the general public and policy makers on risks and appropriate actions needed to minimize human infection by novel pathogens of animal origin.

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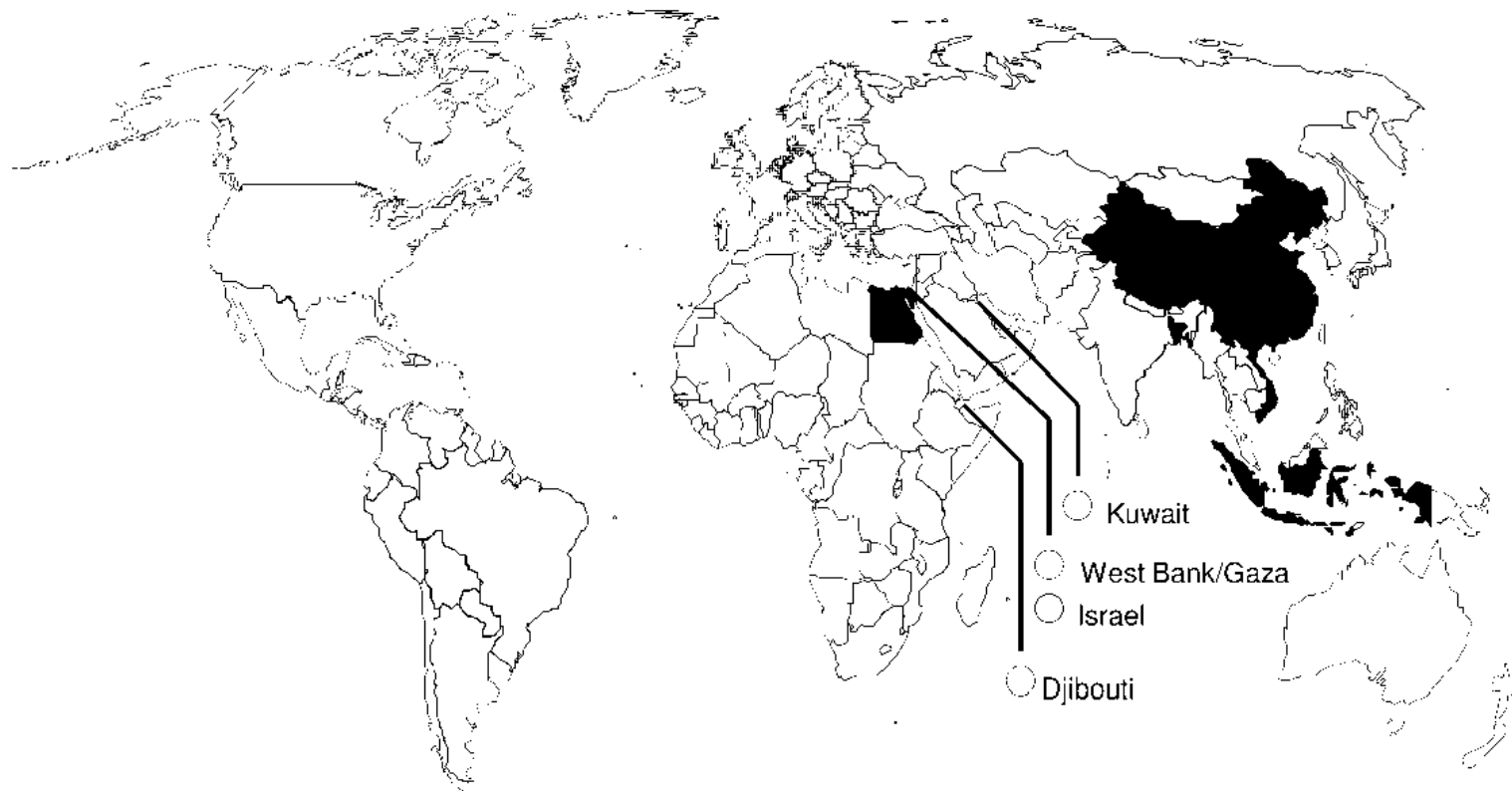
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Global H5N1 Avian Influenza Trends

2-8-11

Andrew Clements
USAID
Bureau for Global Health,
Avian Influenza and Other Emerging Threats Unit






H5N1 Risk



1st Interim

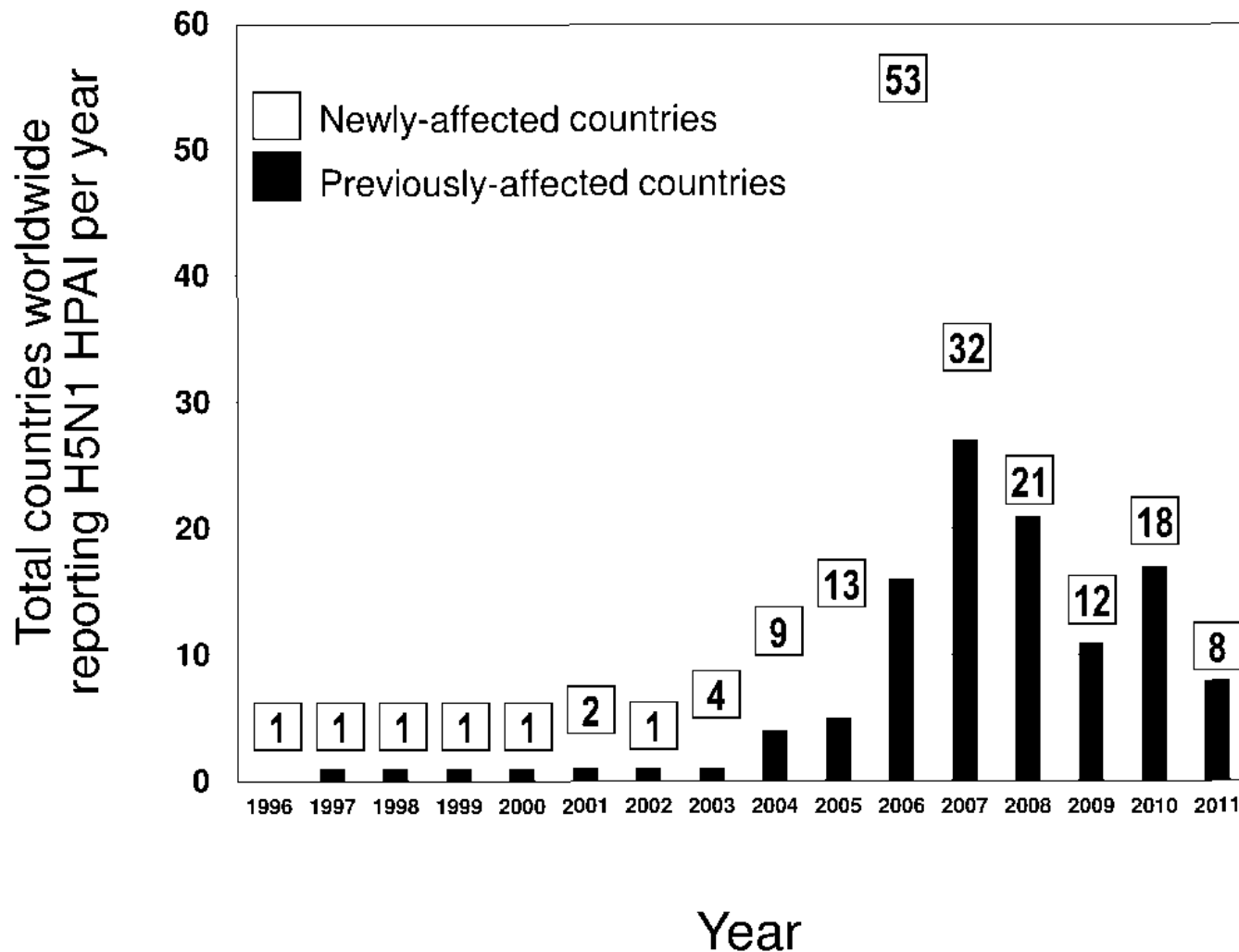
Endemic countries	
Bangladesh	
China	
Egypt	
Indonesia	
Vietnam	

US AID FOIA No. F-00151-16

	"Hyper-Endemic"		Endemic		Epidemic-prone		Previously-affected, but contained		Never Affected
Locations with most H5N1 HPAI disease within endemic countries since Jan 2007		H5N1 HPAI detected in >10 months since Jan 2009		H5N1 HPAI detected in 1-10 months since Jan 2009		H5N1 HPAI detected between 2003-2008, but not since Jan 2009		No H5N1 HPAI detected	

Sources = OIE, WHO, FAO reports and viral sequence submissions through 2/8/11

Number of H5N1 Affected Countries by Year



Total of 62 countries affected since Nov 2003

After 2006 peak, annual total of affected countries generally decreased over time

→ Only a few new countries have been affected since 2008

Of the 19 countries with bird outbreaks in 2009 -2011, five are endemic* and eleven** are near endemic countries

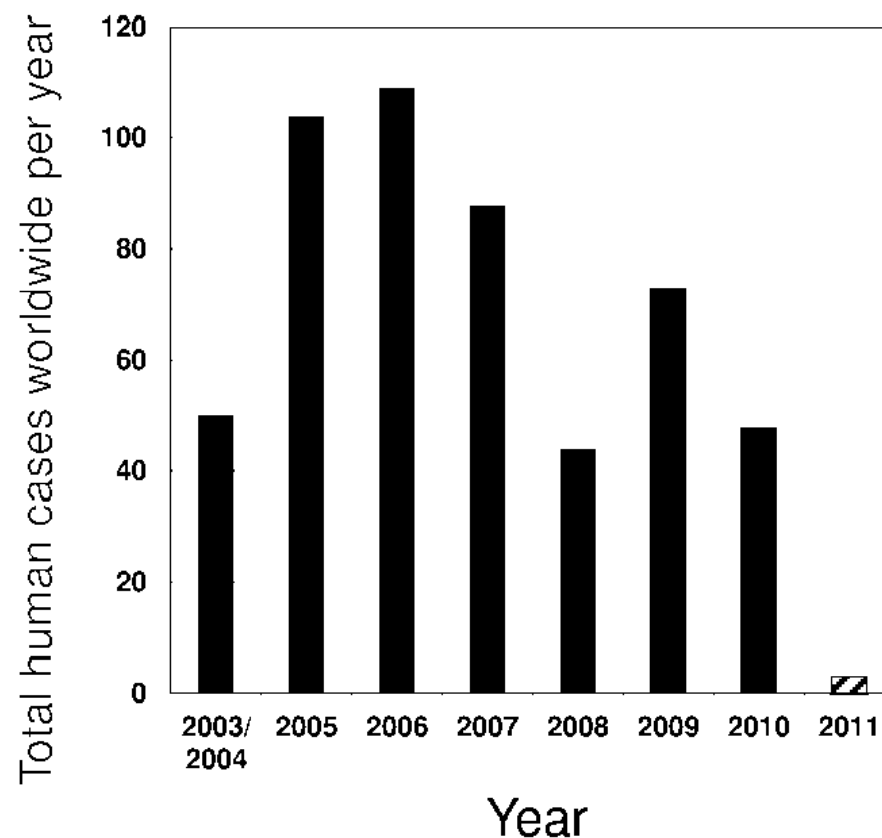
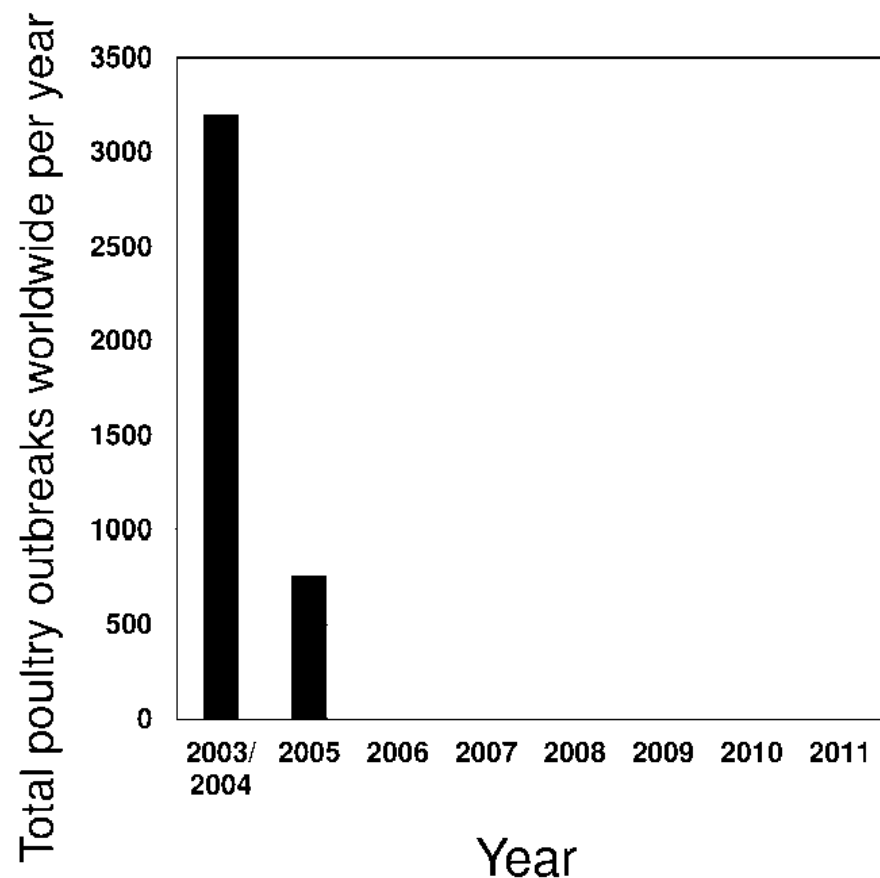
* Bangladesh, China, Egypt, Indonesia, Vietnam; ** Bhutan, Burma, Cambodia, India, Israel, Japan, Laos, Mongolia, Nepal, Russia, S. Korea

Sources: WHO, OIE, FAO reports through 2/8/11. Each affected country had at least 1 outbreak or case in poultry, wild birds, or humans. Number in box indicates total number of affected countries during that year.

Reported Poultry Outbreaks and Human Cases Worldwide

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Note: a decrease in reported outbreaks/cases may not equal a decrease in actual outbreaks/cases



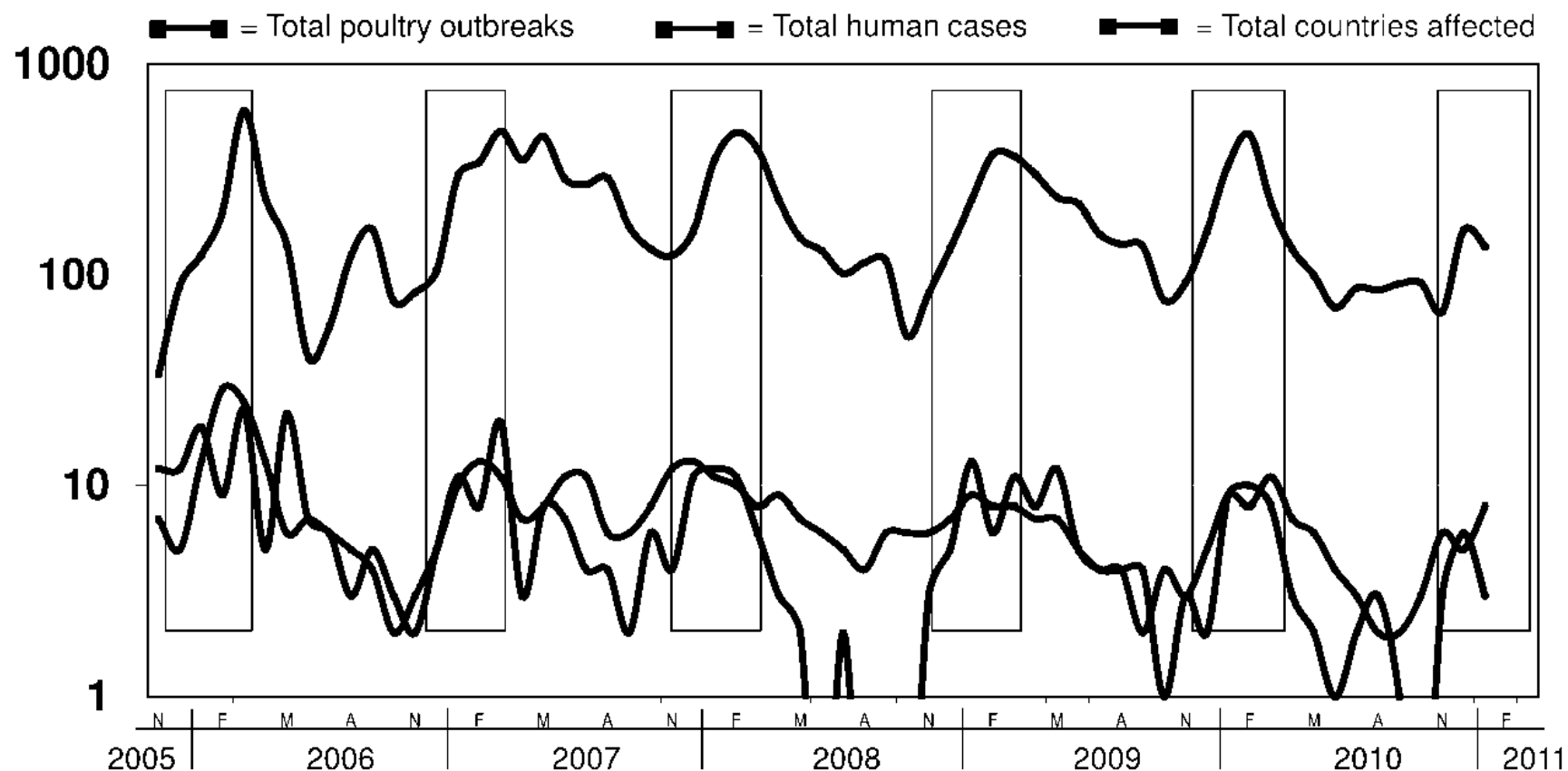
USAID FOIA No. F-00151-16

- General decrease in poultry outbreaks & human cases since 2006-2007 peaks
- Poultry outbreak and human case data since 2006 dominated by Indonesia and Egypt which together account for 86% of poultry outbreaks and 75% of human cases (2006-11)

70

H5N1 Poultry Outbreaks, Human Cases, and Affected Countries by Month

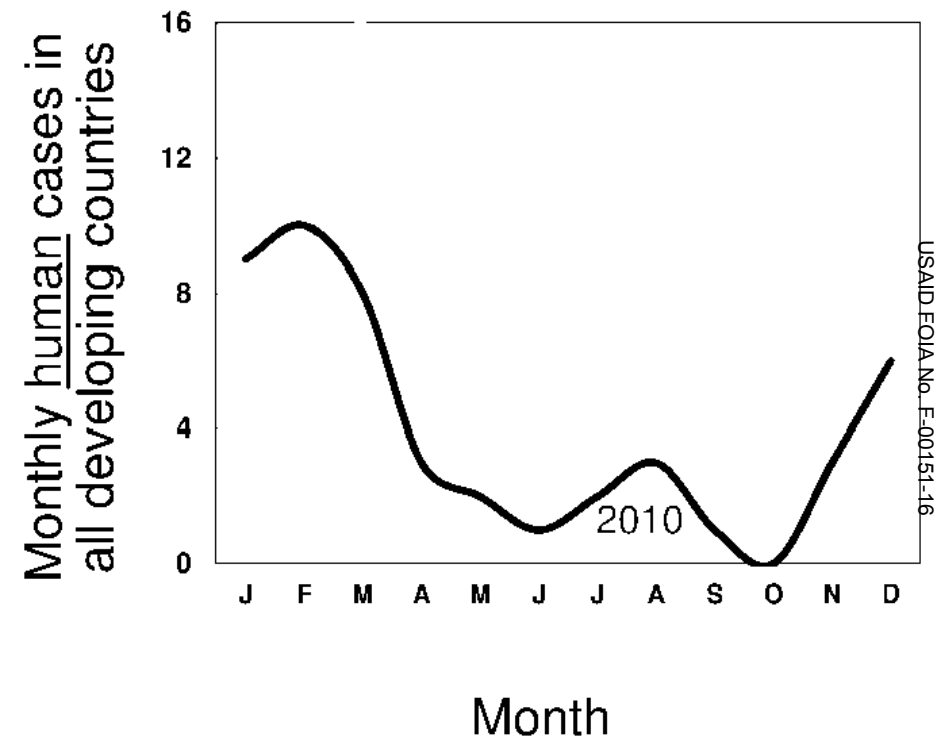
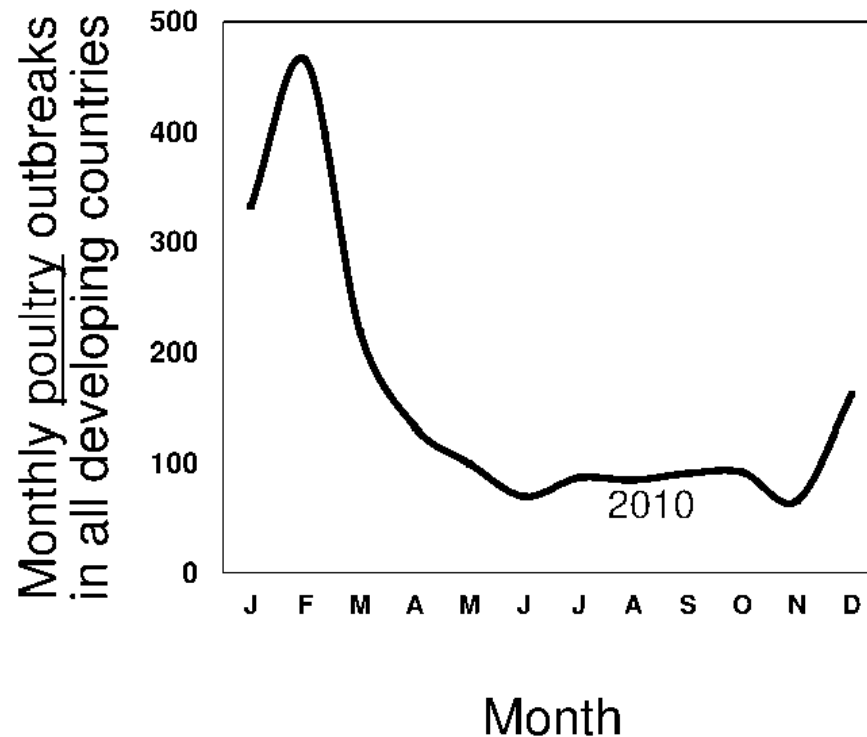
Total monthly H5N1 poultry outbreaks, human cases, and countries affected worldwide



- Monthly poultry outbreaks, human cases, and affected countries tend to peak around Dec to Mar each year providing an opportunity to concentrate interventions
- Intensity of peaks for monthly poultry outbreaks, human cases, and affected countries gradually decreasing over time?

Comparison of H5N1 Poultry Outbreaks and Human Cases in 2010 with Previous Years

1st Interim



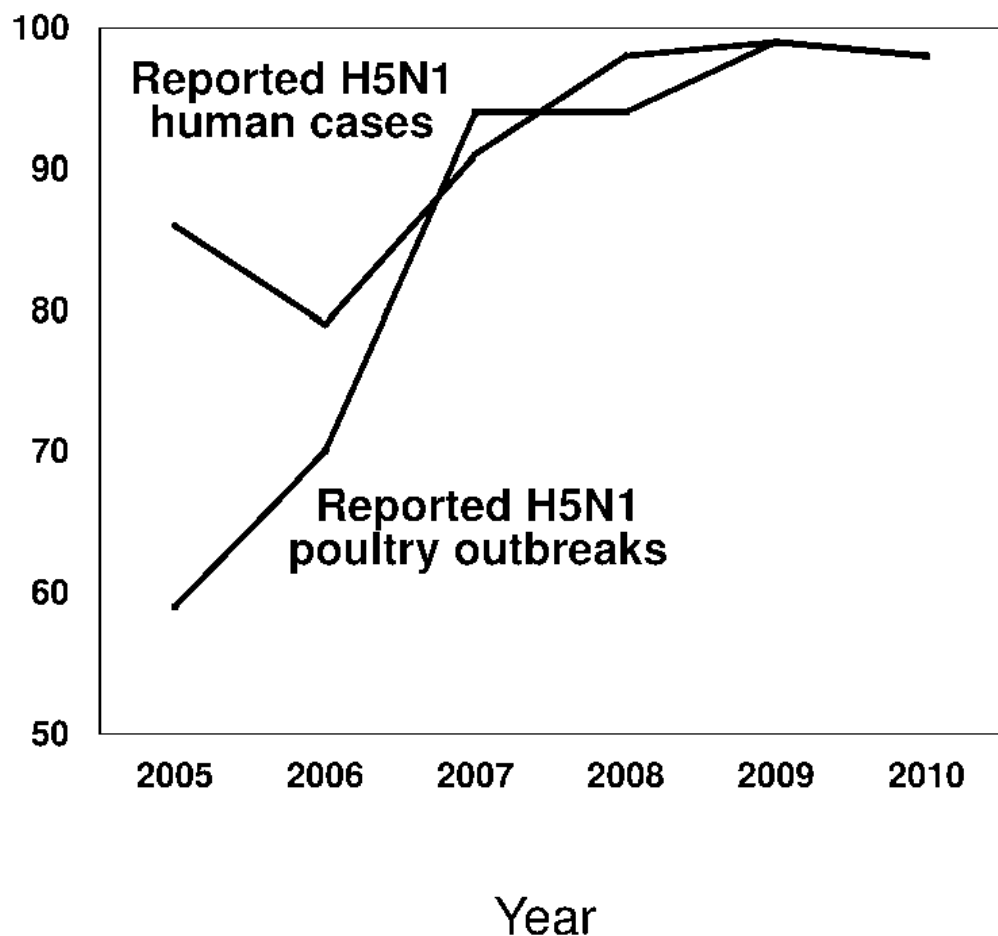
USAID EOIA No. E-00151-16

→ Compared to previous years, number of reported H5N1 poultry outbreaks and human cases in 2010 is generally about or below the monthly median

29

H5N1 Disease Burden Increasingly Concentrated in 5 Countries

Percent of the world's annual total due to 5 highly-affected countries*



Over time, H5N1 disease has become increasingly concentrated in 5 highly-affected countries*

This is likely due to:

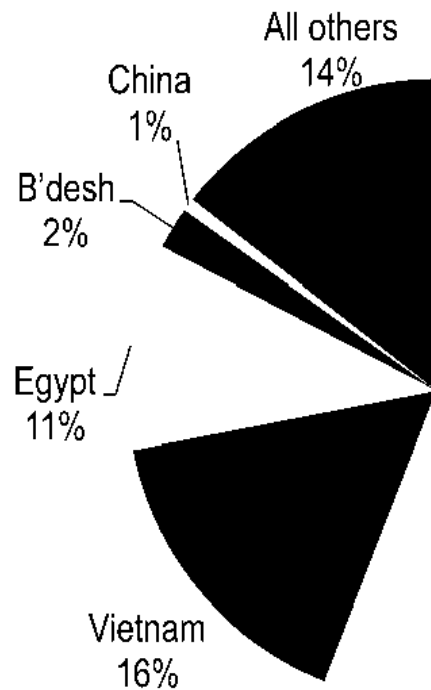
- Favorable conditions (e.g. large poultry populations) in the 5 highly-affected countries that allow for continuous transmission of the virus
- Unfavorable conditions in all other countries so that continuous viral transmission is not possible

In 2009-2010, these 5 countries accounted for at least 98% of H5N1 poultry outbreaks and human cases

Distribution of H5N1 Disease Burden by Country

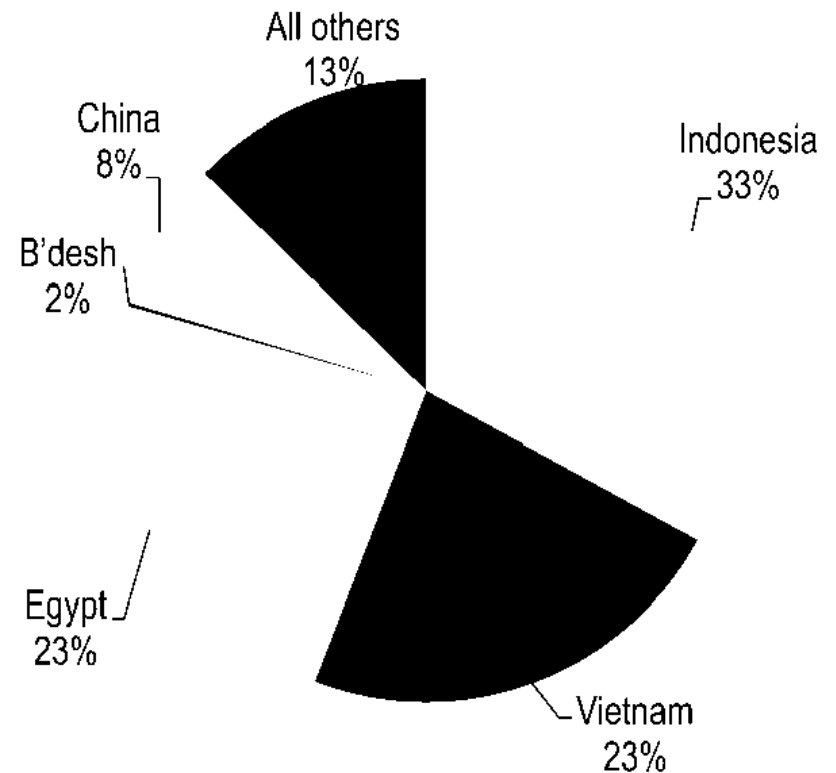
1st Interim

**Total poultry outbreaks
(2003-2011) = 16,142**



Indonesia
56%

**Total human cases
(2003-2011) = 519**



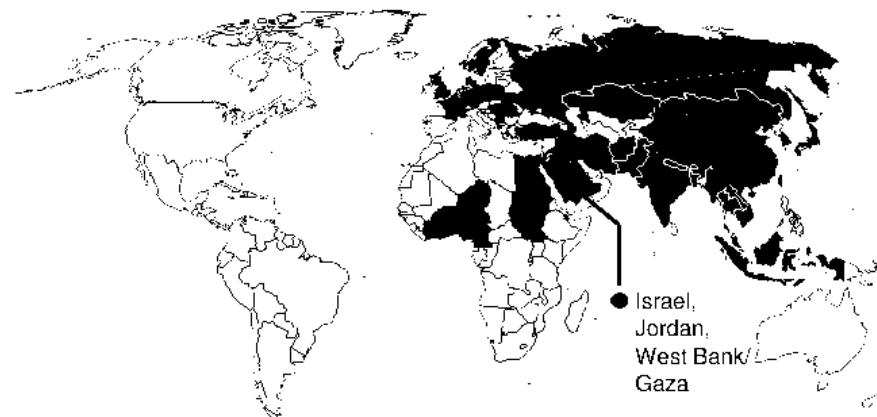
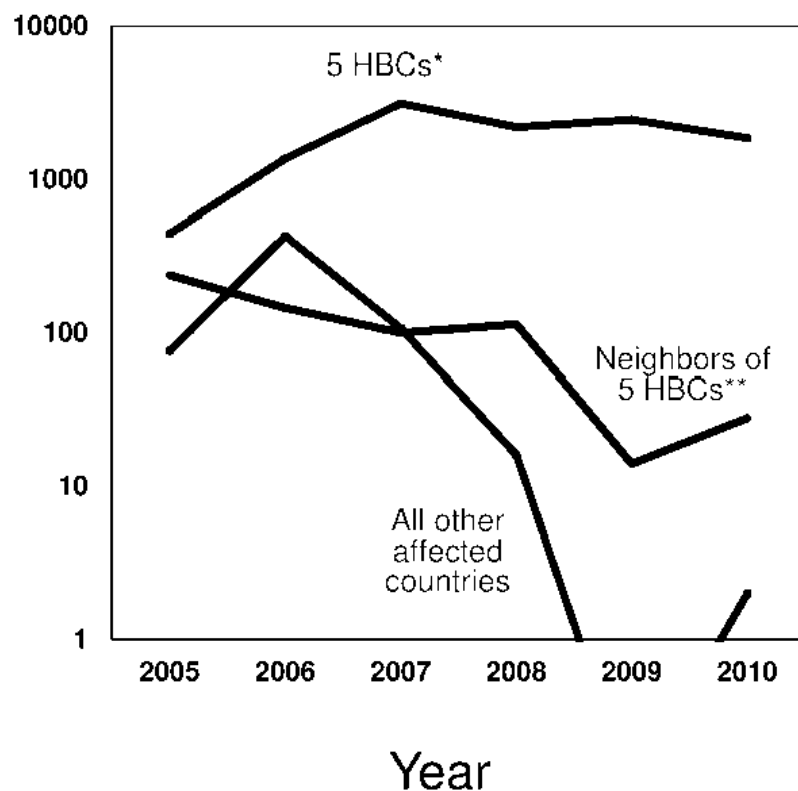
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Sources: OIE , FAO, and WHO reports between November 2003 and January 2011.

Neighbors of 5 Highly-Affected Countries Also at Risk for H5N1 Infections

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Total number of H5N1 poultry outbreaks per year



- = High-burden countries
- = Neighbors of high-burden countries that have also detected H5N1
- = All other H5N1-affected countries

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- Of countries that are not H5N1-endemic (i.e. no sustained circulation of the virus), greatest number of poultry outbreaks is in countries *proximal* to the 5 high-burden countries.
- Virological data suggests that periodic outbreaks in countries proximal to the 5 high-burden countries are often due to re-importation of the virus from endemic countries.

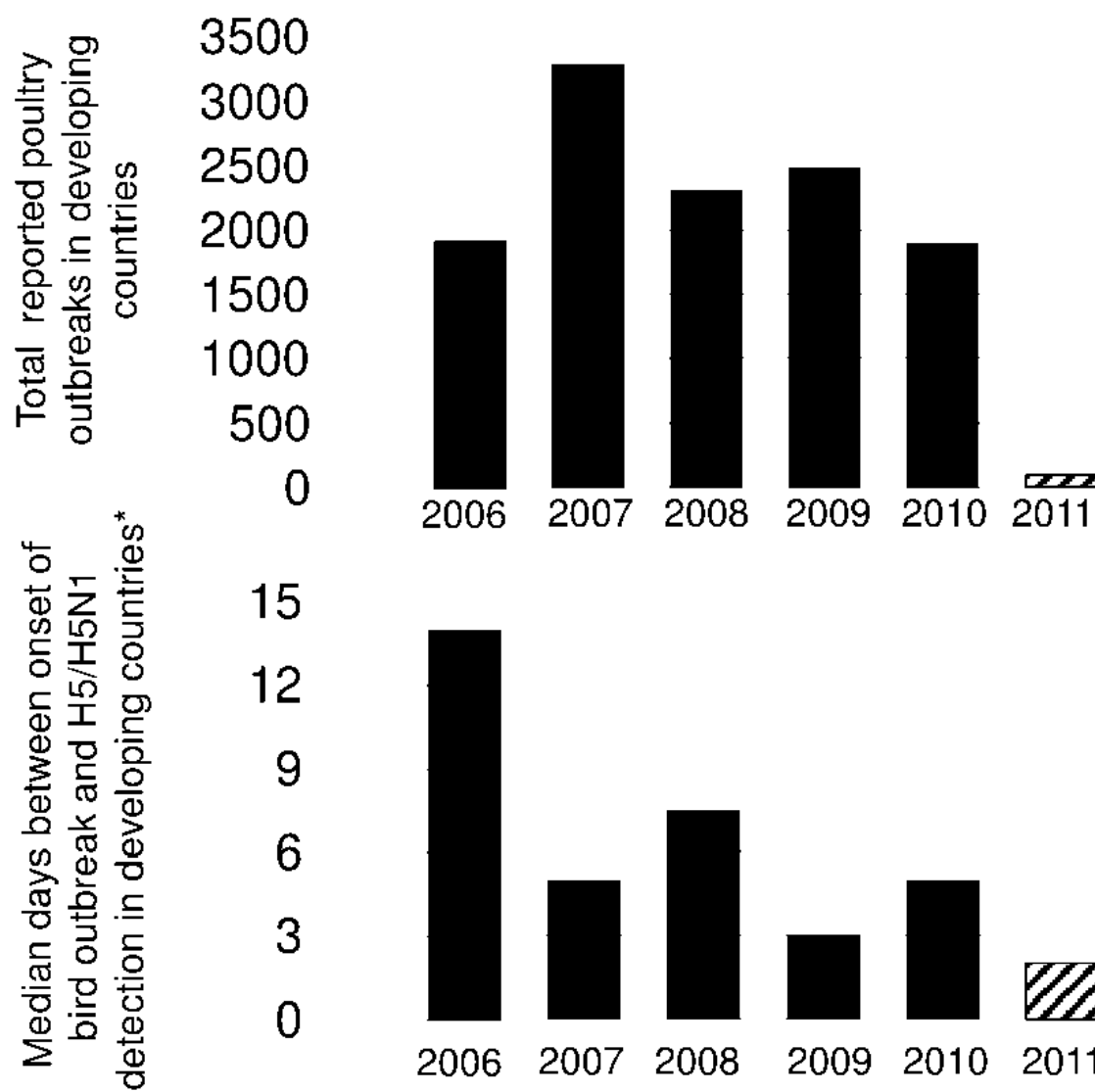
Based on OIE, FAO, WHO reports between January 2005 and January 2011. * 5 high-burden countries = Bangladesh, China, Egypt, Indonesia, Vietnam. ** Includes: Afghanistan, Bhutan, Burma, Cambodia, India, Israel, Japan, Jordan, Kazakhstan, Kuwait, Laos, Malaysia, Mongolia, Nepal, Pakistan, Russia, Saudi Arabia, South Korea, Sudan, Thailand, West Bank/Gaza.

Association between Faster Detection and Reduced Poultry Outbreaks Over Time

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76



General decrease in number of poultry outbreaks in developing countries is associated with a general decrease in H5N1 detection time

Faster detection time allows for faster containment measures which limits H5N1 spread

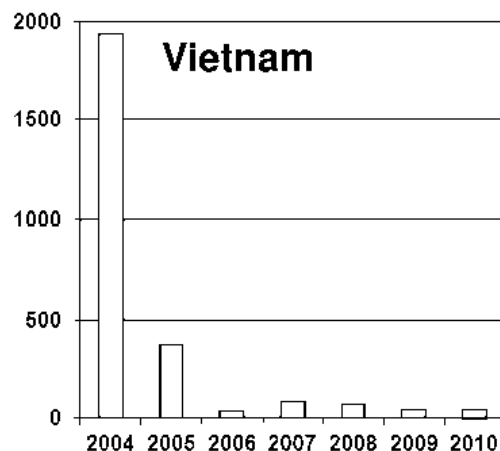
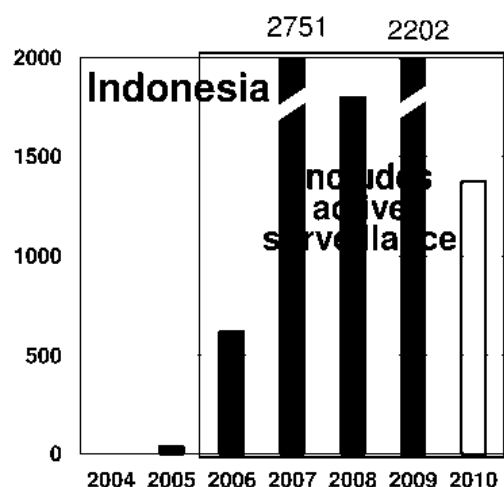
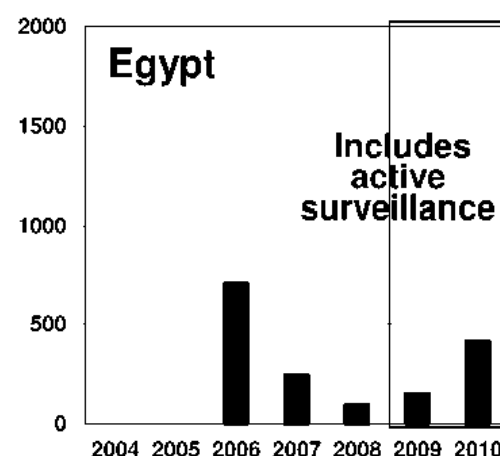
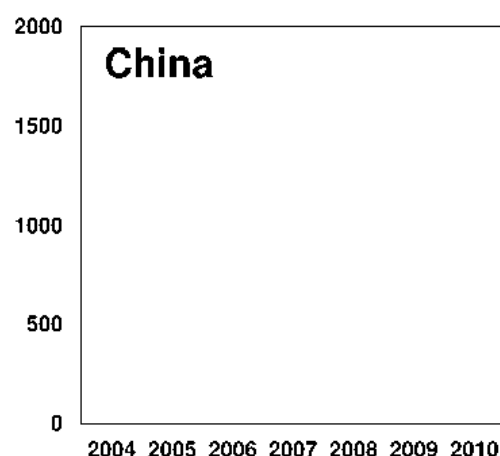
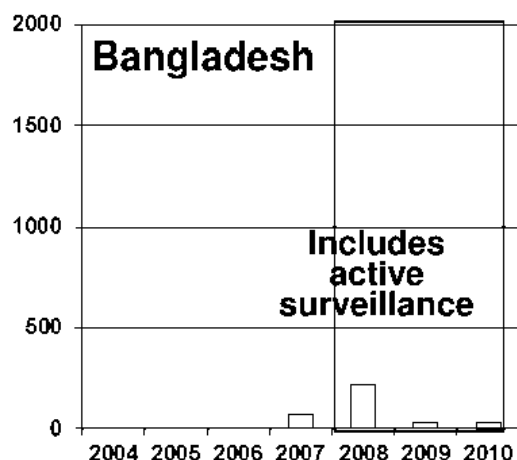
Sources: OIE and FAO reports (Egypt, Indonesia) through 2/8/11. * Only ~6% of reported outbreaks have data on detection time.

▨ , ▨ = partial 2011 data

Some Highly-Affected Countries Have Reduced Reported Poultry Outbreaks Over Time

1st Interim

Number of poultry outbreaks per year per country



→ Bangladesh, China, and Vietnam have reduced reported poultry outbreaks over time and maintained low levels

→ Indonesia appears to have a decreasing trend

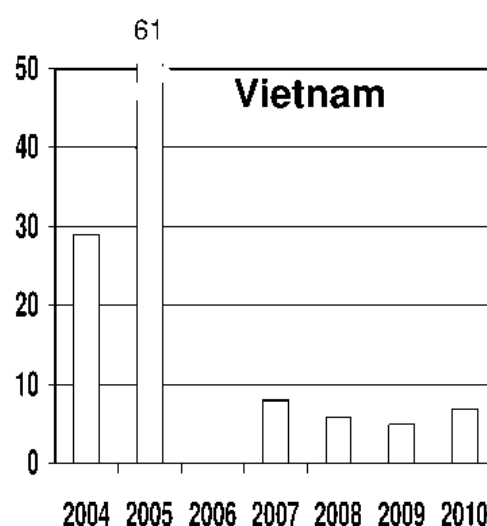
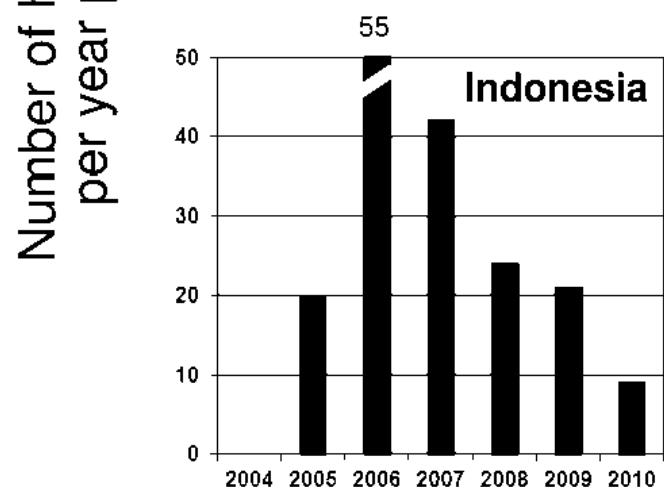
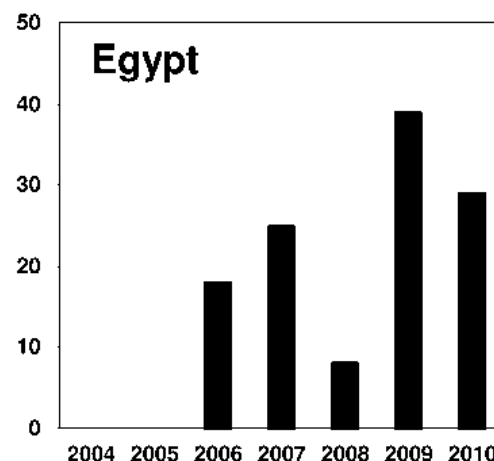
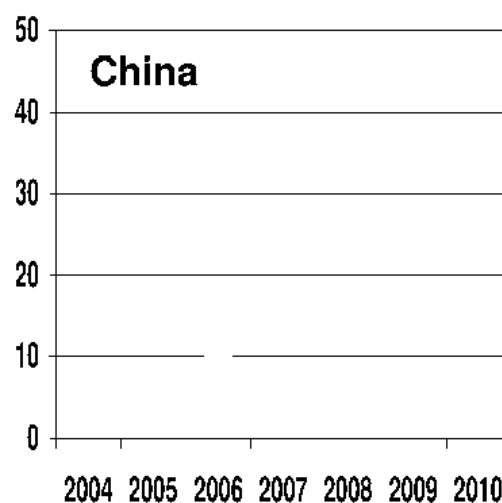
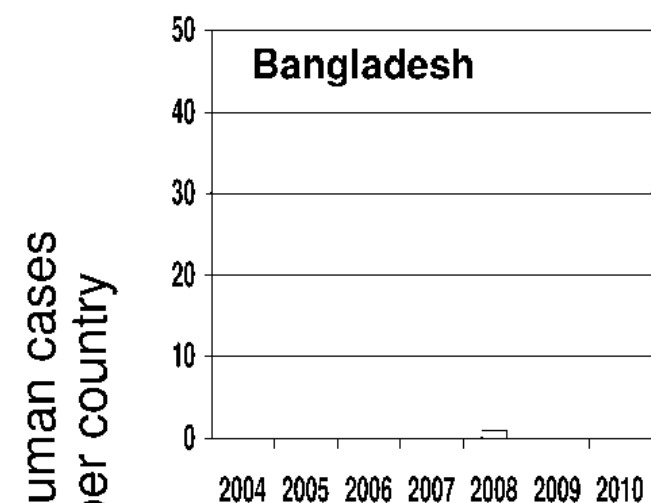
→ Egypt's increases in 2009-2010 may be due to active surveillance

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77

Some Highly-Affected Countries Also Have Reduced Reported Human Cases Over Time

1st Interim



→ China and Vietnam have reduced reported human cases over time and maintained low levels

→ Indonesia has had a decrease in reported cases since 2006

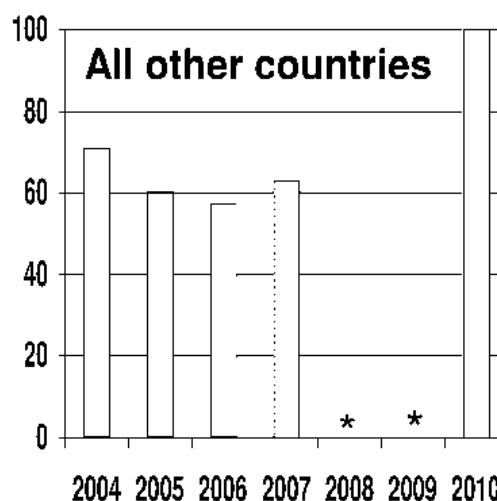
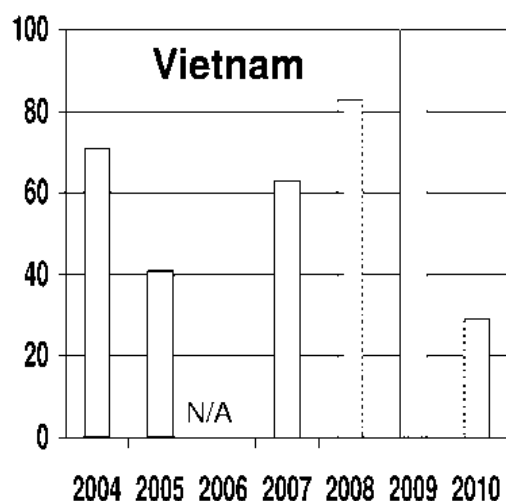
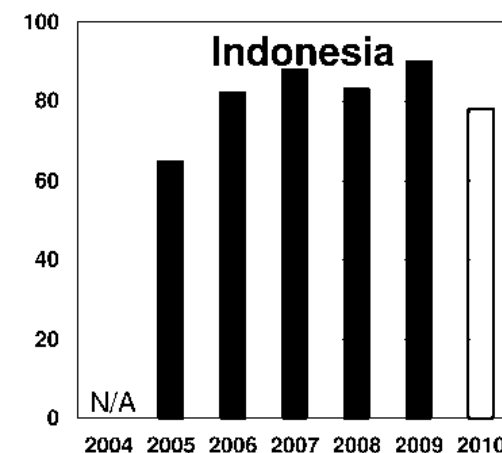
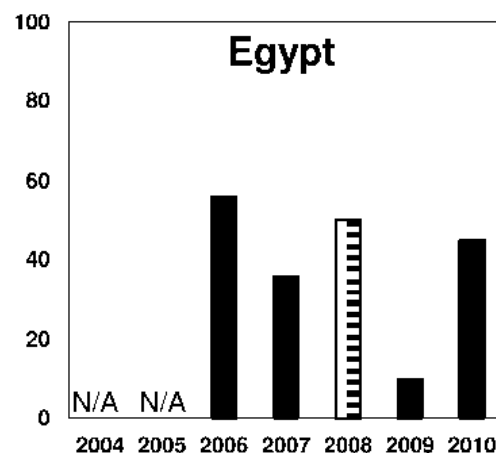
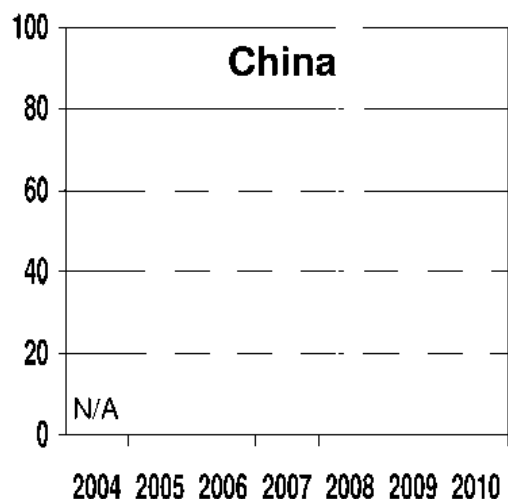
→ Trend in Egypt not clear yet

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78

Most Countries Have Not Lowered Human Case Fatality Rate

Average human fatality rate
per year per country



→ In most countries, human fatality rate remains stable at about 60% or higher

→ Egypt lowered fatality rate to 10% in 2009; however higher in 2010 which is similar to other years

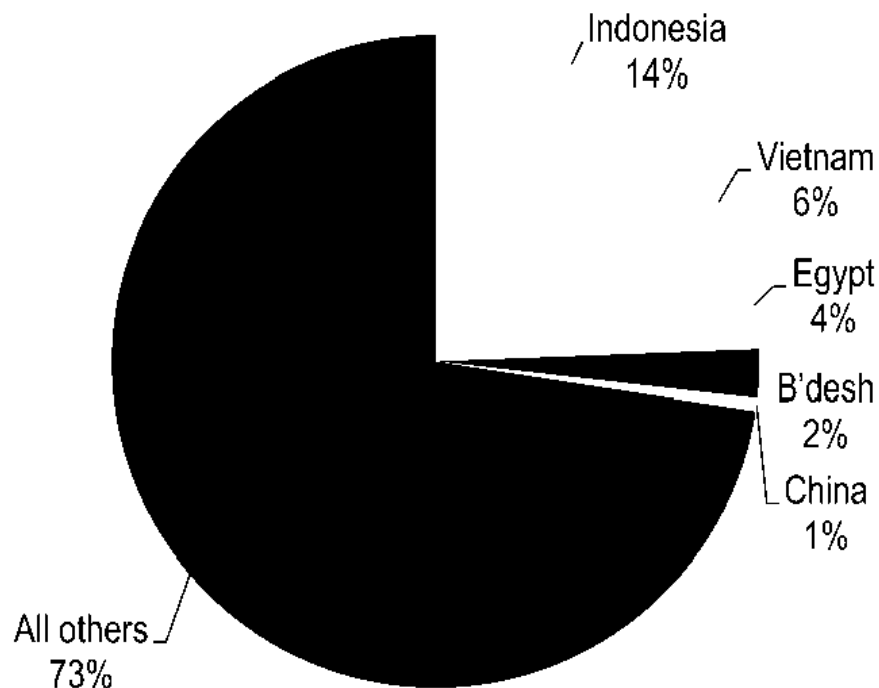
→ Vietnam appears to have improved in 2010

Source: WHO reports through 2/8/11. N/A, not applicable since no cases were reported. and * = 1-5 cases with data; = 6-10 cases with data; = >10 cases with data

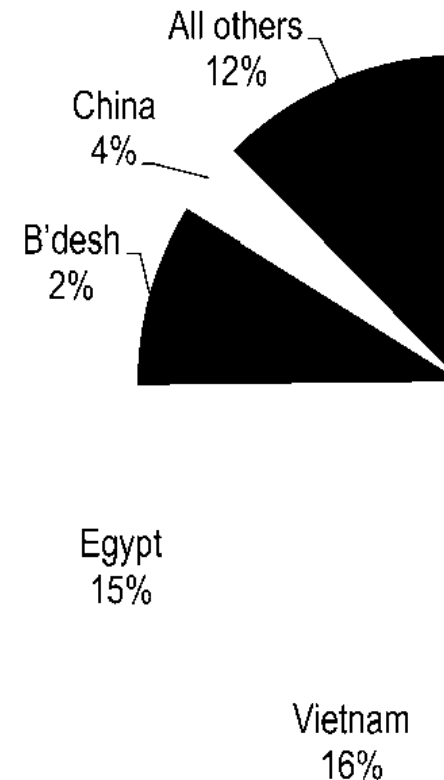
Distribution of USAID H5N1 Avian Influenza Funding (2005-2010)

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**Total AI Funding (2005-2008) =
\$129 million**



**Total AI Funding (2009-2010) =
\$72 million**



Indonesia
44%

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H5N1 Avian Influenza: Key Points

- In general, **H5N1 Avian Influenza disease burden in poultry and humans appears to be decreasing** over time due to control measures
- **Almost all recent bird and human infections have been concentrated in five endemic countries*** in Asia and Middle East that all have large poultry populations
- Even as some of these endemic countries have decreased their H5N1 AI burden, **there continues to be “leakage” of virus to neighboring countries**
- Although rare, human cases more common in countries with many poultry outbreaks since transmission is primarily bird-to-human; **fatality rate for human cases is high (33-83%)**
- H5N1 AI virus **continues to evolve over time; pandemic risk remains** as long as virus continues to persist
- **Donor funding for H5N1 AI continues to decrease**; in the next year or two, USAID will likely be the only remaining donor

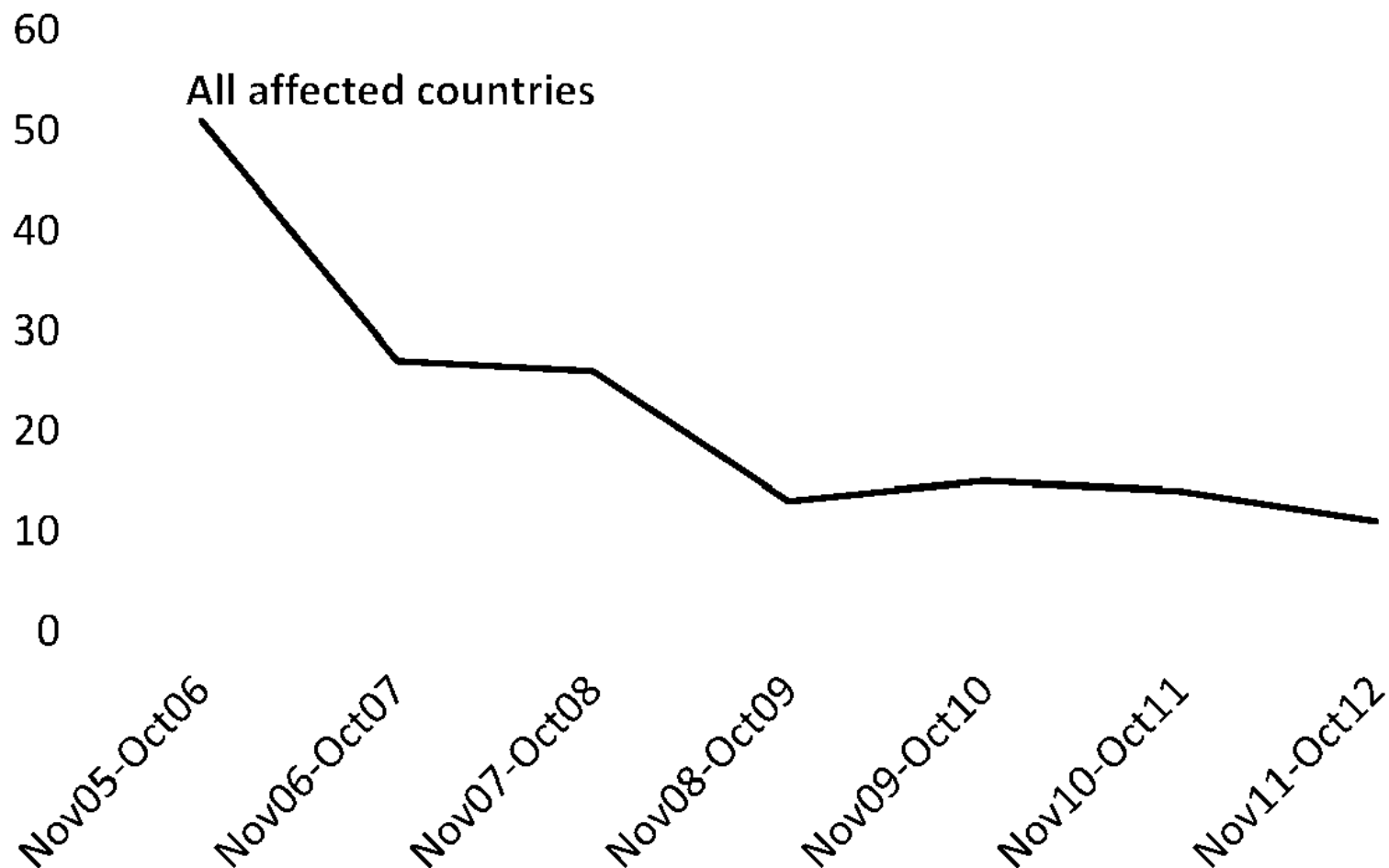
* Bangladesh, China, Egypt, Indonesia, Vietnam

H5N1 Trends, Nov 2005-Oct 2012

Notes on data:

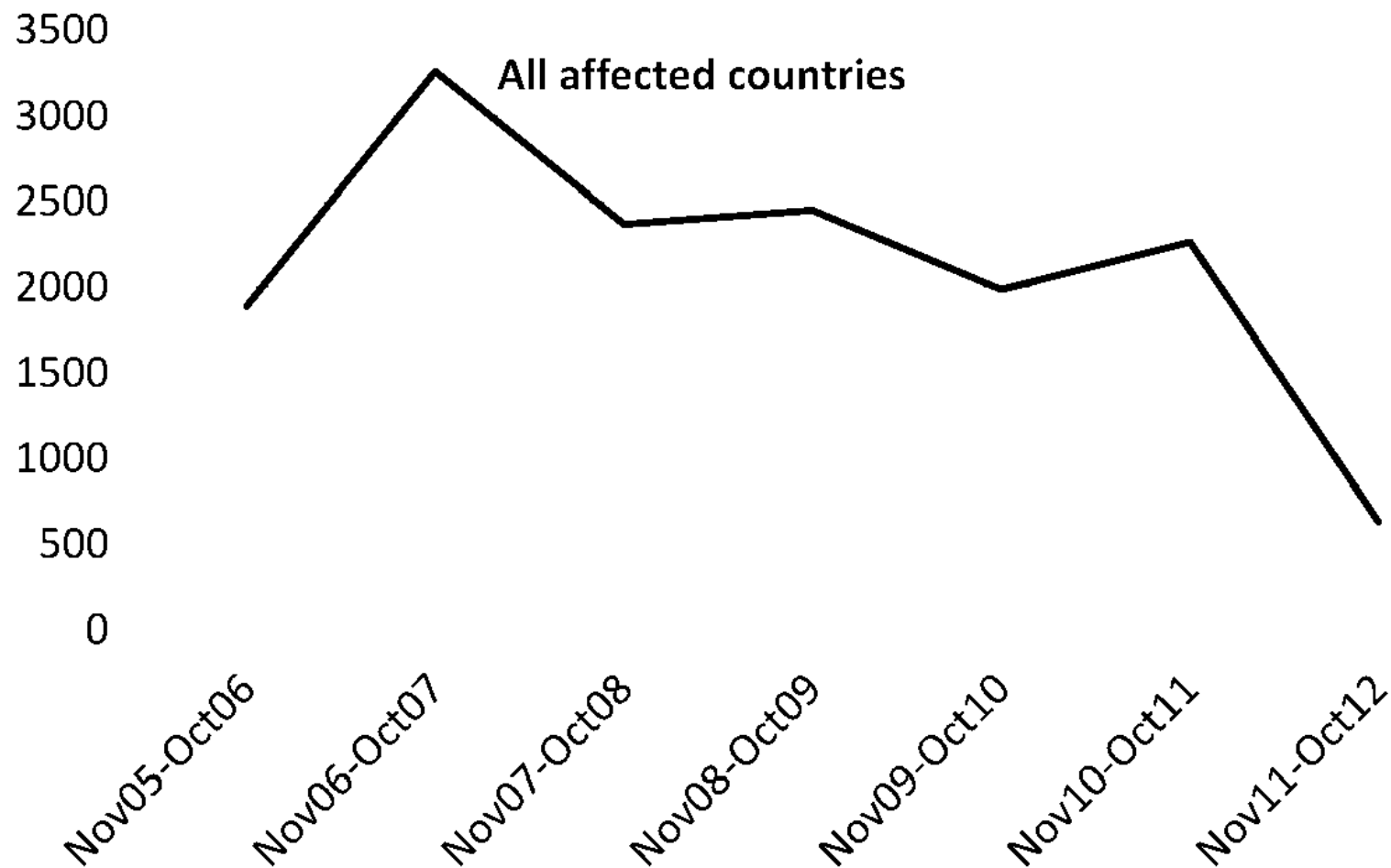
- Analysis only includes information (mostly from passive surveillance) reported to FAO, OIE, and WHO.
- Most countries have limited surveillance capacity; as a result, actual number of bird outbreaks and human cases may be higher than the reported numbers.
- Little to no OIE data from Egypt and Indonesia after June 2008 and Aug 2006, respectively; as a result, these two high-burden countries are underrepresented in the global trends for the time between onset of bird outbreaks and lab confirmation.

Total Countries Reporting H5N1 HPAI Infections in Animals or Humans



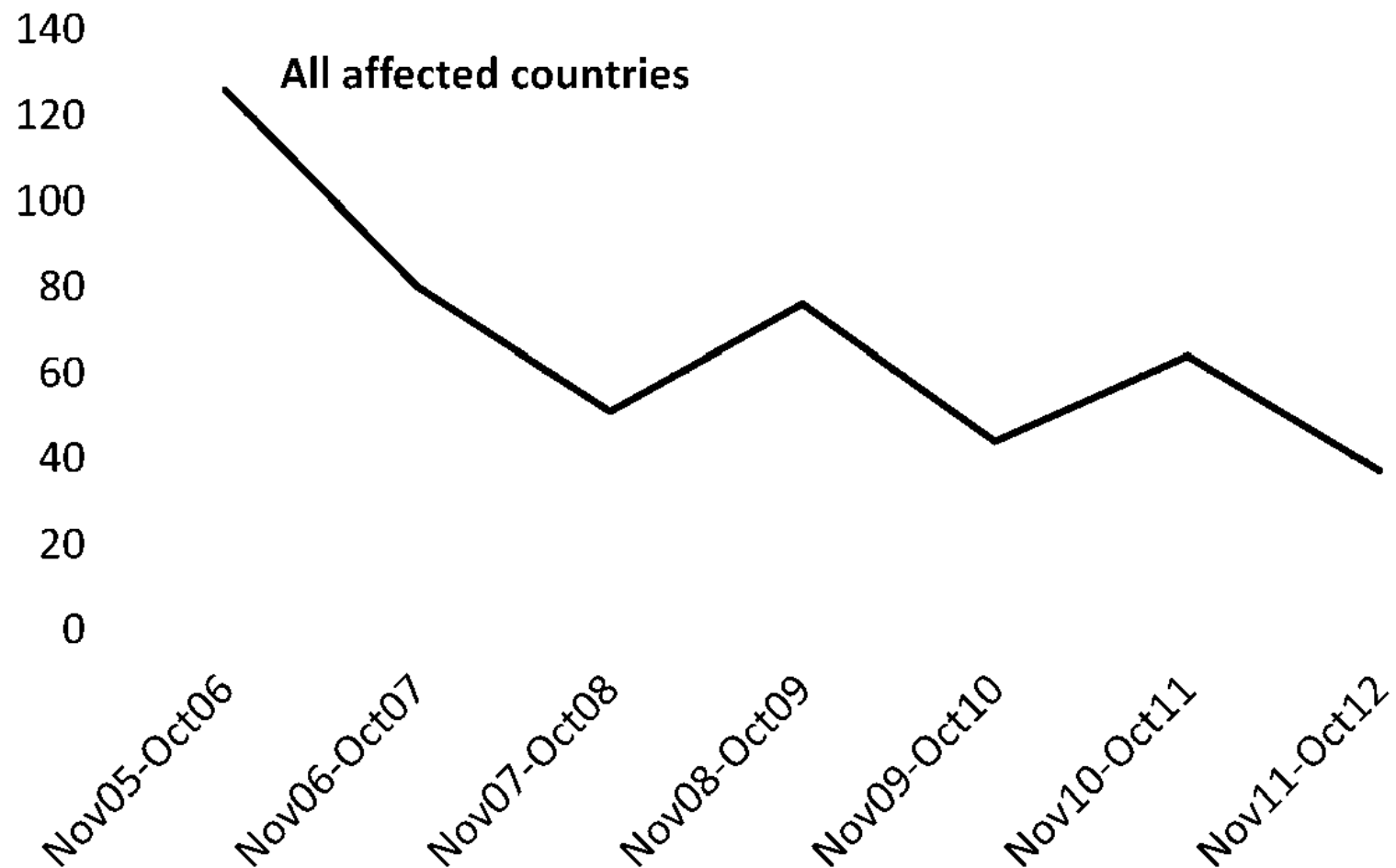
Sources: OIE, FAO, WHO, GenBank reports. * GMS = Greater Mekong Sub-Region which includes Burma, Cambodia, China, Laos, Malaysia, Thailand, Vietnam.

Total Reported H5N1 HPAI Poultry Outbreaks



Sources: OIE and FAO reports. * GMS = Greater Mekong Sub-Region which includes Burma, Cambodia, China, Laos, Malaysia, Thailand, Vietnam.

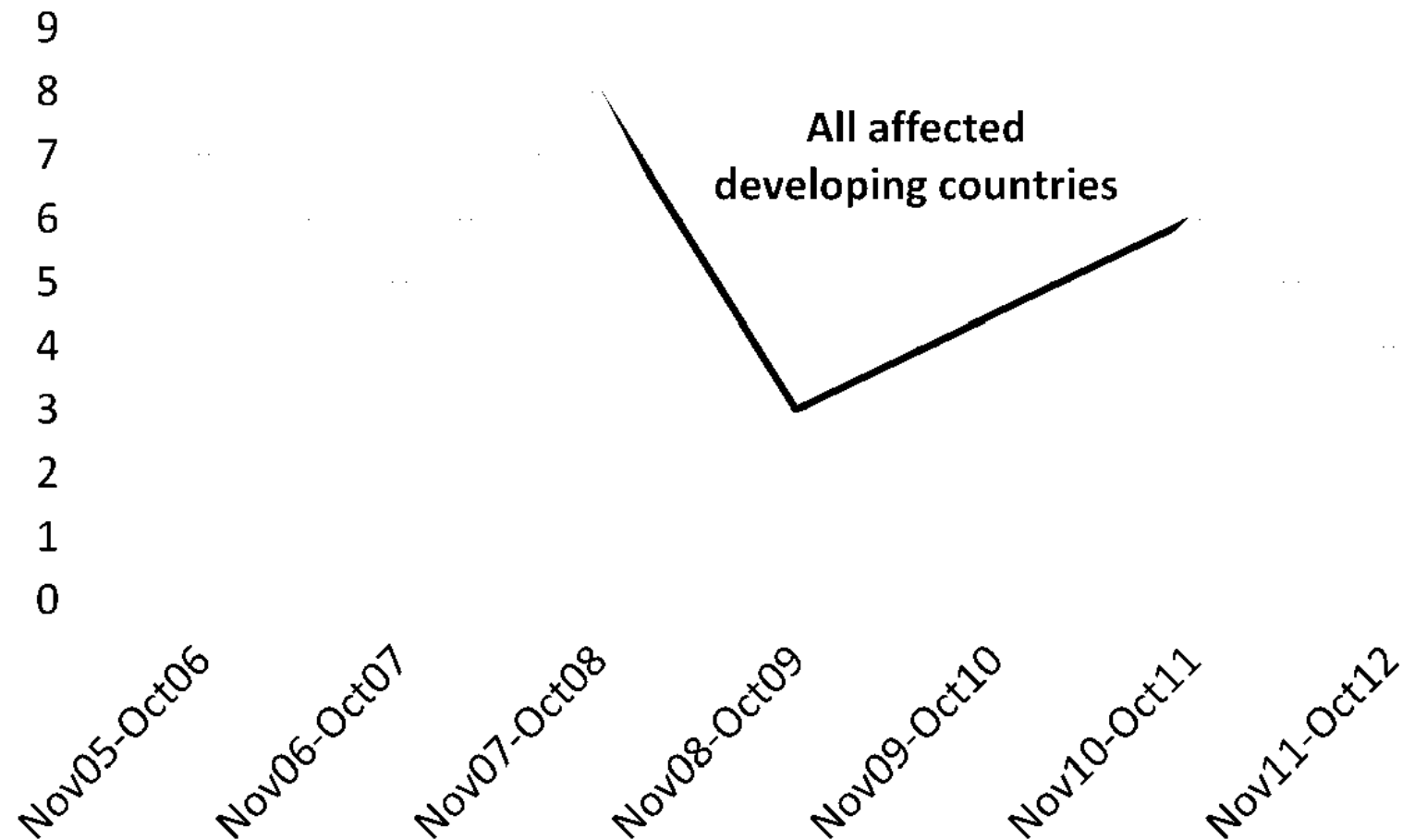
Total Reported H5N1 HPAI Human Cases



Sources: WHO reports. * GMS = Greater Mekong Sub-Region which includes Burma, Cambodia, China, Laos, Malaysia, Thailand, Vietnam.

Median Days from Start of Reported Poultry or Wild Bird H5N1 HPAI Outbreaks to Lab Confirmation

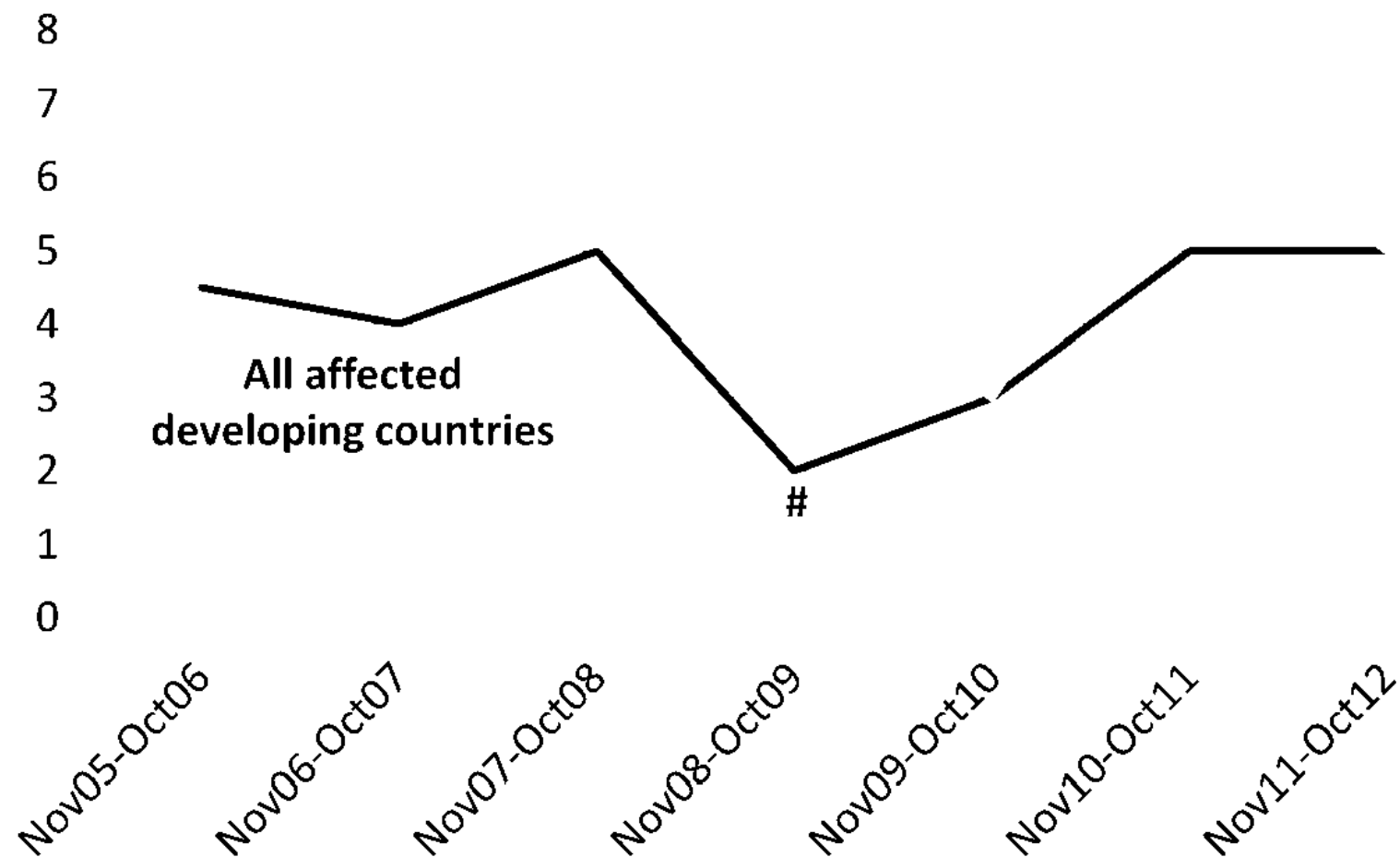
1st Interim



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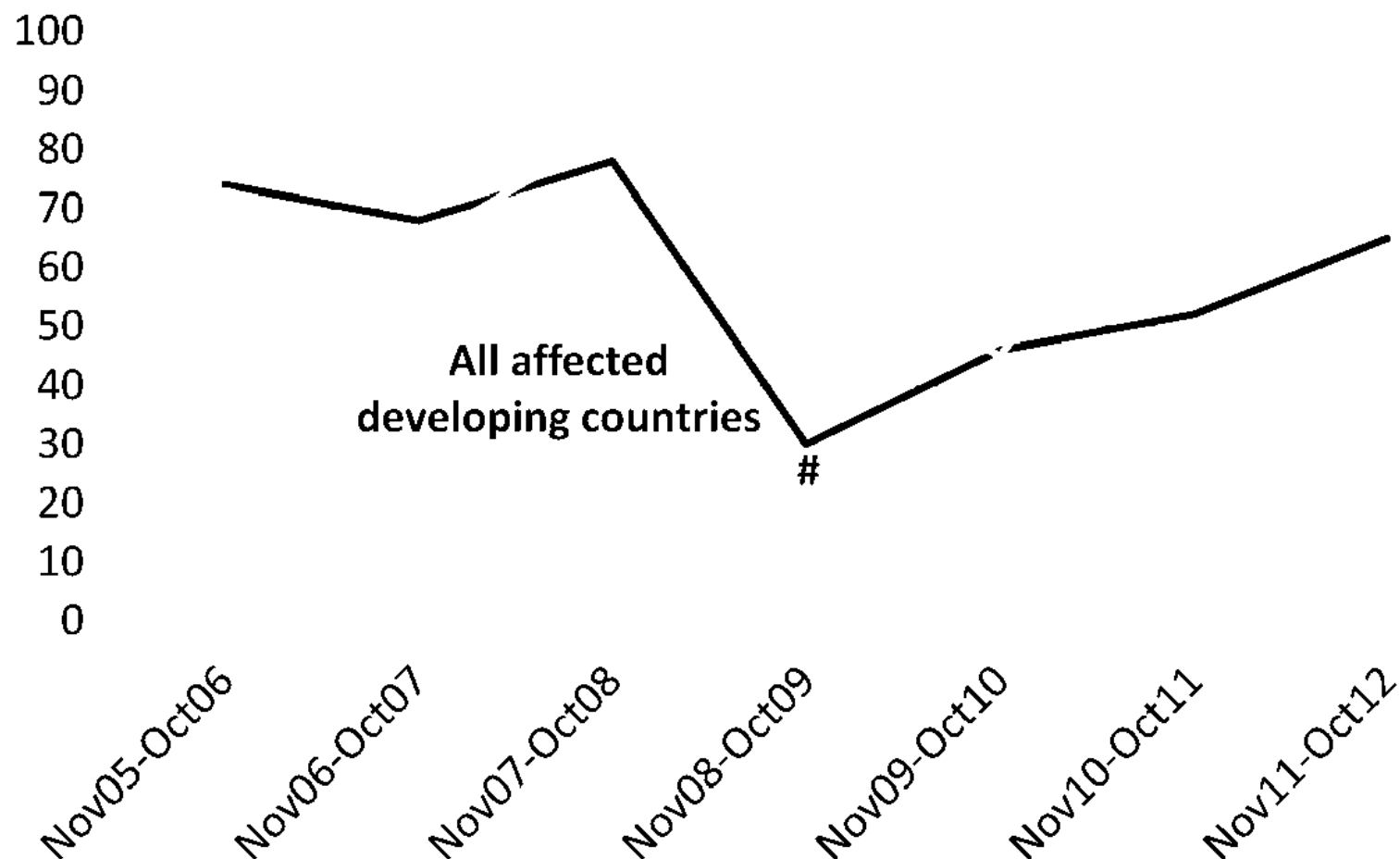
Source: OIE reports. * GMS = Greater Mekong Sub-Region which includes Burma, Cambodia, China, Laos, Malaysia, Thailand, Vietnam.

Median Days from Start of Symptoms for Reported H5N1 HPAI Human Cases to Hospitalization



Sources: WHO reports. * GMS = Greater Mekong Sub-Region which includes Burma, Cambodia, China, Laos, Malaysia, Thailand, Vietnam.
~50% of cases were in Egypt where median time was 1.0 days. ## 7 of 8 cases were from Cambodia where median time was 7.0 days.

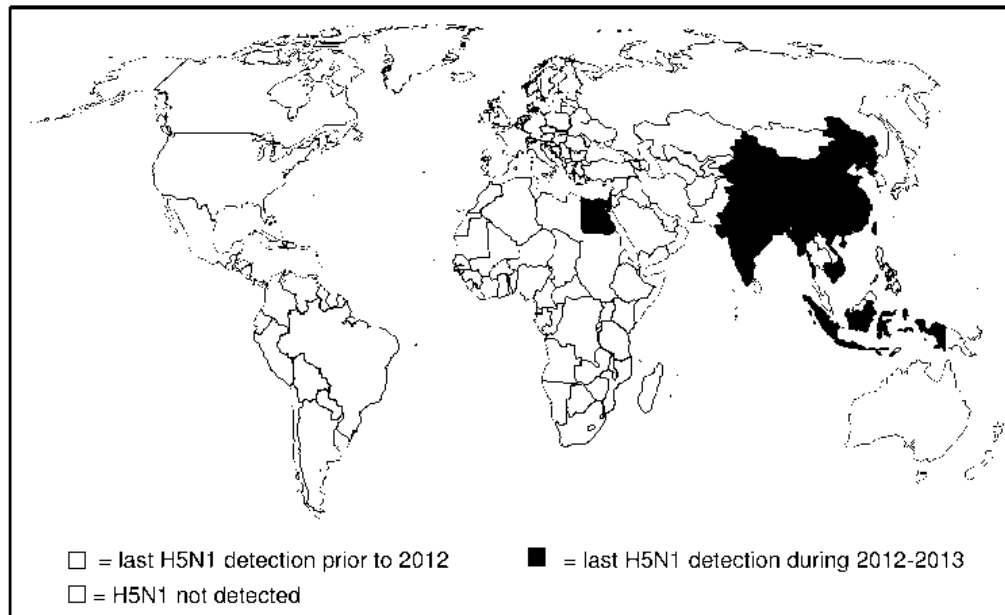
Average Case Fatality Rate for Reported H5N1 HPAI Human Cases



Sources: WHO reports. * GMS = Greater Mekong Sub-Region which includes Burma, Cambodia, China, Laos, Malaysia, Thailand, Vietnam.
 # ~50% of cases were in Egypt where CFR was 14%. ## 7 of 8 cases were from Cambodia where CFR was 100%.

H5N1 Highly Pathogenic Avian Influenza

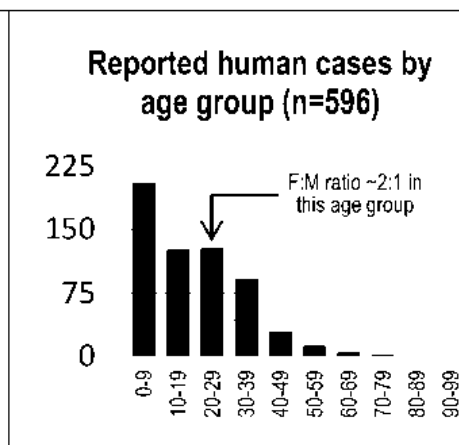
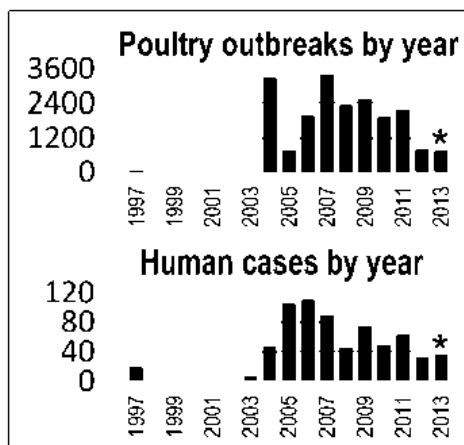
May 1997 – October 2013



Summary of confirmed human infections*:

- Median age = 17 years (range: 0-75)
- 53% cases female
- Average days from symptom onset to hospitalization = 4.5
- Average days from symptom onset to WHO reporting = 20.6
- Apparent case fatality rate = 58%
- Cases in clusters (2 or more) = at least 14%
- Cases exposed to sick or dead poultry = at least 50%
- Cases who were health workers = 0%
- Cases with basic data** = 67%

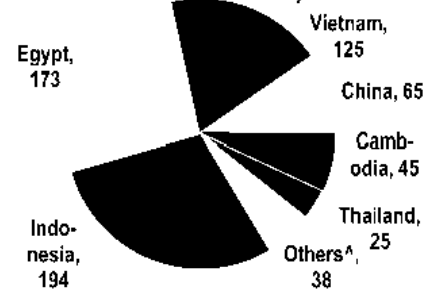
Sources = World Health Organization, Food and Agriculture Organization, OIE, and scientific publications through 11/19/13; * may be biased towards more-severe cases that are more-easily recognized. ** includes age, gender, location, clinical outcome, and dates for symptom onset, hospitalization, death (if applicable) in publicly-available reports



Geographic distribution of H5N1 infections in birds and people



Reported human cases by country (n=665)



* = January-October only

■ = male; ■ = female; □ = gender not reported

* Bangladesh, China (including Hong Kong), Egypt, Indonesia, Vietnam

^ Azerbaijan (8), Bangladesh (7), Burma (1), Djibouti (1), Iraq (3), Laos (2), Nigeria (1), Pakistan (3), Turkey (12)



Emergency Operations and Rehabilitation Division

AFGHANISTAN – PAKISTAN



**“Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and
containment activities between Afghanistan and Pakistan”**

OSRO/RAS/703/USA

FINAL REPORT
April 2008–May 2011

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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ABBREVIATIONS AND ACRONYMS

Afghanistan	Islamic Republic of Afghanistan
AGAH	Animal Health Service (FAO)
AGID	Agar gel immunodiffusion
AI	Avian influenza
AI-SIS	Avian Influenza-Surveillance Information System
CTA	Chief Technical Advisor
CVO	Chief Veterinary Officer
ECTAD	Emergency Centre for Transboundary Animal Diseases (FAO)
ELISA	Enzyme-linked immunosorbent assay
FAO	Food and Agriculture Organization of the United Nations
FATA	Federally Administered Tribal Areas
GIS	Geographical information system
HI	Hemoagglutination inhibition
HPAI	Highly Pathogenic Avian Influenza
KPK	Khyber Pakhtunkhwa
LBM	Live bird markets
NGO	Non-governmental organization
NWF	North West Frontiers
OIE	World Organisation for Animal Health
Pakistan	Islamic Republic of Pakistan
PCR	Polymerase chain reaction
PDS	Participatory disease surveillance
rRT	Real-time reverse transcriptase
SOP	Standard operating procedures
TAD	Transboundary animal disease
TCES	Emergency Operations Service (FAO)
ToT	Training-of-Trainers
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Transboundary animal disease (TAD) outbreaks occurred during the past years in the border provinces of the Islamic Republic of Afghanistan (Afghanistan) and the Islamic Republic of Pakistan (Pakistan). The TADs are spread by the movement of infected live animals or animal products around the area. In Pakistan, independent outbreaks of Highly Pathogenic Avian Influenza (HPAI) were detected in 2006, 2007 and 2008; and in Afghanistan, the disease outbreaks occurred solely in 2006 and 2007. In all cases, frequent poultry commercial trade (both legal and illegal) and the traditional movement of chicken or poultry products for sale in live bird markets (LBMs) contributed to the introduction and spread of HPAI in cross-border provinces and subregions.

The Government of the United States of America, through the United States Agency for International Development (USAID), initially contributed USD 1.3 million to the Food and Agriculture Organization of the United Nations (FAO) for the implementation of project OSRO/RAS/703/USA, entitled "Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan". The project started in April 2008 and formed part of FAO's overall relief and recovery programme in Afghanistan and Pakistan. The initially planned end date was in September 2008; however, the project was extended three times with the actual end date on 31 May 2011 and the total financial contribution of USD 3.2 million. Considering the high risk of HPAI introduction and spread in the cross-border region between Afghanistan and Pakistan, the aim of this project was to establish a shared, sustainable and harmonized HPAI surveillance system to strengthen the capacity for early detection and control of HPAI in the defined areas.

Originally the project considered four provinces at the border between the two countries: Nangarhar and Khost for Afghanistan, and Khyber Pakhtunkhwa (KPK) [former North West Frontiers (NWF)] and Federally Administered Tribal Areas (FATA) provinces for Pakistan. In consultation with the Chief Veterinary Officers of both countries and the Donor, Kandahar and Balkh provinces were subsequently included for Afghanistan, and Abbottabad area in KPK, Balochistan and Sindh provinces for Pakistan. Furthermore, subregions were established for surveillance in different Afghan provinces at the border and those where outbreaks had been reported previously.

In February 2008, the surveillance teams started collecting samples from LBMs, farms and villages, so that at the end of the project in May 2011, 30 358 samples were received from Afghanistan and 126 470 from Pakistan. The difference in the number of samples obtained was influenced by the total population of poultry in each country. At the beginning of the project in 2008, there were no technicians in the laboratories in Afghanistan dedicated to Avian Influenza (AI) diagnosis. The Afghan veterinarians, therefore, received training on the basic concepts of serology procedures, molecular diagnosis and practical proficiency tests. In Pakistan, technicians were trained on conducting tests in the laboratory that included serology, virus isolation and molecular diagnosis, as well as antigen preparation for use in serological tests towards the end of the project. The antigen is now distributed to provincial laboratories in Pakistan on a regular basis, and it has also been delivered to Afghanistan. Improvement of the central laboratory in Pakistan to biosecurity level 2+ now allows for the sample preparation for virus isolation. The capacity for genetic sequence analyses for virus characterization was supported in Pakistan. Laboratories in Abbottabad, KPK and Karachi are conducting serological tests in Pakistan, and the laboratories in Jalalabad and Mazar-e-Sharif in Afghanistan have the infrastructure to conduct serological tests for regional screenings. All of them received training, equipment and reagents.

The results obtained during the surveillance activities showed that there was no evidence of HPAI H5N1 virus circulation in the region. However, the identification of other AI virus subtypes circulating in the region should be considered as a possible threat for reassortment and eventually emergence of novel virus subtypes. The security circumstances that are present in both countries, and especially in the cross-border region, made it difficult to implement some project activities, but the commitment of the project staff, particularly those in the field, was the key success factor for the results obtained.

1. INTRODUCTION

1.1 Project background

The Islamic Republic of Afghanistan (Afghanistan) and Islamic Republic of Pakistan (Pakistan) have experienced Highly Pathogenic Avian Influenza (HPAI) outbreaks caused by H5N1 subtype in various provinces of the bordering areas. The first outbreak started in 2006 in Khyber Pakhtunkhwa (KPK) (former North West Frontier) province and Abottabad region in Pakistan. It was later detected in Nangarhar, Kunar, Kapisa, Kabul, Logar, Laghman, Parwan and Kapisa provinces in Afghanistan. In 2007, outbreaks were initially identified in KPK, Abottabad and Punjab in Pakistan and later in Nangarhar, Kunar, Nuristan, Kabul and Kapisa provinces in Afghanistan. The last outbreaks of HPAI virus subtype H5N1 were detected in June 2008 in KPK and Sindh provinces in Pakistan, and no reports were made in Afghanistan at that time.

Although it was not possible to directly link the occurrence of outbreaks in Afghanistan with those detected in Pakistan, it was speculated that detection of HPAI outbreaks in Pakistan (especially in the northern areas) would likely be followed by an occurrence of outbreaks in Afghanistan, since genetic comparison showed close similarity among the viruses sequenced. In both occasions HPAI entered into Afghanistan through its northeast province of Nangarhar. The reasons for this might be: (i) the area around the capital, Jalalabad city, of Nangarhar province has probably the highest density of commercial and semi-commercial poultry farms of Afghanistan, estimated at around 243 farms with an average number of poultry from 1 500 to 5 000, mainly broilers; (ii) intensive trade activities in the cross-border area between the main cities, Peshawar (KPK) and Jalalabad (Nangarhar), in all types of poultry (broilers, old breeders, one-day-old chicks) from Pakistan; and (iii) porous borders along the countries with security complications that affect efficient control and inspection.

The economic impact on poultry production was severe as a result of the bans imposed on trading poultry and poultry products from Pakistan, and the severe depopulation, stamping out procedures and quarantine measures that affected poultry production in Afghanistan. Moreover, the reluctance of the population to consume poultry meat and eggs affected other regions in both countries, with direct effect on the poor rural households. Additionally, in Pakistan, during the outbreak of 2007, two human casualties owing to H5N1 infection were recorded in KPK, as well as limited human-to-human possible transmission by cluster families and intra-hospital infection. Both Pakistan and Afghanistan declared themselves free of HPAI H5N1 in 2009.

The epidemiological pattern observed in Afghanistan during the two epidemics was rather similar, with the disease entering in Nangarhar province, spreading to other regions and later reaching Kabul city (where market prices for poultry products are higher). In Pakistan, the data available does not allow for an identification of a clear pattern. Even in the last epidemic, a great gap (both in time and space) between the series of outbreaks was observed, indicating, most probably, that the virus had persisted without being reported to authorities (rather than suggesting continuous reintroductions).

In Afghanistan, with 98 percent of the poultry population in the backyard sector, the risk of endemicity is considered low, while in Pakistan, where the poultry sector is economically more important, the risk of infection of the commercial poultry is higher. In particular, the small poultry production units in both countries are the most vulnerable owing to the low level of biosecurity and to traditional production systems for raising chicken (especially for broilers), which are largely un-regulated.

An important risk factor that could make the disease undetectable by clinical signs (especially in Pakistan) is the easy access to vaccines, although the quality of them may, in some circumstances, be questionable (in particular for some of those that are locally produced). During and after outbreaks, poultry producers tend to urgently vaccinate their flocks when experiencing episodes of high mortality in an attempt to slow down the course of the disease. In that case, the vaccinated animals do not show clinical signs while the virus replicates and spreads to other susceptible non-vaccinated poultry.

1.2 Financial contribution of the Donor

The Government of the United States of America, through the United States Agency for International Development (USAID), initially contributed USD 1.3 million to the Food and Agriculture Organization of the United Nations (FAO) for the implementation of the project OSRO/RAS/703/USA, entitled “Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan”. The project started in April 2008 and formed part of FAO’s overall relief and recovery programme in Afghanistan and Pakistan. The initially planned end date was September 2008; however, the project was extended three times until 31 May 2011, with the total financial contribution of USD 3.2 million.

1.3 Project objectives

The primary objective of the project was to promote collaboration between the two involved countries for improving HPAI surveillance by adopting common and shared approaches in areas which may share cultural and social features. The secondary objectives were to strengthen the capacity for early detection and control of HPAI in the defined areas, and thus to avoid further spread of infection to other non-infected parts of the countries and consequently to the human populations.

In the original project, two provinces were considered in each country: Nangarhar and Kandahar in Afghanistan, and KPK and Balochistan in Pakistan. However, during the first inception workshop, the Chief Veterinary Officers (CVOs) of the countries requested extending the benefits of the project to one additional province in each country. Consequently, Khost province was considered for Afghanistan, and the Federally Administered Tribal Areas (FATA) and Abbottabad area in KPK were considered for Pakistan (because of the large number of poultry farms that form the “poultry belt” in the north of both countries). Later, during the second Steering Committee meeting, the CVOs requested including the Sindh province for Pakistan and Balkh for Afghanistan in phase III based on the large numbers of poultry farms in these provinces.

1.4 Planned beneficiaries

The intended beneficiaries of the project were the Ministries of Agriculture and the Animal Health Departments/Chief Veterinary Offices in both countries. Other planned beneficiaries were poultry owners, producers and traders benefiting from a reduced incidence of HPAI through improved knowledge of poultry disease prevention and control methods and through avoiding losses owing to the stamping out procedures; national veterinary and public health services benefiting from strengthened government agencies including management, technical understanding and responsibilities; the general population benefiting from a reduced risk from avian influenza (AI); and the international community benefiting from a reduced risk of the spread of HPAI and of an AI human pandemic.

2. PROJECT IMPLEMENTATION

The project was carried out in high-risk areas that could potentially be infected with HPAI. These included areas that historically represented an entry point for the HPAI virus to spread from one country to another. The modalities under which this event might occur could be rather different: (i) the virus could be transported from the original source (farms) and reach the final destination passing through the concerned areas without any involvement of the local poultry population; or (ii) the local poultry population might be affected, thus providing direct evidence of virus introduction and the infection can spread from village to village because of proximity. The first modality would call for an intensification of border control activities, the second for an intensification of surveillance activities among the local populations and live birds markets (LBMs) that could play an important role in spreading the disease.

The trade routes for poultry and poultry products are basically unidirectional (from Pakistan to Afghanistan), mainly from KPK province, with a significant number of poultry farms, of both layers and broilers, and retailers of live poultry. There were reasons to argue that in Pakistan the infection was underreported. Diseased chickens were frequently sold to and from the markets, as in the case when the outbreaks occurred in 2006. Because they were vaccinated, the animals were not recognized as sick, which could account for the serial outbreaks that largely exceeded several incubation periods. Pakistan made efforts to contain the disease, and the National Avian Influenza Programme was approved to be financed by the Government of Pakistan. However, at the end of this project, the National Programme was closed, making early detection of possible outbreaks in the future difficult, owing to Pakistan's proximity to some HPAI H5N1 endemic areas localized in regions of India, Bangladesh, Nepal and Myanmar, where the disease is continuously identified.

One important issue addressed under this project was the availability of laboratory facilities and expertise in the concerned areas. Pakistan provided reliable diagnostic services at central level but Afghanistan did not. Therefore, provision of diagnostic services at central level in Afghanistan and at peripheral level in both countries needed to be upgraded. This issue was considered under this project.

The activities were established mainly in the following border cities: Peshawar and Abbottabad in KPK, Quetta in Balochistan province, FATA in FATA province and Karachi in Sindh province in Pakistan; and Jalalabad in Nangarhar province, Khost in Khost province, Kandahar in Kandahar province and Mazar-e-Sharif in Balkh province in Afghanistan.

Owing to the number of provinces on both sides of the border (three in Pakistan and seven in Afghanistan), it was necessary to include adequate subregions in Afghanistan for surveillance purposes as follows: eastern region: Nangarhar, Laghman, Kunar and Nooristan provinces; southern region: Khost, Paktya and Paktika provinces; southwestern region: Kandahar, Helmand and Zabul provinces and northern region: Balk, Sar-e-pol, Jowzjan, Faryab and Samangan provinces.

2.1 Implementation arrangements

The project was executed by FAO's Animal Health Service (AGAH) and Emergency Operations Service (TCES) through the Emergency Centre for Transboundary Animal Diseases (ECTAD) under the supervision of the Chief of AGAH and the operational responsibility of the Chief of TCES. Some of the activities were implemented separately in each country, others (common activities) at regional level.

The project was directly supervised by the Regional Technical Coordinator for the Central Asia Network for Avian Influenza and the Chief Technical Advisor (CTA) of the project. In each country, one national consultant/epidemiologist closely monitored the implementation of activities, four national consultants/field veterinarians were appointed for each country (one in Kandahar, Khost, Jalalabad and Mazar-e-Sharif, in Afghanistan; and one in Peshawar and Abbottabad, FATA, Quetta and Karachi, in Pakistan) to coordinate activities at local level, each of them assisted by one paraveterinarian.

In Afghanistan, the project counterpart management unit was operated under the supervision of the General Director of Animal Health and Production, who was also technically responsible for the Provincial Veterinary Departments. In Pakistan, the counterpart initially was the Federal Ministry of Food, Agriculture and Livestock and then the Federal Ministry of Livestock and Dairy Development. This ensured good coordination with the Livestock Departments of KPK, FATA, Baluchistan and Sindh that were operationally responsible for undertaking disease control in their regions. The project counterpart management unit was the National Reference Laboratory for Poultry Diseases of the National Animal Research Council. The counterpart institutions assisted all consultants and experts in the performance of their assigned tasks and guaranteed appropriate mechanisms of coordination with the relevant authorities in their respective countries.

A Steering Committee headed by the CVOs of both countries was established with the scope of driving and facilitating project activities. As there were important security issues in the areas of concern, the Committee advised and guaranteed the support of the local authorities.

The FAO project team actively liaised with all stakeholders and agencies in order to avoid duplication of efforts and ensure complementarities with other interventions and local ownership of project activities.

2.2 Main project activities

2.2.1 Technical assistance outputs

Output 2.2.1 Common strategies and approaches for surveillance developed in the different subsectors in the concerned areas

During the project, it was necessary to establish three main working groups linked in a network system: (i) field veterinarians responsible to visit farms, LBMs and villages to collect information on the health status of poultry in the premises and carry out sampling on a weekly basis to collect blood serum and swabs to submit them to the laboratory for testing; (ii) laboratory staff to introduce the collected information in the data management system developed under the project, process the serological tests indicated for AI surveillance (agar gel immunodiffusion [AGID] test and hemagglutination inhibition [HI] test for detecting antibodies against H5, H7 and H9) and conduct rapid tests for virus identification (positive samples were

processed for virus isolation in Pakistan only and/or tested by real-time reverse transcriptase polymerase chain reaction [rRT-PCR] for identification of M gene [virus type] and H5, H7 in both countries and H9 [virus subtype] in Pakistan); and (iii) epidemiological units to maintain the field information and laboratory results, so that they can be analysed under the supervision of the national epidemiologist in each country. The selected epidemiological units for surveillance were farms (large-scale and small production), LBMs (especially those that distribute imported poultry in the main cities), vendors of live chicken in small towns and household chickens in villages. A unique surveillance format was prepared to gather field information from each type of premises and a data management system was developed named Avian Influenza Surveillance Information System (AI-SIS), which was designed for recording the information collected during routine surveillance. AI-SIS contains six modules to introduce the information obtained from the surveillance format and from laboratory results. The system allows a rapid analysis to obtain quick information about the frequencies of laboratory results by district, province and country and allows being connected to a geographical information system (GIS) to identify in space the location of positive samples, if any. The system was initially established at central level in both countries. After several evaluations, the software was installed in the main provincial laboratories in Pakistan, and in Nangarhar and Balkh in Afghanistan.

Output 2.2.2 The diagnostic ability of field and laboratory staff enhanced

Field staff: At the start, it was necessary to conduct a series of trainings for field veterinarians from both countries, and national trainings for official veterinarians on disease recognition, during which the characteristics of the disease were discussed. The suspicious case definition was established when at least two or more of the clinical signs were identified in a single epidemiological unit. The size of each epidemiological unit was defined as 20 samples (serum and swabs from trachea and cloacae) per premise (epidemiological unit) based on the ongoing circumstances and on international experience. Thereafter, a bi-national training on differential diagnosis to identify AI from other similar diseases was conducted and cascade trainings at national level were held.

Laboratory staff: At the beginning of the project in 2008, there were no laboratory technicians in Afghanistan working on a routine basis on AI diagnosis; therefore, the General Director of Animal Health and Production designated four members of the laboratory to be trained: two of them on serology procedures and the other two on molecular diagnosis. Laboratory biosecurity conditions in Afghanistan did not allow for the conducting of the virus isolation, as the laboratory technicians could be infected. The four members were trained daily for six months by the CTA and the national laboratory expert on the routine diagnosis of the disease. In Pakistan, two technicians regularly conducted serological diagnosis and virus isolation, and two specialists in the diagnosis of PCR procedures worked on molecular diagnosis and sequencing. One laboratory member from each country attended a diagnostic international training course for laboratory technicians held at the FAO/World Organisation for Animal Health (OIE) Reference Laboratory for AI and Newcastle Disease in Padova, Italy, from 6 to 17 July 2009. One laboratory staff member from Pakistan was trained in the FAO/OIE Reference Laboratory for Avian Influenza in the United States of America on antigen production for AI because international antigens are difficult to purchase and the price is very high. Now, the laboratory in Pakistan produces antigen for HI tests for H5, H7 and H9 that is distributed to the provincial laboratories in the country and, upon request, to Afghanistan.

Owing to the expertise in AI diagnosis in Pakistan, two trainings were conducted at the National Reference Laboratory for Poultry Diseases for the laboratory staff from Afghanistan: one of the

courses was for general serological diagnosis and the other for molecular diagnosis with the purpose of harmonizing the procedures. A manual for diagnosis was developed in Pakistan, and the standard operating procedures (SOPs) were established for all laboratory tests, common to both countries in order to harmonize the techniques.

National training courses for provincial laboratory staff were conducted by the national central laboratory staff from each country, for serological diagnosis; and the installation of the enzyme-linked immunosorbent assay (ELISA) equipment in Jalalabad and Mazar-e-Sharif in Afghanistan and Peshawar, Abbottabad, Quetta and Karachi in Pakistan, for proper use. Reagents were allocated to all provincially established laboratories.

Initially, only the National Reference Laboratory for Poultry Diseases in Pakistan was able to conduct AI diagnosis. At the end of the project, all the provincial laboratories indicated in the project document were able to conduct serological diagnosis in Pakistan. In Afghanistan, only Nangarhar and Balk laboratories are now able to conduct serological diagnosis owing to the security constraints in Kandahar and Khost, where the laboratories could not be established owing to the lack of electricity, water and security conditions for proper work in the local offices of animal health.

The central laboratories in both countries participated in a practical proficiency test conducted by the FAO/OIE Reference Laboratory from Padova, Italy, in November 2009. The Reference Laboratory submitted samples to the laboratories in Afghanistan and Pakistan that were both positive or negative. The results for central laboratory in Pakistan scored with 98 percent precision in their identification of the samples, meanwhile the central laboratory in Afghanistan scored 80 percent. Therefore, both laboratories demonstrated satisfactory precision in conducting serological and molecular diagnosis for AI.

Output 2.2.3 Procedures for inspection of poultry and poultry products at border control posts standardized

A workshop that included participants from the authorities of both countries was held in August 2010 in order to establish an understanding of mutual agreements of interest on trading poultry and poultry products, which is indicated below. The veterinary authorities of both countries agreed to work on improving mutual agreements regarding future arrangements for importing/exporting meat, live birds, chicken, day-old chicks, fertile eggs and table eggs.

2.2.3a Certification for farms for exporting

2.2.3a.1 Share information about the requirements and content of the animal health certificate.

2.2.3a.2 Conduct periodic (bi-annual) meetings of the veterinary authorities to review registration and certification of newly authorized farms for exporting. The exporting establishments must be declared by the veterinary authority to access the capacity to fulfill the demand/set standard/measures of the concerned veterinary authority and specify the diseases under control and tests for exporting purposes.

2.2.3a.3 Every import/export document produced by the importer/exporter country must be referred back to the concerned veterinary authorities of the countries for verification and to update the export/import data. Monthly exchange of information regarding the health certificate issued for import/export should be shared between the countries.

2.2.3b Border inspection

2.2.3b.1 Both countries will establish a harmonized and uniform inspection system for different products traded between the two countries.

2.2.3b.2 There should be mutually agreed upon SOPs for border inspection of different products.

2.2.3b.3 The number of border check posts should be increased from three to at least 14 on each side and should be equipped and have trained staff.

2.2.3b.4 There should be a regular joint short-term training programme (one-two weeks) on inspection procedures.

2.2.3c Quarantine station and animal health measures upon arrival

2.2.3c.1 Establish normal standard animal health measures for checking certificates and checking documents with the consignee (certificate No., expiry date, container seal, etc.) as well as conducting physical checking.

2.2.3c.2 Proper samples should be taken randomly from poultry and poultry products for eventual laboratory testing. In the case of positive rapid tests for AI, the poultry products should be detained and confiscated.

2.2.3c.3 In the case of negative results, distribution of the poultry and poultry products would be allowed.

2.2.3d Provision of future demand in Afghanistan

The veterinary authorities of Afghanistan should provide information on the future demand for live birds, animals, day-old chicks, eggs and other livestock products, so that measures can be taken to fulfill the future demand. A follow-up meeting to the August 2010 workshop could not be held since. As of November 2010, the Government of Pakistan was reorganizing its ministries and no authority was recognized as CVO until the end of the project.

Output 2.2.4 Capacity to improve the overall surveillance system enhanced

At the beginning of the project, there were no established epidemiological units in the two countries, and the responsibilities of the epidemiologists were distributed among other entities. A basic workshop was conducted for the high-level authorities in Afghanistan to demonstrate to them the importance of the epidemiology units. Subsequently, for Pakistan, a small unit within the laboratory was established. Instead of the originally foreseen Masters degree course for one person from each country which did not materialize. As no reply to the invitations was received from the Governments of both countries, the CVOs of the two countries opted to send the veterinarians of the units for short-term training, which was conducted in Jordan for 12 weeks for two participants from each country.

During the course, the participants learned about biostatistics, analytical epidemiology and the importance of questionnaires to collect information from the field in order to conduct an epidemiological analysis. The field veterinarians also learned about the importance of collecting complete information from the visited premises, analysing the data and reaching conclusions that could drive the decision-making process. They also learned about the production of antigens at regional level that would considerably reduce the cost of the tests. By the completion of the project, both countries had the technical capacity to continue the surveillance process in a sustainable way.

At the end of the bi-national socio-economic training course conducted in Istanbul, Turkey, in April 2010, the field veterinarians prepared a simple programme in Excel to analyse the economic information obtained from the field in order to measure the economic impacts and consider the social effects of high mortality. As a result, they now better understand the socio-economic impact of the disease in different sectors of the commercial chain: farmers, traders, vendors and consumers.

During visits to the epidemiological units towards the end of the project, the field veterinarians joined workers in farms, vendors at LBMs and households in villages to explain to them the characteristics of the disease and the impacts of the disease if the mortalities were not reported. Similarly, they visited schools to raise awareness among students from different towns about AI in order to improve the surveillance of the disease.

HPAI subtype H5N1 was not identified during the project implementation period, but the virus subtype H9N2 was continually identified in both countries. Molecular comparison analysis with other H9N2 viruses in the region, obtained from the gene bank, revealed that the hemagglutinin gene segment was within at least three H9N2 sublineages within the major G1-like lineage that are co-circulating in the Middle East. The genetic variability identified among the H9N2 viruses used in the comparison study showed that the isolates in Afghanistan and Pakistan contain specific substitutions, which are believed to increase the efficiency of the replication in non-avian species, especially in mammals, and therefore highlight the need to constantly monitor the evolution of this potential pandemic strain in the Middle East. Other AI virus subtypes that were also identified in poultry in Pakistan were H3N1 and H4N6. These are not notifiable AI viruses, but could be considered so owing to the possible reassortments among different AI viruses. These viruses in turn could originate novel, emerging AI viruses, which could affect not only birds but also mammals, including humans; therefore, the spread of these novel viruses should be monitored in the future.

Output 2.2.5 Surveillance in LBMs strengthened

Main LBMs in the cross-border region were identified and continuously visited to detect any virus circulation. During the surveillance period, HPAI H5N1 virus was not identified. The easy recognition and the acceptance of the vendors to maintain the surveillance in those markets resulted in more confidence in the government monitoring programmes of the health status of the birds in those markets. In Pakistan, a formal course was conducted in Islamabad for the main LBM vendors.

2.2.2 Procurement and distribution of inputs

(i) Afghanistan

The Central Veterinary Diagnostic and Research Laboratory in Kabul received non-expendable equipment such as real-time PCR system, conventional thermocycler, documentation system for gel identification of PCR bands in conventional system with camera included to save the results, safety cabinets for sample processing, computer for collection of the field data and laboratory results, ELISA reader and automatic washer system, ultra-low temperature freezer, respirator class III for biosafety laboratory work and container for liquid nitrogen for virus sample store necropsy instruments. The laboratory also received expendable equipment, such as materials for sample collection and sample processing in the laboratory as ELISA kits, antibodies and antigens for other serological test for AI diagnosis, primers and probes for molecular diagnosis by PCR, a series of micro-pipettes for all serological and molecular diagnosis.

The epidemiology unit of the General Directorate of Animal Health and Production received computers, printers and copier machines for their daily work and for connection with the laboratory. At the provincial level, only the laboratories in Nangarhar and Mazar-e-Sharif received low temperature freezers for sample preservation, ELISA equipment, including washer

machines and a computer for ELISA recording system, pipettes and reagents for serological diagnosis.

(ii) Pakistan

The National Reference Laboratory for Poultry Diseases received non-expendable equipment consisting of a complete conventional PCR equipment including a thermocycler, PCR workstation, documentation system for automatic evaluation of the results, vacuum system for concentration during antigen preparation for serological diagnosis, ELISA washers, an air-conditioner system to improve the biosecurity in the laboratory from level 2 to level +2 to allow working with the HPAI virus without emitting any residues to the environment and protecting the laboratory workers from infection and a table top centrifuge. The expendable equipment included laboratory glass materials, micropipettes, antigens, antiserums, ELISA kits, primers and probes for molecular diagnosis, a NanoDrop system with software for DNA/RNA sample analysis and reagents for virus genome sequencing.

The provincial laboratories in KPK, Abbottabad and Sindh received an ELISA washer machine system, micropipettes and other materials for necropsy and performance of serological tests and reagents such as antigens and antiserums.

2.3 Actual beneficiaries

The main beneficiaries of the project were the Ministries of Agriculture of both countries and the population in the areas surveyed in the study.

A total of 758 provincial veterinarians were trained in the two countries on recognizing the disease and reporting suspicious cases as well as on basic epidemiology. Fifteen laboratory technicians were trained in four provinces in Pakistan and three provinces in Afghanistan, and are now able to conduct serological diagnosis and perform rapid tests for early detection. Seventy vendors, 190 poultry producers and more than 500 students received training on the importance of the disease and early recognition by proper reporting. Both countries are beneficiaries of local antigen production.

Fourteen provinces surveyed in Afghanistan with a total of 280 villages in 100 districts, and four provinces with 156 villages in Pakistan showed no evidence of circulation of HPAI subtype H5N1 virus. In general, the entire population in the surveyed provinces can be considered as beneficiaries; for they gained confidence that there was no evidence of the disease. Attached are the maps of Afghanistan and Pakistan where the surveillance was conducted.

2.4 Training

- A national training course on disease surveillance, clinical diagnosis and outbreak investigation was conducted in Kabul, Afghanistan, and attended by 22 veterinarians from several provinces at the border area with Pakistan.
- The inception workshop was conducted in Islamabad, Pakistan, from 15 to 18 July 2008, where 15 participants, four from the Government of Afghanistan, six from the Government of Pakistan, the CTA and three officers from FAO headquarters attended. Additionally, the Donor was represented at the workshop.
- One national Participatory Disease Surveillance (PDS) introductory workshop was held in Islamabad on 6 November 2008, where 10 participants from Pakistan attended.

- A national training course on general epidemiology and rapid diagnosis was conducted in Kabul, Afghanistan, from 23 November to 2 December 2008, and was attended by 16 veterinarians from Nangarhar, Khost and Kandahar.
- A national five-month training (February to August) was conducted in Afghanistan on laboratory tests for AI (serological and molecular diagnosis) for four veterinarians from the Central Veterinary Diagnostic and Research Laboratory in Kabul.
- One bi-national (Afghanistan-Pakistan) training-of-trainers (ToT) course on “Disease recognition and surveillance objectives” was conducted from 23 to 27 February 2009 in Islamabad, Pakistan, with the participation of 16 veterinarians (six from Afghanistan and ten from Pakistan).
- A national pilot one-day training for LBM vendors was conducted in Jalalabad, Afghanistan, on 17 March 2009 on AI update and advantages of biosecurity and biosafety to prevent spread of poultry diseases and human infections. It was attended by 40 participants.
- The following national trainings were conducted for veterinarians in Pakistan on AI surveillance procedures :
 - 7 April 2009 in Balochistan, with the participation of 20 veterinarians from the region;
 - 9 April 2009 in Peshawar, with the attendance of 20 veterinarians from the region;
 - 4–5 May 2009 in Nasirabad (Dera Murad Jamali), Balochistan, with the participation of 20 provincial veterinarians;
 - 5–6 May 2009 in Jaferabad (Dera Allhyar), Balochistan, where 20 provincial veterinarians attended; and
 - 6–7 May 2009 in Sibi, Balochistan, where 20 provincial veterinarians attended.
- One bi-national (Afghanistan-Pakistan) training for ToTs on basic concepts of epidemiology of infectious diseases, outbreak investigation methods and LBM surveillance and monitoring methods was conducted in Islamabad, Pakistan, from 16 to 18 April 2009, with the participation of 16 veterinarians: eight from Afghanistan and eight from Pakistan.
- Two one-day national training courses for village women involved in poultry production were conducted on 5 April 2009 in Mazar-e-Sharif (20 participants) and 6 April 2009 in Kunduz (22 participants) in support of women’s development.
- A national workshop was conducted on surveillance and review using AI-SIS in Islamabad, Pakistan, from 10 to 12 May 2009, with the attendance of seven participants from border areas with Afghanistan.
- National trainings on disease recognition, surveillance, awareness and reporting for field veterinarians from the Government, private sector and non-governmental organizations (NGOs) of three border regions in Afghanistan as follows:
 - 25–26 May 2009 at FAO facilities in Jalalabad for 34 veterinarians and paraveterinarians;
 - 29–30 May 2009 at FAO Dar Ul Aman facilities in Kandahar (Kabul) for 32 veterinarians and paraveterinarians; and
 - 7–8 June 2009 at FAO Dar Ul Aman facilities in Khost (Kabul) for 20 veterinarians and paraveterinarians.
- A national training on basic concepts of epidemiology of infectious diseases and outbreak investigation and methods to be used for surveillance in LBMs was conducted in Islamabad, Pakistan, on 22 and 23 June 2009, with the participation of 14 veterinarians.
- A national training on passive surveillance, awareness and reporting was conducted in Islamabad, Pakistan, from 3 to 5 July 2009, with the attendance of six veterinarians from the Government.
- A bi-national (Afghanistan-Pakistan) workshop for ToTs on participatory disease surveillance methods was conducted from 3 to 5 July 2009 in Kabul, Afghanistan, with six participants from each country.

- The Steering Committee meeting took place in Kabul, Afghanistan, in July 2009, with the participation of 12 officials from Afghanistan and two from Pakistan to review the project progress and achievements, and during which the preparation of Phase III of the project was requested.
- One person from the central diagnostic laboratory of each country attended a two-week training on AI diagnosis at the FAO/OIE Reference Laboratory in Padova, Italy, from 6 to 17 July 2009.
- A national four-day training course for Afghanistan on basic epidemiology and surveillance of LBMs was conducted from 2 to 5 August 2009 in Kabul, with the participation of 20 government veterinarians.
- A national training course on basic epidemiology for 22 high-level officials from the General Directorate of Animal Health and Production, including the CVO, was conducted on 29 and 30 August 2009 in Kabul, with USAID cooperation.
- A regional meeting for preparation of national contingency plans was organized by a regional AI project in Kazakhstan from 16 to 20 November 2009, where two participants from Pakistan and three from Afghanistan attended.
- A one-day training course on update of the AI situation in the country, surveillance and current developments of vaccines was conducted on 16 January 2010 in Islamabad, Pakistan, with the participation of 30 attendants.
- A ten-day bi-national (Afghanistan-Pakistan) training course in laboratory procedures was conducted at the National Reference Laboratory for Poultry Diseases in Islamabad, Pakistan, from 1 to 12 February 2010, for five participants from Afghanistan's central laboratory and four participants from regional laboratories in Pakistan.
- National trainings for provincial laboratory staff in Pakistan were conducted on serological procedures and data management for introducing results in AI-SIS data software as follows:
 - 12–13 March 2010 in Quetta for 20 veterinarians;
 - 15–16 March 2010 in Karachi for 20 veterinarians; and
 - 19–20 March 2010 in Islamabad for KPK and FATA with participation of 32 veterinarians.
- A bi-national (Afghanistan-Pakistan) training for ToTs on communication was conducted in Istanbul, Turkey, from 5 to 9 April 2010, with participation of four government officials from Afghanistan and one from Pakistan.
- One ten-day national training course in Afghanistan was conducted from 1 to 10 April 2010 in Mazar-e-Sharif, Afghanistan, for 16 provincial officers on how to conduct PDS activities.
- One-week training on PDS for 30 women involved in poultry production was conducted in Mazar-e-Sharif, Afghanistan, from 12 to 16 April 2010.
- A five-day training on AI differential poultry diseases for ToTs was conducted in Istanbul, Turkey, for six veterinarians from both countries, from 19 to 23 April 2010.
- A bi-national (Afghanistan-Pakistan) training on socio-economics for ToTs was conducted in Istanbul, Turkey, from 26 to 30 April 2010, and included 12 participants, six from each country.
- A national workshop was organized to evaluate the data format used in the project areas in Islamabad, Pakistan, on 2 May 2010, with the participation of seven veterinarians from the border provinces.
- A national training course for laboratory technicians was conducted in Hayderabad, Pakistan, on 25 May 2010, with the participation of 20 veterinarians from official and private laboratories.
- A national training workshop for surveillance and monitoring LBMs was organized in Islamabad, Pakistan, on 27 and 28 May 2010 with the participation of ten veterinarians.

- More than 20 national one-day trainings were conducted in commercial poultry farms and LBMs in the eastern region in Afghanistan (Kunar, Laghman, Nangarhar and Noorestan) on the importance of HPAI and the surveillance to prevent its spread. More than 100 poultry keepers, and more than 500 students from secondary and bachelor schools in the region were trained from May 2010 until the end of the project.
- National trainings for harmonized laboratory protocols for AI diagnosis and surveillance were conducted in Pakistan as follows:
 - 4–5 June 2010 for 10 veterinarians of the provincial laboratory in KPK;
 - 7–8 June 2010 in Peshawar for 25 veterinarians of FATA provincial laboratory; and
 - 9 June 2010 in Quetta for Balochistan and Sindh provinces with participation of 20 veterinarians.
- A workshop was organized from 26 to 30 June 2010 in Istanbul, Turkey, to review and update the contingency plan for HPAI for Afghanistan with the participation of two Government officials.
- Participation in the workshop on applications of epidemiology concepts in animal disease control in Central Asia held in Istanbul, Turkey, from 5 to 19 July, with the participation of two officials from Pakistan.
- A 15-day training for two laboratory technicians from the central laboratory in Afghanistan was conducted at the central laboratory in Pakistan, from 12 to 24 July 2010. The aim of the course was to review and harmonize the molecular diagnostic methodologies for AI diagnosis, and four laboratory technicians from Pakistan also attended.
- National training courses on biosecurity and its applications for veterinarians, poultry producers and poultry keepers were held in Pakistan as follows:
 - 13–14 July 2010 in Karachi for 53 participants; and
 - 16–17 July 2010 in Abbottabad for 43 persons.
- A national training course was conducted on 10 August 2010 in Kabul, Afghanistan, on data collection using the new AI-SIS developed within the project, with the participation of 10 veterinarians from border areas.
- The Steering Committee meeting was conducted in Azerbaijan, on 19 and 20 August 2010, with the participation of federal authorities to review project advances and make decisions. Participants from Afghanistan were three and from Pakistan four.
- A training workshop was held for high-level authorities from both countries to discuss veterinary legal aspects for trading poultry and poultry products in Baku, Azerbaijan, from 25 to 27 August 2010. Four from Afghanistan and five from Pakistan participated.
- Short-term training for one technician from the central laboratory in Pakistan on AI reagent production was conducted at the FAO/OIE Reference Laboratory in Ames, Iowa, USA, from 6 to 25 September 2010. The participant was trained on the protocols for processing virus fluids to prepare antigens and antisera for serological tests. The preliminary batches will be prepared soon.
- A ten-day training course, from 19 to 30 September 2010, on serological diagnosis was conducted in the central laboratory in Kabul for four officials responsible for the serological tests in the provincial laboratories in Nangarhar, Mazar-e-Sharif, Kandahar and Herat.
- Two training courses on ELISA data entry for laboratory technicians in Afghanistan were held as follows:
 - 8–10 November 2010 in Nangarhar for four participants; and
 - 24–28 December 2010 in Balkh for five participants.
- A national training workshop was conducted in Islamabad, Pakistan, on biosafety and biosecurity in avian disease control, on 23 and 24 March 2011, with the participation of ten veterinarians from project locations.
- A 12-week training course on epidemiology basic statistics analysis of information and epidemiological reporting was conducted at Jordan University for Science and Technology,

from 23 March to 22 May 2011, with the participation of two veterinarians from each country.

- National training was conducted on 26 and 27 May 2011 in Islamabad, Pakistan, on strategic communication for prevention and control of HPAI with the participation of 18 veterinarians.
- A national meeting for final discussion of the project was conducted on 12 May 2011 in Islamabad, Pakistan, with the participation of 18 persons, including provincial officers, USAID and the United States Department of Agriculture representatives and FAO officers.
- A national meeting for final discussion of the project was conducted on 27 June 2011 in Kabul, Afghanistan, with the participation of representatives from the Ministry of Agriculture, Irrigation and Livestock; General Directorate of Animal Health and Production; USAID; and FAO authorities.

2.5 Other project elements

- A number of samples amounting to 30 358 from Afghanistan and 126 470 from Pakistan were submitted to the laboratories and analysed. The difference in the number of samples obtained was influenced by the total population of poultry in each country.
- Fourteen provinces (100 districts) in Afghanistan were included in the project, based on the subregions mentioned above (i.e. Balk, Herat, Jawsjan, Kabul, Kandahar, Kapisa, Khost, Kunar, Kunduz, Laghman, Logar, Nangarhar, Parwan and Takhar) with 141 farms, 159 LBMs and 280 villages sampled, contributing to a total of 580 epidemiological units. In Pakistan, four provinces (i.e. KPK, FATA, Balochistan and Sindh) were included on the basis of their high poultry populations, and more than 156 villages visited.
- High mortalities in poultry were reported in Afghanistan in August 2008, January 2009 and April 2011 from Khost and Balk provinces. Samples were collected and tested in the laboratory to identify the presence of AI virus type by molecular diagnosis. The samples were thereafter submitted to the OIE/FAO Reference Laboratory in Padova, Italy, for confirmation of the diagnosis. The Reference Laboratory reported that all samples were positive to AI virus subtype H9N2 in 2008 and 2009. The viruses were sequenced and sequences were compared with other H9N2 virus genetic sequences deposited in the gene bank. The genetic relationship indicated that isolated AI viruses in Afghanistan were closely related to strains that circulate continually in Iran and Pakistan. Sero-diagnosis and surveillance conducted under other FAO projects indicated that H9N2 that is endemic in the countries could mix with other influenza viruses to allow the emergence of novel influenza viruses that could be a threat to poultry and human health. Other outbreaks were related to toxicity in the feed.
- Owing to an emergence of a novel influenza virus (H1N1) that became pandemic from April 2009, seminars for senior officials from divisions of the Animal Health Directorates in both countries were conducted with the aim to provide a reliable and comprehensive situation of the influenza A H1N1 pandemic. Additionally, several project leaders and coordinators from NGOs dealing with animal health and production attended, and regular technical support was provided by FAO AI experts (ECTAD and AGAH) to the Governments of both countries.

2.6 Difficulties encountered during implementation

Personnel

- Field veterinarians and paraveterinarians in Afghanistan who were approached by FAO to work on the project did not wish to leave their positions in the Government for the period of the project's duration, as they had been working for several years with the Government and did not wish to lose their positions at the end of the project. Therefore, they were contracted under supplementary salary to resolve the situation. Only the field veterinarian for Nangarhar was contracted on a full-time basis.

Counterparts for implementing the project

- Afghanistan: The General Director of Animal Health and Production was the government counterpart for project implementation. During the project life, there were four different General Directors of Animal Health and Production. Although a good relationship was established with each one of them, some delays occurred during the transitional periods.
- Pakistan: The counterpart was the Animal Husbandry Commissioner who was first located in the Ministry of Food, Agriculture and Livestock. In 2009, there was a restructuring of the ministries, and the Commissioner was moved to the Ministry of Livestock and Dairy Development. From the end of 2009 until the end of 2010, he was changed, and the newly appointed Commissioner during that period had intermittent contracts that delayed some of the activities. Finally, by the end of the project, the first Commissioner returned to his position, but was moved to the Ministry of Economy given the low interaction with other sections within the newly restructured Ministry of Agriculture. The excellent coordination with the Programme Management Unit (i.e. the Poultry Disease Laboratory belonging to the National Animal Research Council) gave the opportunity for continuing the project activities as prepared in the work plan of the project.

Security

- Cross-border areas of the project were the most volatile areas in terms of security owing to threats and attacks suffered during project implementation; therefore, the field personnel were very cautious to visit the selected premises to collect information and samples. Their commitment allowed constant surveillance in the regions at both sides of the border.

Technical capacity

- At the beginning of the project, the technical capacity between the staff members and national employees in both countries was different. But with the continuous training and supervision, by the end of the project, the knowledge gap narrowed, and better results were obtained in the implementation of activities.

Communication systems

- The main problem in both countries was the telecommunication systems that made immediate communication and the establishment of a working network system sometimes difficult. In Afghanistan, internet connections are not available in all regions, and connecting to the internet via satellite is expensive and not available in all regions of the project. The internet service is better in Pakistan, but often there is no service owing to power cuts or other reasons. However, the network system was installed between the central laboratory

and provincial laboratories in both countries, so that it can be fully functional when the internet service is improved.

Trade

- An important issue is to continue the talks between the two countries in order to regulate the trading of poultry and poultry products that is necessary to be implemented in both countries.

Other difficulties

- It was not possible to complete the following two outputs:
 - Slats in LBMs for poultry processing: The design of the slats was intended for both countries, but municipality authorities in Islamabad and Kabul did not authorize the installation of the model, arguing that they did not have resources for expanding the slats and there was no regulation for authorizing the proper processing in both countries.
 - Verification posts at the border between the countries: The agriculture authorities denied the authorization to build a separate post for animal import/export verification owing to security issues along the border that might pose a risk for veterinarians on duty.

3. PROJECT IMPACT

Veterinarians from the veterinary services at central and provincial level in both countries received a complete training programme with manuals and guidelines for full understanding of the precautions they would have to adopt when carrying out field activities in surveillance and outbreak investigation. Trainees also had a better insight into the modes and means of transmission of HPAI. They are now able to carry out field investigations for evaluating suspected clinical cases. The veterinarians from the veterinary services as well as private veterinarians learned about the major poultry diseases and how to differentiate them from HPAI virus infection. They also received training on biosecurity in the farms and small-scale production.

The actual numbers of trainees amounted to 758 veterinarians and 15 laboratory technicians, exceeding the foreseen number indicated in the project document. Many of them have the capacity to replicate the training courses following the guidelines provided to them. More than 70 vendors now know about the importance of the disease and how to report to local authorities in their provinces. More than 190 poultry producers and poultry farm managers understand the importance of preventing the introduction of diseases by installing better biosecurity measures, and more than 500 students were informed about the main concepts for considering hygienic measures to avoid being infected, if the disease were to be identified in their localities.

A surveillance system can be continued in both countries if the government authorities are interested in preventing new reintroductions of the virus and if they are interested in controlling other virus infections, as for example the H9N2 AI virus that is endemic in the region and in other poultry diseases, such as the Newcastle Disease or pneumovirus that limit the expansion of the poultry industry in the two countries.

Both countries have field veterinarians, laboratory staff and epidemiologist who are well trained not only on the control of AI but also of other diseases, where the development of surveillance programmes is necessary.

Both countries have a reliable data management system (AI-SIS) that can be easily adjusted for surveillance of other diseases.

Antigen production in Pakistan will allow the convenience of the availability, at a low price, of diagnostic reagents that are equal in quality to those produced in reference laboratories.

One of the requests raised at the beginning of the project by the poultry producer associations was to make available local diagnosis for routine monitoring of the flocks. Now, there are two places in Afghanistan, where 90 percent of the commercial farms are located, and in all provinces in Pakistan that provide AI diagnostic service.

Impact on project beneficiaries has been as follows:

- Diagnostic services and antigen for diagnostic purposes in both countries are easily accessible. It is necessary to make the producers aware of the availability of the services for monitoring flocks.
- Equipment, basic laboratory reagents and qualified personnel for serology are in place for diagnosis in two provinces in Afghanistan and four provinces in Pakistan.
- There has been no indication of the presence of HPAI virus, and the countries have the necessary information that is statistically valid for declaration of the countries to be free from HPAI virus infection.
- The populations in Afghanistan and Pakistan have the confidence that poultry and poultry products are free from HPAI.

4. RECOMMENDATIONS AND CONCLUSIONS

Governments of both countries do not have enough resources to continue the surveillance programme that was developed through the project, which requires additional funds for government staff and procurement of reagents. Funds are needed from donors for continuing the programme. For example, in Pakistan, the National Programme for Avian Influenza Surveillance was closed upon the conclusion of the project; and in Afghanistan, there is no formal government programme for AI. Trained human resources and valuable equipment provided are in the field and the laboratories, but they are not fully utilized.

The project has been successfully implemented, providing the countries with the basis for carrying out surveillance activities of other diseases that are endemic in the region as a result of the free movement of animals across the borders almost without restrictions. The project addressed the concern that the disease could be endemic and unrecognized, as this was possible owing to introductions from infected neighboring countries.



Food and Agriculture Organization of the United Nations

Project Highlights

AFGHANISTAN AND PAKISTAN

“Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan”

Project code: OSRO/RAS/703/USA

Donor: USA

Contribution: USD 3.2 million

Implementation: 01/04/08–31/05/11

Target areas: cross-border provinces and subregions

Contact: Daniele Donati

Title: Chief, Emergency Operations Service

Email: daniele.donati@fao.org



Objective:

To promote collaboration between the two involved countries for improving HPAI surveillance by adopting common and shared approaches in areas which may share cultural and social features.

Key partners:

The Ministry of Animal Health and Production in Afghanistan and the Ministry of Livestock and Dairy Development and the National Animal Research Council in Pakistan.

Beneficiaries reached:

Ministries of Agriculture, the Animal Health Departments/Chief Veterinary Offices; national veterinary authorities and animal health and livestock services; poultry producers and traders; the general public; and the international community.

Activities implemented:

- 30 358 samples were received from Afghanistan and 126 470 from Pakistan collected from live bird markets, farms and villages.
- Training of 758 provincial veterinarians, 15 laboratory technicians, 70 vendors, 190 poultry producers and more than 500 students in the two countries.
- 14 provinces surveyed in Afghanistan with a total of 280 villages in 100 districts, and 4 provinces with 156 villages in Pakistan.
- Procurement and distribution of expendable and non-expendable equipment in the two countries.

Impact:

- Diagnostic services and antigen for diagnostic purposes in both countries are easily accessible.
- Development of common strategies and capacities for surveillance in the different subsectors in the concerned areas.
- Equipment, basic laboratory reagents and qualified personnel for serology are in place for diagnosis in two provinces in Afghanistan and four provinces in Pakistan.
- Standardized procedures for inspection of poultry and poultry products at border control posts.

Semester I 2010**Project Monitoring Sheet: OSRO/RAS/703/USA Baby 1 and 2**

Project title: Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan

Reporting period: October 2010 – March 2011

Regional component: Central Asia
Project title: Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan
Code: OSRO RAS 703 USA
Budget : 1 300 000 (Phase I), 1 300 000 (Phase II), USD 600 000 (Phase III)
Total budget: USD 3 200 000
Effective starting date: 1 April 2008
Planned end date: 31 May 2011
<p>Context of the project</p> <p>The Highly Pathogenic Avian Influenza (HPAI) H5N1 has been detected both in Afghanistan and Pakistan. In Afghanistan, the disease has had a limited spread in time and space, and outbreaks were all detected within a time frame of two months. In Pakistan, outbreaks have been occurring without a clear pattern, and it is likely that the disease is under-reported in the country. It was observed that the outbreaks in Afghanistan were preceded by the outbreaks detected in Pakistan. The introduction of the virus in Afghanistan could have originated from Pakistan, but this information was not confirmed. Therefore, there has been a need to develop joint activities to strengthen the veterinary collaboration between the two countries and to formulate common approaches and strategies.</p>
<p>Objectives of the project</p> <p>Impact</p> <p>The project aims at building a strategic platform where shared approaches - taking in consideration cultural and social features - can be jointly developed by the two countries. This will contribute to the intensification of information exchange and confidence building on both sides. The project aims at improving HPAI surveillance systems and enhance local capacities for early detection and control of HPAI to avoid further spread to non-infected areas of the countries.</p> <p>Outcomes</p> <ul style="list-style-type: none"> • Inter-country consensus built on containment measures, communication interventions and socio-economic issues; • laboratory and field services capacity enhanced in Federal Administered Tribal Areas (FATA), Khost, Balochistan, Kandahar, Nangarhar, Kyber Pakhtunkhwa (KPK) Province in Peshawar and Abbotabad districts, Sindh and Balkh provinces; • procedures for border control inspections standardized; • strengthening of the surveillance activities in the different sub-sectors; and • common methodological approach to surveillance in live-birds markets (LBMs) elaborated and agreed upon.

Planned activities

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.2 Socio-economic studies on farming practices and market chains.

- Present preliminary results of the analysis.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for AI and other poultry diseases.

- Continue national training courses in Afghanistan and organize national training courses at the central and provincial laboratories to train the provincial laboratory staff to conduct serological tests.
- Conduct preliminary test for serological tests to be confirmed by the Central Laboratories.
- Support the Central Laboratory in Pakistan in preparing the pilot antigen hatches for haemagglutination inhibition (HI) that will be used in central and provincial laboratories for routine AI surveillance and diagnosis.
- Prepare the SOPs for antigen preparation and complete the training laboratory manual.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- Complete and translate the manuals for training on surveillance, differential diagnosis and laboratory in local languages in Afghanistan.
- Conduct the national trainings for refreshing sampling collection, submission to the laboratories, washing and disinfection.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of animals and products of animal origin.

- Follow up on the agreement from both countries to complete the review of the main topics for establishment regulations to allow regular legal trading.

Activity 3.1.2 Review and upgrade inspection methodologies.

- Prepare the agenda for the training course on inspection methodologies.
- Conduct the training course on inspection methodologies.
- Finalize the review of SOPs for laboratory procedures and complete the laboratory working manual in the next reporting period.
- Conduct training in both countries for inspectors on international inspection procedures during the next quarters.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.1 Regional training workshop on surveillance methods.

- Continue the surveillance activities in all project regions.
- Implement the geographic information system (GIS) for easy recognitions of the places where the surveillance is ongoing.
- Continue with the establishment and analysis of the information from the network of the AI-SIS (Avian Influenza – Surveillance Information System).
- Link the AI-SIS to Transboundary Animal Disease Information System (TADInfo).
- Identify the venues for short-term courses (two months) in epidemiology.
- Identify the most appropriate candidates from the field to be trained abroad in short-term courses on epidemiology.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector.

- Continue national trainings in the provinces of both countries.

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector).

- Provide national trainings on sample methodologies.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (participatory disease surveillance [PDS] training).

- Review the methodology of PDS conducted by the surveillance teams and make improvements.
- Prepare the PDS technical manual.

Activity 4.1.5 Field activities.

- Continue surveillance activities.

Output 5.1 Surveillance in LBMs strengthened.

Activity 5.1.1 Workshop on methodology of surveillance in LBMs.

- Conduct the workshop on methodology of surveillance in LBMs in each country.

Activity 5.1.2 National training workshop for veterinarians operating in LBMs.

- Conduct a workshop in both countries during the next quarter.

Activity 5.1.3 Surveillance activities in LBMs.

- Carry out the evaluation of the LBMs with respect to the trade movement in all provinces that can provide information on risk assessment in case of an outbreak and on economic impact on the areas.

Activities undertaken during the reporting period

Following the approval of a no-cost project extension until 31 May 2011 from the Donor, a work plan was prepared to complete the pending activities to reach the achievements of intended objectives of the project.

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.2 Socio-economic studies on farming practices and market chains.

- The information from the field was collected, and some indicators will be established to analyse the data and assess the economical impact of outbreaks in both countries.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for avian influenza (AI) and other poultry diseases.

- The laboratory training courses were continued for subregional laboratories in Afghanistan. The enzyme linked immunosorbent assay (ELISA) readers and other laboratory utilities were handed over to the laboratories in Jalalabad (Eastern region: Nangarhar, Laghman, Kunar and Nuristan provinces) from 8 to 10 November 2010, four participants in Mazar-e-Sharif (Northern region: Balk, Samanghan, Jawzjan, Faryab and Sarepol provinces) from 24 to 28 December 2010.
- Following the provision of laboratory equipment and the installation of the software and computer, laboratory staff also received training on electronical recording of ELISA results. ELISA kits were provided for use to test samples during the higher risk period to observe outbreaks of influenza (February to April 2011).
- In addition to these laboratories, the AI-SIS software was installed to feed the

subregional sample information obtained from the field.

- A two-day training course for three persons from National Reference Laboratory for Poultry Diseases in Pakistan was conducted on 11 and 12 October 2010 for data entry of the AI-SIS software. Compilation of information and interpretation of the information analysed were the main topics. The training familiarized the participants with the knowledge of the system.
- The first batches of antigen produced in Pakistan was prepared and distributed to the subregional laboratories (Peshawar, Abbotabad, Karachi and Quetta) for field evaluation. The titers were recorded in the provincial labs to observe the stability of the reagent after transport.
- Field evaluation to test capability at provincial laboratories in Pakistan is ongoing. In Afghanistan, it is pending owing to the lack of antigen for provincial laboratories.
- The SOPs for antigen production are under preparation and will be completed by next reporting period.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- Training was conducted in the past, but no training activities are considered in the future.
- The laboratory manual is being finalized in the months of April and May 2011, and the English version is forthcoming.
- FAO participated in the OFFLU meeting on 16 and 17 November 2010, in which two posters were presented, one indicating the surveillance activities conducted in the project and other related to the identification of a novel AI virus that circulated in poultry farms in Pakistan and of a possible another virus subtype.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of animals and products of animal origin.

- A meeting between the two CVOs was planned to follow up on the agreement on trade to be conducted in March in Islamabad. However, the Deputy Technical Minister from Afghanistan did not authorize the travel of the Chief Veterinary Officer (CVO). Therefore, the intervention of the Representation was requested to discuss if the mission could be established in the next period.

Activity 3.1.2 Review and upgrade inspection methodologies.

- The quarantine inspection procedures for both countries are still under review and the training on inspection methodologies will be conducted in the next period after the meeting with both CVOs to discuss the procedures.
- The SOPs were established in Pakistan and still are under revision in Afghanistan.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.1 Regional training workshop on surveillance methods.

- The regional workshops were completed, and the rapid response is being tested to assure early response to outbreaks.
- An outbreak of sudden mortality was reported on 22 November 2010 in Chawaki district, Kunar province, Afghanistan. The surveillance team was immediately deployed to the place to gather information and collect samples. The samples were tested (HI test and PCR for AI) and were negative. The toxin in the feed from the feed producer company was identified as the cause of mortality.

- An outbreak of respiratory disease in poultry was reported in Lahore at the beginning of January. Therefore, a workshop was conducted in situ to analyse the situation. The Newcastle Disease (ND) virus was identified in the laboratory.
- On 23 and 24 March 2011, a national training workshop on biosecurity was held with the attendance of 75 participants for poultry farmers and laboratory personnel.
- The ten-week training course in Jordan started from 13 March 2011 and will be completed on 22 May 2011. Two nationals from Afghanistan and two nationals from Pakistan are participating. They will initiate a more organized Epidemiology Unit in each country to prepare surveys, collect information and provide informed decisions on animal health issues.
- The GIS was established in both countries and presented the results in the OFFLU meeting in November 2010. The immediate location of the two outbreaks described was identified in the maps of corresponding provinces.
- The network in Pakistan is currently in use with regular internet communication. In Afghanistan, the provincial labs do not have internet access, and the wireless network does not work properly in the country. However, the computers from Mazar-e-Sharif and Jalalabad have installed the necessary system with the capacity to connect, as soon as the technical difficulties with the network are resolved.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector.

- Continuous national training was conducted in commercial poultry farms with the personnel from Eastern Region in Afghanistan (Nangarhar, Laghman, Kunar and Noorestan) on the importance of HPAI and the HPAI surveillance to prevent the spread of the disease.

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector).

- National training was conducted in the past, therefore no additional courses on this topic will be conducted. However, the field veterinarians have organized informal meetings, following sample collection, as reported from the team in Nangarhar, Afghanistan.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (PDS training).

- For security reasons, the PDS surveys could not be conducted. To avoid problems with the participants and with the survey teams, informal questions were posed during sample collection about morbidities and mortalities. Thus far, no other reports were prepared.

Activity 4.1.5 Field activities.

Surveillance activities:

Afghanistan:

- During the reporting period, 7 265 samples were submitted to the Central Veterinary Diagnosis and Research Laboratory (CVDRL) in Kabul from Eastern (Nangarhar, Laghman, Kunar and Noorsitan), Southern (Kosth. Paktika and Paktia), Southwestern (Kandahar, Zabul and Helamand) and Northern (Mazar-e-Sharif, Samanghan, Jawzjan, Farjab and Sarepol) regions (provinces). Positive serology was found for H5, H7 and H9, without any clinical signs. Positive serology was found for NDV. Six samples were positive for M gene, and none were positive for H5 or H7. The rRT PCR for H9 will be established in the future, since previous samples submitted to the National Reference

Laboratory for Poultry Diseases (NRLPD) in Pakistan resulted positive for H9 viruses.

Pakistan:

- During the reporting period, a total of 13 486 samples were received at NRLPD from the surveillance areas (Abbotabad, KPK, FATA, Balochistan and Sindh provinces).
- Positive serology was identified against H7 and H9, the last one in non-vaccinated animals.
- Isolations were done for AI viruses (H9N2), Newcastle Disease Virus (NDV), Avian Pneumovirus (APV) and Infectious Bronchitis Virus (IBV).
- The Laboratory in Pakistan recently nominated as regional laboratory for AI in a regional project for surveillance of transboundary animal diseases (TADs), owing to the capacity to conduct analysis, virus characterization and training.

Output 5.1 Surveillance in LBMs strengthened.

Activity 5.1.1 Workshop on methodology of surveillance in LBMs.

- Weekly trainings on biosecurity, AI impacts and awareness have been conducted in the East region of Afghanistan. More than 300 persons (poultry vendors, small farmers and villagers and students) have received information on AI prevention. The same training could not be conducted in other regions for security reasons and may have to be discontinued in the other region owing to heightened security issues.

Activity 5.1.2 National training workshop for veterinarians operating in LBMs.

- Informal conversations have been conducted with LBMs vendors, as no veterinarians work at LBMs.

Activity 5.1.3 Surveillance activities in LBMs.

- Surveillance activities are ongoing as indicated above.

Planned activities for the next six-month reporting period

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.2

- Conclude the socio-economical study.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for AI and other poultry diseases.

- Evaluation of the antigen prepared in Pakistan: the antigen will be evaluated in each provincial laboratory to measure its efficacy after transport and time of storage.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of animals and products of animal origin.

- The meeting with two CVOs is planned to establish the strategy for trading.

Activity 3.1.2 Review and upgrade inspection methodologies.

- The course will be conducted after the strategy is established among both CVOs.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.1 Regional training workshop on surveillance methods.

- Completed.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector.

- No additional activities are foreseen.

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private

sector).

- No additional training is planned. This activity was completed.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (PDS training).

- No additional activities will be conducted.

Activity 4.1.5 Field activities.

- Continue the surveillance activities during the next period.

Output 5.1 Surveillance in LBMs strengthened.

Activity 5.1.1 Workshop on methodology of surveillance in LBMs.

- No additional activity is considered for the next period.

Activity 5.1.2 National training workshop for veterinarians operating in LBMs.

- No additional activities will be conducted.

Activity 5.1.3 Surveillance activities in LBMs.

- Routine surveillance will continue until the end of the project.

Main challenges encountered and response provided

- Instalment of equipment and in situ training for Khost and Kandahar provinces could not be carried out owing to security reasons. The project implementation in these provinces is not cleared by the United Nations Department of Safety and Security. Therefore, FAO is unable to provide technical assistance to the laboratories and improve their conditions. Considering the above, the laboratories do not have the required capacities to carry out the tests.
- The CVOs appointed in both countries were fully informed about the project activities, and good relationship has been established to assure the final phase of the project could be implemented. Both CVOs are interested in supporting the findings of Donors to continue the activities and even apply them to other diseases.
- The continued education for vendors, poultry farmers and chicken householders in villages has been carried out with a low profile approach in Afghanistan and continued meetings with farmers are being conducted in Pakistan.
- The epidemiological units in both countries are under construction. The veterinarians in the ongoing course for epidemiology are expected to be responsible for those units to make proposals for future surveys and surveillance strategies for AI and other animal diseases.

Main progress made towards the achievement of project outputs**Output 1.1 Common strategies and approaches to surveillance developed in the different subsectors in the concerned areas.**

- The surveillance activities were conducted at the cross-border region between Afghanistan and Pakistan, and no evidence was found to indicate that the virus is endemic in the region. Therefore, the surveillance should be maintained to detect any possible introduction to other sources. The outbreaks in India should be monitored for early detection.
- The presence of virus H9N2 in the region seems to be endemic and additional programmes to control the virus circulation should be established. Vaccines are used to reduce the clinical signs, but the efficacy of the vaccines should be tested.
- The identification of novel AI virus H3N1 and H4N6 should be monitored to prevent the spread.
- The presence of antibodies against H7 AI virus should be closely monitored in other regions to identify the source.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

- Both national laboratories have the capacity to conduct basic analysis for AI detection throughout serology and molecular diagnosis. The laboratory in Pakistan has the capacity to conduct virus isolation and molecular sequencing to support the surveillance conducted in Afghanistan and to produce antigen at low-cost for sustainability of the activity, specially for Afghanistan, but requires funds to maintain the capacity and establish the methodology for distribution.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

- The procedure has been in place since the establishment of formats to gather information, sample collection and logistics for sample submission to the laboratory.
- The poultry inspection methodology, once elaborated, should be established at main border control offices and evaluated.

Output 4.1 Capacity building developed to improve the overall surveillance system.

- The systematic collection of information from the field and from the laboratory results has been established, including a simple software to be used for this purpose. The use of the system should continue beyond the conclusion of the project. However, it would be essential that the government provide further human and financial resources to this activity, otherwise its sustainability would be compromised.

Output 5.1 Surveillance in LBMs strengthened.

- The confidence obtained from the LBM vendors to accept the surveillance from the teams is recognized. It is still necessary to work closely with them in order to provide them with technical assistance to improve the management practices so that the biosecurity measures can be better implemented.

I Quarter 2010**Project Monitoring Sheet: OSRO/RAS/703/USA Baby 1 and 2**

Project title: Highly Pathogenic Avian Influenza: Strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan

Reporting period: January – March 2010

Regional component: Central Asia
Project title: Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan
Code: OSRO RAS 703 USA Baby 1 and 2 (Phase I, Phase II and Phase III)
Budget : 1 300 000 (Phase I), 1 300 000 (Phase II), USD 600 000 (Phase III)
Total budget: USD 3 200 000
Effective starting date: 1 April 2008
Planned end date: 30 September 2010
<p>Context of the project</p> <p>The Highly Pathogenic Avian Influenza (HPAI) H5N1 has been detected in the recent past, both in Afghanistan and Pakistan. In Afghanistan, the disease has had a limited spread in time and space, and outbreaks were all detected within a time frame of two months. In Pakistan, outbreaks have been occurring without a clear pattern, and it is likely that the disease is under-reported in the country. It was observed that the outbreaks in Afghanistan were preceded by the outbreaks detected in Pakistan. The introduction of the virus in Afghanistan could have originated from Pakistan, but this information was not confirmed. Therefore, there has been a need to develop joint activities to strengthen the veterinary collaboration between the two countries and to formulate common approaches and strategies.</p>
<p>Objectives of the project</p> <p>Impact</p> <p>The project will build a strategic platform where shared approaches - taking in consideration cultural and social features - can be jointly developed by the two countries. This will contribute to the intensification of information exchange and confidence building on both sides. The project will improve HPAI surveillance systems and enhance local capacities for early detection and control of HPAI to avoid further spread to non-infected areas of the countries.</p> <p>Outcomes</p> <ul style="list-style-type: none"> • inter-country consensus built on containment measures, communication interventions and socio-economic issues; • laboratory and field services capacity enhanced in Federal Administered Tribal Areas (FATA), Khost, Balochistan, Kandahar, Nangarhar, North Western Frontier Province (NWFP) (Peshawar and Abbotabad districts), Sindh and Balkh provinces; • procedures for border control inspections standardized; • strengthening of the surveillance activities in the different sub-sectors; and • common methodological approach to surveillance in live-birds markets (LBMs) elaborated and agreed upon.

Planned activities

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.1 Regional training workshop on socio-economic issues;

- Prepare agenda, select experts and identify the venue for the workshop

Activity 1.1.2 Socio-economic studies on farming practices and market chains.

- After the workshop, prepare the questionnaires to be used for conducting socio-economic studies

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for avian influenza and other poultry diseases;

- Conduct the bi-national training course in laboratory methods in the National Reference Laboratory for Poultry Diseases (NRLPD) in Pakistan during February 2010, once the security situation improves.
- Enhance laboratory diagnostic capacity in the identified provinces in both countries (FATA, Balochistan, Herat, Kandahar, Nangarhar, NWFP (Peshawar and Abbotabad districts), Sindh and Balkh) through training and setting up of the laboratory equipment.
- Renovate facilities in the NRLPD in Islamabad by March 2010.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- Hold the bi-national training course on recognition of major poultry diseases in March 2010 (the venue will be identified in accordance with the security conditions, and therefore it may be held in a third country, should the security situation in Afghanistan and Pakistan not be improved).

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export of animals and products of animal origin;

- Review the current legislation in both countries.

Activity 3.1.2 Review and upgrade inspection methodologies.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.1 Regional training workshop on surveillance methods;

- Conducted

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector;

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector);

- Identify the most suitable candidates for the Master Course in Epidemiology and the respective University to conduct the studies

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (Participatory Disease Surveillance (PDS) training);

- Develop Standard Operating Procedures (SOPs) and the manual for the establishment of the sentinel farms and sentinel vendor shops according to the risk factors “likely to be infected” in both countries, in order to improve surveillance of avian influenza and monitoring of the vaccinated farms

Activity 4.1.5 Workshop on communication strategies for villagers; and

Activity 4.1.6 Field activities.

- Initiate surveillance activities in the two new provinces (Balkh in Afghanistan and Sindh in Pakistan) after the recruitment of the field veterinarians and para-veterinarians

Output 5.1 Surveillance in live-birds markets strengthened.

Activity 5.1.1 Workshop on methodology of surveillance in LBMs;

Activity 5.1.2 National training workshop for veterinarians operating in LBMs; and

Activity 5.1.3 Surveillance activities in LBMs.

- Evaluate the LBM in function of the trade movement in all provinces that can give details of risk assessment in case of outbreaks and economic impact in the areas

Activities undertaken during the reporting period

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.1 Regional training workshop on socio-economic issues;

- The bi-national training was scheduled to be conducted in Istanbul, Turkey from 26 to 30 April. The course will be conducted by experts of the Royal Veterinary School from the University of London, United Kingdom. The invitations will be sent to the CVOs of both countries for their nomination of candidates.

Activity 1.1.2 Socio-economic studies on farming practices and market chains;

- The study will be carried out as soon as the socio-economic training course is conducted and the strategy in both countries defined during the workshop.

Field activities.

- During the reporting period, the advances were made to the surveillance data management software, named "Avian Influenza Surveillance Information System (AISIS)", and all the provinces from both countries were included. Currently, the procedure on how to link the system to the Geographic Information System (GIS) in Pakistan is being established. The position for the System Data Manager was advertised in Afghanistan and the candidate will be selected at the beginning of next quarter. The expert will provide a training course related to the management of the system and implement the network between the central laboratory and central epidemiological unit and among the laboratories and the countries. In Pakistan, the system is already in on-trial process in order to detect failures and make corrections to the collected information on the surveillance carried out during the project.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for avian influenza and other poultry diseases;

- The bi-national training course was conducted at the NRLPD in Islamabad, Pakistan for six participants from Afghanistan from the central laboratory and four participants from regional laboratories in Pakistan. All of the participants were provided with an update on the serological tests with practical sessions. In addition, three Afghans experts were instructed practically on virus isolation and molecular diagnosis.
- The renovation of the facilities in the NRLPD to upgrade the air system was completed and it is now fully operational.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- This training was scheduled to be conducted in Istanbul, Turkey from 19 to 23 April 2010 with the participation of six veterinarians from both countries. Invitation letters were sent to the Chief Veterinary Officers (CVOs) of both countries and logistics managed with the support of FAO-HQ and FAO office for Central Asia in Turkey. Trainers have been contacted and their travel and contractual arrangements are being finalized.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of animals and products of animal origin;

- One expert from each country was contracted to prepare a review of the current legislation to import and export poultry and poultry products. After their review is finalized, the documents will be sent to an expert in regulation who will conduct a seminar workshop with senior officials from both countries to identify proper ways to fill the gaps in the use of the regulations. The seminar is planned to be conducted in July 2010 after the approval from both CVOs.

Activity 3.1.2 Review and upgrade inspection methodologies.

- After the seminar, the proposal to upgrade the inspection methodologies will be prepared by the expert in trading regulations.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector;

- One-day training workshop was conducted with the Pakistan Poultry Association on 16 January 2010 to update the avian influenza situation, surveillance procedures and the current development of vaccines.

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector);

- Three national training courses on surveillance, disease control, and data management were conducted from 12 to 19 March 2010 in the capital cities of three provinces in Pakistan: Quetta, Sindh and Islamabad with the participation of 20, 20 and 32 participants respectively for each course.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (PDS training);

- Preparation of a one ten-day national training course that will be conducted in April in Mazar-e-Sharif, Afghanistan for 16 provincial officers on how to conduct PDS activities.
- Preparation of one-week training that will be conducted in Mazar-e-Sharif for women involved in poultry production on how to establish PDS activities, as it is the women who are responsible for raising poultry in villages. The expert for both activities has been hired, and the participation of one national expert is also confirmed.

Activity 4.1.6 Field activities;

Afghanistan:

- During the reporting period, 1243 serum samples were collected and 1571 swabs were tested in the laboratory for Enzyme-Linked Immunosorbent Assay (ELISA), Agar Gel Immunodiffusion (AGID) and HI tests for serology and rapid test and rRT-PCR for swabs. No positive reactions were detected for HPAI.
- Also, the contract of the Veterinarian and the Para-veterinarian for Mazar-e-Sharif was completed for the surveillance activities and the sampling in the region already started.
- The European Union will finance the building of a new laboratory facility; a visit to Mazar-e-Sharif was carried out in order to prepare the budget for the construction. The project will focus on serological tests and sample preparation to be submitted to the central laboratory in Kabul.
- The equipment and reagents from the project were delivered to the central laboratory which is ready to work at the central level. The distribution of the equipment and reagents for provincial laboratories is ongoing and the national course will be conducted during the next reporting period.

Pakistan:

- A total of 3 393 serum samples, 3 539 swabs and 656 organs from suspicious cases of influenza were collected in the reported period and the laboratory results indicate the continuous circulation of AI H9N2 and Newcastle in the region.
- Training for the provincial laboratories technicians was conducted, as indicated before, and antigen, antisera and ELISA kits were delivered to the laboratories in Peshawar, Abbottabad, Quetta and Karachi.
- The hiring of veterinarians for FATA and Karachi has been delayed due to some administrative problems in the provincial office to release the selected persons. However, in both regions, the para-veterinarians are conducting the surveillance activities.
- The current security situation did not allow for the planned technical visit by the project Chief Technical Advisor (CTA) to Abbottabad and Peshawar laboratories to verify the advances.

Output 5.1 Surveillance in live-birds markets strengthened.*Activity 5.1.3 Surveillance activities in LBMs;*

- The surveillance outputs during the reporting period were included in the 4.1.6 activity above.
- One day training course was conducted in the mail LBM with the participation of 25 vendors related to the avian influenza recognition and reporting.

Planned activities for the next quarter**Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.***Activity 1.1.1 Regional training workshop on socio-economic issues;*

- Training will be conducted in Istanbul, Turkey from 26 to 30 April, 2010.

Activity 1.1.2 Socio-economic studies on farming practices and market chains.

- Questionnaires will be prepared during the next quarter.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.*Activity 2.1.1 Training on laboratory methods for avian influenza and other poultry diseases;*

- National training courses will be conducted at the central and provincial laboratories for provincial laboratory staff to conduct serological tests.
- The SOPs and the laboratory manual will be completed in the next reporting period.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- The training will be conducted in Istanbul, Turkey, in April 2010.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.*Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of animals and products of animal origin;*

- The national reviews will be concluded and planning for the seminar will be done.

Activity 3.1.2 Review and upgrade inspection methodologies;

- The review will take place after the seminar.

Output 4.1 Capacity enhanced to improve the overall surveillance system.*Activity 4.1.1 Regional training workshop on surveillance methods;*

- A review of the surveillance procedures and formats will be conducted in both countries

along with the use of the AISIS.

- The establishment of the sentinel farms and sentinel vendor shops according to risk factors to be infected will be established in both countries in order to improve surveillance for avian influenza and monitoring the vaccinated farms will be completed by June, 2010.
- Identify the most suitable candidates for the Master Course in Epidemiology and the respective University to carry out the studies for the preparation of the Letter of Agreement (LoA) for the period of study.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector;

- National trainings will continue in the provinces of both countries.

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector);

- National trainings on sample methodologies will be provided, since they lack sample submission procedures and methodologies.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (PDS training);

- The PDS report formats will be developed.

Activity 4.1.5 Workshop on communication strategies for villagers;

- Preparation of a workshop will be considered.

Activity 4.1.6 Field activities;

- Surveillance activities will continue.

Output 5.1 Surveillance in live-birds markets strengthened.

Activity 5.1.1 Workshop on methodology of surveillance in LBMs;

- The workshop on methodology of surveillance in LBMs will be conducted in each country

Activity 5.1.2 National training workshop for veterinarians operating in LBMs;

- A workshop will be conducted in both countries in May and June 2010.

Activity 5.1.3 Surveillance activities in LBMs

- Surveillance activities will continue.
- The evaluation of the LBM in function of the trade movement will be implemented in all provinces that can provide details of risk assessment in case of outbreaks and economic impact in the areas.

Main challenges encountered and response provided

- The change of the CVO in Pakistan at the end of the reporting period influenced the appointments of the participants for the planned activities. The appointment of the new CVO is pending, and care will be taken to ensure that enough time and attention is given to proper handover procedures, so that the newly appointed CVO is fully informed about the ongoing and planned project activities.
- The present security deterioration and the restrictions are still in place in both Afghanistan and Pakistan. With an improved security situation in the future, it is expected that the remainder of project activities will be completed on time.
- Organizing regional activities as well as regional training and workshops required more time than expected for reasons of limitation of movement and restricted travel for the invited participants of Afghanistan and Pakistan. Considering the unstable security situation in both countries, the regional training courses had to be held in third countries. National training courses, however, may be conducted keeping a low profile in the recommended cities, should the UN security officials allow it.

- Central epidemiology units in both countries, but in particular in Afghanistan, need to be re-established and provided with trained personnel in order to generate reliable disease information needed to implement a prevention and control plan.

Main progress made towards the achievement of project outputs**Output 1.1 Common strategies and approaches to surveillance developed in the different subsectors in the concerned areas.**

- Considering the high risk of virus transmission, the surveillance activities in the cross-border region were improved as compared to the previous quarter, as the avian influenza outbreaks began in January and February. During this reporting period, no evidence of the presence of HPAI virus in the countries was found. However, an alert is in place to increase awareness of the recent outbreaks reported in India, Bangladesh and Lao particularly.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

- Routine surveillance in project areas detected consistent circulation of H9N2 AI virus and ND virus at their laboratories. It is, thus, recommended to establish a control program to reduce the incidence of the virus circulation.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

- Progress was limited as a result of a severe security situation.

Output 4.1 Capacity building developed to improve the overall surveillance system.

- The advances made to the data management system for surveillance that will be implemented in both countries will facilitate the analysis of the results of laboratory and field research.

Quarter III 2010**Project Monitoring Sheet: OSRO/RAS/703/USA Baby 1 and 2**

Project title: Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan

Reporting period: July – September 2010

Regional component: Central Asia
Project title: Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan
Code: OSRO RAS 703 USA
Budget : 1 300 000 (Phase I), 1 300 000 (Phase II), USD 600 000 (Phase III)
Total budget: USD 3 200 000
Effective starting date: 1 April 2008
Planned end date: 31 May 2011 (new extended date)
<p>Context of the project</p> <p>The Highly Pathogenic Avian Influenza (HPAI) H5N1 has been detected in the recent past, both in Afghanistan and Pakistan. In Afghanistan, the disease has had a limited spread in time and space, and outbreaks were all detected within a time frame of two months. In Pakistan, outbreaks have been occurring without a clear pattern, and it is likely that the disease is under-reported in the country. It was observed that the outbreaks in Afghanistan were preceded by the outbreaks detected in Pakistan. The introduction of the virus in Afghanistan could have originated from Pakistan, but this information was not confirmed. Therefore, there has been a need to develop joint activities to strengthen the veterinary collaboration between the two countries and to formulate common approaches and strategies.</p>
<p>Objectives of the project</p> <p>Impact</p> <p>The project aims at building a strategic platform where shared approaches - taking in consideration cultural and social features - can be jointly developed by the two countries. This will contribute to the intensification of information exchange and confidence building on both sides. The project aims at improving HPAI surveillance systems and enhance local capacities for early detection and control of HPAI to avoid further spread to non-infected areas of the countries.</p> <p>Outcomes</p> <ul style="list-style-type: none"> • Inter-country consensus built on containment measures, communication interventions and socio-economic issues; • laboratory and field services capacity enhanced in Federal Administered Tribal Areas (FATA), Khost, Balochistan, Kandahar, Nangarhar, North Western Frontier Province (NWFP) in Peshawar and Abbotabad districts, Sindh and Balkh provinces; • procedures for border control inspections standardized; • strengthening of the surveillance activities in the different sub-sectors; and • common methodological approach to surveillance in live-birds markets (LBMs) elaborated and agreed upon.

Planned activities**Third Project Steering Committee (SC) meeting:**

As planned in the project document, the objectives of the third project SC meeting were the review of the project activities and achievements and the identification of pending issues. The Chief Veterinary Officers (CVOs) of Afghanistan and Pakistan, the project Chief Technical Adviser (CTA), the national project managers and FAO- Emergency Centre for Transboundary Animal Diseases Operations (ECTAD) relevant officers were invited to attend this meeting.

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.2 Socio-economic studies on farming practices and market chains.

- Use the questionnaires in the field.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for avian influenza (AI) and other poultry diseases.

- Arrange for a short-term training on a joint reference FAO/the World Organisation for Animal Health (OIE) laboratory for a person from the central laboratory in Pakistan involved in the production of AI reagents for the provincial diagnostic and surveillance units.
- Continue national training courses in Afghanistan organized at the central and provincial laboratories to train the provincial laboratory staff to conduct serological tests.
- Use pilot tests in provincial laboratories for conducting serological tests and report results to the central laboratory.
- Finalize the review of the Standard Operating Procedures (SOPs) and complete the laboratory manual in the next reporting period.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- Conduct national trainings.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of animals and products of animal origin.

- Finalize the bi-national review at the meeting scheduled for 5 and 6 August 2010 in Dubai.

Activity 3.1.2 Review and upgrade inspection methodologies.

- Conduct the review after the seminar with the recommendations obtained.
- Carry out trainings in both countries for inspectors on international inspection procedures during the next quarters.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.1 Regional training workshop on surveillance methods.

- Distribute the updated formats for AI to the surveillance teams.
- Conduct a short training course for data collection by using the new AI-Surveillance Information System (SIS) developed in the project.
- Run pilot tests in both regions to facilitate the exchange of information between the regional epidemiological units, the central pilot unit and the central laboratory.

- Carry out pilot tests for the analysis of the results collected under the AI-SIS in the following quarter.
- Identify the most suitable candidates for the Master Course in epidemiology and finalize the terms of the Letter of Agreement (LoA) with the selected university to conduct the studies.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector.

- Continue national trainings in the provinces of both countries.

Activity 4.1.3 National training for field veterinarians (from the Government, non-governmental organizations (NGOs), private sector).

- Provide national trainings on sample methodologies.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (Participatory Disease Surveillance (PDS) training).

- Distribute the PDS report formats to the veterinary officials to conduct the studies.

Activity 4.1.5 Field activities.

- Continue surveillance activities.

Output 5.1 Surveillance in live-birds markets strengthened.

Activity 5.1.1 Workshop on methodology of surveillance in LBMs.

- Carry out the workshop on methodology of surveillance in LBMs in each country.

Activity 5.1.2 National training workshop for veterinarians operating in LBMs.

- Conduct a workshop in both countries.

Activity 5.1.3 Surveillance activities in LBMs.

- Conduct the evaluation of the LBM with respect to the trade movement in all provinces that can provide information on risk assessment in case of an outbreak and on economic impact on the areas.

Activities undertaken during the reporting period

Third Project Steering Committee meeting:

The third SC meeting was held in Baku, Azerbaijan, on 19 and 20 August 2010 owing to the security situation in the beneficiary countries and the difficulties to obtain an entry visa for Dubai in the United Arab Emirates (UAE). Three governmental officers from Afghanistan, the Director of the Central Laboratory (on behalf of the CVO) and four officials from Pakistan (including the Deputy Animal Husbandry Commissioner on behalf of the CVO) attended the meeting. The project manager from Afghanistan, and the field veterinarian from Kyber Pakhtunkhwa (KPK; former NWFP) Province on behalf of the project manager from Pakistan, in addition to the CTA of the project, the administrative assistant from Afghanistan and the national consultant for the network. The participants from FAO headquarters were the Regional Technical Advisor and Regional Coordinator - Operations.

The main points discussed were: i) balance of good achievements reached during the period; ii) request for an extension of the project owing to the existing funds and pending issues to be resolved; iii) short-term courses in epidemiology for field veterinarians to build the epidemiological units in both countries; iv) suspension of the construction of the slats for the slaughter of chickens in LBM; and v) establishment of the network for surveillance data transmission from the field to a central unit.

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.2 Socio-economic studies on farming practices and market chains.

- The questionnaires were prepared and are used in the field to collect economical

information from the surveillance target areas (LBM, farms and villages). The information is processed in the AI-SIS developed for the analysis.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for avian influenza (AI) and other poultry diseases.

- The short-term training for one technician from the Central Laboratory in Pakistan for AI reagents production was conducted at the FAO/OIE reference laboratory in Ames Iowa, USA from 6 to 25 September 2010. The participant was trained on the protocols for processing virus fluids to prepare antigens and antisera for serological tests. The preliminary batches will be prepared soon.
- The preliminary pilot batches of antigen for haemagglutination inhibition (HI) test will be prepared and used in provincial laboratories for conducting serological tests and reporting results to the Central Laboratory in Pakistan.
- A 15-day training for two laboratory technicians from Central Laboratory in Afghanistan was conducted in the Central Laboratory in Pakistan (from 12 to 24 July 2010). The aim of the course was to review the methodologies and to solve doubts in practical training.
- A ten-day (from 19 to 30 September 2010) training course for serological diagnosis was conducted in the Central Laboratory in Kabul for four officials responsible for the serological tests in the provincial laboratories in Nangarhar, Mazar-e-Sharif, Khandahar and Herat.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- The planned trainings were not conducted owing to other priorities.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of animals and products of animal origin.

- The review workshop was conducted in Baku, Azerbaijan from 25 to 28 August 2010, instead of Dubai (visa was not granted for the participants). The workshop was conducted by an international expert who lectured on: i) the interests of the authorities from both countries to improve the legal trade under proper regulations; ii) the review of the old agreement of the farms approved to export poultry (one-day old chickens) from Pakistan to Afghanistan; iii) maintaining close contact with the counterparts for trading issues; and iv) holding six-monthly meetings to review progress. Three senior officials from both countries attended the workshop, including the Deputy Minister for Agriculture from Pakistan and former CVOs.

Activity 3.1.2 Review and upgrade inspection methodologies.

- Both countries are reviewing their own inspection methodologies to identify gaps and provide assistance with their improvement.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.1 Regional training workshop on surveillance methods.

- The updated formats for AI were distributed to the surveillance teams and the information collected and transferred online from Jalalabad (network pilot tests).
- A short training course (10 August 2010) was conducted in Kabul to collect data (owing to security advisory alert, the field veterinarian from Nangarhar could not attend) by using the new AI-SIS developed in the project in both countries.
- Pilot tests are ongoing in both countries to facilitate the exchange of information

between the regional epidemiological units, the central pilot unit with the Central Laboratory.

- Owing to delays in the collection of data, the pilot tests for the analysis of the results collected under the AI-SIS will be conducted in the next reporting period.
- Following a request by both countries, the Master of Science course was cancelled, as the nomination of the candidates could not be completed. Therefore, it has been agreed on a new requirement to substitute the long-term course with short-term trainings in the universities or centres for field epidemiologists and to establish the Central Epidemiological Unit for both countries.
- A workshop was organized from 26 to 30 June 2010 in Istanbul, Turkey to review and update the contingency plan (CP) for HPAI under the consultancy of an expert from the University of Melbourne, since the CP developed in Australia is considered as one of the best CPs developed. The workshop was attended by the staff from the CVO and the National Reference Laboratory from both countries.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector.

- Continuous national one-day trainings have been conducted in commercial poultry farms with the personnel from Eastern Region in Afghanistan (Nangarhar, Laghman, Kunar and Noorestan) on the importance of HPAI and the surveillance to prevent the spread.

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector).

- National two-day trainings were conducted in July 2010 (on 13 and 14 July in Karachi and on 16 and 17 July in Abbotabad), Pakistan on Biosecurity in Poultry Farms with the participation of 35 and 40 persons from poultry farms for each training.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (PDS training).

- The PDS report formats were distributed to the veterinary officials in Afghanistan to conduct the studies.

Activity 4.1.5 Field activities.

Surveillance activities:

Afghanistan:

- During the reporting period, 4 729 samples were submitted to the Central Laboratory from the Eastern (Nangarhar, Laghman, Kunar and Noorsitan), Southern (Kosth. Paktika and Paktia), Southwestern (Kandahar, Zabul and Helamand) and Northern (Mazar-e-Sharif, Samanghan, Jawzjan, Farjab and Sarepol) regions (provinces). Positive serology was found for H9. From polymerase chain reaction (PCR), 13 samples were positive for Influenza type A.
- The 13 positive samples by PCR were sent to the laboratory in Pakistan (being considered as a potential subregional laboratory) for confirmation, and only nine samples were determined to be positive for H9N2.
- The adaptation of the laboratory in Mazar-e-Sharif was concluded and the personnel will start to work in this area very soon. The equipment was already submitted for the network from the lab.

Pakistan:

- During the reporting period a total of 5 189 samples were submitted to the lab from the provinces KPK (Peshawar, Abbotabad), Balochistan (Quetta), FATA and Sindh (Karachi). Positive serology was found for H9 viruses and isolations were obtained of H9N2 AI and Newcastle Disease (ND) viruses and salmonella spp infection.

- The national reference laboratory is under a selection process to become the Subregional Laboratory for Central Asia in order to provide support for AI diagnosis to the Central Asian countries, including Afghanistan. Therefore, all documents were prepared, and the evaluation was supported by the project.
- As mentioned before, the Central Laboratory in Pakistan conducted the subtyping of the AI viruses identified in Afghanistan as type A. From the samples submitted to the laboratory, it was possible to identify the H9N2 AI virus. It is necessary to improve the procedure for sending-receiving samples to the laboratory by optimizing the request from the CVO in Afghanistan and obtaining the approval for introduction of the samples by the CVO in Pakistan.

Output 5.1 Surveillance in LBMs strengthened.

Activity 5.1.1 Workshop on methodology of surveillance in LBMs.

- Weekly trainings were conducted in the East region in Afghanistan within the cities' LBM, where a total of 160 vendors from different markets were trained on the causes of diseases, HPAI warnings, surveillance and biosecurity.
- The same training could not be conducted in other regions owing to security conditions.

Activity 5.1.2 National training workshop for veterinarians operating in LBMs.

- There are no veterinarians operating in the LBMs, therefore it is necessary to conduct the trainings for local vendors.

Activity 5.1.3 Surveillance activities in LBMs.

- The evaluation of the LBMs is on standby owing to security conditions in the regions. The assessment of the economic impact of any disease outbreak, and with respect to the trade movement, will be conducted in all provinces that can provide information on risk assessment in case of an outbreak and on economic impact on the areas. The preliminary information is being gathered in the basic information format and will be analysed and reported in the next reporting period.

Planned activities for the next reporting period

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.2 Socio-economic studies on farming practices and market chains.

- Present preliminary results of the analysis.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for AI and other poultry diseases.

- Continue national training courses in Afghanistan and organize national training courses at the central and provincial laboratories to train the provincial laboratory staff to conduct serological tests.
- Conduct preliminary test for serological tests to be confirmed by the Central Laboratories.
- Support the Central Laboratory in Pakistan in preparing the pilot antigen batches for HI that will be used in central and provincial laboratories for routine AI surveillance and diagnosis.
- Prepare the SOPs for antigen preparation and complete the training laboratory manual.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- Complete and translate the manuals for training on surveillance, differential diagnosis and laboratory in local languages in Afghanistan.
- Conduct the national trainings for refreshing sampling collection, submission to the laboratories, washing and disinfection.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of animals and products of animal origin.

- Follow-up the agreement from both countries to complete the review of the main topics for establishment regulations to allow regular legal trading.

Activity 3.1.2 Review and upgrade inspection methodologies.

- Prepare the agenda for the training course on inspection methodologies.
- Conduct the training course on inspection methodologies.
- Finalize the review of SOPs for laboratory procedures and complete the laboratory working manual in the next reporting period.
- Conduct trainings in both countries for inspectors on international inspection procedures during the next quarters.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.1 Regional training workshop on surveillance methods.

- Continue the surveillance activities in all project regions.
- Implement the geographic information system (GIS) for easy recognitions of the places where the surveillance is on-going.
- Continue with the establishment and analysis of the information from the network of the AI-SIS.
- Link the AI-SIS to Transboundary Animal Disease Information System (TADInfo).
- Identify the venues for short-term courses (two months) in epidemiology.
- Identify the most appropriate candidates from the field to be trained abroad in short-term courses on epidemiology.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector.

- Continue national trainings in the provinces of both countries.

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector).

- Provide national trainings on sample methodologies.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (PDS training).

- Review the methodology of PDS conducted by the surveillance teams and make improvements.
- Prepare the PDS technical manual.

Activity 4.1.5 Field activities.

- Continue surveillance activities.

Output 5.1 Surveillance in LBMs strengthened.

Activity 5.1.1 Workshop on methodology of surveillance in LBMs.

- Conduct the workshop on methodology of surveillance in LBMs in each country.

Activity 5.1.2 National training workshop for veterinarians operating in LBMs.

- Conduct a workshop in both countries during the next quarter.

Activity 5.1.3 Surveillance activities in LBMs.

- Carry out the evaluation of the LBMs with respect to the trade movement in all provinces that can provide information on risk assessment in case of an outbreak and on economic impact on the areas.

Main challenges encountered and response provided

- In both countries, the processes for replacement of the CVOs have been very slow, and no agreements could be established with the acting CVOs. Care needs to be taken to ensure that the newly appointed CVOs is fully informed about the ongoing and future project activities.
- As a result of the elections of the parliament authorities in Afghanistan, UN staff movement restrictions have been in place. The UN security office is anticipating some reactions from the political parties to the elections during October and November, limiting the project field activities and trainings planned. The bi-national trainings were conducted in a third country, and local trainings were conducted under low profile and in low risk cities. Therefore, the current security conditions in Afghanistan need to be taken into consideration while organizing the upcoming project activities. In Pakistan, the threats to international activities persist as an important element to be considered when planning or implementing project activities. Restrictions to the movement of UN staff may hinder the implementation of project activities.
- Central epidemiology units in both countries are not fully established and require provision of intensive training for understanding epidemiological concepts. Although some veterinarians have been trained in Pakistan, it is necessary to identify the location of the Central Unit in question.
- It was estimated that more time was required to implement the earlier planned activities in order to achieve the intended objectives, owing to the difficulties encountered and the security restrictions in both countries. Although most of the provisions are on the ground, they will require additional time to be made operational. As a result of this, a no-cost project extension of eight months (up to 31 May 2011) was requested and duly granted by the Donor.

Main progress made towards the achievement of project outputs**Output 1.1 Common strategies and approaches to surveillance developed in the different subsectors in the concerned areas.**

- Considering the high risk of virus transmission, the surveillance activities in the cross-border region were improved. During this reporting period, no evidence of the presence of HPAI virus in the countries was found. However, there is a need for an increased awareness about the pandemic potential of H9N2 and H7 for AI and ND viruses that are limiting poultry production. An evaluation of the control strategies should be carried out.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

- Routine surveillance in project areas detected consistent circulation of H9N2 AI and ND viruses at their laboratories. It is, thus, recommended to establish a control programme to reduce the incidence of the virus circulation.
- The new facility, established in Pakistan, for virus isolation at a level of biosecurity higher than level 2 will conduct the biosafety diagnosis for the region.
- A mission from FAO reviewed the conditions of the laboratory in Pakistan and its suitability in becoming a subregional laboratory for AI typing confirmation and subtyping samples obtained in other countries. Additionally, the laboratory could conduct regional trainings for neighbour countries for AI improvement diagnosis and supply antigens for serological studies. It could also serve as a twin laboratory of one of the joint FAO/OIE reference laboratories, which will be important for the regional diagnosis of AI.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

- Progress was limited as a result of a severe security situation at the border areas.

Output 4.1 Capacity building developed to improve the overall surveillance system.

- The advances made to the data management system for surveillance that will be implemented in both countries will facilitate the analysis of the results of laboratory and field research.

Project Monitoring Sheet: OSRO/BGD/902/USA

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance

Reporting period: October 2010 – March 2011

Country: Bangladesh
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance
Code: OSRO/BGD/902/USA + OSRO/RAS/605/USA Baby 01
Effective starting date: October 2009
Planned end date: September 2010
Budget OSRO/BGD/902/USA: USD 3 082 800 (Phase I)
Total budget: USD 3 082 800
Budget OSRO/RAS/605/USA Baby 01: USD 515 000 (Phase I), USD 1 365 000 (Phase II), USD 1 225 000 (Phase III)
Total Budget: USD 3 105 000
Effective starting date: July 2006
Planned end date: September 2011
<p>Context of the project</p> <p>At present, there are five high-risk countries that are still considered endemic for Highly Pathogenic Avian Influenza (HPAI) H5N1: Bangladesh, China, Egypt, Indonesia and Viet Nam. Since the first outbreak in March 2007, Bangladesh has experienced a total of 493 outbreaks (437 commercial and 56 backyard). Fifty one out of 64 districts and 170 out of 492 Upazilas/Thanas (subdistricts) have been affected thus far, resulting in the culling of over 2.2 million birds. Following the peak of HPAI H5N1 incidence in 2008, the number of annual outbreaks remains at around 30 in 2009 and 2010 respectively. However, as of January 2011 and after an absence of over six months, the number of outbreaks among poultry started to rise. The situation is compounded by the occurrence of crow die-offs and detection of a non-fatal second and a third human infection with H5N1 virus and a fourth one with H9N2 virus.</p>
<p>Objectives of the project</p> <p>The primary objective of the project is to improve control of infectious diseases by enhancing outbreak responses for preventing poultry diseases and developing awareness of HPAI in Bangladesh.</p> <p>Specific immediate objective is to improve the HPAI surveillance capacity of the Government of Bangladesh to respond more effectively to HPAI outbreaks and thereby reduce economic losses and a global human pandemic threat. Specifically, the project aimed to achieve the following:</p> <ul style="list-style-type: none"> • increasing the capacity of the Department of Livestock Services (DLS) to manage the surveillance programme without technical or operational help from the Food and Agriculture Organization of the United Nations (FAO); • early reporting of poultry diseases by door-to-door surveillance; • early HPAI detection by diagnostic specimen collection and testing to ensure a rapid and effective disease response to control HPAI;

- increasing awareness among the surveyed farmers and villagers to strengthen passive surveillance; and
- improving and monitoring minimum biosecurity standards in commercial farms.

Planned activities:

Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention

- Continue to provide expertise to the Government of Bangladesh, facilitate contacts between the Government and Donors and coordinate projects and regional activities.
- Increase coordination role to cover activities funded by the World Bank (WB) and the United States Agency for International Development (USAID).
- Complete geospatial farm mapping project and use the system for facilitating outbreak responses.

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- Support the Government in conducting outbreak investigation on avian influenza (AI).
- Improve post-outbreak investigation by collecting samples from free-ranging ducks in backyards in the vicinity of affected farms and inoculate samples into embryonated eggs to attempt virus isolation.
- Support the Government to design and conduct case control study to ascertain the risk factors.
- Conduct a longitudinal study in a selected district.
- Conduct 'simulation' or 'drill' to examine the standard operating procedures (SOPs) and train field staff for practicing SOPs during operations.
- Support the Government on any disease response and control efforts.
- Enhance collaboration between the USAID-supported staff and WB-supported staff according to the matrix developed in discussion between the two organizations.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the target areas

- Conduct biosecurity campaigns across the country targeting the large-, medium- and small-scale poultry farmers through Additional Veterinary Surgeons (AVSs)/ Community Animal Health Workers (CAHWs), expanding from 260 up to 306 Upazilas.
- Provide continuous assistance to Public-Private Partnership (PPP) and Cleaning and Disinfection (C&D) of LBM project (OSRO/INT/805/USA)
- Conduct training for farm managers to improve biosecurity of commercial farms.

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza and Human Pandemic Influenza Preparedness Plan

- Support continuously the Government in the execution of National Avian Influenza and Human Pandemic Influenza Preparedness Plan.

Output 5: Active surveillance of HPAI

- Assist in the implementation of the active surveillance programme in 306 Upazilas/ Metrothanas under the programme financed by WB under the Avian Influenza Preparedness and Response Project (AIPRP). Carry out active surveillance through 88 AVSs.
- Awareness building among school children in selected areas to encourage reporting of sickness and death in poultry.

Activities undertaken during the reporting period**Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention.**

- The Team Leader (TL)/Chief Technical Adviser (CTA) and FAO Representative visited the Japanese Ambassador to update him on the progress and explore possibilities for future funding.
- The TL/CTA liaised with the World Organisation for Animal Health (OIE) headquarters, OIE Representation for Asia and the Pacific to facilitate information sharing initiatives.
- Provided expertise on various issues, including vaccinations by attending national technical committee meetings or in direct consultation with the Director General (DG) DLS, the Secretary and the Minister for Fisheries and Livestock.
- Assisted the Chief Veterinary Officer (CVO) (Director Animal Health Administration) to attend “Regional Cooperation Programme on Highly Pathogenic and Emerging Diseases (HPED) in South Asia”, held on 30 September and 1 October 2010 in Colombo, Sri Lanka. Operationalization of a number of activities including the establishment of the Regional Support Unit (RSU), Regional Epidemiology Centre (REC) and the three Regional Reference Diagnostic Laboratories on priority transboundary animal diseases (TADs) was discussed.
- An international expert on AI was recruited in order to provide Technical Assistance Services (TAS) for AIPRP, Project Coordination Unit (PCU), DLS, supported by WB along with other national and international staff.
- Assisted the Secretary of the Ministry of Fisheries and Livestock to attend the “36th Session World Food Security Committee” held from 11 to 14 October 2010 in Rome.
- Assisted CVO (Director Animal Health Administration) to attend the Global Rinderpest Eradication Programme (GREP) held on 13 and 14 October 2010 in Rome.
- In the “USAID/Bangladesh” Lessons Learned and Disseminated Workshop: H5N1 Virus” held on 13 October 2010 in Dhaka, a national consultant presented the paper “Improved biosecurity and hygiene at production, collection points and live bird markets including decontamination”. The workshop was attended by the Minister for Fisheries and Livestock and the Mission Director of USAID.
- Co-organized the “Workshop on orientation of cross-border preparedness to HPAI control” with the Emergency Centre for Transboundary Animal Diseases (ECTAD) South Asian Association for Regional Cooperation (SAARC) component, FAO Nepal on 29 and 30 December 2010, and on 2 and 3 January 2011.
- A relevant government high official of Bangladesh and CTA participated in “High level regional consultation on the control of priority transboundary animal and other emerging infectious diseases in South Asia” held on 13 and 14 January 2011, Bangkok, Thailand. Both policy and technical issues related to a concerted and coordinated action plan for improved control of priority TADs in South Asia were

discussed.

- Co-organized with ECTAD/SAARC component the “Workshop on evaluation of Foot-and-Mouth Disease (FMD)-progressive Control Pathway” on 5 January 2011 to understand the current status of FMD control programmes in Bangladesh, India and Nepal.
- Co-organized with ECTAD/SAARC component “Sensitization workshop for media in Bangladesh for prevention and control of HPAI” held on 15 February 2011 in Dhaka. The TL/CTA presented a paper on the status of H5N1 HPAI outbreaks in Bangladesh. The opening ceremony was attended by the Minister for Fisheries and Livestock, Secretary of the Ministry of Fisheries and Livestock, DG and CVO, DLS.
- “AI situation report” was frequently updated and distributed among stakeholders, donors and others for sharing up-to-date information on AI in Bangladesh.
- Collaborated with other organizations including the United States Geological Survey (USGS), the International Centre for Diarrhoeal Disease Research Bangladesh (ICDDR), in assisting wild birds surveillance in relation with H5N1 HPAI.
- Maintained close contact with public health sectors such as DG Health, the Institute of Epidemiology, Disease Control and Research (IEDCR) and the World Health Organization (WHO) in sharing information on H5N1 infection in humans as well as other diseases, such as Nipah virus infection and anthrax.
- One oral and three poster presentations were held during the event “Vet2011” at Bangladesh Agriculture University, Mymensingh, held on 9 and 10 February 2011.
- The AI Technical Unit (TU) team actively participated in the 7th International Poultry Show and Seminar organized by the World’s Poultry Science Association-Bangladesh Branch (WAPSA-BB), and one consultant chaired a scientific session.
- CTA and other consultants investigated the decontamination status of several HPAI outbreaks.

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- A number of SOPs were updated/developed as follows:
 1. Culling and disposal
 2. Decontamination
 3. Restocking
 4. Outbreak investigation
 5. Post-outbreak/Infected place management (comments need to be incorporated)
 6. Laboratory and biosafety
- Assisted the national reference laboratory for AI, the Bangladesh Livestock Research Institute (BLRI), and the Central Disease Investigation Laboratory (CDIL) to be assessed for their biosafety by international expert to ensure laboratory safety.
- To facilitate outbreak response management, geo-spatial information from all commercial farms and major LBMs in the country was entered into a computer. The data was being further processed to compute the density of farms as well as LBMs in relation to affected farms to strengthen ongoing countrywide HPAI surveillance programme.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the targeted areas.

- Workshops on “Record keeping and biosecurity auditing in commercial poultry farm”

were held on 20 and 27 October 2010 and 23 December 2010. A record keeping template was developed in the workshop.

- “Biosecurity SOP’s writing workshop for poultry producers and service providers” was held from 19 to 21 January 2011.
- “Training on farm biosecurity and decontamination for poultry farm managers in HPAI affected areas” was held on 22 and 23 March 2011.
- In “Biosecurity training for poultry industry suppliers”, a total of 838 poultry industry suppliers were trained on biosecurity. The trained industry suppliers transferred their biosecurity knowledge to 5 500 poultry farmers.
- “Training of trainers (ToT) on biosecurity auditing for the Department of Livestock Services (DLS) officials”, 26 DLS officials at the District Livestock Office level were trained.

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza and Human Pandemic Influenza Preparedness Plan

- In response to an urgent request from the Government of Bangladesh, FAO Mission on “In-depth assessment of the present and past situation of the anthrax outbreak in Bangladesh” was dispatched to Bangladesh from 25 October to 3 November 2010.
- One of the FAO Mission members, FAO Representative and CTA of AI TU/Country Team Leader of ECTAD appeared in a TV talk show to disseminate evidence-based information to the general public, and the TV programme was repeatedly broadcast.
- Upon request from DLS, SOPs on culling and disposal, decontamination, restocking, outbreak investigation, post-outbreak/infected place were provided to be distributed to all District Livestock Offices in the country.

Output 5: Active surveillance on HPAI

- Assisted AIPRP in training on active surveillance using SMS Gateway for Avian Influenza Workers (AIWs; previously called “CAHWs”).
- Assisted AIPRP in refresher training for AVSs on active surveillance using SMS Gateway on 30 and 31 March 2011.
- “Training in HPAI active surveillance network programme” was conducted on 7 November and 27 December 2010.
- Technical Meeting on HPAI active surveillance programme was held on 6 January 2011 for AVSs.
- Assisted AIPRP in training AVSs on culling, safe disposal, biocontainment and biosecurity on HPAI (March 2011).
- Maintained the system receiving approximately 1 000 SMS messages per day from 1 035 AIWs in 306 Upazilas.
- Maintained the network of 88 AVSs supervising AIWs.
- Supported installation of transmitters in migratory birds in Hakaluki Haor in February 2011.
- An international expert was employed to integrate existing databases to design integrated and effective data entry and analysis.

Planned activities for the next six-month period

Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention

- Continue to provide expertise to the Government of Bangladesh, facilitate contacts between the Government and donors and coordinate projects and regional activities.
- Increase coordination role in activities funded by WB and USAID.
- Using geospatial farm mapping data, develop a system to enable outbreak responses to be carried out more efficiently.
- Collaborate and coordinate with public health and wild life sectors to develop a more holistic approach in line with the One Health initiative.

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- Support the Government in conducting outbreak investigation on AI.
- Ensure that affected farms are properly and repeatedly decontaminated after immediate post-outbreak decontaminations.
- Improve post-outbreak investigation by collecting samples from free-ranging ducks in backyards in the vicinity of affected farms and inoculate samples into embryonated eggs to attempt virus isolation.
- Develop a system to support the Government in any disease response and control efforts.
- Enhance collaboration between the USAID-supported staff and WB-supported staff according to the matrix developed in discussion between the two organizations.
- Further strengthen search for reservoirs of H5N1 HPAI as well as LPAI among free-ranging, scavenging ducks in backyards in the proximity of affected farms.
- Reduce the risk of re-occurrence of H5N1 HPAI outbreaks by removing hidden reservoirs, as well as by rapid disposal of dead wild birds.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the target areas

- Conduct biosecurity campaigns across the country targeting the large-, medium- and small-scale poultry farmers through AVSS/CAHWs, expanding from 306 up to 492 Upazilas.
- Continue to provide assistance to the Public-Private-Partnership (PPP) and C&D of LBM project (OSRO/INT/805/USA).

Output 4: Provision of assistance to the Government of Bangladesh in implementing the National Avian Influenza and Human Pandemic Influenza Preparedness Plan

- Continue to provide support to the Government in the implementation of National Avian Influenza and Human Pandemic Influenza Preparedness Plan.

Output 5: Active Surveillance on HPAI

- Assist in the implementation of the active surveillance programme across 306 Upazilas/Metrothanas under the programme financed by WB AIPRP.
- Assist in providing necessary refresher training to Avian Influenza Workers on the Active Surveillance using SMS Gateway system.
- Carry out active surveillance through 88 AVSS.

Main challenges encountered and response provided

- The post-outbreak decontamination and improvement of biosecurity are two main challenges encountered during the implementation of the project. Decontamination of affected sheds and premises need to be intensified as a part of post-outbreak responses. To ensure the chain of transmission is broken, decontamination needs to be repeated after immediate post-outbreak decontaminations. Further, FAO has developed Standard Operating Procedures (SOPs) for post outbreak decontamination and submitted to government for implementation in the field. FAO has already flagged the issue in different meetings with the government.
- Backyard poultry was considered secondary to the poultry on commercial farms. Awareness needs to be heightened among backyard farmers that they play critical roles in prevention of HPAI outbreaks in commercial farms in the vicinity. FAO has piloted school training programme for raising awareness for reporting poultry sickness and death. Technical support has been provided to develop communication materials to sensitize backyard farmers for disease reporting.
- Most of the backyard poultry are free-ranging and are allowed to scavenge in the environment. Risk of intermingling with wild migratory birds, as well as free-ranging ducks, need to be acknowledged by backyard farmers. Training of backyard farmers are needed. FAO has supported development of communication material to encourage separating terrestrial birds from aquatic fowls in backyards. Advocacy is also needed.
- Owing to a shortage of human and material resources at the field level, quick and appropriate response to disease events was lacking at times. Additional Veterinary Surgeons need to be advised to provide assistance to ascertain quick and appropriate response and to complement the veterinary services. FAO has raised the issue with the government and government is planning to reorganize DLS with more human and material resources.
- Motivation was weak among DLS staff to capture every disease event at the earliest stage. Awareness of DLS staff needs to be heightened by training.
- Compliance to animal disease regulation is weak. Compliance needs to be reinforced by training veterinary officers, raising public awareness, communication and farmer education. FAO has recruited one consultant to review legislation to recommend mitigation options of implementation bottlenecks.
- Registration of farms is not established. Farmers need to be encouraged to register their farms. Benefits of being registered need to be widely known through advocacy.
- Movement control in densely populated areas is difficult. Cooperation from communities needs to be sought by deploying community leaders. FAO has developed SOPs where directives have been given for implementation of movement control.
- Properties are often not easily accessible. Farms in remote places nevertheless need to be visited in an event of unusual mortality. Unwilling farmers need to be persuaded.

Main progress made towards the achievement of project outcomes

- FAO TU was established at DLS comprising a team of international and national experts and support staff.
- The office for the TU at DLS was refurbished including the provision of standby power supply. TU is fully computerized with high-speed reliable internet services.
- AI TU is technically and logistically supporting the DLS.
- Biosecurity and awareness of HPAI are reinforced and strengthened by: the Active Surveillance Programme, teachers training and dissemination of 50 000 leaflets, posters and stickers to schools and at various national and regional meetings.
- Door-to-door/farm-to-farm surveillance was initiated using a network of 1 035 AIWs (CAHWs). The CAHWs, 103 AVSs and respective 306 supervising Upazila livestock officers (ULOs), 32 veterinary officers of the “Strengthening of support service for combating avian influenza” (SSCAIB) project received the necessary training. As a result, disease surveillance enhanced disease reporting. Better surveillance combined with increased awareness and constant reinforcing of biosecurity messages helped to reduce the number of HPAI outbreaks.
- All 1 035 recruited AIWs (CAHWs) received training and refresher training by FAO consultants on basic communication skills, specifically on those related to HPAI and SMS gateway.
- Various laboratory supplies including polymerase chain reaction (PCR) kits, RNA extraction kits, primers and other consumables were provided to BLRI laboratory to support the increase in diagnostic workload.
- SOPs for laboratory tests for AI diagnosis were drafted and submitted to the Government.
- SOPs for outbreak response, disease investigation, culling, C&D were drafted and are being reviewed.
- FAO team facilitated the Laboratory Working Group meetings attended by BLRI, CDIL and the Field Disease Investigation Laboratory (FDIL) to provide advice on laboratory design and procurement.
- Technical officers of eight leading farms and selected government veterinarians received training on biosecurity and routine disinfection for poultry raising establishments.
- Two hundred government veterinarians received training on post-outbreak decontamination.
- FAO contributed to the development of the Second Communication Strategy for Avian and Pandemic Influenza.
- Web-based SMS gateway improved the early reporting system.
- Lowering of the number of HPAI H5N1 outbreaks was achieved without resorting to vaccination during the last three years.
- Strong partnership was established between the DLS and FAO allowing for smooth transmission of information and collective action.
- With the support of USAID and WB, a team was formed consisting of four international staff and 11 national staff members.
- All of the 780 CAHWs involved in the active surveillance programme using SMS Gateway were transferred from FAO to AIPRP, DLS as a part of the process of ownership transfer by the end of September 2010.
- For the improvement of LBMs, a solid collaboration was established with AIPRP, DLS.

I Quarter 2010**Project Monitoring Sheet: OSRO/BGD/902/USA**

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance

Reporting period: January – March 2010

Country: Bangladesh
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance
Code: OSRO/BGD/902/USA + OSRO/RAS/605/USA Baby01
Budget OSRO/BGD/902/USA: USD 3 082 800 (Phase I)
Total budget: USD 3 082 800
Effective starting date: October 2009
Planned end date: September 2010
Budget OSRO/RAS/605/USA Baby01: USD 515 000 (Phase I), USD 1 365 000 (Phase II), USD 1 225 000 (Phase III)
Total Budget: USD 3 105 000
Effective starting date: July 2006
Planned end date: September 2010
Context of the project
<p>Bangladesh is a high-risk country with respect to Highly Pathogenic Avian Influenza (HPAI) H5N1, experiencing its first outbreak in March 2007. As of 31 March 2010, a total of 351 (298 commercial and 53 backyard) outbreaks have been recorded in 49 out of 64 districts and in 156 out of 492 Upazilas/Thanas (sub-districts), resulting in the culling of over 1.8 million birds.</p>
Objectives of the project
<p>The primary objective of the project is to improve control of infectious diseases by enhancing outbreak responses for preventing poultry diseases and developing awareness of HPAI in Bangladesh.</p> <p>Specific immediate objective is to improve the HPAI surveillance capacity of the Government of Bangladesh to respond more effectively to HPAI outbreaks and thereby reduce economic losses and a global human pandemic threat. Specifically, the project aimed to achieve the following:</p> <ul style="list-style-type: none"> • increasing the capacity of the Department of Livestock Services (DLS) to manage the Surveillance programme without technical or operational help from the Food and Agriculture Organization of the United Nations (FAO); • early reporting of poultry diseases by door-to-door surveillance; • early HPAI detection by diagnostic specimen collection and testing to ensure a rapid and effective disease response to control HPAI; • increasing awareness among the surveyed farmers and villagers to strengthen passive surveillance; • monitoring minimum biosecurity standards in commercial farms.

Planned activities :**Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention**

- The national capacity for disease detection, diagnosis, control and prevention will be strengthened through coordinated efforts of all stakeholders.
- Continuous assistance will be provided by international and national experts to the Government of Bangladesh to facilitate contacts between the Government and donors, and coordinate projects and regional activities.
- FAO country team will take lead role in the coordination and technical backstopping to cover activities funded by the World Bank (WB) and Asian Development Bank (ADB).

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- The capacity of the Outbreak Response Management Centre within DLS will be strengthened through the provision of appropriate human resources and equipment.
- DLS' capacity for communicating with field operators, facilitating logistics, collection and analysis of data will be improved.
- National and international experts in disease surveillance, control and epidemiology will provide technical inputs to assist the Government of Bangladesh in animal disease management.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the target areas

- Biosecurity campaign across the country will be implemented as much as possible in targeted large-, medium- and small-scale poultry farmers in poultry-dense areas in every district.
- Educational materials to train trainers will be developed by technical experts in epidemiology, response management and advocacy.
- The campaign on biosecurity is aimed to reach at least 20 percent of the entire poultry farmer population in the targeted areas.

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza & Human Pandemic Influenza Preparedness plan

- The Government of Bangladesh will be assisted in the implementation of the national Avian Influenza & Human Pandemic Influenza Preparedness Plan for 2009-2011, which was elaborated in collaboration with FAO.
- Specifically, FAO will assist in surveillance, disease response and diagnostics and will provide further technical inputs.

Output 5: Active Surveillance on HPAI

- Door-to-door active surveillance will be conducted to collect information on sickness and unusual deaths in poultry of 260 Upazilas, of which 150 have been already under surveillance since 1 October 2008.
- Reports will be sent through coded message to web-based SMS gateway System.
- Sites of potential outbreak will be investigated by Upazila livestock officers (ULOs)

- and/or additional veterinary surgeons (AVSs) supported by the project.
- Specimens for diagnosis in suspected cases will be collected by ULOs or AVSs and shipped to laboratories.

Activities undertaken during the reporting period

Output 1: Improved Coordination and Management for disease detection, diagnosis, control and prevention.

- International and national experts continued to provide expertise to the Government of Bangladesh, facilitated contacts between the Government and donors and coordinated projects and regional activities.
- FAO country team continued its coordination role to cover those activities funded from WB, ADB, and United States Agency for International Development (USAID).
- The monitoring and evaluation of the Teachers Training Programme of three pilot Upazilas (Panchagar, Trishal and Sreepur) showed positive impact in awareness building and passive surveillance. The students of primary schools where teachers had been trained on HPAI were also better informed on HPAI.
- FAO continued to facilitate the Laboratory Working Group meetings attended by Bangladesh Livestock Research Institute (BLRI), Central Disease Investigation Laboratory (CDIL) and Field Disease Investigation Laboratory (FDIL), World Health Organisation (WHO), USAID, and Japan International Cooperation Agency (JICA) to provide advice on laboratory design and procurement.
- In collaboration with US Geological Survey, Wildlife Trust of Bangladesh (an affiliate of Wildlife Trust New York), FAO funded the training course on sampling of birds for testing avian influenza.
- FAO has supported the shipment of samples from the outbreak cases to the World Organisation for Animal Health (OIE)/FAO Reference Laboratory for Newcastle Disease and Avian Influenza located in Padua, Italy.
- Samples collected from free-ranging ducks around farms affected with HPAI have been collected and submitted to National Reference Laboratory for Avian Influenza, of BLRI in Savar for virus propagation and identification.
- One National Consultant was the main speaker in the awareness building meeting arranged by DLS at Kishoregonj district.
- Three National Consultants (Laboratory Expert, IT specialist, and Communication and Advocacy) have joined the Avian Influenza Technical Unit.

Output 2: Enhanced Outbreak Response by effective Outbreak Response Management Centre

- FAO has been providing training on post-outbreak management to DLS field officials.
- Chief Technical Advisor (CTA) and other members of the team have been monitoring the outbreak management system by visiting the vicinity of affected farms after occurrence of outbreaks.
- As part of the post-outbreak investigation, samples have been collected from free-ranging ducks in backyards for monitoring.
- Samples have been brought to BLRI to be inoculated into embryonated eggs for isolation of viruses.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the targeted areas

- The biosecurity campaign continued across the country's targeted large-, medium- and small-scale poultry farmers through AVSs/Community Animal Health Workers (CAHWs).
- FAO drafted a standard operation procedure (SOP) titled "Biosecurity for Backyard poultry".
- AVSs/CAHWs have been provided with written instructions on biosecurity by visiting individual commercial farms.
- The project supported and contributed to the Public-Private-Partnership (PPP) project, also supported by USAID, in delivering biosecurity training for poultry industry suppliers.
- The letter of agreement (LoA) on Geospatial Farm Mapping for commercial poultry farms and markets in Bangladesh has been signed and the project will start soon.

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza and Human Pandemic Influenza Preparedness plan

- The FAO team participated in further review of the Second National Avian Influenza and Human Pandemic Influenza Preparedness Plan for 2009-2011.
- The team also contributed in the development of a contingency plan for influenza pandemic management by the Department of Health.

Output 5: Active Surveillance on Highly Pathogenic Avian Influenza

- The Active Surveillance programme is continuing in 260 Upazilas with 780 CAHWs and 88 AVSs.
- The newly recruited CAHWs and the ULOs of newly added Upazilas were trained on active surveillance.
- The Veterinary Officers (VOs) working under "Strengthening of Support Service for Combating Avian Influenza (SSCAIB) in Bangladesh" were trained to be involved in active surveillance.
- A fourth member team from Nepal was trained on SMS gateway system.
- The National Consultant and Programme Coordinator/Representative from the Government monitored activities of AVSs and CAHWs.

Planned activities for the next quarter

Output 1: Improved Coordination and Management for disease detection, diagnosis, control and prevention.

- International and national experts will continue to provide expertise to the Government of Bangladesh, facilitate contacts between the Government and donors and coordinate projects and regional activities.
- FAO country team will increase its coordination role to cover activities funded by WB, ADB and USAID.
- FAO country team will support Geospatial farm mapping project.

Output 2: Enhanced Outbreak Response by effective Outbreak Response Management

Centre

- National and International Consultant will support the Government in conducting outbreak investigation on avian influenza.
- Post-outbreak investigation will be intensified by collecting samples from free-ranging ducks in backyards in the vicinity of affected farms. Samples are to be inoculated to isolate viruses, if any.
- The FAO Avian Influenza Unit, consisting of one international, six national consultants, one web page manager, one operation officer, one logistics and procurement assistant, and one secretary, financially supported by the project, will be ready to support the Government on any disease response and control efforts.

Output 3: Improved bio-security status in poultry sectors through bio-security campaigns in the target areas

- Biosecurity campaign will be conducted across the country targeting the large-, medium- and small-scale poultry farmers through AVSs/CAHWs, expanding from 150 to up to 300 Upazilas.
- Continuous assistance will be provided to PPP and Cleaning and Disinfection of Live Bird Market projects.

Output 4: Provision of assistance to the Government of Bangladesh in implementing the National Avian Influenza and Human Pandemic Influenza Preparedness plan

The team will continuously support the Government in the execution of National Avian Influenza and Human Pandemic Influenza Preparedness Plan.

Output 5: Active Surveillance on Highly Pathogenic Avian Influenza

The active surveillance programme will be extended to 300 Upazilas.

Main challenges encountered and response provided

- The implementation of the project was delayed because of the time taken to receive government endorsement of the project activities. However, the Government gave *post facto* approval of the project documents and clearance of the appointment of a new CTA.
- The National Consultant for Laboratory left the Unit. Recruitment of an International Consultant was delayed because of the Government clearance. The position of communication and advocacy consultant has been vacant for a long time due to difficulties of finding suitable candidates. This severe staff shortage has resulted in high work pressure on all staff in the unit. However, a new National Consultant for Communication and Advocacy was identified and recruited in January and the National Consultant for Laboratory was finally recruited in February 2010.

Main progress made towards the achievement of project outcomes

- FAO Technical Unit has been established at DLS comprising a team of international and national experts and support staff.
- The office for the Technical Unit at DLS has been refurbished including the provision of standby power supply. The Unit is fully computerized with high-speed reliable internet services.
- AI Technical Unit is technically and logistically supporting the DLS. The AI Unit's technical support enhances DLS staff capacity.
- Biosecurity and awareness of HPAI are reinforced and strengthened by: Active Surveillance Programme; Teachers Training; and dissemination of 50 000 leaflets, posters and stickers to schools and at various national and regional meetings.
- Door-to-door/farm-to-farm surveillance has been initiated using a network of 780 CAHWs. The CAHWs and respective 260 supervising ULOs, 32 veterinary officers of SSCAIB project have received the necessary training. As a result, disease surveillance has enhanced disease reporting. Better surveillance combined with increased awareness and constant reinforcing of biosecurity messages have helped to reduce the number of HPAI outbreaks.
- All 780 recruited CAHWs were given training and then refresher training by FAO consultants on basic communication skills, specifically on those related to HPAI and SMS gateway.
- Various laboratory supplies including PCR kits, RNA extraction kits, primers and other consumables have been provided to BLRI laboratory to support the increase in diagnostic workload.
- SOPs for laboratory tests for AI diagnosis have been drafted and submitted to the Government.
- SOPs for outbreak response, disease investigation, culling, cleaning and disinfection have been drafted and are being reviewed.
- FAO team facilitated the Laboratory Working Group meetings attended by BLRI, CDIL and FDIL to provide advice on laboratory design and procurement.
- Technical officers of eight leading farms and selected government veterinarians have received training on biosecurity and routine disinfection for poultry raising establishments.
- Two hundred government veterinarians received training on post-outbreak decontamination.
- FAO contributed to the development of the Second Communication Strategy for Avian and Pandemic Influenza.
- Web –based SMS gateway has improved the early reporting system.

Project Monitoring Sheet: **OSRO/BGD/101/USA**

Project title: **Strengthening Emergency Preparedness and Response for Highly Pathogenic Avian Influenza in Bangladesh**

Reporting period: **April 2013 to September 2013**

Country: Bangladesh
Project title: Strengthening Emergency Preparedness and Response for Highly Pathogenic Avian Influenza in Bangladesh
Code: OSRO/BGD/101/USA
Total Budget: USD 2.5 million
Effective starting date: 1 October 2011
Planned end date: 31 December 2013
<p>Context of the project</p> <p>The Food and Agriculture Organization of the United Nations (FAO) and its Emergency Centre for Transboundary Animal Diseases (ECTAD) continues to support the Government of Bangladesh in controlling Highly Pathogenic Avian Influenza (HPAI) H5N1 outbreaks and in building national veterinary service capacity to report and respond to outbreaks. These efforts were initiated in 2007 after which successive projects were designed and implemented to assist the Government. However, Bangladesh remains one of five countries in which HPAI is still considered endemic. Since March 2007, there have been a reported total of 555 outbreaks (498 commercial and 57 backyard farms) in Bangladesh. Some 52 out of 64 districts and 179 out of 492 <i>upazilas</i> (sub-districts) have been affected so far. This resulted in the culling of over 2.7 million birds and the destruction of over 3.5 million eggs.</p> <p>Following the peak of HPAI H5N1 incidence in 2008, the number of annual outbreaks remains at approximately 30 in 2009 and 2010. Another peak was reported 2011, when the number of outbreaks reached 171. However, in 2012, a total of 23 outbreaks were reported. In 2013 (as of 24 September), three outbreaks were confirmed. While new clades 2.3.2.1 and 2.3.4 were reported in addition to clade 2.2, only clade 2.3.2.1 was detected in 2012. One fatal human case of H5N1 virus has been reported in Bangladesh. In total, seven people were infected since 2008, out of whom, three were found to be found as part of a cluster related to a live bird market (LBM) in Dhaka in 2011.</p> <p>The Government decision to approve vaccination against HPAI targeting the commercial sector in the Districts of Gazipur and Kishorgonj is likely to require additional surveillance framework. There is also a substantial risk that the active surveillance system, supported under World Bank funded project will collapse unless the Government is able to secure necessary funds. Since Bangladesh continues to face other emerging disease threats, the ECTAD mandate has continued to expand to address these issues through the <i>One Health</i> approach.</p>
<p>Objectives of the project</p> <p>The primary objective of the project is to strengthen the emergency preparedness to prevent and control HPAI in Bangladesh. The immediate objective is to improve the HPAI surveillance capacity of the Government of Bangladesh to respond more effectively to HPAI outbreaks and thereby reduce economic losses and the global human pandemic threat. Specifically, the project aims to achieve the following:</p> <ol style="list-style-type: none"> 1. increased capacity of the DLS to manage the surveillance programme; 2. early reporting of poultry diseases and early HPAI detection; 3. increased public awareness; 4. improved biosecurity and hygiene in poultry farms and LBMs; and 5. identification and elimination of the sources of HPAI infection.

Planned activities for the reporting period (April 2013 to September 2013)

In accordance with the no-cost extension of the project to 30 September 2013, two main components were included; (i) LBM development, advocacy and capacity building; and (ii) serological monitoring and virological surveillance of the experimental HPAI vaccination programme implemented by the Government. The following activities were planned:

1. upgrade biosecurity and biosafety in a maximum of 12 LBMs;
2. intensify advocacy with city corporations/municipalities and market committees to improve biosafety and biosecurity at a total of 31 LBMs;
3. conduct regular surveillance of the 25 renovated LBMs;
4. train LBM personnel, traders, transporters, local government staff and veterinary officers in adopting biosafety and biosecurity measures;
5. hold meetings, at least monthly, with all stakeholders for promoting public private partnership (PPP) in sustaining LBM biosecurity;
6. raise public awareness for ensuring that biosecurity is maintained and sustained in LBMs; and
7. monitor and characterize presence or absence of viruses in the two districts where the Government conducted experimental vaccination (Gazipur and Kishorgonj).

Activities undertaken during the reporting period (April 2013 to September 2013)

1. Improvements in biosecurity and safety in 12 LBMs were carried out. Approximately 80 percent of renovation/construction work was completed.
2. Advocacy with city corporations/municipalities and market committees to improve biosecurity and safety at 31 LBMs (24 existing and seven new) continued.
3. Regular surveillance of 25 LBMs was conducted jointly with sister project OSRO/BGD/202/USA. Other LBM surveillance activities were also conducted under the influenza A(H7N9) prevention programme.
4. Eight meetings were held with key LBM stakeholders (City Corporations/Municipalities, District Livestock Officers and market committees) for promoting biosecurity and PPP in LBMs. Project staff also continued to raise public awareness for ensuring that biosecurity is maintained and sustained in LBMs.
5. Regular cleaning and disinfection in LBMs was promoted. Advocacy continued for weekly rest-day for thorough cleaning and disinfection practices. Decontamination commodities and metallic cages were distributed to LBMs through district livestock officers.
6. Monitoring of the Government's experimental vaccination in two districts (Gazipur and Kishorgonj) was conducted by the Government of Bangladesh Expert Committee, in which FAO ECTAD was represented. FAO ECTAD attended five meetings of this committee and extended technical advice.

Planned activities for the next three-month period

Under the no-cost extension of project OSRO/BGD/101/USA to 31 December 2013, no additional activities are planned. Monitoring the renovation of 12 LBMs will be conducted and committed funds for LBM renovations will be released. Other activities will be funded under sister projects.

Main challenges encountered and responses provided

1. Sustaining and extending the LBM weekly rest-day and decontamination practices will require continued advocacy with stakeholders, especially market committees and City Corporations/Municipalities.
2. Sustainability of SMS surveillance system by the national government is at risk due to the lack of financial support available during 2013. This means that field staff do not currently receive incentive. Discussions are ongoing to find solutions for sustainability of the SMS surveillance system in the future.
3. The Government of Bangladesh started implementing an experimental vaccination of poultry

against HPAI in two districts in December 2012. Although FAO was not directly involved in taking this decision, it provided technical advice and worked with the Experts Committee during the planning and implementation of this programme.

Main progress made towards the achievement of project outcomes

1. National capacity was strengthened to report and effectively respond to HPAI outbreaks, including surveillance (active and passive) and diagnostic capabilities.
2. Significant technical and logistic support was provided to DLS, Bangladesh Livestock Research Institute, Central Disease Investigation Laboratory, two national universities and national veterinary services to increase the capacity in disease surveillance, diagnosis and control/prevention.
3. The project sustained smooth continuity of activities initiated by previous projects funded by the United States Agency for International Development, and facilitated coordination with other projects and partners (Emerging Pandemic Threats [EPT] Program, EPT Plus, Food Safety and Family Health International [FHI]-360 EPT PREVENT, Eco-Health Alliance and International Centre for Diarrhoeal Disease Research, Bangladesh [icddr,b] and the United States Centers for Disease Control and Prevention [CDC]).
4. The focus of the *One Health* approach has shifted from conceptual acceptance by key stakeholders to the adoption of strategies through which it can be practically implemented, which include creating and supporting the *One Health* Secretariat within the Government's structures. A multisectoral *One Health* approach for controlling rabies is being adopted. ECTAD Bangladesh will continue to play a pivotal role in this evolutionary process.
5. A novel disease reporting system, the Livestock Disease Information System, has been developed and disseminated. All DLS field staff have been trained in operating the system, which will allow for quick reporting of the animal health situation directly from the field to Dhaka.
6. Biosecurity and HPAI awareness have been strengthened through active surveillance, training and dissemination of information.
7. A strong partnership has been established between DLS and FAO, allowing for the smooth transmission of information and collective action.
8. For the improvement of LBMs, a solid partnership was established with key stakeholders, including DLS, local governments, icddr,b, United Nations Children's Fund, FHI-360 EPT PREVENT and market committees.

Project Monitoring Sheet: **OSRO/BGD/202/USA**

Project title: Strengthening national capacity to respond to Highly Pathogenic Avian Influenza and emerging and re-emerging diseases in Bangladesh

Reporting period: April 2013 to September 2013

Country: Bangladesh
Project title: Strengthening national capacity to respond to Highly Pathogenic Avian Influenza and emerging and re-emerging diseases in Bangladesh
Code: OSRO/BGD/202/USA
Total Budget: USD 2 million
Effective starting date: 1 October 2012
Planned end date: 30 December 2013
<p>Context of the project</p> <p>The Food and Agriculture Organization of the United Nations (FAO) and its Emergency Centre for Transboundary Animal Diseases (ECTAD) continues to support the Government of Bangladesh in controlling Highly Pathogenic Avian Influenza (HPAI) H5N1 outbreaks and in building national veterinary service capacity to report and respond to outbreaks. These efforts were initiated in 2007 after which successive projects were designed and implemented to assist the Government. However, Bangladesh remains one of five countries in which HPAI is still considered endemic. Since March 2007, there have been a reported total of 555 outbreaks (498 commercial and 57 backyard farms) in Bangladesh. Some 52 out of 64 districts and 179 out of 492 Upazilas (sub-districts) have been affected so far. This resulted in the culling of over 2.7 million birds and the destruction of over 3.5 million eggs.</p> <p>Following the peak of HPAI H5N1 incidence in 2008, the number of annual outbreaks remained at approximately 30 in 2009 and 2010. Another peak was reported 2011, when the number of outbreaks reached 171. However, in 2012, a total of 23 outbreaks were reported. As of September 24 2013, three outbreaks were confirmed. While new clades 2.3.2.1 and 2.3.4 were reported in addition to clade 2.2, only clade 2.3.2.1 was detected in 2012. One fatal human case of H5N1 virus has been reported in Bangladesh. Of seven people infected since 2008, three were found to be found as part of a cluster related to a live bird market (LBM) in Dhaka in 2011.</p> <p>The Government decision to approve vaccination against HPAI targeting the commercial sector in the Districts of Gazipur and Kishorgonj is likely to require additional surveillance framework. There is also a substantial risk that the active surveillance system, supported under World Bank funded project will collapse unless the Government is able to secure necessary funds. Since Bangladesh continues to face other emerging disease threats, the ECTAD mandate has continued to expand to address these issues through the <i>One Health</i> approach.</p>
<p>Project Impact</p> <p>The project will contribute to the improvement of livelihoods of vulnerable populations in Bangladesh by safeguarding human and animal health, and improving food security and safety.</p> <p>Outcome of the project</p> <p>The outcome of the project is a decreased spread of H5N1 HPAI and other emerging and re-emerging diseases of significant public health and economic impact in the country. This will be achieved through enhanced coordination, a multi-sectoral approach, outbreak management, disease surveillance systems and biosafety and biosecurity at the farm and LBM levels.</p>

Planned activities for the reporting period (April 2013 to September 2013)

Output 1: Strengthened coordination, planning and policy support for effective management and control of HPAI and other emerging and re-emerging diseases.

Activities:

- 1.1 Support the Country Team Leader and the Team to provide inputs for planning coordination required at the country level.
- 1.2 Actively engage with animal health authorities as appropriate.
- 1.3 Conduct regular meetings with DLS, the Ministry of Fisheries and Livestock (MOFL), Institute of Epidemiology, Disease Control and Research (IECDR), Ministry of Health and Family Welfare (MOHFW), International Centre for Diarrheal Diseases Research, Bangladesh (icddr,b) and the World Health Organization (WHO) to promote *One Health* coordination using avian influenza as a model.
- 1.4 Organize regular coordination meetings with DLS and MOFL, and liaise with relevant stakeholders in the public and private sectors.
- 1.5 Attend regional meetings and workshops to integrate national project activities and to facilitate coordination of the country programme with national, regional and global projects such as AIPRP, the European Union (EU) Highly Pathogenic Emerging Diseases (HPED) programme, the United States Agency for International Development (USAID) Emerging Pandemic Threats (EPT) program and EPT Plus (+).
- 1.6 Conduct an analysis of the key strengths and weaknesses of the current control approach including the HPAI vaccination policy and provide the policy advice and necessary support in consultation with the Government, including post-vaccination serological monitoring and virological surveillance.
- 1.7 Provide technical support to facilitate contact between the Government, FAO and donors.
- 1.8 Facilitate the participation of officials of national veterinary services and policy makers in regional and international conferences and seminars related to HPAI and other emerging infectious diseases.
- 1.9 Ensure the active participation, as appropriate, and facilitate the coordination of the country programme with other projects or programmes (including EU-HPED, AIPRP, EPT and EPT+) and explore collaboration with USAID's PREVENT project on risk communication and prevention at the LBMs.
- 1.10 Advocate with poultry farmers and associations in collaboration with the Government agencies to adopt biosecurity measures at the farm level.
- 1.11 Advocate with DLS and poultry associations to encourage commercial poultry farmers to register their farms in compliance with regulations, including biosecurity guidelines.

Output 2: Enhanced veterinary services capacity in HPAI surveillance and control.

Activities:

- 2.1 Review and refine standard operating procedures (SOPs) already developed by the ECTAD-Bangladesh Team for controlling HPAI and other zoonotic diseases, to ensure the application of best practices, based on international standards and guidelines.
- 2.2 Ensure full operation and dissemination of web-based Livestock Disease Information System (LDIS) by following up on its implementation for the timely electronic reporting on HPAI and other zoonotic diseases by all Upazila Livestock Offices and Disease Investigation Laboratories, and assist the Epidemiology Unit and Outbreak Response Management Centre of DLS to conduct outbreak investigations and process epidemiological data to identify risk factors and adjust control programmes accordingly.
- 2.3 Create and operationalize the Bangladesh Laboratory Response Network in collaboration with FAO/USAID's EPT-IDENTIFY project, DLS, Directorate General of Health and other partners involved in providing laboratory services.

2.4 Conduct surveillance and respond to signs of small-scale mortality among backyard poultry in areas indicated as high risk by spatial temporal analysis of outbreaks.

2.5 Conduct epidemiological studies, in collaboration with DLS and other relevant stakeholders, to identify the trends and patterns of HPAI in Bangladesh, as well as virological investigations whenever crows and other birds die off, in order to identify links to poultry in commercial farms and backyards.

2.6 Continue conducting an in-depth longitudinal study that has already been initiated on free-ranging ducks in the vicinity of affected farms for sequence analysis in five selected districts and ensure synergy with the EPT+ activities.

2.7 Ensure biological samples from outbreak investigations and active surveillance to be 1) processed for isolation of low pathogenic avian influenza (LPAI) and HPAI in Central Disease Investigation Laboratory (CDIL) and Bangladesh Livestock Research Institute (BLRI); and 2) shipped to the FAO/World Organisation for Animal Health (OIE) Reference Laboratory for molecular characterization.

2.8 Strengthen the capacity of DLS and BLRI for molecular analysis of sequence data derived from the H5N1 virus isolated in Bangladesh.

2.9 In collaboration with the environmental/forestry sector, monitor mortality in wild birds to effectively roll out preventive measures such as carcass disposal to contain the virus and to have samples collected.

2.10 Further expand the geospatial mapping programme by including smaller commercial farms.

2.11 In collaboration with DLS, conduct formal biosecurity audits of commercial poultry farms adopting assessment tools developed under a previous USAID-funded project on public private partnership (PPP).

2.12. Support the participation of national epidemiologists from DLS to the regional and sub-regional (SAARC) Field Epidemiology Training Programme for Veterinarians (FETPV).

Output 3: Improved biosecurity of LBMs through targeted renovation.

Activities

3.1 Select and upgrade biosecurity in up to six LBMs out of the already developed 24 LBMs.

3.2. Intensify advocacy with city corporations/municipalities and market committees to improve biosafety at LBMs.

3.3 Conduct regular surveillance for avian influenza viruses and conduct regular biosecurity audits of the 24 LBMs.

3.4 Train LBM personnel, traders, and veterinary officers in adopting biosafety and biosecurity measures and conduct refresher training of LBM cleaners and traders in cleaning and disinfection exercises following SOPs in collaboration with DLS and city corporations/municipalities/development authorities and AIPRP.

3.5 Hold meetings at least monthly with market committees for promoting PPP in sustaining the biosecurity in LBMs, and continue to provide technical advice to the Government and stakeholders on the renovation and rehabilitation of LBMs in collaboration with the AIPRP of the WB.

3.6 Raise public awareness for ensuring that biosecurity is maintained in LBMs and poultry farms and distribute communication materials on biosafety and biosecurity in collaboration with stakeholders, including DLS, AIPRP, city corporations/municipalities, school teachers, religious leaders and the United Nations Children's Fund (UNICEF).

Output 4: A model is developed for monitoring the movement of poultry from production to LBMs.

Activities:

4.1 Hold meetings with the DLS Services to adopt a short message service (SMS) gateway system and geospatial maps of commercial farms for monitoring the movement of poultry from production to LBMs.

4.2 Initiate a pilot study for monitoring poultry movement and its biosecurity practices using the SMS

system by selecting one major LBM in Dhaka.

Sub -activities include:

4.2.1 Support DLS in establishing checking posts for monitoring the movement of poultry on transportation routes into Dhaka.

4.2.2 Assess the feasibility of the monitoring used the system.

4.2.3 Expand the system to the remaining LBMs in Dhaka.

Activities undertaken during the reporting period (April 2013 to September 2013)

Output 1: Strengthened coordination, planning and policy support for effective management and control of HPAI and other emerging and re-emerging diseases.

- Five funding proposals and five progress reports were prepared.
- Daily contact was maintained with the Chief Veterinary Officer and key DLS staff.
- More than 20 meetings were held with DLS on HPAI and other diseases, including two monthly meetings, three meetings on rabies control, and 10 meetings to discuss specific requests made by DLS. Twelve meetings were also held with key stakeholders such as MOFL, the Institute of Epidemiology, Disease Control and Research (IEDCR), MOHFW, UNICEF and WHO, including two meetings of the National Expert Committee on Vaccination.
- MoFL approved strategic Framework and Action Plan for a One Health approach to Infectious Diseases in Bangladesh in July 2013. Two workshops (one national and one regional) were organized in May 2013 to prepare a One Health project proposal to the EU.
- A meeting was held with BLRI in July 2013 to discuss the activities of national avian influenza and regional peste des petits ruminants (PPR) reference laboratories. Decisions were made to continue support to the avian influenza laboratory for testing samples from surveillance (HPAI, EPT+ and H7N9) and to undertake a PPR pilot study.
- Three Coordination meetings were held with icddr,b and other EPT partners (Family Health International FHI-360/EPT PREVENT, Eco-Health Alliance, IEDCR), BLRI and CDIL to promote the coordination of the EPT program.
- Seven regional meetings and four workshops/conferences were organized and/or attended to integrate project activities (EPT, EPT+, One Health, H7N9, rabies and gender).
- Ongoing analysis of the key strengths and weaknesses of the current control approach was performed. A checklist was developed and used during field visits/outbreak investigations.
- Contact between the Government and donors was facilitated by liaising with relevant Government departments to ensure timely approval of project documents.
- Support was provided to nine officials and policy makers of the Government who participated in seven regional conferences/meetings related to HPAI and other emerging infectious diseases including H7N9.
- ECTAD continued to take the lead in coordinating EPT partners in Bangladesh – three coordination meetings were held. Three meetings with FHI-360 PREVENT were held to prepare a joint plan for implementing behaviour change communication at the LBMs.
- ECTAD and icddr,b continued to share information on locations where LBM, duck and pig surveillance are conducted. icddr,b animal health laboratory will continue conducting sample testing for EPT+ and H7N9 samples through a letter of agreement (LoA).
- Project activities were coordinated with other USAID funded and FAO projects to ensure no duplication of efforts (EPT-IDENTIFY, EPT-PREVENT, EPT+, Food Safety, Feed the Future (FtF)-Poultry upscaling, FtF-Nutrition and with icddr,b/United States Centers for Disease Control and Prevention [CDC] Atlanta).
- Project staff participated in 11 technical meetings and workshops on various diseases (anthrax, HPAI, H7N9, rabies, Nipah, EID, Leishmaniasis and PPR).
- ECTAD was involved in organizing a three-day workshop on Elimination of Rabies from SAARC (South Asian Association for Regional Cooperation) countries in Dhaka in August 2013. ECTAD

took the lead role in planning and implementing a multi-sectoral rabies control programme through mass dog vaccination (MDV) and dog population management. ECTAD is currently working with DLS and Public Health in planning and implementing a MDV campaign in Dhaka division utilizing 200 000 rabies vaccine doses provided by OIE, adopting a One Health approach. Five meetings were held so far.

- ECTAD continued to support the HPED regional project. A field mission was supported to investigate a PPR outbreak in Bhola district. A national laboratory technician was recruited to expedite sample testing. Of the 107 serological samples tested, 67 (62.6 percent) indicated presence of antibodies, and the 61 nasal swab and tissue samples tested for virus indicated 52 (85.2 percent) positive cases.
- A total of 100 farmers/farm managers were trained on farm biosecurity and decontamination to adopt improved biosecurity including decontamination. The need for farm registration was emphasized. Government of Bangladesh guidelines and SOPs on biosecurity practices, record keeping and farm registration were used as primary references. A manual was distributed to the participating farmers.

Output 2: Veterinary services capacity in HPAI surveillance and control enhanced.

- LDIS a web-based information system to support DLS animal disease surveillance was disseminated to all the 492 Upazilas in the country; 638 DLS staff were trained.
- A total of 84 Veterinary Surgeons from DLS were trained on the use of Microsoft Excel in processing and analysing epidemiological data, and on Field Epidemiology.
- ECTAD continued to take the lead in supporting the Bangladesh Laboratory Response Network, which was established in 2011 with key players (DLS/CDIL, BLRI, icddr,b, Bangladesh Agricultural University [BAU] and Chittagong Veterinary and Animal Sciences University [CVASU]). Six meetings were held to review the progress of different surveillance activities.
- Two cohorts of hands-on lab training on reverse transcription polymerase chain reaction for partners were conducted at icddr,b in May 2013.
- A backyard duck survey was conducted in three Upazilas (NetrakonaSadar, Kendua and Modon) of Netrakona district to assess the present biosecurity, disease and mortality conditions of backyard poultry (ducks, chickens, pigeons etc.).
- Two publications from ECTAD were produced, one on reassortant influenza A(H5N1) sequence analysis in Bangladesh (Emerging Infectious Diseases journal), and the second one on risk factors for HPAI (Transboundary Animal Diseases journal) were made. A third article on genetic diversity and phylogenetic analysis of HPAI was submitted and is currently being reviewed by Transboundary Animal Diseases Journal.
- A total of 2 948 samples (1 155 cloacal, 1 155 tracheal and 638 blood) were collected from 1 180 ducks. A total of 457 Serum samples were tested, of which 57 percent were H5 antibody positive.
- A total of 1 850 Ducks, 185 Sheds and 4 625 kg of feed were distributed to 185 beneficiaries and training was provided on duck rearing and biosecurity practices.
- Biological samples that were collected from H5N1 outbreak (two positives) and for H7 (four suspected positives) from LBM were sent to the OIE/FAO Reference Laboratory for molecular characterization. Four putative H7 positive samples were confirmed to be H9N2 and negative to H7.
- An LoA was signed with a consulting firm (CEGIS) to further develop the Geospatial mapping management information system, which includes commercial poultry farms, check posts and LBMs. Data from DLS and primary sources is being updated and validated; CEGIS prepared a detailed work plan and initiated activities to develop the information management system and to validate the data.
- For the second attempt, four DLS participants could not attend the SAARC FETPV training in Nepal in September 2013 owing to delayed release process within the Government.
- A new letter of agreement (LoA) with CVASU was signed to undertake avian influenza surveillance in LBMs and wild birds to detect incursion of influenza viruses in migratory birds in five districts.

Output 3: Improved biosecurity of LBMs through targeted renovation.

- A second consultant mission was completed in May-June 2013 and the report was prepared, setting plans for the renovation of six LBMs. The drawings and bill of quantity were prepared by an architect. Eighty percent of the renovation work in the six LBMs has been completed as per the plan.
- Integration of FAO interventions at LBM in collaboration with the sister FAO food safety project was planned using a risk assessment approach to ensure disease control as well as food safety.
- Advocacy by FAO continued with LBM stakeholders for local governments to institute a weekly rest day in LBMs, which commenced in April 2012 in Dhaka and was later extended to other parts of the country. FAO continued to provide technical support for these operations through the presence of veterinarians at the LBM level.
- Twenty three meetings were held with stakeholders to advocate for LBM renovation, decontamination, surveillance and weekly closures.
- Planning for behaviour change communication in collaboration with FHI-360/EPT-PREVENT has been initiated in six LBMs.
- LBM surveillance continued at 25 markets. A total of 824 samples were tested of which three were positive for influenza A virus.
- Monitoring of regular cleaning and disinfection practices in the LBMs was continued.
- Decontamination commodities were distributed to the LBMs through District Livestock Officers.

Output 4: A model is developed for monitoring the movement of poultry from production to LBMs.

- Thirty-three check posts were established by DLS around Dhaka and in other parts of the country to monitor poultry movement and to look for signs of HPAI.
- Discussion was initiated to develop the model and a plan was devised to implement it in Gazipur district and two major LBMs in Dhaka.
- The community-based biosecurity model initiated by stakeholders in Kapasia Upazila of Gazipur district will be assessed and further developed for implementation in the next quarter.

Additional activities performed:

- The project supported SMS gateway staff salaries for two months (January to February 2013) following the completion of the WB-funded AIPRP on 31 December 2012. The Government is currently looking for an alternative funding mechanism.

Planned activities for the next three-month period

In addition to maintaining the activities mentioned above in Outputs 1-4, the following activities are planned:

- Use findings of duck surveillance to narrow down flocks of HPAI-infected ducks without symptoms.
- Build evidence to further promote and extend the policy and practice of having a weekly rest day for cleaning and disinfection to the rest of the country.
- Complete post-vaccination monitoring including virological investigation and challenge experiments.
- Develop a model for monitoring the movement of poultry from production to LBMs.
- Hold meetings with the DLS to adopt and sustain the SMS gateway system and geospatial maps of commercial farms for monitoring the movement of poultry from production to LBMs.
- Initiate a pilot study for monitoring poultry movement and its biosecurity practices using the SMS system by selecting one major LBM in Dhaka.
- Assess the feasibility of monitoring by using the SMS system and expand the SMS system to the remaining LBMs in Dhaka.

Main challenges encountered and responses provided

- The experimental vaccination of poultry against HPAI in two districts, which was initiated in December 2012 by Government of Bangladesh, was completed in June 2013. A final report was provided to DLS by the technical committee. The report is yet to be made public. If HPAI vaccination continues, it might compromise the active surveillance by masking manifestation of symptoms in

infected birds and could have an impact on public health.

- The SMS based active surveillance system on HPAI was terminated by the completion of the WB-funded AIPRP. Although support was provided to DLS under this project, continued advocacy and public awareness raising is needed for it to remain operational and sustainable within the Government system.
- Sustaining and extending the LBM rest days and decontamination practices will require continuous advocacy with stakeholders and monitoring. City corporations have become engaged in sustaining cleaning and disinfection activities.
- The institutionalization of *One Health* remains a priority. Funding and coordination efforts must continue.
- The lengthy process of obtaining release for Government officials to attend regional and international meetings, workshops and training hamper the ability of the project to support their attendance of these important events.

Main progress made towards the achievement of project outcomes

- National capacity was strengthened to report and effectively respond to HPAI outbreaks, including surveillance (active and passive) and diagnostic capabilities.
- Significant technical and logistic support was provided to DLS, BLRI, CDIL, two national universities and national veterinary services in improving capacity in disease surveillance, diagnosis and control/prevention.
- The project established sustained smooth continuity of activities initiated by preceding USAID-funded projects, and facilitated coordination with other projects and partners (EPT, EPT+, Food Safety and FHI-360 EPT PREVENT, Eco-Health Alliance and icddr,b/CDC).
- The focus of the *One Health* approach has shifted from conceptual acceptance by key stakeholders to the adoption of strategies through which it can be practically implemented, which include creating and supporting the *One Health* Secretariat within Government structures. A multi-sectoral *One Health* approach for controlling rabies is being adopted. ECTAD Bangladesh will continue to play a pivotal role in this evolutionary process.
- A novel disease reporting system, LDIS, has been developed and disseminated. All DLS field staff has been trained in operating the system, which will allow quick reporting of the animal health situation directly from the field to Dhaka.
- Biosecurity and HPAI awareness have been strengthened through active surveillance, training and dissemination of information.
- A strong partnership has been established between DLS and FAO, allowing for the smooth transmission of information and collective action.
- For the improvement of LBMs, a solid partnership was established with key stakeholders, including DLS, local governments, icddr,b, UNICEF, FHI-360 EPT PREVENT and market committees.

I Quarter 2009**Project Monitoring Sheet: OSRO/MYA/702/USA**

Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: January-March 2010

Country: Myanmar
Project: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/MYA/702/USA
Budget: USD 500 000 (Phase I), USD 750 000 (Phase II), USD 375 000 (Phase III)
Total budget: USD 1 625 000
Effective starting date: January 2008 (Phase I), January 2009 (Phase II), September 2009 (Phase III)
Planned end date: September 2010
Context of the Project <p>Myanmar experienced three waves of Highly Pathogenic Avian Influenza (HPAI) outbreaks in 2006 and 2007, and a resurgence of outbreaks in the first quarter of 2010. A national duck survey conducted from November to January 2010 showed that 40 percent of surveyed duck flocks had antibody to the H5 virus, suggesting that avian influenza is endemic in duck flocks throughout the country. These issues resulted in a major shift in strategy during the last quarter, with emphasis on expanding the surveillance program. The Food and Agriculture Organization of the United Nations (FAO) is implementing an integrated avian influenza control programme, consisting of three projects with complementary activities: OSRO/MYA/702/USA project, OSRO/MYA/801/WBK project and OSRO/MYA/601/AUL project. The report describes activities funded or co-funded by the project in the context of the overall program.</p>
Objectives of the project <p>The major objective of the project is to address the urgent short-term actions to strengthen Myanmar's capacity to rapidly detect HPAI and minimize its spread. Specifically, the project aims to provide necessary assistance in:</p> <ol style="list-style-type: none"> 1. strengthening HPAI prevention and control in Myanmar, particularly the capacity to effectively contain the outbreak, including animal surveillance, collaboration and communication between the animal and human health sectors; 2. strengthening the capacity of the veterinary services at the field level; 3. mobilizing stakeholders towards building a community based rapid warning and response system to meet the challenge of an AI outbreak in Myanmar.
Planned Activities Output 1: Strengthened cross-sectoral coordination at the national level <i>Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the government.</i> <ul style="list-style-type: none"> • The chief technical adviser (CTA), national operations officer, administrative assistant finance assistant and national project manager, will be in place throughout the quarter. It is expected that an international operations officer will be mobilized in the next quarter.

- Two national consultants' (an epidemiologist and a biosecurity and logistics support expert) contracts will expire in February 2010. These contracts are expected to be renewed. Three new contracts for a national laboratory expert, disease control technical support expert and risk assessment and management expert will be agreed upon early in the next quarter.

Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals.

- Coordination meetings will be held with the World Health Organisation (WHO), Livestock Breeding and Veterinary Department (LBVD) and Ministry of Health (MoH). The topics will be the follow-up to the Field Epidemiology Training Program (FETP) for the previous quarter and the update on the findings of the national cross-section study and other studies on disease epidemiology, as well as the linkages between animal and human sectors in passive surveillance near duck raising areas.

Activity 1.3: Support the review and revision of the National Strategy Contingency plan and Standard Operating Procedures (SOPs) related to HPAI control measures.

- The Integrated Results Framework will be utilized.
- SOPs will be developed for laboratory, especially related to serology for avian influenza (AI).

Activity 1.4: Support national staff of LBVD to participate and give presentations/share information in international conferences, meetings or workshops.

- The project will provide support to LBVD staff participating in laboratory and surveillance trainings and workshops related to the regional project on H1N1.

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- The epidemiologist (Risk Assessment) will not be required for this quarter, rather for the following quarter.

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

No activities planned for this quarter.

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- Animal surveillance and rapid response team (SRRT) training will start once all the results of the national cross sectional study and associated policy discussions are completed. Health sector will be involved in both policy discussions and in some of the trainings. Outbreak management will form a part of the training.

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- The need for further equipment and supplies will depend on recommendations from the national cross-section study. It is likely that more supplies will be procured, as it is expected that a series of cohort studies will be designed and then implemented.

Activity 2.5: Support national staff to participate in Regional FETPV.

- The LBVD staff trainee, who began the Field Epidemiology Training Programme for

Veterinarians (FETPV) in Thailand in 2009, will return to Thailand in January 2010 for several weeks. The project will assist the trainee in the analysis of secondary data collected from the surveillance activities from 2006 to 2009.

- One LBVD staff will participate in the Epidemiology in Action short course in January-February 2010.

Activity 2.6: Support passive and active surveillance for the high risk areas including wetlands, duck-raising and border areas.

- The national duck cross sectional study will be completed and the data processed, analyzed and policy discussions undertaken, with the support of epidemiology expert inputs.
- Passive surveillance programs will be strengthened through the expected agreement to a letter of agreement (LoA) on Disease Control, aiming to improve data management within LBVD including township surveillance reporting, and an analysis of the quality and quantity of passive surveillance activities; and the implementation of an LoA on national database of commercial farms.
- There will be some follow-ups on the border studies already completed, and the nature of the border studies will depend on the final results of the national duck cross section study which will dictate policy and resource allocations.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

Activity 3.1: Organize local training by trainees previously trained overseas.

- Lab staff returning from regional trainings related to the regional project on H1N1 will train local staff.

Activity 3.2: Conduct semi-annual proficiency testing (PT) and quality assessment (QA) for serological and rapid tests by linking national labs with Australian Animal Health Laboratory.

- The project will discuss with the Australian Animal Health Laboratory (AAHL) as to how to coordinate PT and QA within the context of the regional project on H1N1.

Activity 3.3: Manage a local quality assurance/quality control (QA/QC) program for the national laboratory network.

- This is an ongoing activity that will be extended through an amendment to the existing LoA on laboratory activity assessment/improvement. Through this extension, there will be a second round of Q/QC in domestic laboratories.

Activity 3.4: Procure necessary laboratory equipment and supplies.

- The need for further equipment and supplies will be reviewed in light of the recommendations arising from the national duck cross-section study.

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected live bird markets

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

No activities planned for this quarter.

Activity 4.2: Support activities related to biosecurity improvement in selected live bird markets and production zones.

- The LoA on the production zones is expected to be completed and a new follow-up LoA will be prepared, based on findings from the first LoA.
- The LoAs on “Area Risk Assessment for Yangon and Mandalay Markets” and “Area Risk assessment for Ayeyarwaddy and Inle Lake Areas” will both begin implementation and will continue through the next quarter.

Activity 4.3: Recruit an international consultant (epidemiology).

- The consultant will provide support to the risk assessments around markets and the Ayeyarwaddy and Inle Lake areas.

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- These include the “Area Risk Assessment for Yangon and Mandalay Markets” and “Area Risk assessment for Ayeyarwaddy and Inle Lake Areas” as described in 4.2.

Activities undertaken during the reporting period

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1: Recruit an International Technical Advisor (CTA), Operations Officer (OO) and National Consultants (NC) to assist in coordinating the project implementation with the government.

- There were no changes in the Management team during the reporting quarter. The project funded the position of the Chief Technical Adviser (CTA) for three months.
- As planned, five National Consultants (NCs) continued working under the programme. The assignment of a new NC in charge of risk assessment began. In particular, the project co-funded the epidemiologist and the risk assessment expert.

Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals.

- A coordination meeting was held between the FAO, LBVD, WHO and Department of Health (DoH) on 5 February 2010 during which the parties agree to hold a joint national zoonoses workshop. In addition, FAO updated WHO and DoH on the findings of the national duck survey, while DoH and WHO updated FAO and LBVD on H5N1-H1N1 status.
- Plans were made for to the National Steering Committee to be held June 2010.

Activity 1.3: Support the review and revision of the National Strategy, Contingency plan and Standard Operating Procedures (SOPs) related to HPAI control measures.

- The Integrated Results Framework was utilized and updated.
- As part of programme activities, SOPs on outbreak investigation, including updating reporting forms, are being developed. Management Guidelines are also being produced to support an expanded surveillance program. Further work was done on laboratory SOPs with the support of the FAO regional project on animal influenza.

Activity 1.4: Support national staff of LBVD to participate and give presentations/share information in international conferences, meetings or workshops.

No relevant activity undertaken during the reporting period.

Output 2: Strengthened capacity in HPAI disease surveillance.

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- The international short term consultant was not required for this quarter.

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- The Animal - SRRT training was conducted under the workshop described in 2.3.

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- The program provided support to the LBVD in management of the three reported outbreaks, two in the Yangon area and one in Sagaing Division.
- The project supported two planning workshops for follow-up surveillance activities based on the findings of the national duck cross sectional study and the fact that HPAI outbreaks had re-emerged in February. These were:
- The workshop “Lower Myanmar H5N1 Surveillance Planning Workshop” held in Yangon from 2 to 4 March 2010. This was attended by 81 participants (51 male and 30 female);
- The workshop “Upper Myanmar H5N1 Surveillance Planning Workshop” held in Yangon from 7 to 9 March 2010. This was attended by 59 participants (38 male and 21 female).
- In addition, the project covered the travel costs for national and international consultants to travel to Pyawbwe township in Ayeyawaddy Division to conduct an outbreak investigation and for an international epidemiologist to travel to Central Myanmar to monitor surveillance activities.

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- The project procured 2 100 litres of disinfectant, 250 live bird cages, 35 000 plastic bags, 45 fibreglass containers and 150 gas cylinders for use during disease response activities

Activity 2.5: Support national staff to participate in Regional FETPV.

- One LBVD staff trainee is participating in the Field Epidemiology Training Programme for Veterinarians (FETPV) in Thailand. The project co-funded the trainee’s travel costs to Thailand in January and February and supported field work in Myanmar which included the analysis of secondary data collected from the surveillance activities from 2006 to 2009.
- One LBVD staff participated in the Epidemiology in Action short course in January and February 2010 in Bangkok and was subsequently selected for the second session of the FETPV course.

Activity 2.6: Support passive and active surveillance for the high-risk areas including wetlands, duck-raising and border areas.

- The national duck cross sectional study was completed, data processed and analysed. Policy discussions were completed with the support of epidemiology expert inputs. It involved sampling of about 16 000 ducks on 541 farms. The study showed that 15 percent of ducks and 40 percent of flocks were seropositive for H5 virus, suggesting the

HPAI virus may be endemic in ducks in Myanmar. One of the LoAs with LBVD, targeting Lower Myanmar, was co-funded by the project.

- Due to the urgency of responding to the outbreaks, the planned LoA on disease control /epidemiology was postponed to next quarter. The implementation of an LoA on national database of commercial farms began in January and will be completed in the next Quarter of 2010.
- During the reporting period, the China-Thai Border Risk Assessment Study, funded by the project, was completed in February. This study analysed the risk of HPAI being imported through poultry trade. The follow-up to this study consists of surveillance and outbreak investigations in border areas. This will be incorporated in the Surveillance and Outbreak Investigation Programme, which will be implemented in 76 townships. Planning and training for this programme began in the reporting period, and field activities will start in the next quarter.

Output 3: Strengthened capacity in HPAI laboratory diagnosis.

Activity 3.1: Organize local training by trainees previously trained overseas.

- Lab staff returning from regional trainings in Geelong (Australia) related to the regional project on H1N1 trained local staff through on the job training.

Activity 3.2: Conduct semi-annual PT and QA for serological and rapid tests by linking national labs with AAHL.

- Under the programme, viruses isolated from the first two outbreaks were sent to AAHL Geelong and National Institute for Animal Health (NIAH), Thailand for analysis. Sera from the duck survey were sent to AAHL Geelong for N-type testing and quality assessment.

Activity 3.3: Manage a local QA/QC program for the national laboratory network.

- The local QA/QC programme is active and ongoing. As a part of the QA/QC, national staff visited regional laboratories and conducted QA/QC on serology and virology. They also conducted three workshops on "Activity Assessment and Improvement of Laboratories" in Kaingtoung on 31 January 2010, Eastern Shan State on 31 January 2010, and Lashio and Muse, Northern Shan State on 21 March and 22 March 2010, respectively. These workshops were attended by 38 (5 women), 29 (2 women) and 30 (8 women) participants, respectively.

Activity 3.4: Procure necessary laboratory equipment and supplies.

- The project procured miscellaneous items for the laboratory such as marker pens, detergent powder and disinfectants; supplies for processing of swabs collected in the duck cross sectional study, including eggs, chickens and chicken feed. Additional lab reagents and supplies were procured under the other 2 projects.

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected live bird markets

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- No activities were originally planned for this quarter. Since outbreaks occurred in the reporting period, several meetings were organized:

- twelve meetings in the Yangon area with poultry farmers, traders and local authorities aimed at raising awareness during the period immediately after the HPAI outbreaks in Yangon with a total of 747 (108 women);
- four meetings, with poultry farmers, traders and local authorities on HPAI in Pyay, WestBago Division with 651 participants (80 women);

Activity 4.2: Support activities related to biosecurity improvement in selected live bird markets and production zones.

- The LoA on the production zones is ongoing and will be completed in the next quarter.
- The LoAs on “Area Risk Assessment for Yangon and Mandalay Markets” and “Area Risk assessment for Ayeyarwaddy and Inle Lake Areas” are being implemented. A workshop on “Yangon Area Risk Assessment” was held in Yangon on 29 January, with 22 (10 women) participants, including poultry farmers, traders and local authorities for the purpose of introducing and starting up the LoA activities.

Activity 4.3: Recruit an international consultant (biosecurity specialist).

- An International Biosecurity Specialist was recruited for a month, focusing mostly on supporting LBVD in outbreak management.

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- These include the “Area Risk Assessment for Yangon and Mandalay Markets” and “Area Risk Assessment for Ayeyarwaddy and Inle Lake Areas” and the ongoing production zone LoA as described in 4.2.

Future Planned Activities

Component/Output A - Strengthened cross-sectoral coordination at the national level.

Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the government.

- Management team will be in place with the addition of an international operations officer.
- Six NCs will be in place and co-funded by the project.

Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals.

- DoH will participate to the Programme NSC. Meetings with WHO will be organized.

Activity 1.3: Support the review and revision of the National Strategy, Contingency plan and Standard Operating Procedures (SOPs) related to HPAI control measures.

- Finalization of SOPs to support the expanded surveillance programme. This includes management guidelines as well as technical guidelines such as outbreak investigation.
- Ongoing review of SOPs on outbreak management in the light of the recent outbreaks and an assessment on outbreak management in backyard or duck farms.

Activity 1.4: Support national staff of LBVD to participate and give presentations/share information in international conferences, meetings or workshops.

No activity planned.

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level.

Activity 2.1: Recruit an international short term consultant (epidemiologist).

No activity planned.

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- Training workshops are planned in Upper and Lower Myanmar.

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

See 2.2.

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- The project will purchase large quantities of syringes, masks, gloves, swab tubes, plastic bags, marker pens, containers and antibiotics.

Activity 2.5: Support national staff to participate in Regional FETPV.

- One LBVD staff to attend second session of FETPV in Bangkok at end of May for 2 months and the first session trainee will undertake field work in Myanmar.

Activity 2.6: Support passive and active surveillance for the high risk areas including wetlands, duck-raising and border areas.

- Investigation programme in 76 townships will be completed and field activities will begin.
- The project will support a new LoA with LBVD for Disease Control/Epidemiology, which will provide technical support to the field activities.
- An additional LoA will support management of data generated from the recently-completed national duck survey; data from the soon-to-be completed national GPS census of commercial poultry farms; and FETV related field activities.

Output 3: Strengthened capacity in HPAI laboratory diagnosis.

Activity 3.1: Organize local training by trainees previously trained overseas.

- Ongoing through on the job training.

Activity 3.2: Conduct semi-annual PT and QA for serological and rapid tests by linking national labs with Australian Animal Health Laboratory.

- Lab results from samples submitted to AAHL and NIAH are expected to be received. Action for further QA will be taken accordingly.

Activity 3.3: Manage a local QA/QC program for the national laboratory network.

- See 3.4. Domestic QA/QC program is ongoing. Central Lab staff will travel to regional laboratories to conduct QA/QC on serology, virology and poultry post mortem under the LoA supporting the Surveillance and Outbreak Investigation Programme.

Activity 3.4: Procure necessary laboratory equipment and supplies.

- The project will support the upgrading of cooling infrastructure at Yangon laboratory. This will include a larger chilling machine and larger ducts.

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected live bird markets.

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- The LoA on risk assessment in Yangon and Mandalay is expected to be completed. The LoA on Ayeyewaddy and Inle lake area will be ongoing and is expected to be completed in the following quarter.

Activity 4.2: Support activities related to biosecurity improvement in selected live bird markets and production zones.

- The LoA on production zones biosecurity improvement will be completed. Planning for a follow-up LoA will be undertaken.

Activity 4.3: Recruit an international consultant (epidemiology).

No activity planned.

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

See 4.1.

Main challenges encountered and response provided

- The January-March period was a very busy time, marked by the completion of the national duck cross sectional study, the emergence of three new outbreaks and the shift in strategy to the expanded surveillance program. The major technical challenge has been how to respond to the duck survey results and to the re-emergence of outbreaks. The main question with respect to the duck survey results was whether the circulating virus was indeed the HPAI H5N1, and if so, why no outbreaks have been reported, and what threat the new findings might pose. The response has been to expand the surveillance program to 76 townships (funded by other donors) and to have this project fund the key support activities of epidemiology and laboratory services. In addition, the project is sending sera to AAHL Geelong to test for N1 and the virus isolated from the outbreaks to AAHL and NIAH Thailand for analysis.
- No serious internal or external challenges or impediments have been encountered.

Main progress made towards the achievement of project outcomes (from the start of the project activities)

Output 1: Strengthened cross-sectoral coordination at the national level

While the project lacked a CTA for a six month period in 2008, there is now a full-time CTA in place, and this is allowing the project to move forward. The project team has now been stabilized with a CTA, five national consultants and three national operations staff. There continue to be good relations with the Government, and coordination between the FAO program and the national AI program is very good. Coordination between the animal-human sectors is good when there is an outbreak, but at other times remains a challenge, although some progress has been made. The agreement of a national zoonoses workshop is significant and may lead to further collaboration.

Output 2: Strengthened capacity in HPAI disease surveillance

The finalization of the national duck survey, with improved data collection and management systems, including the use of GPS and computer technology, was a major achievement. Expanding surveillance into 76 townships and utilizing community animal health workers and township veterinary officers in a systematic fashion is a new approach for the LBVD. Epidemiology capacity is steadily building with the second FETPV trainee being accepted and the first trainee making a good progress. LBVD has attained a fair understanding of the value of good data management. The recent outbreaks indicated that disease reporting is adequate and response is well managed and transparent.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

There is good capacity for HPAI diagnosis and HA/HI testing in Myanmar. The domestic QA/QC program is developing well. The prompt shipment of sera to Geelong for N testing and of the virus samples to Geelong and NIAH is testament to the readiness of Myanmar to seek international support when needed.

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected live bird markets

The LBVD has developed a range of risk management strategies, most significant of them being the development of production zones and permit systems for poultry movement. The recently-developed risk assessment/management framework and its initial application has been a notable achievement that has received strong government support. On the basis of the conducted studies, the LBVD is in a much better position to assess and manage risks. The LBVD has acquired a good understanding of risks in major border and duck raising areas, based on the results of the duck survey.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 01**Project Title: **Support to Highly Pathogenic Avian Influenza Surveillance Programme in Cambodia**Reporting period: **October 2010 – March 2011**

Country: Cambodia
Project title: Support to Highly Pathogenic Avian Influenza Surveillance Programme in Cambodia
Code: OSRO/RAS/604/USA Baby 01
Budget: USD 1 150 000 (Phase I), USD 1 900 000 (Amendment I), USD 600 000 (Amendment II), USD 400 000 (Amendment III), USD 400 000 (Amendment IV)
Total budget: USD 4 450 000
Effective starting date: 1 October 2006
Planned end date: 30 September 2011
Context of the project <p>The sporadic outbreaks of Highly Pathogenic Avian Influenza (HPAI) in poultry and humans indicate that the H5N1 virus is still circulating in Cambodia. Therefore, it is necessary to detect the outbreaks as early as possible and ensure that immediate and appropriate containment measures are taken to prevent the spread of the disease. The continued improvement of capacities and capabilities in Cambodia to prevent and control HPAI in animal population is necessary to limit its impacts in poultry sectors and minimize the risk of an infection in humans. The Food and Agriculture Organization of the United Nations (FAO) Avian Influenza (AI) Programme in Cambodia is currently funded by the United States Agency for International Development (USAID) in Cambodia for surveillance activities and a World Bank funded project for Village Animal Health Workers' (VAHWs) training and strengthening of the laboratory capacities and capabilities.</p>
Objectives of the project <p>The main objective of the project is to reduce and stop the spread of H5N1 among and between flocks of birds in Cambodia and between Cambodia and the neighboring countries (Viet Nam, Thailand and the Lao People's Democratic Republic), thus reducing the risks of the pathogen spread to mammals and humans and of the emergence of pandemic influenza.</p>
Planned activities <p>Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.</p> <p>Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.</p> <p>Activity 2: Continue active surveillance activities focusing on sentinel flocks, live bird markets (LBMs) and border inspection posts in targeted provinces following a risk assessment approach.</p> <p>Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.</p> <p>Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at the National Veterinary Institute (NaVRI) and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.</p>

Activities undertaken during the reporting period

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.

No major action has been taken under Activity 1 during the reporting period. In coordination with the World Bank-funded project, Avian and Human Influenza Preparedness and Response Project, this activity will be summarized into the study of poultry market chain, which is going to be conducted later in 2011.

Activity 2: Continue active surveillance activities focusing on sentinel flocks, LBMs and border inspection posts in targeted provinces following a risk assessment approach.

- LBM Surveillance of AI in ducks in eight markets of Phnom Penh, Kampong Cham, Kampot, Prey Veng, Siem Reap and Takeo and the Sentinel Flock Surveillance in 12 commercial duck farms of Battambang, Kampong Cham, Kampot, Preah Sihanouk Prey Veng and Takeo were set up through Letters of Agreement (LOAs) with NaVRI to determine the presence of HPAI/H5N1 in the major duck producing regions of Cambodia as part of the national AI surveillance programme and to estimate the level of risk that ducks pose to poultry (chickens and ducks) in traditional and commercial enterprises.
- From 1 September 2010 to 31 March 2011, 3 325 cloacal, 3 325 tracheal swabs and 3 228 sera were collected from the above-mentioned markets, and all of them were found negative for A/H5N1 virus by egg-inoculation test and antibody of AI by haemagglutination (HA) and haemagglutination inhibition (HI) tests.
- From 1 September 2010 to 31 March 2011, 1 440 cloacal, 1 440 tracheal swabs and 1 440 sera were collected from sentinel duck flocks, and all of them were found negative for A/H5N1 virus by egg-inoculation test and antibody of AI by HA and HI tests.
- Both LOA with NaVRI were reviewed and renewed for a six-month period from January to June 2011.
- The contract on supplying fertilized eggs with Celagrid was extended for three months at no-cost from October to December 2010 and renewed for six months in support to the LOAs of surveillance signed with NaVRI.
- A new LOA with the Institut Pasteur du Cambodge (IPC) was signed, aimed at two months of environmental surveillance in two Phnom Penh markets (Deumkor and Orisey) to determine the presence of HPAI-H5N1 in the environment of the two LBMs as part of the national AI surveillance programme. In addition, the aim was to assess the risks that the virus poses to the humans (sellers and consumers) in surrounding markets and to enhance the public awareness of AI at LBMs. The outcomes of the surveillance activities could also be useful in the restructuring of the poultry selling places in LBMs.
- Following the first HPAI field simulation exercise organized in Svay Rieng in early September, two others were conducted during November and December in Kampong Cham and Preah Sihanouk provinces. The Chief of Office of Animal Health and Production of the 24 provinces, four officers from NaVRI and two officers from the Department of Animal Health and Production (DAHP) participated in the field simulation exercise.

Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.

- Two officers in the epidemiology unit of NaVRI/DAHP were sent to the Department of Livestock Development (DLD) Thailand, to attend a one-month training in Field Epidemiology Training Programme for Veterinarians (FETPV). The coming country FETPV is being discussed by the Emergency Centre for Transboundary Animal Diseases (ECTAD) in Cambodia.
- Coordinated the collection of weekly AI inputs from NaVRI for the United Nations Resident Coordination Office, which has the lead on AI update from the Ministry of Agriculture, Fisheries and Forestry (MAFF), the Ministry of Health (MOH), FAO and the World Health Organization (WHO), as well as other partners in Cambodia, to be included in AI bulletin and circulated to all concerned agencies.

Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at NaVRI and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

- The 27th HPAI outbreak occurred in a small poultry farm of Kandal province on 4 January 2011. The veterinary measures were applied, including investigation, culling, disinfection, banned animal movement and education.
- The 12th human case, a five-year old boy, and the 13th human case, a 19-year old mother with an 11-month old baby, were the three human cases that occurred respectively in the outskirts of Phnom Penh (Sang Kat Prek Leap) on 4 February 2011 and in Banteay Meanchey Province on 12 and 17 February 2011. The three cases were fatal and were experienced previously in contact with poultry. Following the human H5N1 cases, the animal health authorities carried out the investigation and collected samples from occurring and neighbouring locations. Preliminary results of 90 samples from Sangkat Prek Leap, 12 from Banteay Meanchey and ten from Prey Veng were negative. Further investigations and sample collections are still ongoing and were expanded to a 5 to 10 km radius.

Other related activities funded under the project

- A legislation mission was fielded in February 2011. The mission examined the chapters which did not conform to the World Organisation on Animal Health (OIE) and the World Trade Organisation (WTO) guidelines and requested further adjustments.
- A joint mission for the National Medium Term Priority Plan for Animal Health (NMTTP-AH) and the Strategy for Animal Production were fielded from 24 January to 4 February 2011. A full Cambodian Animal Production and Health Strategy will be ready for the country in mid-2011 after a completion of series of missions for the animal production strategy. More detailed information will be made available in the next progress report.
- The first Zoonotic Technical Working Group was held in December 2010 with the participation from NaVRI/DAHP, FAO, MOH and WHO. The working group is focusing on, not only HPAI-H5N1, but also zoonotic diseases in general.
- A Workshop on Human and Animal Health Collaboration on Zoonosis Diseases was co-organized by MAFF and MOH and co-financed by FAO and WHO. It is a first workshop aiming at sharing surveillance and response system of human and animal health and at designing the Terms of Reference (TOR) for the Human and Animal

Health Technical Committee and its roles and responsibilities. The technical working committee is composed of existing AI technical working group committee members (MAFF, MOH, FAO, WHO and IPC) and two prospective members, the Forestry Administration (FA) and the Wildlife Conservation Society (WCS).

- The certification of the biosafety cabinets in NaVRI was done under the Emerging Pandemic Threat (EPT) Identify Component of a FAO regional and USAID-funded programme, in collaboration with the Asia-Pacific Biosafety Association (APBA). The APBA organized the Biosafety Management Training in Singapore in mid October 2010 where two laboratory experts were sent to certify the four biosafety cabinets of NaVRI. The three of the four safety cabinets were certified by the team, and the fourth safety cabinet did not obtain certification in accordance with the regional standards.
- Three regulator auto voltages and electricity cables were installed in NaVRI building in order to ensure stable electricity power and therefore to reduce the risks of breakage for the laboratory equipment.

Planned activities for the next six-month period

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.

Activity 2: Continue active surveillance activities focusing on sentinel flocks, LBMs and border inspection posts in targeted provinces following a risk assessment approach.

Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.

Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at NaVRI and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

Main challenges encountered and response provided

As the communication component is not any more supported by this project because of reduced funding, a gap has been perceived in the AI Programme in Cambodia. The public awareness which is considered as an essential component in the AI control efforts has been neglected by the different stakeholders working in the country. It is important to maintain the momentum for the farmers, poultry traders and animal health authorities to understand the risks of transmission and continue funding public arenas/communication component.

Main progress made towards the achievement of project outcomes

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

- Eight LBMs and twelve duck commercial farms are being surveyed in six provinces.
- 4 765 cloacal, 4 765 tracheal and 4 668 sera collected were negative for H5N1.
- Signed new LOA for environmental surveillance in two LBMs of Phnom Penh with IPC.
- Produced an educational training video on HPAI field simulation, which was widely distributed in the country.
- Organized two more HPAI field simulations in Kampong Cham and Preah Sihanouk

Province, which covered all the provinces of Cambodia.

- Established zoonosis committee and regular monthly zoonosis technical working group meetings.
- Organized the workshop on human and animal health collaboration on zoonotic disease in January 2011.
- The Permanent Representatives of Bangladesh, Congo, Denmark, Finland, the United States of America and Uruguay to FAO headquarters visited NaVRT's facilities.

I Quarter 2010

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 01**

Project title: **Support to Highly Pathogenic Avian Influenza control programme in Cambodia**

Reporting period: **January – March 2010**

Country: Cambodia
Project title: Support to Highly Pathogenic Avian Influenza control programme in Cambodia
Code: OSRO/RAS/604/USA Baby 01
Budget: USD 1 150 000 (Phase I), USD 1 900 000 (Phase II), USD 600 000 (Phase III), USD 400 000 (Phase IV)
Total budget: USD 4 050 000
Effective starting date: 1 October 2006
Planned end date: 31 December 2010
Background <p>The sporadic outbreaks of Highly Pathogenic Avian Influenza (HPAI) in poultry and humans clearly indicate that the H5N1 virus is still diffused in the country. Therefore, it is necessary to detect the outbreaks as early as possible and ensure that immediate and appropriate containment measures are taken place to prevent the spread of the disease. The continued improvement of capacities and capabilities of Cambodia to prevent and control HPAI in animal population is necessary to limit its impacts in poultry sectors and minimize risk of infection to humans.</p>
Objectives of the project <p>The main objective of the project is to reduce and stop the spread of H5N1 among and between the flocks of birds in Cambodia, and between Cambodia and the neighboring countries (Viet Nam, Thailand and the Lao People's Democratic Republic), thus reducing the risks of the pathogen to mammals and humans, and reducing the risk of the emergence of pandemic Influenza.</p>
Planned activities <p>Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.</p> <p><i>Activity 1: Develop harmonized procedures and protocols for surveillance activities.</i></p> <p><i>Activity 2: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.</i></p> <p><i>Activity 3: Continue active surveillance activities focusing on sentinel flocks, live bird markets and border inspection posts in targeted provinces following a risk assessment approach.</i></p> <p><i>Activity 4: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.</i></p>

Activity 5: Continue to improve and facilitate sample dispatch of surveillance activities to national laboratory at the National Veterinary Research Institute (NaVRI) and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

Activities undertaken during the reporting period

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

Activity 1: Develop harmonized procedures and protocols for surveillance activities.

- Two Letters of Agreement (LoAs) on market surveillance of avian influenza in duck and duck sentinel flock surveillance were designed. Procedure and protocol for the surveillance activities are clearly stated in the LoAs.
- The Avian Influenza Technical Working Group (AI-TWG) meeting has been revamped, and the Food and Agriculture Organization of the United Nations (FAO) supported NaVRI to continue the TWG meetings. The first AI-TWG meeting for the year was held on 18 March at NaVRI, presided by the Ministry of Agriculture Forestry and Fisheries (MAFF). Participants in the meeting were from MAFF, Ministry of Health (MOH), FAO, World Health Organisation (WHO) and *Institute Pasteur de Cambodge* (IPC). The meeting allowed information exchange between MAFF and MOH on the last outbreak in Takeo. Meetings are now held every two weeks, though the meeting planned on 1 April 2010 was cancelled due to some external factors.

Activity 2: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.

This activity was not carried out during the reporting period.

Activity 3: Continue active surveillance activities focusing on sentinel flocks, live bird markets and border inspection posts in targeted provinces following a risk assessment approach.

- Conducted Market Surveillance of AI in duck (through LoA with NaVRI) in eight markets of Phnom Penh, Takeo, Kampot, Siem Reap, Kampong Cham, Prey Veng from March 2010.
- Conducted Duck Sentinel Flock Surveillance (through LoA with NaVRI) in 12 duck commercial farms in Takeo, Kampong Cham, Prey Veng, Kampot, Battambang and Sihanouke Ville from March 2010.
- 400 ring duck tags were provided to NaVRI to be used in duck sentinel flock surveillance.
- The extended two months LoA with NaVRI (January to February) of duck surveillance in the 12 targeted markets in 11 provinces collected 1 435 cloacal swabs, 1 435 tracheal swabs and 1 434 serum. All the collected swabs were found negative for AI virus by egg-inoculation test and all the serum samples were negative for antibody of avian AI by Haemagglutination and Haemagglutination Inhibition tests.

Activity 4: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.

- Issued a contract with the Center of Livestock and Agriculture Development (CelAgrid) to provide eggs to NaVRI for virus inoculation procedure. The number of supplied eggs per week has increased in parallel with the number of cloacal, tracheal swab and serum samples.
- Continued to support consumable laboratory equipments to NaVRI.
- Purchased a full digital 500 eggs incubator for NaVRI to respond to the increasing

number of eggs required for inoculation.

- Coordinated the training on Animal Influenza Viruses Diagnosis and Molecular Characterization for six laboratory staff of NaVRI from 3-5 March 2010.
- Ensured safety of the electricity running in the laboratory of NaVRI by providing the following:
 - an Auto Voltage Regulator (AVR);
 - installation of the AVR with proper cable and connection;
 - installation of load shedding contactor; and
 - installation of new electrical line from the sub panel to the laboratory equipment.

Procurement processes have been finalized and the project is now identifying suitable local suppliers.

Activity 5: Continue to improve and facilitate sample dispatch from surveillance activities to NaVRI and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

- H5N1 virus were found by NAVRI in duck samples from Bralaymeas village, Romenh communc, Koh Andeth district, Takoc Province on 29 January 2010. Samples were then sent to IPC for confirmation on 1 February 2010, and MAFF officially declared AI outbreak in the said village on 2 February 2010 (Prakas number 040).
- FAO assisted in the complete investigation and culling of 500 chickens and 760 ducks in the outbreak surrounding areas.

Planned activities for the next quarter

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.

Activity 2: Continue active surveillance activities focusing on sentinel flocks, live bird markets and border inspection posts in targeted provinces following a risk assessment approach.

Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.

Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to NaVRI and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

Main challenges encountered and response provided

While overall coordination is shared between MOH and MAFF, FAO still plays an important role during outbreak investigation and response in advising the Department of Animal Health and Production. WHO and FAO are the two United Nations agencies still involved in the disease surveillance on H5N1. However, the public awareness component of the national programme is not fully addressed, as no donor is supporting it, therefore creating a gap vis-à-vis the implementation of the strategy..

Main progress made towards the achievement of project outcomes**Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.**

Major achievements still have to be generated for this current phase because the LoA for the main surveillance activities has just been signed and started.

- Twelve live bird markets in 11 provinces have been surveyed (extended LoA, January to February), 1 435 cloacal swabs, 1 435 tracheal swabs and 1434 serum were collected;
- Eight live bird markets are being surveyed in six provinces, 960 ducks are to be sampled fortnight;
- Twelve duck commercial farms are being surveyed, 360 identified ducks are to be sampled fortnight.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 02**

Project title: **Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **October 2010 – March 2011**

Country: People's Republic of China
Project title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 02
Budget: USD 500 000 (Phase I), USD 500 000 (Phase II), USD 650 000 (Phase III), USD 1 150 000 (Phase IV), USD 1 250 000 (Phase V) Total budget: USD 4 050 000
Effective starting date: October 2010
Planned end date: September 2011
<p>Context of the project</p> <p>Despite efforts by the Government of the People's Republic of China to improve the surveillance and control of Highly Pathogenic Avian Influenza (HPAI), the disease is still endemic in some parts of the country, and some basic understanding about the disease and key ecological risk factors is still lacking. Vaccination has been used widely throughout the country to dampen down the infection and bring the disease under control. However, the virus is still circulating in some production systems where the implementation of the vaccination policy requires major effort and where regulation enforcement is difficult. This project was designed to improve the country's ability to detect and control HPAI infection and disease in identified high-risk ecological and production systems at an early stage, through the implementation of intensified surveillance activities, epidemiological studies, socio-economic activities, capacity building and training.</p>
<p>Objectives of the project</p> <p>The main objectives of the assistance under Phase V of the United States Agency for International Development (USAID) project are to continue working in Hunan, Yunnan, Guangxi and Chongqing while extending activities to Guangdong province in order to increase the scope and impact of project activities in Southern China and provide technical assistance and support in the areas of HPAI epidemiological investigation, disease risk analysis and control strategy. In addition, Phase V of the project is expected to increase support to training activities under the China Field Epidemiology Training Programme for Veterinarians (FETPV) umbrella and provide a significant leap in understanding of HPAI ecology.</p> <p>Through project activities, a strengthened early detection and response mechanism will enable China to increase its capacity to detect and eliminate the disease in a timely manner, thereby minimizing production losses and risk to human safety. The immediate objective of the project is to improve the understanding of HPAI infection and disease distribution, assist the country in defining high-risk areas for targeted control activities in order to minimize the risk to human health and produce skilled and experienced veterinary field epidemiologists who can provide China with expertise and service to address transboundary and emerging infectious diseases among animals.</p>
<p>Planned activities (Phase V)</p> <p>Output 1: Strengthened cross-sectoral coordination at the national and international level</p> <p>Activity 1.1 Support national consultants to assist in coordinating project implementation with the Government</p>

Activity 1.2 Organize regular meetings with the Ministry of Agriculture (MoA), the Veterinary Bureau, the State Forestry Administration and the Department of International Cooperation (DIC) to discuss project activities

Activity 1.3 Contribute to and facilitate the coordination of surveillance and applied research activities at the wild bird/domestic poultry interface at Poyang Lake reserve including joint meeting with the State Forest Administration (SFA), provincial veterinary and wildlife authorities to discuss, plan and coordinate field activities

Activity 1.4 Strengthen cooperation with the FAO/ the World Organization for Animal Health (OIE) Network of Expertise on Animal Influenza (OFFLU) and other laboratory and epidemiology networks - discuss and define joint scientific collaboration perspectives and opportunities

Activity 1.5 Organize steering committee workshop and inception workshop (involving MoA, the Veterinary Bureau, the China Animal Health Epidemiology Center (CAHEC), Harbin, provincial Centres for Animal Disease Prevention and Control (CDCs) and other project partners and stakeholders)

Activity 1.6 Coordinate the newly created United Nations subworking group on diseases at the human-animal interface

Activity 1.7 Foster exchange of experiences with Viet Nam and Indonesia on vaccination strategy and market chain analysis

Activity 1.8 Improve public-private partnership cooperation through case-study activities (e.g. live bird market [LBM] restructuring) and missions of the international expert on public private partnership (PPP)/biosecurity

Activity 1.9 Engage in joint collaboration activities with Guangdong Province and use the province as a model for PPP activities; engage Guangdong in FETPV

Output 2: Capacity building in epidemiology: implementation of the China FETPV programme

Activity 2.1 1st module of FETPV: short-term basic training course in epidemiology

Activity 2.2 Training through services

Activity 2.3 2nd module of FETPV: short-term training course in the geographic information system (GIS) and epidemiology. Presentation of investigations and research activities performed in the framework of the training through services (see 2.2)

Activity 2.4 International experts in veterinary epidemiology from the Netherlands will develop case studies for outbreak investigation during March-April

Activity 2.5 Introduce and promote the concepts of diseases at the human-animal interface through training and multidisciplinary approach to disease surveillance and control

Activity 2.6 3rd module of FETPV: advanced training on epidemiology, socio-economic studies, risk assessment and understanding diseases at the human-animal interface

Activity 2.7 Support the participation of two Chinese national to the regional FETPV training in Bangkok

Output 3: Improved knowledge of HPAI epidemiological, ecological and socio-economic risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies

Activity 3.2 Strengthen existing risk based surveillance approach through the longitudinal monitoring of selected LBMs in order to identify seasonal changes in infection distribution in winter and define early warning indicators associated to HPAI emergence

Activity 3.3 Facilitate the implementation of epidemiological studies at the domestic poultry/wildlife interface in Poyang Lake Reserve to uncover risk factors associated with the emergence of new virus strains and their subsequent spread

Output 4: Improved HPAI surveillance and control strategy through focused control actions

Activity 4.1 Assist in refining the strategic vision for the national vaccination campaign, provide guidance on improving the progressive control of HPAI, H5N1 through vaccination and share views on establishing a vaccination exit strategy

Activity 4.2 Organize training on biosafety, management and test validation for project province laboratories

Activity 4.3 Organize ring trial between provincial laboratory and Harbin National Reference laboratory

Activity 4.4 Establish GIS-based system at provincial level (Chongqing municipality) to support HPAI surveillance activities

Activity 4.5 Procurement of necessary laboratory equipment and supplies for HPAI diagnosis, data analysis and information sharing including for Guangxi CDC laboratory

Activity 4.6 In the framework of the PPP activities, organize a stakeholder meeting and group discussion for the development of minimum biosecurity standards for LBMs

Activities undertaken during the reporting period (October 2010 – March 2011)

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1 Support national consultants to assist in coordinating project implementation with the government

- Initiated the recruitment of National Programme/Operations Officer in March. The new Programme/Operations Officer is expected to join the team in April.

Activity 1.2 Organize regular meetings with MoA, the Veterinary Bureau, the State Forestry Administration and DIC to discuss project activities

- Maintained close contact/communication with MoA, the project team ensured smooth implementation of the planned activities during the first six months.

Activity 1.5 Organize steering committee workshop and inception workshop (involving MoA, Veterinary Bureau, CAHEC, Harbin, provincial CDCs and other project partners and stakeholders)

- Hold three Steering Committee Meetings in September, November and January. These meetings discussed progress and other key issues regarding FETPV at regular intervals.

Activity 1.6 Coordinate the newly created UN sub-working group on diseases at the human-animal interface

- Coordinated the United Nations Theme Group on Health (UNTGH) 4th Subworking group meetings (diseases at the human-animal interface) in October, December and March. The newly created subworking group will be used as a forum of exchange of scientific information on animal and human health related issues.

Activity 1.7 Foster exchange of experiences with Viet Nam and Indonesia on vaccination-strategy and market chain analysis

- Organized the China-Vietnam Discussion Forum on HPAI Risk Management and Control on 8 and 9 March. The meeting reviewed the scientific progress made in HPAI H5N1 control and explored avenues for joint collaborations.

Output 2: Strengthened HPAI Disease Surveillance System and capacity building

Activity 2.1 1st module of FETPV: short-term basic training course in epidemiology

- 15 trainees from the national institutions and provincial veterinary departments attended the first module of FETPV. The focus of the training was mainly on basic concepts of field epidemiology was held from 29 November to 23 December 2010.

Activity 2.2 Training through Services

- FETPV trainees' surveillance plans of first Phase of training through services (TTS)

were reviewed by MoA. Three trainees' surveillance plans are under improvement, the rest of the trainees' surveillance plans have been submitted to their international mentors for review and comments.

Activity 2.3 2nd module of FETPV

- The second module of FETPV which focuses on participatory epidemiology, risk analysis, basic statistical analysis, data management and applied surveillance, as well as outbreak investigation started on 28 March 2011. An English communication training was provided to the 15 trainees on 26 and 27 2011 March to enhance their language abilities and presentation skills.

Activity 2.4 International experts in veterinary epidemiology from the Netherlands will develop case studies for outbreak investigation during March-April 2011.

- Two Dutch experts conducted their first mission to China from 21 to 25 March 2011. Field mission to Guangxi Province was implemented to discuss with local China Animal Disease Control Centre (CADC) officials about work plan for the next step.

Activity 2.5 Introduce and promote the concepts of diseases at the human-animal interface through training and multidisciplinary approach to disease surveillance and control

- Addressed the One Health concept at the human-animal interface in the framework of FETPV.

Activity 2.7 Support the participation of two Chinese nationals to the regional FETPV training in Bangkok

- One Chinese national expert from CAHEC, Qingdao participated in the third annual regional training course from 17 January to 11 February 2011 in Bangkok.

Output 3: Improved knowledge of HPAI epidemiological and ecological and socio-economic risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies.

- Produced and disseminated China HPAI highlights to donors, animal health units at FAO RAP, headquarters and MoA.

Output 4: Improved HPAI surveillance and control strategy through focused control actions

Activity 4.1 Assist in refining the strategic vision for the national vaccination campaign, provide guidance on improving the progressive control of HPAI, H5N1 through vaccination and share views on establishing a vaccination exit strategy.

- Recommendations on how best to sustain the efforts to control HPAI H5N1 in China and Vietnam were provided during the China-Vietnam Discussion Forum in March.

Activity 4.5 Procurement of necessary laboratory equipment and supplies for HPAI diagnosis, data analysis and information sharing including for Guangxi CDC laboratory.

- Procured laboratory equipment and materials for Guangxi CACD, the National Harbin Reference Laboratory (NHRL) and CAHEC; 15 laptop computers were also procured for FETPV trainees.

Planned activities for the next six-month period

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.2 Organize regular meetings with MoA, the Veterinary Bureau, the State Forestry Administration and DIC to discuss project activities

- Regular meetings with MoA to discuss China FETPV and other programmatic/operational matters of Phase V.

Activity 1.4 Strengthen cooperation with OFFLU and other laboratory and epidemiology networks - discuss and define joint scientific collaboration perspectives and opportunities

- Organize a ring trial between Harbin National laboratory and provincial laboratories under the guidance of the Istituto Zooprofilattico Sperimentale (IZS), Padova Reference Laboratory on AI.

Activity 1.6 Coordinate the newly created UN subworking group on diseases at the human-animal interface

- Regular working group meeting will be held every two months.

Activity 1.8 Improve public private partnership cooperation through case-study activities (e.g LBM restructuring) and missions of the international expert on PPP/biosecurity

- The PPP expert will visit Guangdong Province in April.

Output 2: Capacity building in epidemiology: implementation of the China FETPV program

Activity 2.2 Training through services

- The first Phase of TTS activities will be implemented from May to August.

Activity 2.6 3rd module of FETPV

- 3rd module of FETPV will start at the end of June.

Output 4: Improved HPAI surveillance and control strategy through focused control actions

Activity 4.2 Organize training on biosafety, management and test validation for project province laboratories

- Organize the biosafety laboratory training for provincial laboratory staff in May.

Activity 4.6 In the framework of the PPP activities, organize a stakeholder meeting and group discussion for the development of minimum biosecurity standards for LBMs.

- Conducted field mission to Guangdong Province in April with the PPP expert.

Main challenges encountered and responses provided

There are no major issues at present.

Main progress made towards the achievement of project outcomes

The project has made noticeable progress towards achieving the expected outputs of the project. Main progress can be summarized as follows:

- Increased MoA's involvement and support to the implementation of project activities of the current phase. MoA has shown strong commitment to FETPV programme and has allocated resources (RMB 500 000) to this programme in both 2010 and 2011.
- Strengthened the cooperation with MoA, provincial partners and international partners. International partners such as Canada, the Netherlands, the United States Center for Disease Control (USCDC) and the European Union have contributed to the successful rollout of the FETPV training.
- Trained 15 key veterinary staff from national institutions and provincial veterinary departments through China FETPV.
- Promoted exchange of experiences on HPAI H5N1 control, especially on the use of vaccination in endemic situation through the organization of China-Vietnam Discussion Forum of HPAI Risk Management and Control.
- Strengthened the link and collaboration between the animal health sector and public health sector, addressed the One Health approach at the human-animal interface through regular meetings involving a wide range of disciplines and scientific communities.
- More project information/event sharing with MoA, national counterparts, RAP, headquarters and donors through the production of China HPAI Highlights.

I Quarter 2010**Project Monitoring Sheet: OSRO/RAS/604/USA Baby 02**

Project title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: January- March 2010

Country: People's Republic of China
Project title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 02
Budget: USD 500 000 (Phase I), USD 500 000 (Phase II), USD 650 000 (Phase III) USD 1 150 000 (Phase IV)
Total budget: USD 2 800 000
Effective starting date: November 2009
Planned end date: September 2010
<p>Context of the project</p> <p>Despite efforts by the Government of the People's Republic of China to improve the surveillance and control of Highly Pathogenic Avian Influenza (HPAI), the disease is still endemic in some parts of the country, and some basic understanding about the disease and about key ecological risk factors is still lacking. Vaccination has been used widely throughout the country to dampen down the infection and bring the disease under control. However, the virus is still circulating in some production systems where the implementation of the vaccination policy requires major effort and where regulation enforcement is difficult. This project was designed to improve the country's ability to detect and control HPAI infection and disease in identified high-risk ecological and production systems at an early stage, through the implementation of intensified surveillance activities, epidemiological studies, socio-economic activities, capacity building and training.</p> <p>Objectives of the project</p> <p>The main objectives of the assistance under Phase IV of the United States Agency for International Development (USAID) project are to continue and expand the activities in southern China (Hunan and Guangxi with the addition of Yunnan Province and Chongqing Municipality during Phase III and IV) and provide technical assistance and support in the areas of HPAI epidemiological investigation, disease risk analysis and control strategy.</p> <p>Through project activities, a strengthened early detection and response mechanism will enable China to increase its capacity to detect and eliminate the disease in a timely manner, thereby minimizing production losses and risk to human safety. The immediate objective of the project is to improve the understanding of HPAI infection and disease distribution, and assist the country in defining high-risk areas for targeted control activities in order to minimize the risk to human health.</p>

Planned activities (Phase IV)**Output 1: Strengthened cross-sectoral coordination at the national level**

Activity 1.1 Support national consultants to assist in coordinating project implementation with the Government.

Activity 1.2 Organize regular meetings with the Ministry of Agriculture (MoA), Veterinary Bureau (VB) and Disease Investigation Center (DIC) and organize project steering committee meetings involving MoA, VB, China Animal Health Epidemiology Center in Qingdao (CAHEC), National Harbin Reference Laboratory (NHRL) and provincial Center for Animal Disease Prevention and Control (CDCs)

Activity 1.3 Contribute to and facilitate the coordination of surveillance and applied research activities at the wild bird/domestic poultry interface in Poyang Lake reserve and organize joint meeting with State Forestry Administration (SFA), provincial veterinary and wildlife authorities to discuss, plan and coordinate field activities.

Activity 1.4 Coordinate meeting with CAHEC and National Animal CDC to improve data integration and analysis at national level.

Activity 1.5 Strengthen international cooperation with the World Organization for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO) Network of Expertise on Animal Influenza (OFFLU) and other laboratory and epidemiology networks.

Activity 1.6 Organize steering committee workshop and inception workshop.

Activity 1.7 Organize FAO HPAI team building workshop to optimize the resource, definition of tasks and responsibilities and increase project delivery.

Activity 1.8 Organize final workshop at national level to report on the results and achievements of the 3rd and 4th Phase of the project.

Output 2: Strengthened HPAI disease surveillance system

Activity 2.1 Training and capacity building.

Activity 2.2 Establish a Geographical Information System (GIS) at the provincial level to support HPAI surveillance activities.

Activity 2.3 Procurement of necessary laboratory equipment and supplies for HPAI diagnosis, data analysis and information sharing.

Activity 2.4 Produce the China HPAI quarterly bulletin – update on HPAI situation and analysis of surveillance results. Produce and disseminate the HPAI monthly highlight summarizing key achievements of the project on a monthly basis.

Output 3: Improved knowledge of HPAI epidemiological, ecological and socio-economic risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results. Identify additional risk factors and data to be collected at local, provincial, and national levels to refine HPAI risk assessment at national and provincial level in order to better advice on priority surveillance and control activities.

Activity 3.2 Strengthen existing risk based surveillance approach through the longitudinal monitoring of selected live bird markets (LBM) in order to identify seasonal changes in infection distribution in winter and define early warning indicators associated to HPAI emergence.

Activity 3.3 Follow-up socio-economic studies: compile key information on poultry sector and its structure, analyse product flow along the market chains and determine the implications for disease surveillance and control issues in selected border provinces (Guangxi and Yunnan). Produce a report summarizing the main findings of the socio-economic studies performed in Hunan, Yunnan and Guangxi, their application in risk assessment studies and the lessons learned).

Activity 3.4 Facilitate the implementation of studies at the domestic poultry/wildlife interface in Poyang Lake Reserve to uncover risk factors associated with the emergence of new virus strains and their subsequent spread.

Output 4: Improved HPAI control strategy through focused control actions

Activity 4.1 Assist national authorities in collating and analysing post-vaccination surveillance data from the Ministry of Agriculture and CAHEC for the evaluation of the nationwide vaccination surveillance campaign.

Activity 4.2 Assist in refining the strategic vision for the national vaccination campaign, provide guidance in improving the progressive control of HPAI H5N1 through vaccination and share views on defining a vaccination exit strategy.

Activity 4.3 Compile results of above-mentioned epidemiological and socio-economic studies into a final report that will present a framework for changes of national surveillance and control policy.

Activity 4.4 Use LBM survey results generated during the Phase III of the project, assess biosecurity levels in LBM of the three pilot provinces, collect information on current regulations and plans for restructuring and advise national/provincial authorities accordingly

Activities undertaken during the reporting period (January -March 2010)

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1 Support national consultants to assist in coordinating project implementation with the government.

With newly joined national epidemiologist (risk analysis), the AI project team is working in full capacity to ensure a smooth and efficient delivery of the project work plan for the reporting period

Activity 1.2 Organize regular meetings with MoA, Veterinary Bureau and DIC and organize project steering committee meetings (involving MoA, Veterinary Bureau, CAHEC, Harbin and provincial CDCs).

- Through frequent communication and working meetings with MoA, the project team found better ways and measures to speed up delivery of the planned project activities particularly LBM surveillance, training workshops in the four project provinces/municipality and preparation for the establishment of the China Field Epidemiology Training Program for Veterinarians (FETPV).
- Prepared a concept paper for the stakeholders' meeting on China's FETPV in Beijing (3rd week of May 2010) and identified the necessary steps to achieve the expected results of the event.
- Supported FAO headquarters' efforts to obtain agreement from the Russian Federation regarding a proposal for an FAO regional project on transboundary animal diseases (TADs) surveillance.
- Organized the second session of team building training for the project staff to improve communication skills in public speaking, problem solving and action planning.

Activity 1.3 Contribute to and facilitate the coordination of surveillance and applied research activities at the wild bird / domestic poultry interface at Poyang Lake reserve. Organize joint meeting with SFA, provincial veterinary and wildlife authorities to discuss, plan and coordinate field activities

Communication and working group meetings involving FAO's Wildlife Unit, the China Forestry University and the Jiangxi Provincial veterinary authorities to work out the detailed plan for a field study at the Poyang Lake in Jiangxi Province, China, which were part of the ongoing effort to enhance the understanding of virus transmission capability between domestic and wild waterfowl and the overall HPAI epidemiological cycle.

Output 2: Strengthened HPAI Disease Surveillance System and Capacity Building

Activity 2.1 Training and Capacity Building

Organized training in disease outbreak investigation and surveillance protocols in Zhang Jiajie, Hunan Province. A total of 26 veterinarians and animal health officers from 11 prefectures/municipalities in Hunan attended the four-day training that was conducted by Dr. Flavie Goutard, veterinary epidemiologist of the French Center for International Agricultural Research (CIRAD) and Ms. Jia Beibei, veterinary epidemiologist (risk analysis), ECTAD China.

Activity 2.3 Procurement of necessary laboratory equipment and supplies for HPAI diagnosis, data analysis and information-sharing.

Laboratory supplies and equipment for provincial laboratories were procured.

Activity 2.4 Disease analysis: HPAI analysis of surveillance results

Produced the China HPAI Quarterly Bulletin – Volume 5.

Output 3: Improved knowledge of HPAI epidemiological and ecological risk factors

Activity 3.2 Strengthen existing risk based surveillance approach through the longitudinal monitoring of selected Live Bird Markets (LBM) in order to identify seasonal changes in infection distribution in winter and define early warning indicators associated to HPAI emergence.

- Organized training for provincial veterinarians and staff to prepare for another round of LBM survey in the two provinces of Hunan and Guangxi, and in Chongqing Municipality.
- Carried out LBM survey in Hunan and Guangxi provinces and Chongqing Municipality.

Activity 3.3 Follow-up socio-economic studies: compile key information on poultry sector and its structure, analyse product flow along the market chains and determine the implications for disease surveillance and control issues in selected provinces (Yunnan and Hunan).

Updated the plan and design for poultry sector review in Yunnan and Hunan provinces.

Activity 3.4 Facilitate the implementation of studies at the domestic poultry/wildlife interface in Poyang Lake Reserve to uncover risk factors associated with the emergence of new virus strains and their subsequent spread.

Organized a field study at the domestic poultry/wildbird interface in Poyang Lake in Jiangxi Province in China (January 2010).

Planned activities for the next quarter (April –June 2010)

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1 Organize regular meetings with MoA, Veterinary Bureau and DIC and organize project steering committee meetings (involving MoA, Veterinary Bureau, CAHEC, Harbin and provincial CDCs)

Regular meetings with MoA to discuss programmatic and operational matters.

Activity 1.2 Contribute to and facilitate the coordination of surveillance and applied research activities at the wild bird/domestic poultry interface at Poyang Lake reserve and organize joint meeting with SFA, provincial veterinary and wildlife authorities to discuss, plan and coordinate field activities

Facilitate the coordination of surveillance and research at the Poyang Lake, enter the data/information into the HPAI data base, analyze the findings and present the results to relevant authorities for further action.

Activity 1.3 Data integration and analysis workshop organized at national level.

Organize a data integration and analysis workshop in Qingdao on 26 May 2010.

Activity 1.4 Strengthen cooperation with OFFLU and other laboratory and epidemiology networks - discuss and define joint scientific collaboration perspectives and opportunities

- Visit of OFFLU partner laboratory in China scheduled in April by Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) - Padua/Italy to share information, establish effective communication and contacts to facilitate future cooperation opportunities
- Organize training on laboratory biosafety (by IZSVe) in Chongqing and Guangxi.

Activity 1.5 Organize a stakeholder meeting on FETPV

Hold Stakeholder Meeting on FETPV on the third week of May 2010.

Output 2: Strengthened HPAI Disease Surveillance System and Capacity Building

Activity 2.1 Training and capacity building.

- Two more training sessions in disease outbreak investigation and surveillance protocols at provincial and local levels following the first training in Hunan in March 2010 (eight days in Guangxi and four days in June in Yunnan).
- Organize theoretical and hands-on training in biosafety, management and test validation for the provincial laboratory staff in Chongqing and Guangxi (by IZSVe).
- Review the current AI diagnostic testing procedure and efficiency in April in Guangxi (by IZSVe).
- Follow up advanced training in Risk Analysis to be conducted by Royal Veterinary College in London (RVC) from 17 to 21 May 2010 in Qingdao and from 14 to 18 June 2010 in Chongqing.
- FETPV- Roadmap implementation and support of two national staff to attend the regional FETP-V training in Bangkok (June/July to August 2010).

Activity 2.2 Establish GIS-based system at provincial level to support HPAI surveillance activities.

Follow up training on GIS for provincial veterinary officials and staff in Guangxi, Chongqing (and possibly Yunnan) in June 2010.

Output 3: Improved knowledge of HPAI epidemiological and ecological risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies. Identify additional risk factors and data to be collected at local, provincial and national levels to refine HPAI risk assessment at national and provincial level in order to better advice on priority surveillance and control activities.

Finalize the ongoing analysis on 1) HPAI environmental risk factors; 2) role of LBM in HPAI spread throughout first and second quarter of 2010.

Activity 3.2 Strengthen existing risk based surveillance approach through the longitudinal monitoring of selected Live Bird Markets (LBM) in order to identify seasonal changes in infection distribution in winter and define early warning indicators associated to HPAI emergence.

Continue longitudinal LBM survey in the Guangxi and Chongqing in April 2010.

Activity 3.3 Follow up socio-economic studies: compile key information on poultry sector and its structure, analyse product flow along the market chains and determine the implications for disease surveillance and control issues in selected provinces (Yunnan and Hunan).

Recruit two international epidemiologists to (1) review the results of the market chain analysis studies conducted in 2009 and guide the ECTAD China team in applying social network analysis techniques in disease risk assessment and management, and (2) provide guidance on disease risk mapping techniques and modelling during April to June 2010.

Main challenges encountered and responses provided

There are no major issues at present. The project team will continue to closely monitor the implementation of remaining activities of the work plan for the next two quarters in order to ensure completion of all planned activities by the completion date of the project.

Main progress made towards the achievement of project outcomes

Over the period from January to March 2010, the project has made noticeable progress towards achieving the expected outputs of the project. FAO's technical assistance through the support provided by USAID, particularly the training and capacity building activities designed for and organized in the provinces have fostered a positive spirit and strengthened the relationships between FAO and the Central Government of China as well as with the provincial veterinary authorities. Some of the main achievements are:

- (1) **Strengthened cross-sectoral coordination and collaboration among all partners:**
 - Increased MoA and national partners' involvement and support to the planning and implementation of field surveillance activities, reinforcing disease surveillance and disease outbreak investigation through promotion and understanding of the importance of animal epidemiology and common approach/practices in other regions and the world.
 - Improved project/activity planning process and increased involvement and support from the MoA and national partners, which have resulted in increased project delivery and better results for the various inputs.
 - Routine functioning of the working groups and project focal points, resulting in better coordination and collaboration on HPAI at national and provincial levels.
 - Consolidated coordination between MoA and SFA and among all the national partners, increased collaboration and improved relationship and trust with MoA through regular meetings.
 - Improved design and effective organization of HPAI studies, field missions, and training activities targeting local veterinarian (provincial and prefecture levels) and laboratory staff.
- (2) **Strengthened HPAI Disease Surveillance System and Capacity Building**
 - Key competencies and skills required for better HPAI detection and data analysis and the overall capacity of the provincial CDCs have been developed, providing future opportunity and collaboration with national partners during the next phase of the project.
 - Some changes and adaptation of provincial surveillance protocols and planning (strategy) were made in Guangxi and Hunan, following FAO trainings.
 - Initial success in the study around the Poyang Lake, which laid down a foundation for studies of similar nature to be carried out during the coming year.
 - Provincial veterinary authorities and staff learned new skills, obtained first hand data and information and gained the experience in organizing more complex LBM survey and socio-economic studies. More locations could be included and follow these patterns.
 - Participants involved in the targeted surveillance activities, training workshops and studies focusing on animal epidemiology and risk analysis (LBM, cross-border socio-economic study, disease outbreak investigation, risk analysis and biosafety in laboratories) gained better understanding of the need for quality information/data for the HPAI disease surveillance system.
 - MoA and national partners better understood and increased their interest/support for an FETPV programme in China.
 - Provincial laboratories and staff enhanced their skills through additional training on laboratory protocol and the provision of laboratory supplies and equipment.
 - Continued efforts to involve national research/academies and international centres

of excellence to help widen the horizon of the project as well as to improve quality of training, knowledge sharing, networking and to increase the interest and participation of local veterinary authorities and staff.

(3) Contribution to improve knowledge of HPAI epidemiological, ecological and socio-economic risk factors through enhanced skills/knowledge and the overall capacity of provincial veterinary authorities and their staff, in particular:

- the concept, contents and benefits of a FETPV in China;
- the role and use of GIS technology in HPAI surveillance and risk analysis;
- the skills and protocols involved in the LBM survey and importance of the studies;
- the skills of epidemiologists in disease risk analysis and modelling techniques;
- AI project team produced/published HPAI bulletins and monthly reports which were shared with national counterparts, FAO headquarters and the donor at a regular basis.

(4) Improved HPAI control strategy through focused control actions.

Better understanding of poultry production structure and socio-economic issues for further integration into national response plan.

Project Monitoring Sheet: **OSRO/GLO/705/USA**Project Title: **China and Viet Nam Forum on HPAI Risk Management and Control**Reporting period: **October 2010 – March 2011**

Country: China and Viet Nam
Project title: China and Viet Nam Forum on HPAI Risk Management and Control
Code: OSRO/GLO/705/USA
Budget: USD 60 000 ¹
Total budget: USD 735 848
Effective starting date: 1 October 2007
Planned end date: 30 April 2014
<p>Context of the project</p> <p>A two-day “<i>Technical discussion on best practices for prevention and containment of H5N1 Highly Pathogenic Avian Influenza (HPAI)</i>” was organized by the United States Agency for International Development (USAID) in Bali, Indonesia, on 30 and 31 March 2010. Five countries (Bangladesh, China, Egypt, Indonesia and Viet Nam) were highlighted because of their extensive experience with H5N1 HPAI. This experience included the countries’ capacity in defining high-risk populations and geographic areas where H5N1 occurs and their efforts to continually readjust their prevention and containment strategies to manage the virus in both human and avian populations.</p> <p>During the meeting, experience and lessons learned were shared among the participants. There was a common agreement that H5N1 still posed a threat to animal/human health and sustainable rural livelihoods and that there was still a potential for a human influenza pandemic. Therefore, it was important to remain focused on the highly impacted countries and to continue targeted support with the goal of ultimately reducing circulating H5N1, leading to progressive eradication. One of the recommendations of the meeting was to share experiences among the target countries of many ‘good practices’ and lessons learned from controlling HPAI. These included:</p> <ul style="list-style-type: none"> • documentation and transfer of the good practices, e.g. health care in Egypt, market chain critical intervention point analysis, etc; • documentation and sharing of experiences of challenges and shortcomings; and • areas where best practices still needed to be developed. <ul style="list-style-type: none"> ○ full understanding of epidemiology; ○ identifying better tools to support behaviour change; ○ how best to engage with private sector and ensure biosecurity enhanced “farm to fork”; and ○ vaccination – most effective strategy(ies), effective vaccine for ducks. <p>The China and Viet Nam Forum is a direct result of the recommendations of the Bali meeting with a new approach of experience sharing, which is believed to be more beneficial to the participating countries than the conventional study tour programme. Initially, three possible study tours were considered: Viet Nam/China, Indonesia/Egypt and Bangladesh/? (Collaborating country was not selected). Owing to political problems in Egypt and subsequent budget constraints, only the study tour from Viet Nam to China was finalized and completed.</p>

¹ The amount of USD 60 000 was approved by the Donor for this specific activity.

Objectives of the project

To review the scientific progress made in HPAI H5N1 control and explore avenues for joint collaboration between China and Viet Nam in areas of mutual interest, covering the following topics: (i) disease and infection control along market chains and (ii) cost-effective, risk-based targeted vaccination.

Planned activities

Output: Increased understanding of the successes, challenges and lessons learned in combating H5N1 HPAI under similar country contexts

- Conduct workshop on China and Viet Nam Forum on HPAI Risk Management and Control.

Activities undertaken during the reporting period

Output: Increased understanding of the successes, challenges, and lessons learned in combating H5N1 HPAI under similar country contexts

A two-day workshop (8-9 March 2011) was held in Beijing China. This was a joint meeting between the governments of China and Viet Nam in order to assess the results of the past five years of mass vaccination and opportunities for transition to targeted, risk-based vaccination. The meeting was a follow-up of a technical discussion on best practices for prevention and containment of H5N1 HPAI that was held in Bali in March 2010 and hosted by USAID and the government of Indonesia to foster dialogue and experience sharing between countries highly impacted by H5N1 avian influenza. The meeting included presentations by international experts on the current scientific knowledge regarding influenza vaccines and new epidemiological approaches to assessing risk, reports on the national policies and programmes of both China and Viet Nam, as well as a special focus on the ongoing Food and Agriculture Organization of the United Nations (FAO)/USAID project in Viet Nam, called Gathering Evidence for Transitional Strategy (GETS) project. The GETS project is a pilot study conducted in three Vietnamese provinces.

Participants included:

- China: Deputy Director General (DG) of Veterinary Bureau (VB), HPAI experts from VB, Center for Animal Disease Control (CADC), China Animal Health and Epidemiology Center (CAHEC), Harbin Veterinary Research Institute (HVRI), Shanghai Veterinary Research Institute (SVRI), CADC Hunan, CADC Guangxi, FAO China
- Viet Nam: Deputy DG of Viet Nam Ministry of Agriculture and Rural Development (MARD), FAO Viet Nam ECTAD staff, USAID/RDMA and USAID in Viet Nam.
- Other international guest experts: FAO Regional Office for Asia and the Pacific (RAP) staff, Laboratory Director, Southeast Poultry Research Laboratory (SEPRL) of the United States Department of Agriculture.

Planned activities for the next six-month period

No further activities are directly foreseen under this project.

Main challenges encountered and response provided

- Despite the reduction in reported HPAI H5N1 outbreaks and human cases, the risks for the

generation of new influenza pandemic strains still exist. Animal and human cases are still occurring, and the virus continues to circulate in the traditional live bird market (LBM) system. As a consequence, some challenges still remain to be addressed for better controlling the disease and drastically reducing the level of infection in high-risk areas and/or high-risk segments of the poultry industry.

- Maintaining human and financial resources for a massive vaccination programme over an extended time span is recognized.
- Traditional farming systems, including waterfowl and free ranging duck systems, still represent a challenge for HPAI control and the implementation of a successful vaccination programme. In addition, it is difficult to improve the biosecurity of these traditional farming systems.
- There is a need to better understand different farming systems and more specifically duck husbandry systems in China and Viet Nam.
- In addition, it is necessary to better understand the ecosystems and market chains which bring together domestic waterfowl, farmed wild birds and migratory birds.
- Policy should be developed to support farmer applying Good Animal Health Farming Practices.
- LBMs still represent a particularly high-risk part of the industry and serve as a possible mechanism by which infection is maintained for prolonged periods of time, posing additional risk for disease spread and human exposure. The meeting recommended that:
 - There is a need to better understand the structure and dynamics of these markets, and how they are intertwined, to define control measures geared towards interrupting the HPAI H5N1 infection perpetuating cycle. Techniques and approaches borrowed from social sciences applied to epidemiology can assist in identifying persistence of infection or points of concentration along poultry market chains.
 - In this regard, a better knowledge of market trade practices and an increased understanding of market networks through value chain analysis and social network analysis would allow the definition of targeted control interventions along market chains.
 - With a view of drastically reducing the level of infection, which is maintained through LBM networks, restructuring of LBMs should become a priority and should engage both the public and the private sector. This approach was adopted in the United States to control avian influenza infection in LBMs and has proven to be successful. Increased surveillance activities in LBMs are also required.
- In Viet Nam: Policy should be developed to reduce the number of LBMs and increase super markets systems to sell safer poultry products.
- Additional recommendations:
 - It is necessary to review the current strategy (which started in 2004) in light of new scientific development (availability of new vaccines, prospects for developing risk-based surveillance and vaccination strategy, innovative approaches offered by market chain analysis and social network analysis, etc.).
 - There is a need to know more about the HPAI H5N1 virus, where it is entrenched and how it circulates within and between both countries. Thus, one of the areas for joint action should be to enhance the information sharing by establishing a mechanism of regular and timely update on the epidemiological situation, as well as on the field circulating strains.
 - There is a need to maintain donor support in both countries to assist them in their transitional strategy towards targeted risk based surveillance and vaccination.
 - More training in epidemiology is required to raise the capacity and skills of field veterinarians in order for them to better understand basic concepts of epidemiology

including the notion of risk and risk-based surveillance and control techniques. In this regard the Field Epidemiology Training Programme for Veterinarians (FETPV) in China should be further supported to train a critical mass of veterinarians, who will be responsible for the design and monitoring of risk-based strategies for HPAI and other infectious diseases.

Main progress made towards the achievement of project outcomes

- The vaccination programme implemented in China and Viet Nam has contributed to the improvement of the HPAI H5N1 epidemiological situation in the countries as demonstrated by a significant reduction in the number of animal and human cases.
- China and Viet Nam have taken several important steps to confront and control outbreaks and respond to the occurrence of human cases. These steps include measures, such as stamping out, movement controls, cleaning and disinfection of infected premises and the adoption of a nationwide mass vaccination campaign combined with intensive post-vaccination monitoring efforts.
- The use of vaccination in Viet Nam and China in accordance with OIE and FAO guidelines has been coupled with other surveillance and control measures to allow a progressive control of the disease in both human and animals.
- Viet Nam is willing to share virus samples with China for genotyping and to ensure that vaccines match circulating strains. China has agreed in principle and will consult further with national authorities, such as the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ). Vietnamese technicians are also welcome to visit China Reference Laboratory for Avian Influenza and learn about new laboratory techniques.
- Owing to the success of the discussion during the meeting and the dialogue initiated during the forum, it was agreed that follow-up meetings of this kind are required. Smaller follow-up technical meetings could also be envisaged every six months.

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 02

Project Title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza**Reporting Period: **April to September 2013**

Country: The People's Republic of China
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza
Code: OSRO/RAS/604/USA Baby 02
Budget: Phase I: USD 500 000 Phase II: USD 500 000 Phase III: USD 650 000 Phase IV: USD 1 150 000 Phase V: USD 1 250 000 Phase VI: USD 1 005 500 Phase VII: USD 670 000 Phase VIII: USD 781 000 Total budget: USD 6 506 500
Effective starting date: 1 August 2006
Planned end date: 30 September 2014
Context of the project <p>Despite efforts by the Government of the People's Republic of China to improve the surveillance and control of Highly Pathogenic Avian Influenza (HPAI) through the commitment of resources and development of widespread and comprehensive programmes in both animal disease surveillance and preventive vaccination, the disease remains endemic in some areas of the country. More specifically, the virus is still circulating widely in agro-ecological zones and traditional production systems where the implementation of the control policy requires major effort and commitment of human and financial resources at national and provincial levels. This project was designed to improve the country's capacities to detect and control HPAI in identified high-risk ecological and production systems at an early stage, through the implementation of intensified surveillance activities, epidemiological studies, socio-economic activities, capacity building and training. Ultimately, the project aims to reduce the spread of H5N1 in poultry in the country, thus minimizing the risk of contagion to other mammals and humans and the possibility of a pandemic.</p>
Objectives of the project <p>The main objective under Phase VII of the project is to continue the improvement of China's capacities and capabilities to understand HPAI epidemiology, to acquire and analyse relevant information and, overall, to effectively prevent, prepare for, and respond to HPAI outbreaks in the animal population. A significant part of Phase VII of the project revolves around training and capacity building through the China Field Epidemiology Training Programme for Veterinarians (FETPV). The project also follows up on new activities and approaches that were initiated in previous phases, including improvement of public-private partnerships (PPPs), biosecurity in live bird markets (LBMs), improving knowledge of market chain dynamics and investigation and</p>

reporting of outbreaks. Other activities include fostering exchanges of knowledge and good practices with neighboring countries on vaccination strategies, cross-border issues and controlling risks of transboundary animal diseases (TADs) using HPAI as a model, operationalizing the *One Health* concept, and addressing health issues at the human-animal-ecosystem interface with a special emphasis on a multi-disciplinary and cross-sectoral approach.

Planned activities for the reporting period (April to September 2013)

Output 1: Cross-sectoral coordination at the national and international levels strengthened

- 1.1 Support the country team including national and international consultants to assist in coordinating project implementation with the Government.
- 1.2 Ensure active participation as appropriate and facilitate coordination of the country programme with other projects or programmes including the Emerging Pandemic Threats Plus (EPT+) and EPT programmes.
- 1.3 Organize and attend meetings with United States Agency for International Development (USAID) partners and national Government partners to discuss project activities and implementation issues.
- 1.4 Strengthen the collaboration with border countries on prevention and control of transboundary animal diseases and safeguard animal production and public health.
- 1.5 Coordinate the United Nations Theme Group on Health (UNTHG) Sub-Working Group on diseases at the human-animal interface using avian influenza coordination as a model.

Output 2: Veterinary epidemiology capacity strengthened

- 2.1 Organize stakeholder meeting/mentors workshop/Steering Committee meeting for the second cohort of China FETPV.
- 2.2 Organize two training modules under the framework of the China FETPV for the second cohort.
- 2.3 Enhance practical *One Health* approaches in China FETPV training including promoting strengthening of working ties with China FETP.
- 2.4 Support the Veterinary Bureau and China Animal Health and Epidemiology Center (CAHEC) to organize epidemiology training at the national and provincial levels.

Output 3: Knowledge of HPAI epidemiological, ecological and socio-economic risk factors improved and shared

- 3.1 Produce the monthly bulletin, HPAI Disease Update, technical/scientific papers and analytical reports on the HPAI situation.
- 3.2 Discuss with the Ministry of Agriculture (MoA), State Forestry Administration (SFA) and other national implementing partners, means of supporting the implementation of surveillance and epidemiological studies.

Output 4: HPAI surveillance and control strategies improved

- 4.1 Assist in refining the strategic vision for the national vaccination campaign; provide guidance on improving the progressive control of H5N1 HPAI through vaccination and share views on establishing vaccination exit strategies where appropriate.
- 4.2 Assist the MoA and provincial partners to establish models of good practice for disease control.

Activities undertaken during the reporting period (April to September 2013)

Output 1: Cross-sectoral coordination at the national and international levels strengthened

Activity 1.1: Support by country team in coordinating project implementation:

- Recruitment of a national project coordinator under the EPT+ project (OSRO/INT/001/USA).
- Recruitment of a national consultation PPP to work for the promotion and roll-out of the PPP approach under project OSRO/GLO/302/USA.
- Recruitment of a national veterinary epidemiologist to carry out HPAI epidemiology research under project OSRO/RAS/604/USA B02.
- Contracts for the rest of office staff were extended to the new completion date of 31 December 2013 following the three-month no-cost extension of the project in order to ensure the successful completion of activities under the current phase and a smooth transition into the next phase.

Activity 1.2: Implementation of the EPT+ project in the country:

- Virus isolation and enzyme-linked immune-sorbent assay (ELISA) tests for two batches of samples were conducted in Harbin laboratory with preliminary results shared in the mid-term technical report.
- The EPT+ internal meeting attended by FAO's Emergency Centre for Transboundary Animal Diseases (ECTAD) China, Bangladesh and Vietnam country teams was held at the FAO's Regional Office for Asia and the Pacific (RAP) from 28 to 30 August 2013. The meeting was held to share information on project achievements and lessons learned during Phase I.
- The final report and payment based on the letter of agreement (LoA) with the Harbin Veterinary Research Institute (HVRI) on "Conducting field sampling and laboratory testing to characterize influenza viruses in the livestock sector" have been completed.
- An LoA on "Conducting genetic sequencing analysis of the swine influenza viruses from EPT+ project" with HVRI during the period from October to December 2013 was prepared and technically cleared by FAO RAP.
- The EPT+ project proposal for Phase II with an estimated budget was prepared for submission to USAID.

Activity 1.3: Meetings with USAID partners and national government partners for project implementation:

- From 6 to 7 May 2013, a USAID Partners Meeting was held in Guangzhou to review current projects and identify opportunities for future work and collaboration, and consider the ongoing influenza A(H7N9) situation. Representatives from USAID (Washington and Bangkok), relevant USAID projects (PREDICT/IDENTIFY), World Health Organization (WHO) China, United States Centers for Disease Control and Prevention (CDC), World Organization for Animal Health (OIE), FAO ECTAD and the Veterinary Bureau of the Chinese MoA attended.
- The implementation plan of the project, under FAO's Technical Cooperation Programme, entitled "Developing Prevention and Control Technologies for African swine fever (ASF) in China" has been approved by the Veterinary Bureau of the Chinese MoA. This is one of the important items specified in the memorandum of understanding (MoU) signed between the Veterinary Bureau and FAO owing to the huge pig population in China and the great risks of

ASF.

Activity 1.4: Strengthen the collaboration with border countries on prevention and control of transboundary animal diseases and safeguard animal production and public health:

- The Second China-Viet Nam bilateral meeting on collaboration to address transboundary animal diseases and diseases of public health concern was held from 22 to 24 August 2013 in Viet Nam. This meeting served as a comprehensive summary of China-Viet Nam veterinary cooperation in recent years and will promote practical and effective cooperation in the control of animal diseases in the future.
- Provided technical advice to the World Bank-funded Emerging Infectious Diseases (EIDs) project in the country and participated in the China-Mongolia joint exercises on the prevention and control of brucellosis in Inner Mongolia from 15 to 17 September 2013.

Activity 1.5: UNTGH Sub-Working Group meetings:

- The Executive Committee Meeting of the UNTGH Sub-Working Group on Diseases at the Human-Animal Interface was held on 8 July 2013 at the ECTAD Office in China.
- The event on 'Sharing Experiences on the Application of *One Health* Approaches in China' was successfully held from 8 to 9 August 2013 in Beijing. This event provided an opportunity for experts from multiple sectors to share their experiences with applying *One Health* approaches to the control and elimination of rabies and brucellosis, influenza A(H7N9) emergency response, as well as education, training and research. Good examples of the application of *One Health* approaches in China were identified, which can be used as models of good practice.

Output 2: Veterinary epidemiology capacity strengthened

Activity 2.1: The eighth Steering Committee of China FETPV was held on 21 June 2013 at the FAO ECTAD China Office, with the participation of representatives from the Veterinary Bureau, CAHEC, European Union (EU)-China Trade Project Phase II, CDC and other members. The meeting reviewed the progress of the past half year, finalized the Action Plan for the second half year of 2013 and also discussed the proposed activities and new initiatives for 2014. The members reached agreement on emphasizing the sustainability of the China FETPV programme as well as epidemiology capacity development in the coming year, e.g. roll out at provincial level and engagement with universities.

Activity 2.2: The activities of second cohort of the China FETPV are:

- A six-week training programme was delivered in Qingdao from 11 March to 19 April 2013. This was the first module of the second two-year China FETPV. The module mainly focused on the basic concepts of field epidemiology and application tools including biostatistics and geographic information systems (GIS). The trainees were comprised of 20 selected veterinarians from several governmental veterinary services and research centres across China.
- The second module of the China FETPV was held from 1 to 26 July 2013. A total of 20 trainees participated in the module. The module provided the trainees with expertise on outbreak investigation, risk assessment, advanced data analysis and disease control strategies.
- Trainees carried out the field practice assignments according to the programme framework.

Trainees completed 20 secondary data analyses, and 20 field epidemiological studies are ongoing. These field practice assignments helped the trainees to apply the epidemiology they have been learning into practice in a real context.

Activity 2.3: The training course “*One Health* for Veterinary and Medical Field Epidemiologists” sponsored by the EU-China Trade Project Phase II and co-organized by FAO ECTAD China Office, the Chinese Field Epidemiology Training Programme (CFETP) and the CAHEC was held from 15 to 19 July 2013 in Beijing. It was the first joint course between China FETPV and CFETP. There were a total of 43 participants, including 29 FETPV trainees and graduates plus 14 CFETP trainees.

Activity 2.4: The activities to strengthen the Chinese partners’ capacity were organized both at the national and provincial levels:

- The Good Emergency Management Practice (GEMP) Workshop on Strengthening Capacity to Respond to Animal Disease Emergencies, organized in conjunction with the China Center for Animal Diseases Control (CADC) and the Veterinary Bureau of the MoA, was held from 15 to 17 May 2013. The objectives of this workshop were to improve the capacity to respond to animal disease emergencies at provincial levels, and promote capabilities of veterinary authorities to prevent and control major animal diseases.
- The MoA designated six Chinese trainers for the China FETPV - three staff epidemiologists from CAHEC; two graduates of the first China FETPV cohort course and a PhD student from the University of Prince Edward Island. Each Chinese trainer took responsibility for three or four trainees and will act as a mentor for these students for the remainder of the course. This was seen as an important development and should enable close supervision and development of contacts between trainees and trainers.
- Training of trainers for the six Chinese trainers was delivered by two experts from the Royal Veterinary College in April 2013. The training focused on how to teach basic epidemiology and participatory teaching approaches.
- The Chinese trainers engaged with the China FETPV teaching activities; they delivered lectures and group-based exercises and provided the mentoring for the field practices. The international trainers provided guidance throughout the activities, which allowed the Chinese trainers to enhance their understanding of epidemiology and the teaching skills.

Output 3: Knowledge of HPAI epidemiological, ecological and socio-economic risk factors improved

Activity 3.1: In total, 12 issues of the monthly bulletin China HPAI Highlights (six in English and six in Chinese) and one HPAI Disease Update and analysis report on the HPAI situation were produced during the past six months. These products were disseminated to all relevant stakeholders on a regular basis.

Activity 3.2: Consultation with the MoA, SFA and provincial partners to carry out surveillance and epidemiological studies were continued through technical workshops/meetings.

Output 4: HPAI surveillance and control strategies improved

Activity 4.1: Work with national and provincial partners and provide support to facilitate trainees' field epidemiology surveillance and outbreak investigation under the second cohort of China FETPV.

Activity 4.2: Assist the MoA and provincial partners to establish models of good practice for disease control:

- On 14 May 2013, the Crisis Management Centre – Animal Health (CMC-AH) and ECTAD China met with representatives from the Veterinary Bureau and Zhejiang and Shanghai animal health authorities to discuss animal carcass disposal and farm waste management. CMC-AH assisted with the scoping of needs for further assistance on this topic.
- A seminar on strengthening biosecurity in LBMs was jointly held by the MoA and FAO on 23 July 2013 in Guangzhou, followed by a field visit to the Jiangcun Poultry Wholesale Market. Government representatives from the Veterinary Bureau, CADC, CAIIEC, FAO ECTAD China Office, the Agriculture, Fisheries and Conservation Department of Hong Kong, and local veterinary authorities from Shanghai, Jiangsu, Zhejiang, Hunan, Anhui provinces, where low pathogenic avian influenza A(H7N9) was experienced earlier this year. They were joined by stakeholders from market management, vendors and the private sector.
- With the company of local partners from the Veterinary Bureau and Animal Health & Inspection Institution, FAO ECTAD visited two of the largest poultry wholesale markets in Changsha on 23 September 2013 and attended a meeting chaired by the Director of Veterinary Bureau of Hunan Province, joined by the management of the LBMs, State Administration for Industry & Commerce of Changsha and Market System Construction Department of Changsha Commerce Bureau. The meeting identified the difficulties, challenges and opportunities of relocating and upgrading the new LBM in Changsha City, as well as FAO's possible involvements in strengthening the biosecurity of the market.

Activity 4.3: Following the outbreaks of influenza A(H7N9) that resulted in infection and human deaths in the eastern provinces of China in April 2013, FAO ECTAD China has been assisting the MoA's implementation of a large-scale national strategy for surveillance by providing information and participating in a joint epidemiological investigation along with four teams of graduates and trainees from FAO's FETPV. In particular, FAO's response included the following:

- An Incident Response Team was established with close linkages to FAO headquarters and RAP. Advice has been provided to the MoA and FAO on request. The Team worked very closely with WHO in China.
- FAO headquarters convened a workshop of international experts who have prepared detailed reports on risk assessment, surveillance and risk management. Chinese language versions have been prepared and shared with the MoA.
- FAO was invited by the MoA to participate in a joint FAO/MoA team to conduct an epidemiological study in the affected areas. This is underway – the first stage has been completed and a preliminary analysis has been prepared and shared with the MoA.
- A conference for information exchange on influenza A(H7N9) situation and sharing of experiences and lessons learned from the prevention and control of influenza A(H7N9) in China was held in Bangkok from 24 to 25 June 2013.

Activity 4.4: In coordination with Veterinary Bureau of the MoA, the FAO ECTAD China Office carried out influenza A(H7N9) research through market chain analysis with Jiangsu Province, the potential high-risk area, as the pilot province. In consultation with experts from CAHEC, a series of scientific investigation forms was designed and the local veterinary authority of Jiangsu Province was required to provide the information needed.

Main challenges encountered and responses provided

Due to the influenza A(H7N9) outbreaks, FAO ECTAD staff worked long hours to assist the MoA. FAO ECTAD staff were able to maintain a high level of completion of agreed activities by working hard, prioritizing and adjusting schedules. The MoA has recognized the significant contribution made by FAO ECTAD staff.

The vacant National Epidemiologist position was filled and an international consultant was employed on emergency funding to assist with the response.

Main progress made towards the achievement of project outcomes

The project has made considerable progress towards achieving the expected outcomes, which can be summarized as follows:

- There was a high level of achievement of planned activities. Highlights include good progress with the FETPV, collaboration with neighboring countries, application of *One Health* approaches, GEMP training, the recognition of the Animal Influenza Laboratory, HVRI as a FAO Reference Centre for Animal Influenza, and progress with the EPT+ project.
- The signing of the MoU on prevention and control of TADs and EIDs between FAO's Animal Production and Health Division and the Veterinary Bureau of China's MoA in May 2013 demonstrates the high-level commitment for bilateral cooperation on animal health issues. It was assisted by high-level visits and dialogues by both parties, who have agreed to continue such meeting and plan activities jointly.
- The promotion of the PPP project in Guangzhou through the demonstration of model market is the first time that FAO China has introduced the PPP approach to address veterinary and animal health issues, with a special focus on LBMs in China. Winning the support from both public and private sectors, the seminar and field visit provided an opportunity for all interested stakeholders to participate in the scaling up of existing experience to other LBMs in the future.
- Following the visits by the FAO Chief Technical Adviser and the National Technical Adviser to the Veterinary College of Huazhong Agricultural University in Wuhan, the University has agreed to participate in FAO activities to promote veterinary epidemiology education.

Project Monitoring Sheet: **OSRO/INT/604/USA Baby 1**

Project title: **Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment**

Reporting period: **October 2010 – March 2011**

Regional:	Global
Project title:	Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment
Code:	OSRO/INT/604/USA Baby 1
Budget:	USD 5 000 000 ¹
Planned end date:	30 April 2014
Effective starting date:	January 2007
Context of the project:	
<p>The Crisis Management Centre – Animal Health (CMC-AH) of the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) is mandated to respond to new outbreaks and critical epidemiologic situations involving Highly Pathogenic Avian Influenza (HPAI) and other transboundary animal diseases (TADs) upon official government request. Within the framework of the Emergency Centre for Transboundary Animal Diseases (ECTAD), the CMC-AH provides assistance where local governmental capacity may be insufficient to respond effectively and where the spread of the virus may pose a broader regional or global risk.</p> <p>In support of this mandate, and within the context of the mandates of OIE to improve animal health worldwide and the World Health Organization (WHO) to lead global human health initiatives, the United States Agency for International Development (USAID) has provided to date a total of USD 5 million to FAO in support of the CMC-AH for sustained emergency preparedness, rapid assessment and response in the field and at headquarters to suspected or confirmed outbreaks of HPAI and other zoonoses in collaboration with OIE and WHO.</p> <p>Under this project the CMC-AH continues to carry out its mandate while working to combine efforts, avoid overlaps and build synergies between FAO, OIE and WHO, as the organizations work to facilitate the containment of HPAI and other zoonotic diseases at its source in animals, prevent its spread across international borders and mitigate the risk of a human pandemic.</p>	
Objectives²:	
<p>The purpose of the Grant is to provide funding to FAO to support activities to prevent and control HPAI worldwide and reduce the risk of a human pandemic. In this general context and in the specific context of Amendments 1 and 2, the objective of the project is to support CMC-AH operations and missions for: (i) enhanced core team capacity; (ii) improved FAO/OIE/WHO linkages at regional and country level; (iii) increased immediate capacity building; and (iv) strengthened risk communication support (provided to affected/at-risk countries) and overall communication activities (targeting donor, partner and other audiences).</p>	

¹ The budget allocation amounts to USD 2 000 000 (Phase I), USD 2 000 000 (Phase II) and USD 2 000 000 (Phase III). The total budget takes into account the reallocation of USD 1 million of CMC-AH funds to the surveillance and response component of the USAID grant as agreed with the Donor.

² These objectives represent a synthesis of the main Grant Objectives contained in the Grant Agreement and Amendments 1 and 2 (i.e. the project document). They have been presented in summarized form in compliance with the Progress Monitoring Sheet format. Detailed reporting on objectives and activities will be included in the final narrative report upon project completion.

Planned activities of the project:

- planning, deploying and following up CMC-AH rapid response missions;
- developing tools in support of CMC-AH operations and response capacity;
- defining cooperation mechanisms between WHO and the CMC-AH;
- exchanging information and regularizing communications;
- developing standard operating procedures (SOPs) for FAO, WHO and OIE; and
- coordinating missions at headquarters and field levels.

Activities implemented during the reporting period (October 2010 – March 2011):

- **Missions for HPAI³**

No missions were deployed for HPAI during the reporting period.

- **Missions for zoonoses or unknown disease crises**

Bangladesh, Anthrax, 23 October – 3 November 2010

After anthrax outbreaks in humans and animals came to prominence in the country, the Government of the People's Republic of Bangladesh requested FAO support to: (i) conduct an in-depth assessment of the anthrax situation; and (ii) increase anthrax prevention and control capacities. The CMC-AH deployed a team of four experts, including an anthrax expert, suggested by the OIE as a recognized expert, and provided in-kind from the Canadian Food Inspection Agency, to provide technical and operational assistance. The team provided detailed recommendations, including the proposal of a control strategy to break the cycle of anthrax infection in the animal and human population.

Azerbaijan, Rabies, 10–17 December 2010

Building on discussions between the Azerbaijan authorities, FAO and the Asian Development Bank – which resulted in the allocation of USD 50 000 for rabies prevention and control – the Ministry of Agriculture of the Government of Azerbaijan requested additional support from the CMC-AH for technical assistance. In response, the Centre deployed a disease control expert to support the Government's response to an apparent increase of rabies cases in dogs and livestock. The increase was postulated to have arisen as a result of congregation of animals following an exceptional flooding event. The mission provided detailed recommendations, including raising awareness of technical assistance requirements and led to WHO follow-up for public health protection.

Mauritania, Rift Valley fever (RVF), 7–17 January 2011

In light of RVF outbreaks occurring in-country in late 2010, the Mauritanian authorities requested FAO assistance to respond to the epidemic that was causing human deaths, livestock losses and dramatic economic challenges. The CMC-AH deployed a team of four experts with specialities in: (i) vector-borne diseases; (ii) diagnostics; (iii) epidemiology and risk management; and (iv) laboratory networks. In addition to augmenting information on the ground and recommending next steps, the mission helped secure from the Central Emergency Response Fund of the United Nations: (i) USD 400 000 for WHO to assist with epidemiological surveillance, human case detection and management and disease awareness raising; and (ii) USD 280 000 for FAO to assist with veterinary equipment, training, risk assessment, epidemic control and RVF information dissemination.

- **FAO-OIE Memorandum of Understanding (MoU)**

The MoU was signed and confirmed by FAO and OIE in late 2010.

- **Strengthening coordination and building awareness of CMC-AH and its services**

³ During the reporting period and with alternate funds, the CMC-AH deployed missions to Mongolia (December 2010) and the Democratic Republic of Korea (February–March 2011) in support of Foot-and-Mouth Disease assessment and control efforts.

- The CMC-AH briefed 14 FAO Representatives to strengthen collaboration with response missions.
- CMC-AH hosted a visit by WHO focal points to enhance coordination methodologies.
- A CMC-AH Administration Coordinator and the Response Veterinary Officer seconded from France met with the French Agency for Food, Environmental and Occupational Health Safety and *France Vétérinaire International* in Paris for two days to discuss expert availability for future CMC-AH missions.
- Visits to WHO Headquarters in Geneva for other purposes provided the opportunity for two separate discussions to be held with WHO officers engaged in emergency response work. This ensured briefings and information exchange between CMC-AH and WHO officers and resulted in plans for: (i) the key WHO focal point for CMC-AH to visit FAO headquarters; and (ii) WHO and FAO to explore opportunities for joint exercises and information products.
- FAO produced three publications during the reporting period to raise awareness among the international community of the: (i) Centre's work on animal disease response; (ii) ongoing disease threats facing the world's most vulnerable; and (iii) challenges those threats pose to animal health, human health and livestock-related livelihoods.
 - **Activity Report (2008–2010):** The updated Activity Report described the continued evolution of the CMC-AH platform and its activities at the conclusion of its fourth year of existence. The report highlighted the long-term vision of FAO and partners like USDA in providing in-kind and cash support to maintain the Centre's capacity to assist member countries in a changing disease landscape. Available [online](#).
 - **Rapid Mission Update (2008–2010):** This chronology of missions over the past two years provides a detailed account of each mission's activities and outputs in support of governments working to reduce public health and animal health risks and protect livestock-related livelihoods. It is available [online](#).
 - **Sida and the CMC-AH (2008–2010):** This brochure was produced to highlight the positive impacts that CMC-AH rapid response can have on vulnerable, smallholder livelihoods, especially those affected by TADs other than HPAL. Available [online](#).
- From 7 to 11 February 2011, the CMC-AH Administration Coordinator participated in the "Tanzanian National Government Civ-Mil Pandemic Disaster Response Tabletop Exercise" hosted by the United Republic of Tanzania and funded by USAID. The exercise provided the CMC-AH with the opportunity to: (i) contribute its experience to the simulation in an observer/coordinator role; (ii) make contact with focal points potentially important toward future responses in the region; and (iii) review specific emergency management principles for continued strengthening of the Centre's response capacity. Noting the utility of the exercise, the CMC-AH plans to send the newly recruited Operations Officer (see below) to a similar exercise planned for May 2011 in Senegal.
- **Revision and update of FAO's Good Emergency Management Practices (GEMP)**
The initial, draft version of GEMP was completed and is undergoing expert/peer review. The coming version will emphasize preparedness supported by prevention, detection, response and recovery.
- **Event Tracking and Management System (ETMS)**
ETMS went live in February 2010; the system is currently the Centre's main tool for event management and action planning. Entry of previous event and mission data is scheduled for completion during the next reporting period.
- **Staffing**
The CMC-AH recruited a new Operations Officer during the reporting period.

- **Fourth Steering Committee, 22 November 2010**

The Fourth meeting of the CMC-AH Steering Committee provided a renewed opportunity to review and discuss CMC-AH initiatives and implementation with key stakeholders. New arrangements for the meeting included the invitation of a beneficiary country (i.e. the Togolese Republic) to participate and provide direct feedback on CMC-AH assistance and added value. Meeting constituents provided positive feedback on results and progress while emphasizing the need for FAO, OIE, WHO and their partners to find new ways to: (i) prioritize and plan response activities; (ii) seek feedback from recipient countries; and (iii) collaborate with third-party actions where appropriate.

Planned activities for April to September 2011:

- continued monitoring of high-risk countries and situations;
- mission planning and deployment upon request for or acceptance of assistance;
- data entry and training using ETMS;
- continued CMC-AH awareness building activities;
- finalization and promotion of GEMP and publication of the core GEMP documents; and
- continued contact with OIE regarding the implementation of FAO-OIE MoU.

Main challenges encountered and response provided: None

Main progress made towards project objective, listed by activity⁴ (since project start):

- **Mission planning, deployment and follow-up**
HPAI missions: 24 Total missions: 51 Total countries: 33
- **Development of tools supporting CMC-AH response capacity**
 - Reagent contingency stock implemented for HPAI
 - HPAI stocks stored under cold chain at the United Nations Humanitarian Response Depot in Brindisi, Italy
 - HPAI reagent stock successfully utilized to support government response efforts
 - Technical SOPs revised as part of overall GEMP efforts
- **Refining cooperation mechanisms between WHO and CMC-AH**
 - Standard lines of interagency communication defined
 - Information focal points established
 - Coordinated missions (human and animal health) deployed and followed up
- **Exchanging information and regularizing communications**
 - WHO's Emergency Management System analysed for applicability to CMC-AH
 - Development of ETMS final version complete; training/data entry underway
 - Regular information exchange through regular meetings and staff visits
 - FAO/OIE/WHO coordination methodologies confirmed through standardized information sharing methods and focal points
- **SOP development for FAO, WHO and OIE**
 - Initial SOPs defined: 21
 - Consolidated SOPs: 4
- **Strengthening mission coordination and field-level cooperation**
 - After action review processes implemented to capture lessons learned
 - Headquarter- and field-level contacts established and disseminated
 - Coordination mechanisms strengthened through mission experience
 - Field-level SOPs under development for enhanced national response

⁴ Due to the nature of the CMC-AH concept and the project's main aim to support FAO's capacity for rapid response, the majority of activities are to be considered as ongoing initiatives.

Project Monitoring Sheet: OSRO/INT/604/USA Baby 01**Project title: Support for FAO/OIE/WHO collaboration on
HPAI rapid response and containment****Reporting period: April 2013 to September 2013**

Regional: Global
Project title: Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment
Code: OSRO/INT/604/USA Baby 01
Budget: USD 5 000 000 The budget allocation amounts to USD 2 000 000 (Phase I), USD 2 000 000 (Phase II) and USD 2 000 000 (Phase III). The total budget takes into account the reallocation of USD 1 million of the Crisis Management Centre – Animal Health (CMC-AH) funds to the surveillance and response component of the USAID grant as agreed to with the Donor.
Effective starting date: 1 January 2007
Planned end date: 30 April 2014
Context of the project: The CMC-AH of the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) is mandated to respond to new outbreaks and critical epidemiologic situations involving Highly Pathogenic Avian Influenza (HPAI) and other transboundary animal diseases (TADs) upon official government request. Within the framework of the Emergency Centre for Transboundary Animal Diseases (ECTAD), the CMC-AH provides assistance when local governmental capacity may be insufficient to respond effectively, and when the spread of the virus may pose a broader regional or global threat. In support of this mandate, within the context of OIE's mandate to improve animal health worldwide, and with the World Health Organization (WHO) to lead global human health initiatives, the United States Agency for International Development (USAID) has provided, to date, a total of USD 5 million to FAO in support of the CMC-AH for sustained emergency preparedness, rapid assessment and response in the field and at headquarters, to suspected or confirmed outbreaks of HPAI and other zoonoses, in collaboration with OIE and WHO. Under this project, the CMC-AH continues to carry out its mandate while working to combine efforts, avoid overlaps and build synergies between FAO, OIE and WHO, as the organizations work to facilitate the containment of HPAI and other zoonotic diseases at their source, in animals, prevent their spread across international borders and mitigate the risk of a human pandemic.
Objectives¹: The purpose of the grant is to provide funding to FAO to support activities in preventing and controlling HPAI worldwide, and reducing the risk of a human pandemic. In this general context, and in the specific context of Amendments 1 and 2, the objective of the project is to support CMC-AH operations and missions for: (i) enhanced core team capacity; (ii) improved FAO/OIE/WHO linkages at regional and country level; (iii) increased immediate capacity building; and (iv) strengthened risk communication support (provided to affected/at-risk countries) and overall communication activities (targeting donor, partner and other audiences).

¹ These objectives represent a synthesis of the main Grant Objectives contained in the Grant Agreement and Amendments 1 and 2 (i.e. the Project Document). They have been presented in summarized form in compliance with the Progress Monitoring Sheet format. Detailed reporting on objectives and activities will be included in the final narrative report upon project completion.

Planned activities of the project:

- coordinating missions at headquarters and field levels (decentralized offices);
- planning, deploying and following up on CMC-AH rapid response missions;
- developing tools in support of CMC-AH operations and response capacity;
- defining cooperation mechanisms between WHO and the CMC-AH;
- exchanging information and regularizing communications; and
- developing standard operating procedures (SOPs) for interagency cooperation between FAO, WHO and OIE.

Activities implemented during the reporting period (April 2013 to September 2013)

- **Assistance to respond to emergency situations linked to HPAI**

FAO (jointly CMC-AH, EMPRES Animal Health, and ECTAD China Team) is closely monitoring and assessing the situation on a new avian influenza A(H7N9) through its wide network of decentralized offices, together with the Chinese Authorities, and liaising with key partners including WHO and OIE.

The Democratic People's Republic of Korea (DPRK), H5N1 HPAI, 2-10 June 2013

A state-owned duck farm located ten kilometres from Pyongyang observed symptoms that led to a suspicion of HPAI, with a subsequent tentative local diagnosis of H5N1. A CMC-AH mission was deployed in order to: (i) assess the diagnostic capabilities of the country and advise officials on specific requirements for effective laboratory diagnosis and confirmation of influenza viruses; (ii) assess the extent of the H5N1 outbreak and advise the DPRK officials in drafting an action plan; (iii) assist DPRK officials with virus molecular characterization by facilitating sample submission to a reference laboratory; and (iv) liaise with partners and potential donors to consider funding needs for enhanced avian influenza control programmes.

At the debriefing session, the mission team recommended that the DPRK should: (i) increase its disease surveillance capacity via technical trainings; (ii) obtain necessary equipment for vaccine production and diagnostic laboratories; and (iii) join the ongoing FAO regional cooperation programme on TADs (along with the People's Republic of China, Mongolia, the Russian Federation and others).

- **Missions for other disease emergencies**

The Socialist Republic of Viet Nam, Rabies, 5-16 May 2013

An increase of human and animal cases of rabies in the Northern Provinces of Viet Nam led the government to request assistance from the CMC-AH. The mission team addressed the rabies situation with national representatives, meeting objectives to: (i) provide assistance and support in assessing the epidemiological situation of the ongoing rabies events in Viet Nam; (ii) identify possible risk factors that may further amplify and disseminate the disease; (iii) provide advice on priority intervention approaches to decrease rabies events in the country; and (iv) encourage local government employees to engage in feral dog capture and vaccination, as well as encourage responsible pet ownership among Viet Nam's residents.

The mission made a number of recommendations to the government of Viet Nam: (i) conduct nationwide synchronized dog vaccination; (ii) enhance the communication and awareness campaign, targeted at specific at-risk populations; (iii) increase sample collection and establish working relations with reference laboratories for rabies; and

(iv) coordinate rabies surveillance and investigations through linking animal and human health information systems (internet based), beneficial in assessing information for decision-making to prevent the further spread of the disease.

Libya, Newcastle disease, 13-18 May 2013

On 17 April 2013, an official request for assistance was sent by the Deputy Minister of Agriculture, Animal and Marine Wealth to the FAO Director-General. As a result, the CMC-AH fielded a rapid response mission with the main objectives to: (i) review the ongoing poultry Newcastle disease situation in Libya and assist the veterinary services of the country in disease diagnosis, including laboratory diagnostic procedures; (ii) advise and assist in the drafting of an action plan to guide a timely poultry disease response and future prevention measures; (iii) consider means of identifying and addressing funding needs for enhanced control programmes; and (iv) suggest ways in which future activity regarding containment and control can be integrated to further strengthen and support other initiatives related to poultry disease surveillance.

A number of recommendations associated with the response were provided, including: (i) the reinforcement of basic biosecurity measures in order to limit the spread of the disease; (ii) stamping out, in addition to vaccination; (iii) drafting of a communication strategy and an operational plan targeting main stakeholders; and (iv) strengthening virology capacities of laboratories and enabling the production of the appropriate reference materials.

The Kingdom of Saudi Arabia, Middle East respiratory syndrome coronavirus (MERS-CoV), 14-25 September 2013

The first known human case of MERS-CoV occurred in April 2012 in Jordan. Since then, the disease has spread to eight other countries, with 60 confirmed human deaths and 133 confirmed cases (as of 24 September 2013). During the course of this mission, the team's goal was to: (i) assist the country in the disease investigations of human cases of MERS-CoV by considering animal species as potential sources of human exposure, and assisting the veterinary authorities in developing a surveillance programme to identify potential sources of animal origin; (ii) collaborate with experts to develop a carefully designed study into potential MERS-CoV exposures, in coordination with epidemiological studies in humans; and (iii) support the country on preparedness, contingency planning, and risk mitigation.

- **Good Emergency Management Practice (GEMP) Workshops**

The GEMP manual in French has been printed. The GEMP manual in Arabic, Chinese and Spanish are ready for printing. A second printing of the English version has taken place. These manuals were distributed to participants attending the GEMP workshop.

Abidjan, Côte d'Ivoire, 20-24 April 2013

Animal health officials from the Republic of Benin, Burkina Faso, Côte d'Ivoire, the Republic of Mali, the Republic of Senegal and the Togolese Republic convened in Abidjan on 20 April 2013 for a presentation of GEMP principles. Over the course of the workshop, seven modules of the GEMP manual were presented and working group discussions took place. Attendees participated in a simulation exercise where two neighbouring countries experienced a theoretical outbreak of avian influenza A(H7N9), with human deaths reported.

Morogoro, the United Republic of Tanzania, 2-4 May 2013

The workshop was jointly organized by the CMC-AH and ECTAD Eastern Africa, in collaboration with the Department of Veterinary Services of Tanzania. Focus was placed on a participatory forum, making use of presentations and group discussions. In order to strengthen the country's capacity in responding to animal disease emergencies, the participants agreed that appropriate national emergency contingency plans for *peste des petits ruminants* (PPR), brucellosis and African swine fever are needed.

Nakuru, the Republic of Kenya, 7-9 May 2013

For this workshop, the CMC-AH worked with ECTAD Eastern Africa and the Department of Veterinary Services of Kenya to bring together 31 senior veterinary officers from the country. The sessions focused around different phases of emergency disease management, key matters in preparedness planning and principles of infectious disease control as well as the role of veterinary services in outbreak situations and recovery and more. The participants also discussed and agreed upon priority actions that ought to be taken in disease emergency situations.

Beijing, the People's Republic of China, 15-18 May 2013

Among the 40 participants, four groups were arranged, based on geographic distribution in the country, and then cross-provincial border issues were discussed. They were able to share their own experiences and difficulties with disease control and prevention strategies used in each province, region and municipality. Most importantly, it was noted that existing plans did not address many of the issues that were encountered with the country's actual H7N9 response. This led to a discussion on the need for preparedness plans targeted at specific locations, accounting for diversity of cultures, geography and industry throughout the country.

While the CMC-AH team was in Beijing, the Chinese government asked to convene a meeting to discuss the issue of animal carcass disposal including emergency disease disposal and normal death disposal, particularly in relation to pig mortalities. China farms approximately one-half of the world's pigs, and that which can be regarded as normal mortality associated with pig production presents major logistical and pollution problems. Emergency disease outbreaks will exacerbate this problem and it is important that practical options exist. The CMC-AH agreed to assist in supporting ECTAD China in further defining the issues and seeking solutions.

- **CMC-AH 7th Steering Committee (SC7), 24 October 2013 in Rome, FAO headquarters**

The SC7 is in the planning stage, scheduled to be held on 24 October 2013. The SC7 will bring together representatives of FAO, OIE, and WHO, and those representing donors and beneficiary countries. In addition to presenting CMC-AH missions and activities, the CMC-AH will continue the precedent of receiving direct feedback from beneficiary countries and donors.

The SC7 will feature a segment entitled, 'Voices from the field,' with videos provided by the FAO Representative of the Democratic Republic of the Congo, Ndiaga Gueye, and the former FAO Representative of the Republic of the Gambia, Ahmadu Babagana (FAO Representative at the time of the Gambia mission).

- **Revision of internal SOPs for CMC-AH operations**

A CMC-AH working group is continuing to work on updated internal SOPs for rapid deployment mission activities.

- **Partnership building**

In February 2013, a meeting was held at the French Ministry of Agriculture with the Chief Veterinary Officer and other key participants regarding support to the CMC-AH through a loaned expert. This meeting led to the extension of the availability of the French expert for an additional year, until November 2014.

The finalization of the re-drafted Standard Operating Guidelines (SOGs) with OIE is ongoing.

A Letter of Agreement (LoA) between FAO and *France Vétérinaire International* (FVI) was signed in June 2013 and amended on 4 October 2013. The LoA enables the rapid deployment of experts from FVI to participate in CMC-AH missions. FVI has designated a focal point in direct contact with the CMC-AH. This focal point is in charge of all FVI administrative tasks on and is responsible for liaising with potential experts. A meeting with CMC-AH and FVI will be convened on 23 October 2013 to facilitate cooperation between the two organizations.

A new partnership between FAO and the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan was established in August 2013. CMC-AH will receive one Veterinary Expert from the MAFF, Tokyo, starting 1 October 2013, for a period of three months.

As the USDA-funded project OSRO/INT/602/USA and its associated programme agreement was due to terminate at the end of September 2013, a new Programme Agreement (between the USDA and FAO), for the loan of USDA experts to FAO was negotiated and signed on 4 September 2013. This new Programme Agreement for the loan of USDA experts to FAO will come into force on 1 October 2013, for a duration of five years.

From 12-13 September 2013, an H7N9 technical and programmatic meeting was held in FAO headquarters between USAID, the Centers for Disease Control and Prevention (CDC) and FAO staff from regional and country offices. At a side meeting, the CMC-AH discussed future activity projections with the USAID representatives regarding: i) a multidisciplinary approach to unknown diseases at early stages; ii) the proposed renaming of the CMC-AH to Centre for Preparedness and Rapid Response – Animal Health; and iii) current project funding forecasts and future project funding availability.

- **CMC-AH methodology**

CMC-AH emergency response methodologies are being adapted by other parts of FAO for use with other response activities (humanitarian responses) carried out by the organization. The CMC-AH has provided advice and access to relevant tools.

In August 2013, a CMC-AH veterinary intern developed guidelines for the efficient use of the CMC-AH's electronic records and of the Event Tracking Management System (ETMS). The intern also developed a short document aimed at informing experts on FAO's position in animal disease prevention and control using Rift Valley fever as an example.

<ul style="list-style-type: none"> • FAO Representatives <p>Outreach to FAO Representatives remained a core activity in the framework of the decentralization process by corporate initiative at headquarters, regional, sub-regional and national levels, with the CMC-AH continuing to brief newly appointed country and regional FAO Representatives as standard practice.</p>
<p>Planned activities for the next six-month period (October 2013 to March 2014)</p> <ul style="list-style-type: none"> • discussion on the renewal of the LoA with FVI on 23 October 2013; • SC7 to be held on 24 October 2013; • continued monitoring of high-risk countries and situations; • mission planning and deployment upon request for, or acceptance of, assistance; • continued discussions with OIE and WHO on working methodologies; • continued promotion of GEMP principles through a workshop in Jordan; • mission follow-up to maximize impact; • further development of SOPs for rapid deployment mission activities; • no-cost extension of project OSRO/INT/604/USA (baby 01 and baby 02) will be requested from April to September 2014 with budget revision ; and • finalization of common FAO/OIE SOGs.
<p>Main challenges encountered and response provided: None</p>
<p>Main progress made towards project objective, listed by activity¹ (from project start)</p> <ul style="list-style-type: none"> • Mission planning, deployment and follow-up <p>HPAI missions: 26 Total missions: 66 Total countries: 43</p> • Development and securing of tools and supplies to support CMC-AH response capacity <ul style="list-style-type: none"> ○ technical SOPs revised; ○ development of GEMP. • Refined cooperation mechanisms between WHO and CMC-AH <ul style="list-style-type: none"> ○ standard lines of interagency communication defined; ○ information focal points established; ○ coordinated missions (human health and animal health) deployed and followed up; and ○ CMC-AH participation in WHO's initiatives to improve its emergency preparedness and management. • Exchanging information and regularizing communications <ul style="list-style-type: none"> ○ regular information exchange through regular meetings and staff visits; and ○ FAO/OIE/WHO coordination methodologies confirmed through standardized information sharing methods and focal points. • SOP development for FAO, WHO and OIE <ul style="list-style-type: none"> ○ Initial, internal SOPs defined: 21 ○ Consolidated, internal SOPs: 4 ○ Further streamlined SOPs: 3

¹ Owing to the nature of the CMC-AH concept and the project's main aim to support FAO's capacity for rapid response, the majority of activities are to be considered as ongoing initiatives.

- **Strengthening mission coordination and field-level cooperation**
 - after-action review processes implemented to capture lessons learned;
 - headquarters- and field-level contacts established and disseminated;
 - coordination mechanisms strengthened through mission experience; and
 - field-level SOPs completed and printed for enhanced national response to HPAI and other transboundary animal and zoonotic diseases.

2nd Quarter 2010Project Monitoring Sheet: **OSRO/RAF/718/USA Phase II**Project title: **Strengthening capacity of the Eastern Africa Sub-region to prevent and control HPAI**Reporting period: **April – June 2010**

Regional component: Eastern Africa (Burundi, Djibouti, Ethiopia, Kenya, Rwanda, South Sudan, Tanzania and Uganda)
Project title: Strengthening capacity of the Eastern Africa Sub-region to prevent and control HPAI. Code: OSRO/RAF/718/USA Phase II
Budget : USD 1 209 601 (Phase I), USD 650 000 (Phase II) Total budget: USD 1 859 601
Effective starting date: 01 October 2009
Planned end date: 30 September 2010
<p>Context of the project</p> <p>The confirmation of outbreaks of the Highly Pathogenic Avian Influenza (HPAI) in Africa in 2006 called for concerted efforts on the part of national and international agencies to assist countries in stopping the spread of the disease throughout the continent. Currently, eleven African countries have reported outbreaks of HPAI. There is an elevated risk that the disease will spread throughout eastern Africa due to the occurrence of the disease in Sudan and Djibouti in 2006 and unregulated intra-regional trade in poultry and poultry products. In addition, many of the countries of this region trade with other regions outside Africa and also lie in the pathways of migratory birds, some of which are thought to play a role in the spread of HPAI.</p>
<p>Objectives of the project</p> <p>The overall objective of the project is to assist eastern African countries (Burundi, Djibouti, Ethiopia, Kenya, Rwanda, South Sudan, Tanzania and Uganda) to develop and implement robust and effective plans for the prevention and control of HPAI and other transboundary animal diseases (TADs) through the strengthening of epidemiology and laboratory networks for improved surveillance. The prevention and control of HPAI and other TADs requires regional cooperation/collaboration. Such cooperation could be strengthened through networking and inter-country interactions among disease surveillance and diagnosis teams. Increased collaboration also would help to coordinate efforts against emerging zoonotic diseases, which are increasing due to climatic changes, human population dynamics and livestock/human/wildlife interactions.</p> <p>The principal objective of the project will be achieved through a regional and multidisciplinary approach implemented by the Food and Agriculture Organization of the United Nations (FAO) Emergency Centre for Transboundary Animal Diseases Operations (ECTAD) Unit of the Regional Animal Health Centre (RAHC) in Nairobi, facilitated by staff at FAO headquarters in Rome, and by working in close collaboration with national governments, regional economic communities (East African Community (EAC) and Intergovernmental Authority on Development (IGAD)), institutions of higher learning, other United Nations (UN) agencies such as the World Health Organization (WHO), non-governmental organizations (NGOs), African Union/Inter-African Bureau for Animal Resources (AU-IBAR) and the private sector. The project implementation will embrace the One Health (OH) concept particularly when addressing zoonosis.</p>
<p>The outcome of the project</p> <p>Strengthening of the coordination mechanisms for epidemics-surveillance, diagnostic laboratory improvements, socio-economic and production analysis and sharing of information through strategic and</p>

appropriate communication channels.

Successful implementation of the project will result in the following major outputs:

1. Laboratory capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs.

The various diagnostic laboratory systems in each country will be assessed and documented to enable harmonization of protocols and guidelines for surveillance, reporting, diagnoses, prevention and control of priority diseases.

2. Epidemiology capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs.

Different systems of operation of the epidemio-surveillance systems in different countries will be assessed and documented to enable harmonization at regional level. The project will assist the network to define terms of reference and operational frameworks, including detailed description of relationships, roles and responsibilities of stakeholders, such as the private sector, research institutions, universities, AU-IBAR, FAO, World Organization for Animal Health (OIE), WHO and other NGO's. In order to ensure sustainability, the network plans will be presented for endorsement by regional and national leaders, with financial commitments for specific national requirements.

3. Animal health interventions used as entry points in analysis and improvement of poultry/livestock value chains.

Policy makers, governments and network experts will be provided with evidence-based information to better understand the dynamics of poultry value chains as they relate to disease control and food safety. Evidence will be provided on cost-effectiveness, costs and benefits, suitability and appropriateness of disease control measures. The project will educate and develop best practices along the poultry value chain and strengthen partnerships between private and public sector through consultations, working with national governments and regional economic communities (RECs) to develop and implement policies.

Activities that were planned for this quarter

Output 1: Laboratory capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs.

Activity 1.1: Assessment of diagnostic capacity of central veterinary laboratories (CVL) for HPAI and other TADs.

Activity 1.2: Assist national laboratories in implementation of quality management systems (QMS).

Activity 1.3: Organize targeted training courses on disease recognition and diagnostic techniques for emerging zoonotic diseases so as to facilitate prevention and control actions.

Activity 1.4: Hold a joint five-day Epidemiology and Laboratory Networks meeting to share regional information including reaching a consensus on a list of priority TADs for targeted prevention and control in line with the Global Framework for Transboundary Animal Diseases (GF-TADs) in Africa.

Activity 1.5: Hold a meeting with Chief Veterinary Officers (CVOs)/Heads of CVL, RECs, AU-IBAR and development partners. The agenda of the meeting is to discuss the findings of laboratory assessments, select regional laboratories for the network and promote integration of the network into the RECs structures.

Activity 1.6: Supply critical equipment, materials and reagents for diagnosis of HPAI and other priority TADs at the national laboratories.

Activity 1.7: Strengthen regional laboratory network web page and link it with other existing (epidemiology) and proposed thematic networks to increase the information sharing capacity.

Output 2: Epidemiology capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs.

Activity 2.1: Assess national epidemio-surveillance systems for HPAI and other TADs.

Activity 2.2: Hold a joint five-day annual Epidemiology and Laboratory Networks meeting to share regional information including reaching a consensus on list of priority TADs for targeted prevention and control.

Activity 2.3: Supply critical equipment, materials and reagents for field surveillance of HPAI and other priority TADs at the national laboratories.

Activity 2.4: Prioritize transboundary animal disease detection, reporting and preparedness in the region through structured qualitative national risk assessments, including probable impacts of the disease.

Output 3: Animal health interventions are used as entry points in analysis and improvement of poultry/livestock value chains.

Activity 3.1: Consolidate information on cross-border trade in poultry and poultry products to provide better targeted disease surveillance and monitoring through review of country poultry value chain analysis.

Activity 3.2: Conduct a benefit-cost analysis of functional laboratory and epidemiology surveillance systems as a policy tool to lobby national governments to adopt and mainstream funding for the systems into their annual budgets.

Activity 3.3: Commission a study to identify and quantify the key drivers in private sector adoption of biosecurity and poultry health interventions along the poultry value chains. The study is to be conducted in Sudan and Kenya in consultation with the International Livestock Research Institute (ILRI) and Winrock International non-profit organization.

Activity 3.4: Facilitate a stakeholders' workshop to enable policy dialogue between public and private sector operators on restructuring the poultry industry and improving poultry health management in the region.

Activities undertaken during the reporting period

Output 1: Laboratory capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs.

Activity 1.1: Assessment of diagnostic capacity of CVL for HPAI and other TADs.

- The Central Veterinary Laboratories of Rwanda and Uganda were assessed by experts from the Tri-Veneto Region Experimental Animal Health Care Institute (IZS^{Ve}), Padova, Italy, the FAO/OIE Reference Laboratory for Avian Influenza (AI) and Newcastle disease (ND). Assessment of the CVL in Uganda was also conducted by IZS^{Ve} from 14 April to 18 April 2010.

Activity 1.2: Assist national laboratories in implementation of quality management systems (QMS).

- Act. 1.2.a: A five-day regional training workshop on QMS was held in Debre Zeit, Ethiopia from 31 May to 4 June 2010. Some 20 laboratory personnel from Ethiopia, the Democratic Republic of Congo, Sudan, Kenya, Somalia, Tanzania and Uganda were trained. The workshop was successful as evidenced by positive evaluation feedback from the trained persons. In addition, a one-year work plan on the implementation of quality assurance system for the laboratories was approved at the end of the training. Progress on the implementation of the work plan will be monitored by the ECTAD Regional Office for Eastern Africa.
- Act.1.2.b: Analysis of Questionnaires that were submitted by beneficiary countries has been conducted, and the level of implementation of QMS in these countries' diagnostic laboratory units is better understood. The outcome of the analysis will be presented and discussed during an annual laboratory coordination meeting to be held in Dar es Salaam, Tanzania in July 2010.
- Act.1.2.c: Proficiency testing on serological and molecular techniques for AI and ND was carried out by CVL in Ethiopia, Kenya, Rwanda and Tanzania in November 2009. There was a marked improvement in the execution of such tests by the participating laboratories. A Letter of Agreement (LoA) is being finalized with IZS^{Ve} to carry out proficiency ring tests for CVL in the region.

Activity 1.3: Organize targeted training courses on disease recognition and diagnostic techniques for

emerging zoonotic diseases, so as to facilitate prevention and control actions.

- A ten-day training on the laboratory diagnosis of AI and ND was conducted from 7 to 20 April 2010 at CVL Dar es Salaam for four laboratory personnel from Burundi and South Sudan.

Activity 1.6: Supply critical equipment, materials and reagents for field surveillance of HPAI and other priority TADs at the national laboratories.

- Procurement procedures have been initiated for countries that have provided lists of necessary equipment/material.

Activity 1.7: Strengthen regional laboratory network web page and link it with other existing (epidemiology) and proposed thematic networks to increase the information sharing capacity.

- A communications consultant was recruited in April to update information on the webpage. The consultant also provided training to the FAO ECTAD staff on how to update the web page.

Output 2: Epidemiology capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs.

Activity 2.1: Assess national epidemio-surveillance systems for HPAI and other priority TADs.

- Act. 2.1.a: Responses were received for questionnaires which had been sent to national epidemiology units (to establish the levels of epidemiology activities in the countries). Actions are being developed for intra and inter-regional collaboration
- Act. 2.1.b: A three-day workshop on Regional Animal Health Information Systems was held in Entebbe, Uganda from 18 to 20 May 2010 to review the current information systems and discuss sustainable harmonization and increased information sharing in the region.
- Act. 2.1.c: A three-day workshop was held from 21 to 23 June 2010 in Kigali, Rwanda. Within the framework of the East Africa Regional Epidemiology Network (EAREN), the workshop brought together representatives of the national epidemiology and wildlife units and other network initiatives to discuss the results of the assessments carried out and to make recommendations for the adoption of harmonized surveillance systems.

Activity 2.3: Supply critical equipment, materials and reagents for field surveillance of HPAI and other priority TADs at the national laboratories.

- Procurement procedures have been initiated for countries that have provided lists of necessary equipment/material.

Output 3: Animal health interventions are used as entry points in analysis and improvement of poultry/livestock value chains.

Activity 3.1: Consolidate information on cross-border trade in poultry and poultry products to provide better targeted disease surveillance and monitoring through review of country poultry value chain analysis.

- Experts have been identified to undertake trade flow mapping in Kenya and Rwanda. The recruitment is ongoing.

Activity 3.2: Conduct a cost-benefit analysis of functional laboratory and epidemiology surveillance systems as a policy tool to lobby national governments to adopt and mainstream funding for the systems into their annual budgets.

- Terms of Reference (TOR) have been drafted. Participation of national governments in the study has been agreed on. Study experts have been identified to undertake cost-benefit analyses of the epidemio-surveillance networks in Kenya and Uganda. The recruitment process is being initiated.

Activity 3.3: Commission a study to identify private sector drivers of adoption of biosecurity and poultry health interventions along the poultry value chains in Sudan and Kenya in consultation with ILRI and Winrock.

- A meeting between Winrock International (Partnership for safe poultry in Kenya project manager)

and FAO-ECTAD was held on 26 May 2010 at Winrock Kenya Office Nairobi to discuss collaboration on the activity. Winrock has trained several sector 4 (free range) poultry farmer groups on several biosecurity packages. The study by FAO will draw part of the sample from the Winrock supported farmers as well as others not covered by Winrock's project. Study TORs have been agreed upon and recruitment process has begun.

Planned activities for the next quarter (up to 30/09/2010) and future proposed actions

Output 1: Surveillance and diagnostic capacity is strengthened.

Activity 1.1: Assessment of diagnostic capacity of CVL for HPAI and other TADs.

- An LoA is being finalized with IZSve to carry out the assessments. This activity is scheduled for July 2010.
- Act.1.2.c: Proficiency ring tests will be carried out (through an LoA in preparation at HQ with IZSve).

Activity 1.4: A joint Epidemiology and Laboratory network meeting is planned from 14 to 16 September 2010 to share regional information including reaching a consensus on a list of priority TADs for targeted prevention and control.

Activity 1.5: A meeting with the CVOs/Heads of CVL is planned from 24 to 26 August 2010 to discuss the findings of laboratory assessments, select regional laboratories for the network and promote integration of the network into the RECs' structures.

Activity 1.6: Supply critical equipment, materials and reagents for field surveillance of HPAI and other priority TADs at the national laboratories.

- Countries that have not yet responded will be requested again to provide lists of necessary equipment/material. Procurement procedures will then be initiated to procure and distribute the equipment/material.
- The annual coordination meeting for Eastern Africa Laboratory network will be held in July 2010 in Dar es Salaam, Tanzania.

Output 2: Epidemiology capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs.

Activity 2.2: Hold a joint five-day annual Epidemiology and Laboratory Networks meeting to share regional information including reaching a consensus on list of priority TADs for targeted prevention and control.

- This workshop is planned from 14 September to 16 September 2010. The tentative venue is Djibouti.

Activity 2.4: Prioritize TADs detection, reporting and preparedness in the region through structured qualitative national risk assessments including probable impacts of the disease.

- This will be carried out through selected in-country risk analysis studies using local available consultants on prioritized TADs.

Output 3: Animal health interventions are used as entry points in analysis and improvement of poultry/livestock value chains.

Activity 3.3: Commission a study to identify and quantify private sector drivers of adoption of biosecurity and poultry health interventions along the poultry value chains in Ethiopia and Tanzania in consultation with ILRI and Winrock.

- Finalize the cost- benefit analysis study and present results at a meeting attended by CVO in August 2010.
- Finalize the trade flow mapping in Kenya and Uganda.

<ul style="list-style-type: none"> ▪ Undertake study on drivers of biosecurity in collaboration with Winrock. ▪ Support Kenya Ministry of Livestock in holding a workshop on the poultry sector in collaboration with Winrock.
<p>All outputs</p> <ul style="list-style-type: none"> ▪ Carry out activities as proposed in the three outputs enumerated above. <p>Reports</p> <ul style="list-style-type: none"> ▪ Continue preparing project progress reports on the implementation of activities.
<p>Main challenges encountered and response provided</p> <ul style="list-style-type: none"> ▪ Slow pace of submission of filled questionnaires on epidemiology and laboratory assessments despite a clearly stated deadline.
<p>Main progress made towards the achievement of project outcomes (from the start of the project activities)</p> <ul style="list-style-type: none"> ▪ Conducting of project inception workshop during which the final project content, work plan and implementation time tables as well as roles and responsibilities were agreed upon. A workshop report has been prepared and technically cleared by the ECTAD Regional Manager. ▪ Assessment of questionnaires on the status of CVL and national epidemiology units. ▪ Successful conducting of a three-day regional animal health information systems workshop and a regional epidemiology network meeting. ▪ Successful conducting of a five-day training workshop on diagnostic laboratory quality management systems. ▪ Conducting of a 3-day annual coordination meeting of the EAREN. ▪ Assessment of the diagnostic capacity for AI and other TADs was undertaken in three national laboratories in the region.

Quarter III 2010

Project Monitoring Sheet: **OSRO/INT/704/USA**

Title: Enhancing preparedness and response capacity to Highly Pathogenic Avian Influenza (and other emerging/re-emerging zoonotic diseases) in Eastern Europe and Central Asia countries

Reporting period: July – September 2010

Regional component: Europe and Central Asia

Title: Enhancing preparedness and response capacity to Highly Pathogenic Avian Influenza (and other emerging/re-emerging zoonotic diseases) in Eastern Europe and Central Asia countries

Code: OSRO/INT/704/USA

Budget: USD 370 000

Effective starting date: 1 July 2008

Planned end date: 31 December 2010

Context of the project

Although most of the countries within Eastern Europe and Central Asia (EEACA) region have developed a preparedness and contingency plan for the Highly Pathogenic Avian Influenza (HPAI), there still remains a need to devise generic standard operating procedures (SOPs) in order to minimize the potential spread of the HPAI virus and to reduce the risk of human infection.

The aim of this project, therefore, is to develop the SOPs that are applicable in the countries (or districts within countries) of different socio-economical, cultural and geographical structures and capacities in the EEACA regions. In line with the set project objective, this project also promotes improvement of the understanding of epidemiology and surveillance information in minimizing human health risks and reducing the livelihood impacts posed by HPAI through its effective prevention and control.

In addition, the project specifically aims at enhancing the coordination and collaboration between veterinary services, Ministries of Forestry, Ministries of Environment and/or Departments of Ornithology, which often have jurisdictional authority over wildlife management.

The risk of disease introduction and spread within domestic poultry through exposure to migrating wild water birds remains high in these regions. In the rural poultry sector, mainly involved in backyard poultry breeding, the disease can be introduced through the movement of hunted wild birds that might have been previously infected with the virus. This calls for a need for harmonized multi-sectoral coordination and management of risks and outbreaks and a greater attention to the epidemiological intelligence in the regions.

International sharing of wild bird epidemiology and surveillance information, as well as developing and implementing SOPs on risk reduction in backyard poultry breeding in the areas of the Black Sea and the Caspian Sea regions, would have a direct impact on reducing the risk of the spread of the virus.

Objectives of the project

The main goal of the project is to reduce the H5N1 viral spread from wild birds to domestic poultry and among domestic poultry by delivering enhanced wild bird disease management and providing generic operational guidance and procedures to the veterinary services within the EEACA regions. The ultimate goal of this project is to promote long-term veterinary service capacity building that will promote both public health improvement and better economic impact on poultry and livestock production in the future.

The main outputs expected from the project are:

1. development of generic SOPs for HPAI and improvement of epidemiology understanding within the veterinary services;
2. improvement of multi-sectoral coordination and management of risks and outbreaks involving wild birds and free range domestic duck, goose and chicken populations in the Black Sea and Caspian Sea regions.

Planned activities for the reporting period

1. Development of generic standard operating procedures (SOPs) for HPAI and improvement of epidemiology understanding within the veterinary services

1.5. Disseminate SOPs to Ministries, Task Forces, veterinary services and eventually donors and make them available for global access through FAO website.

Activities undertaken during the reporting period

The following SOPs have been revised and finalized by FAO in-house experts:

- Provisional diagnosis of HPAI and disease tracing;
- sampling procedures;
- disposal of sampled carcasses, sampling materials and equipment used while sampling;
- culling of animals;
- mass disposal of bird carcasses and potential contaminated materials; and
- safe handling of hunted wildfowl (HPAI risk reduction).

Planned activities for the next reporting period

- Finalization of remaining SOPs by FAO in-house experts, including:
 - control of disease using zones
 - decontamination of an infected farm;
- publication and dissemination of SOPs;
- participation in a “final lessons learned” meeting to be organized by USAID tentatively in December 2010 in order to build on the experiences of the USAID projects implemented by FAO and other implementing agencies within a wider donor community.

Main challenges encountered and response provided

As FAO has also developed SOPs for other regions, the main challenge has been to streamline the different SOPs into a common format.

Main progress made towards the achievement of project outcomes

The project is expected to achieve its set objectives and will make a substantial contribution to HPAI prevention and control, especially through the development of generic SOPs and enhanced cooperation between sectors. Thus far, an extensive consultation and clearing process of SOPs has been undertaken within FAO. The final layout is being finalized, and a dissemination strategy is being elaborated.

Semester I 2010

Project monitoring sheet: **OSRO/EGY/801/USA**Project title: **Vaccine efficacy for the control of Avian Influenza in Egypt**Reporting period: **October 2010 – March 2011**

Country: Egypt Title: Vaccine efficacy for the control of Avian Influenza in Egypt Code: OSRO/EGY/801/USA
Budget: USD 2 416 500
Effective Starting Date: June 2008
Planned End Date: June 2011
Context of the Project <p>Outbreaks of Highly Pathogenic Avian Influenza (HPAI) spread in 18 governorates in Egypt within less than three months after the disease was originally diagnosed in three governorates on 17 February 2006. The Government attempted to control the outbreak through a stamping out procedure, which included culling of all poultry within a 1 km radius of positively confirmed areas. By the end of 2006, nearly 30 million birds had been culled. Outbreaks continue to be reported in 23 of the 29 governorates in the country and the disease has become endemic.</p> <p>In response to the continued threat of HPAI to Egypt, the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) have been providing technical assistance through the joint OIE/FAO Influenza Network (OFFLU) and other initiatives. Specifically, FAO has been providing the Ministry of Agriculture and Land Reclamation (MoALR) with major technical assistance through the implementation of this project, also called Avian Influenza Vaccine Efficacy Project (AIVEP) and Strengthening Avian Influenza Detection and Response (SAIDR) project, both funded by the United States Agency for International Development (USAID).</p> <p>Working in collaboration with the Government of the Arab Republic of Egypt, FAO, OFFLU and USAID are working together to conduct virus characterization and mapping of Egyptian antigenic variants with intensified HPAI field isolate collection and analyses. Through antigenic mapping, challenge testing and transmission studies, these projects have been developing strategic recommendations for Egypt, including the development of clear criteria for the selection of vaccinal strains.</p> <p>FAO is providing key technical support through AIVEP, as vaccination is considered as part of the overall efforts to reduce HPAI infections and spread of the virus in Egypt, with the potential to benefit other countries in the region and worldwide.</p>

Objectives of the Project

The overall project objective is to assist the Government of the Arab Republic of Egypt in its efforts to control HPAI in the domestic poultry population and avoid the risk of human infection.

The specific project objectives are to conduct:

1. screening and evaluation of genetic and antigenic variants among existing H5N1 HPAI field strains previously collected from 2006 until early 2008;
2. intensified collection of H5N1 HPAI field isolates from newly confirmed outbreaks (since mid-2008);
3. challenge testing of antigenic variants in Specific Pathogen Free (SPF) birds and currently used Avian Influenza (AI) vaccines in Egypt; and
4. controlled transmission trials in the laboratory on birds raised and vaccinated in commercial poultry farms.

Planned Activities

Output 1.1: Screening and evaluation of genetic and antigenic variants among existing field strains previously collected from 2006 until early 2008

- Activity 1.a: Screening and evaluation of genetic and antigenic variants among existing field strains (2006 – early 2008 collections)
- Activity 1.b: Carry out sequencing and phylogenetic analysis
- Activity 1.c: Conduct antigenic profiling
- Activity 1.d: Perform antigenic cartography
- Activity 1.e: Selection of variants for challenge studies as specified under Output 1.3 below
- Activity 1.f: Assessment of biosecurity and biosafety of the National Laboratory for Veterinary Quality Control on Poultry Production (NLQP) and laboratory operations
- Activity 1.g: Capacity building (i.e. training of Egyptian scientists)

Output 1.2: Intensified collection of H5N1 HPAI field isolates from newly confirmed outbreaks (since mid-2008)

- Activity 2.a: Intensified HPAI field isolate collection
- Activity 2.b: Conduct real-time polymerase chain reaction (RT-PCR) analysis (Support for laboratory consumables provided through SAIDR project)
- Activity 2.c: Identify all H5N1 HPAI isolates collected since mid 2008 to 2009
- Activity 2.d: Sequencing and analysis of 100 isolates by NLQP under the supervision of and assessment by the Southeast Poultry Research Laboratory (SEPRL) of USDA
- Activity 2.e: Perform antigenic profiling and cartography

Output 1.3: Challenge testing of antigenic variants in SPF birds and currently used AI vaccines in Egypt

- Activity 3.a: Safety, Purity and Potency testing of currently used AI vaccines in Egypt conducted at the Central laboratory for Evaluation of Veterinary Biologics (CLEVB)
- Activity 3.b: Selection and testing of vaccinal seed strains for challenge testing (Planned to test six vaccinal seed strains against four challenge viruses (requiring a total of 24 isolation units) carried out at SEPRL (USA).
- Activity 3.c: Second year challenge testing carried out at NLQP (Egypt)
- Activity 3d: Capacity building (refurbishing one of existing NLQP units to BSL2 + animal facility)

Output 1.4:	Controlled transmission trials in the laboratory on birds raised and vaccinated in commercial poultry farms
Activities:	Organize and provide support through training and workshop (during the last quarter of the project) to enhance skills of NLQP staff in transmission trials.

Activities Undertaken during the Reporting Period

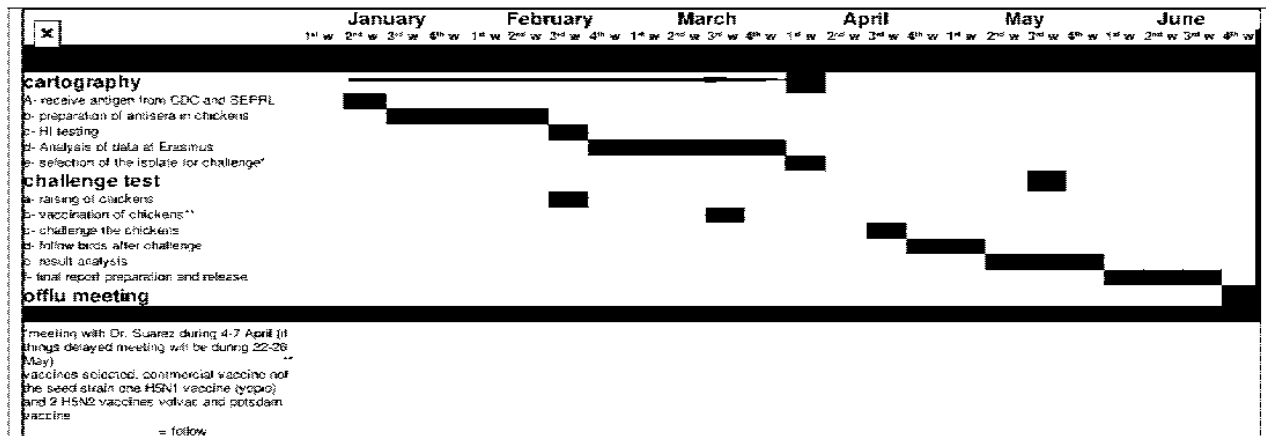
Challenge Testing of Antigenic Variants and Existing Vaccines

- First year challenge test was done at SEPRL and some groups of birds were in need of re-testing. This was scheduled to be done during September 2010, and a scientist from NLQP was selected to attend this study and visited SEPRL from 1/9/2010 to 15/9/2010, but the test had been cancelled as the renovation of the BSL3 lab at SEPRL was still running. Subsequently, the re-testing of the groups was carried out and finalized during February 2011. The results from SEPRL are still pending.

Second year testing

NLQP, SEPRL and Erasmus University Rotterdam examine antigenic, genetic, potency, efficacy; make recommendations to GOE

- Two scientists from Erasmus University Rotterdam visited NLQP in November 2010 and held extensive discussions with NLQP and the FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) staff on the progress made so far on the project, challenges and way forward. As a result, a no-cost extension of the project until the end of June 2011 was agreed upon. Technical issues related to conjugates and antisera were discussed and solutions recommended. The revised work plan was approved by SEPRL and NLQP for the implementation of the remaining project activities during the extension period (see table below).
- The Hemagglutination-inhibition (HI) test for cartography analysis was stopped based on the advice received from SEPRL and OFFLU colleagues, as the test requires the use of new conjugate for the preparation of antisera of the reference antigen and selected new Egyptian AI strains from year 2009-10. The new conjugate was procured and received by NLQP during the second week of January 2011.
- We were also advised to use new (additional) reference antigens for HI testing. Accordingly, one reference antigen from SEPRL and two from CDC were sent to NLQP and received during the last week of February 2011 (see below for the details of the antisera received). The shipment of the antisera was delayed by five weeks due to the recent civil unrest in Egypt. On 2 March 2011, the antigens were prepared and injected into chickens for the production of antisera. The latter will be harvested after three weeks, then the HI testing will follow during the first week of April 2011.



The following antigen and antisera were selected for HI testing:

antigens

References

Indonesia 2005 (Present)

Turkey/ turkey 2005 (present)

Anhui/05 (from CDC)

Vn/1194 (from CDC)

TK/England/N28/73 (from SEPRL)

A/chicken/Egypt/0876-NLQP/2008 (H5N1) (new)
 A/chicken/Egypt/096L-NLQP/2009 (H5N1) (new)
 A/chicken/Egypt/1050ss-NLQP/2010 (H5N1) (new)
 A/chicken/Egypt/102d/2010 (H5N1) (new)
 A/chicken/Egypt/1021L/2010 (H5N1) (new)
 A/chicken/Egypt/1011d/2010 (H5N1) (new)
 A/chicken/Egypt/1063/2010 (H5N1) (new)

A/chicken/Egypt/08341s-NLQP/2008 (H5N1)
 A/chicken/Egypt/0841-NLQP/2008 (H5N1)
 A/chicken/Egypt/06959-NLQP/2006 (H5N1) (new)

Non-intermediate Results (IRs) Activities:

- Two expert scientists visited SEPRL from 26 October to 2 November 2010 and held discussions on the challenge test results and related issues.
- From 9 to 14 January 2011, three NLQP staff received training on LIMS programme at the Veterinary Laboratory Agency (VLA, England)

Planned Activities for the Next Reporting Period:

The project will continue according to the agreed timeline between NLQP and SEPRL. This includes:

- preparation of reference antisera in SPF chicken (three weeks) to be completed in the first week of April 2011;
- HI testing required for cartography analysis (one week) to be completed in the second week of April 2011;
- cartography analysis to be carried out at Erasmus University Rotterdam (one month) to be completed in the second week of May 2011;
- selection of viral isolates for challenge test (one week) to be completed in the third week of May 2011;
- challenge testing (involving vaccination of experimental chicken [three weeks]), challenge with selected virus isolates (three weeks) to be completed in the third week of June 2011;

- data analysis from the challenge test (three weeks) to be completed in the second week of July 2011; and
- final project review (OFFLU) meeting will take place in the third week of July 2011.

Main Challenges Encountered and Solutions

- There was a delay in the shipment of the reference antigen and antisera owing to the recent civil unrest in Egypt. This has resulted in a delay of the HI testing and cartography analysis. The antigens are now received and were inoculated into SPF chickens for antisera production. The HI testing will start in April 2011. As a result of the above-mentioned delay, the project activities will be completed one month behind the original plan.

Semester I 2010**Project monitoring sheet: OSRO/EGY/701/USA****Project title: Strengthening Avian Influenza Detection and Response (SAIDR) in Egypt****Reporting period: October 2010 – March 2011**

Country: Egypt
Title: Strengthening Avian Influenza Detection and Response (SAIDR) in Egypt
Code: OSRO/EGY/701/USA
Budget: USD 2 000 000 (Phase IV) ¹
Effective starting date: October 2010
Planned end date: September 2011
Context of the Project Outbreaks of Highly Pathogenic Avian Influenza (HPAI) spread in Egypt since February 2006 and the disease has become endemic. The Food and Agriculture Organization of the United Nations (FAO) has been providing technical assistance to the Ministry of Agriculture and Land Reclamation (MoALR) through the implementation of the animal health component of SAIDR project funded by the United States Agency for International Development (USAID).
Objectives of the project The overall objective of this project is to minimize the risk of H5N1 HPAI to poultry in Egypt, such that the disease no longer represents a significant threat to human health, through strengthening institutional capacities to ensure progressive HPAI control, protection of producers' livelihoods and viability of the Egyptian poultry industry through sustained implementation of risk reduction measures along the poultry value chain.
Planned outputs and activities Remaining activities of SAIDR Year 3: <ul style="list-style-type: none"> • continue the process of refurbishment of 120 decentralized epidemiology units and distribution of purchased items; • follow up on procurements in progress and deliver the items to concerned beneficiary organization; and • closure of various Letters of Agreement (LoAs) signed with national and international partners. SAIDR Year 4: <ul style="list-style-type: none"> • finalize SAIDR Year 4 project activities and follow up on the clearance process both from FAO and USAID sides and start with the implementation. SAIDR Year 3: Activities undertaken during the reporting period <ul style="list-style-type: none"> • The process for the refurbishment of 120 decentralized epidemiology units is still ongoing. The local needs were assessed, specifications prepared, contractors identified and tender launched. • FAO and the General Organization of Veterinary Services (GOVS), in collaboration with the International Livestock Research Institute (ILRI), finalized a draft Community Animal Health Outreach (CAHO) manual for practitioners (in English). The purpose of this manual is to serve as a reference for veterinarians during and after CAHO training. The main focus of the manual is on HPAI, but the methods can be easily adapted and applied to address other livestock diseases. The process for the Arabic translation of the manual has been initiated. • A total of 21 out of 30 (70 percent) of the LoAs signed with various governorates veterinary services have been closed. The closure of nine LoAs is still pending because of final progress and financial reports not having been submitted. ILRI submitted the last narrative report as part of the FAO–ILRI collaboration for the project “Introduction of PE to strengthen animal disease surveillance and control for

¹ The final budget amount is divided as follows : USD 1 700 000 from the “Pipeline funds” and USD 300 000 as part of the new contribution.

HPAI H5N1", initiated in August 2008, including clear recommendations for improvement. The report has been approved and the LoA with ILRI has been closed.

SAIDR Year 4: Activities undertaken during the reporting period (October 2010 – March 2011)

- In close consultation with the government counterparts and USAID country mission, SAIDR Year 4 project proposal was prepared, cleared at FAO headquarters, submitted to USAID and approved on time. The project duration is from 1 October 2010 to 30 September 2011.

Objective 1: Strengthen elements of government veterinary services

- The process of desktop review of legislation has started on movement of poultry and poultry products, live bird markets (LBM) operation, outbreak response and compensation schemes. This involves collection and sorting of all legislations concerning HPAI control measures, identification of gaps, assessing levels of enforcement and formulating recommendations to overcome challenges. The initial report has been drafted and will serve as the basis for the planned review process following the completion of the value chain analysis work.
- A simplified guide for minimum biosecurity practices was developed and submitted to GOVS. The guide was extensively discussed and approved by the Animal Health Technical Committee for the Control of Avian Influenza. The guide will serve as a basis for communication of biosecurity messages to commercial poultry producers and as self-assessment tool.
- The FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) provided support to GOVS in facilitating the transfer of the SAIDR Web site from the USAID-funded Communication for Healthy Living (CHL) project to GOVS. In response to capacity strengthening needs, ECTAD provided the following:
 - a software programme required for the operation of the Web site (two users License Win Dream Weaver and one Media CD);
 - a one-day technical training courses (12 October 2010) for six GOVS staff; and
 - a one-day on-the-job training (31 December 2010) for the same staff to ensure that the system is fully functional.
- First meeting of the Animal Health Technical Committee was held on 12 October 2010. The meeting included an extensive discussion and approved the FAO proposed minimum biosecurity guidelines for commercial poultry farms. In addition, the technical committee discussed the critical gap in sharing vital HPAI-related information, and ECTAD was designated to bridge this gap until local capacity is created in the future. Since then, FAO has established an electronic address database of Technical Committee members and shares all national and international information on animal health in general and HPAI in particular. The feedback received so far on the effectiveness of this recent communication platform is very encouraging.
- In consultations with GOVS, specifications for 75 desktops, 75 UPS, 75 air conditioners, 150 chairs and 75 computer tables were prepared and the procurement process initiated. These materials are needed for the planned expansion of epidemiology units in governorates and districts that have not been covered during previous SAIDR project years.
- A stakeholders workshop on "Strategic HPAI Surveillance Planning" was organized on 8 November 2010. Relevant staff from GOVS, the National Laboratory of Veterinary Quality Control on Poultry Production (NLQP), local veterinary directorates and USAID participated, where a thorough Strengths, Weaknesses, Opportunities, and Threats (SWOT) profiling and analysis of the existing HPAI surveillance plan was carried out.
- A revised HPAI epidemio-surveillance plan finalized in a follow-up workshop was conducted on 29 December 2010. Participants were key actors directly involved in day-to-day HPAI surveillance activities and were drawn from GOVS, NLQP and FAO. Based on the SWOT analysis output and considering the essence of the revised HPAI control strategy, the existing surveillance plan was streamlined and consolidated. The newly revised surveillance plan has four subcomponents (active, targeted, passive and syndromic) each with defined objectives, scope and geographic coverage and elaborated information gathering instruments (formats).
- A series of meetings were held between ECTAD consultants and staff of epidemiology unit in GOVS and NLQP to strengthen the current epidemiological network at both central and governorate levels to enhance timely flow of epidemiological information and setting of mechanisms to support provision of feedback.

- ECTAD continues to regularly provide technical support to GOVS and NLQP units involved in the analysis of surveillance data. Needs were assessed and areas of intervention jointly identified. Joint analysis and management of available for HPAI surveillance have been initiated.
- ECTAD continues facilitating ongoing efforts for the establishment of “Fourway Linking” of animal and public health sectors to enhance sound epidemiological information exchange.
- The preparation of specifications for laboratory reagents and consumables, including those required for real-time polymerase chain reaction (RT-PCR) and that are adequate for testing 2 000 pooled samples from HPAI suspected cases, was carried out in close consultation with NLQP staff. The procurement process has been initiated and the delivery of goods is expected to be completed in the coming months.
- Preparation of specifications for 125 000 swabs was completed and the procurement process initiated. The swabs will be delivered to GOVS and used in HPAI surveillance activities.
- FAO has made an official request to NLQP requesting collaboration for joint analysis of historical laboratory data on HPAI. NLQP, in turn, accepted the request and preparation for data analysis by NLQP and FAO staff is underway.
- A number of meetings and missions were carried out by FAO and GOVS staff working under the Veterinary Public Health (VPH) department. The aim was to assess the needs to provide capacity strengthening support to the VPH department of GOVS. A draft SWOT analysis report dealing with the operations of poultry slaughterhouses in Egypt was prepared. A consultative workshop involving all relevant stakeholders will be organized in April 2011 to discuss the SWOT analysis outputs.
- A laboratory consultant has been recruited to perform a controlled study on the detection of viral residues in different organs of vaccinated chickens. An experimental protocol was designed by FAO and NLQP staff. The trial taking place in NLQP began in early January and will be completed in two months.

Objective 2: Define epidemiological parameters of HPAI

- Various technical supports were provided to GOVS through compiling all existing disease reporting forms and elaboration of flow chart for disease reporting, identification of links and actors involved in HPAI surveillance, reviewing of proposed notification forms and database systems (data entry, analysis of outputs, dissemination) and recommendations to improve the surveillance system.
- In close consultation with relevant staff from GOVS and NLQP, simplified formats for collection of epidemiological data in various HPAI surveillance activities were developed.
- On 20 October 2010, a coordination meeting was organized to discuss the mechanism of collaboration between GOVS and NLQP to enhance operational efficiency and improve epidemiological data quality. The meeting involved relevant staff from various GOVS departments (Epidemiology Unit, Preventive Medicine, AIEMU), NLQP and FAO, including the backstopping officer from FAO headquarters.
- In consultation with GOVS and USAID country mission, the purchase of HPAI Rapid Field Test in GOVS was cancelled because of availability of adequate stock. This procurement budget line was substituted by materials for strengthening the epidemiological network at district levels.
- Data collection sheets for passive, active and syndromic and targeted surveillance were developed and detailed implementation modalities of the surveillance plan discussed. These actions allowed the programme to overcome constraints faced and harmonize field operations.
- The CAHO programme has been administratively integrated into the regular GOVS structure and technically into the passive surveillance system.
- The development of a web-based surveillance system for consolidation of participatory epidemiological data collection through enhanced CAHO activities was completed. Currently CAHO practitioners in the field can access and directly enter data into the programme.

Objective 3: Understand economic and cultural elements of poultry production and improve hygienic measures along the value chain to enhance HPAI control in Egypt

- FAO international consultant undertook a review of prior socioeconomic and related works on HPAI in the Egyptian household poultry sector and its linkages to other stakeholders along the poultry value chain.
- With a backstopping support at FAO headquarters, during October and November 2010, the consultant carried out household producers’ value chain assessment study in various piloted governorates in Egypt. She also identified/described specific hygienic and disease prevention measures (bird confinement, general cleaning and hygiene) practiced by household poultry producers.

- The consultant made a presentation of her study at a workshop specifically organized by FAO for this purpose and wherein all key stakeholders and relevant partners were invited. She also submitted a comprehensive report.
- FAO international consultant undertook a value chain study with an emphasis on the identification of the major poultry value chains, to identify and provide an overview of the linkages between the different chains and the critical control points for highly pathogenic disease control. In addition, the study attempted to develop participatory options to deal with the critical control points.
- On 27 January 2011, the consultant made a presentation of his study at a workshop specifically organized by FAO for this purpose and wherein all key stakeholders and relevant partners were invited. He also submitted a comprehensive report including an overview of the chains and linkages, and quantitative data, as well as a proposal for options to deal with the critical control points from a systems management point of view.

Objective 4: Improve biosecurity in the context of improved poultry production

- From October to November 2010, FAO international consultant, conducted a financial feasibility analysis of biosecurity measures in the household poultry production sector in Egypt. The study revealed that biosecurity implementation in the household was at least 8.5 times financially more beneficial than doing nothing to reduce the risks and costs associated with major poultry diseases.
- For the purpose of the study and in an attempt to identify most appropriate social, practical and cost-effective measures, 191 individual and group interviews were conducted in Qalubia, Menoufia and Gharbia governorates with focus on various biosecurity measures adopted by households.
- ECTAD organized a video conference on 9 December 2010 wherein experts at FAO headquarters, GOVS, NLQP, CLEVB, CHL, UNDP and USAID staff discussed the findings of the study and the way forward.
- The consultant has submitted an end-of-assignment report (cleared at FAO headquarters) and two draft manuscripts for publication in international peer-reviewed journals.
- In December 2010, evaluation of the impacts of previous biosecurity training programmes carried out by FAO in seven high HPAI risk governorates was carried out. The evaluation was performed through the administration of questionnaire and visual inspection of premises of sampled commercial farms using an FAO prepared checklist. Analysis of the evaluation output was made by comparing farm biosecurity levels in relation to farming types, capacity, species of birds, etc. Based on the analysis outputs, farms were categorized as low-, moderate- or high-risk classes whereby the evaluation of the impacts of previous biosecurity trainings was measured through disaggregation of training beneficiary and non-beneficiary farms.
- A comprehensive report was submitted and is currently under review for formal clearance and further dissemination.

Objective 5: Improve AI vaccination in commercial poultry production units

- Previous assessment vaccination reports and SOPs developed in 2009 were discussed with GOVS authorities to assist GOVS in designing and implementing a strategy for clinical, serological and virological surveillance in vaccinated poultry flocks.
- A consultant from Agricultural Research for Development (CIRAD) was recruited by FAO and started her first mission by reviewing and updating the current AI vaccination plan. Her work covers the various poultry production sectors. In addition, it entails developing SOPs for effective monitoring of vaccinated flocks, and assessing the cost-effectiveness and impact of AI vaccination in Egypt. The first mission was carried out between 18 and 26 January 2011. The second mission will take place in a couple of months after the collection of required data is completed.

Objective 6: Increase incident reporting through outbreak response measures

- Identification of high-risk practices and behaviours as applied to HPAI surveillance and outbreak response was started. The field work was interrupted owing to the recent civil unrest in Egypt. The security situation is now improving and the work will be completed within eight weeks.
- The preparation of specifications for 250 mobile phones, 250 mobile lines and 50 GPS devices were completed. GOVS was consulted throughout as these materials are meant to provide capacity support to field veterinary staff engaged in surveillance and outbreak response activities. The procurement process

has been initiated.

Component 7. Setting up and implementing efficient monitoring and evaluation

- A Detailed Implementation Plan (DIP) describing timelines and budget for all project activities has been set up. The DIP was thoroughly discussed among FAO staff and project partners. Work plans for each FAO consultant were developed, discussed at ECTAD regular meetings and agreed by staff.
- Various meeting were held with project partners to set up and identify the mechanism of project implementation is such a way to suit upcoming monitoring and evaluation activities.
- Monthly programme team meetings were held to allow periodical monitoring of project implementation and overcome any constraints encountered.

Planned Activities for the Next Quarter:

- Prepare Terms of Reference (ToR), identify potential candidates and recruit an international consultant who will undertake review of current legislation on HPAI control and make proposals based on the outputs of the ongoing value chain analysis.
- Organize a workshop to discuss revised proposal of HPAI legislation based on the outputs of the ongoing value chain analysis and produce a comprehensive report with recommendations.
- Undertake an assessment study, organize a consultative workshop involving key stakeholders and produce a report on a proposed mechanism for licensing and registration of commercial poultry farms.
- Review OIE gap analysis report and identify and liaise with GOVS to identify key areas that require FAO's support and modus operandi.
- Provision of additional on the job training on SAIDR Web site management.
- Organize two coordination workshops for HPAI task force in governorate and head of local veterinary services to discuss activities and implementation of HPAI strategic action plan.
- Continue to provide support to the Animal Health Technical Committees and the new veterinary administration in order to revamp field level HPAI activities that slowed down due to the recent civil unrest in Egypt.
- Selection of governorates, districts and villages to target Community Development Associations (CDAs) that will closely work with GOVS and be involved in HPAI detection and awareness creation.
- Enhance the establishment of formal links between GOVS and CDAs and organize orientation days for CDAs in selected villages.
- Follow up on the implementation of the surveillance plan and regularly review and update the plan in accordance with the field situation analysis and upcoming value chain analysis outputs.
- Organize four refresher training sessions involving 104 CAHO practitioners on the new scope of work and field operations.
- Conduct two consultative workshops to develop a system that ensures harmonization of Epidemiology Unit functions with other relevant structures.
- Prepare ToR and recruit an international consultant to conduct a pilot study on the feasibility of poultry sector restructuring in Egypt.
- Organize two technical training courses on food safety and public health as part of the technical assistance to support the veterinary public health department.
- Finalize SWOT analysis of the operations of poultry slaughterhouses in Egypt.
- Support the establishment of a nation-wide epidemiological networking at governorate and district levels.
- Identify the further epidemiological information needs that could be gathered through the CAHO programme.
- Assign field teams to implement biosecurity messages for Sector 3 farms using the newly developed simplified guide.
- Improve epidemiological data quality, management, analysis and sharing through:
 - provision of continuous technical assistance to the partners involved in surveillance;
 - joint analysis and management of existing HPAI surveillance data; and
 - four-way linking of animal and public health sectors and other means.
- Conduct an assessment of outbreak response measures and provide recommendations for further improvement.
- Compile an elaborated assessment report on the current disease information system in Egypt.

<ul style="list-style-type: none"> o continue joint FAO-NLQP collaboration for laboratory analysis. The work entails holding of regular support/meetings, develop and agree on methodology for data analysis, consolidate epidemiological data describing HPAI and support coordination and information sharing between NLQP and other partners. • Processing a second consultancy mission for a consultant from CIRAD and organizing a stakeholder workshop where she will present and discuss the findings of her study. <p>Other planned activities:</p> <ul style="list-style-type: none"> • Finalize the process of refurbishment of 120 decentralized epidemiology units and distribution of purchased items. • Closure of the remaining nine LoAs signed with governorate veterinary services in the context of SAIDR III project. <p>Main challenges encountered and solutions:</p> <ul style="list-style-type: none"> • Frequent changes in the veterinary administration in general and the CVOs in particular. The new appointees lack proper understanding of the national HPAI situation and the complex issues they are purported to handle. During the reporting period, two new CVOs as well as the Head of Preventive Medicine were appointed. The Animal Health Technical Committee was also newly established. In response to these changes, ECTAD organized a workshop (15 December 2010) and separate briefing meetings with all those concerned. These allowed us to systematically describe the status of HPAI in the country, past and current efforts, evaluation of outputs, lessons learned and the way forward. • The recent generalized civil unrest in Egypt led to a dramatic slowdown of government-led field activities related to HPAI. Thanks to the initial smooth progress, the crisis did not result in any delay in the implementation of FAO project activities. However, it has to be noted that, unfortunately, the crisis occurred during the peak HPAI outbreak season. Available data suggest a decline in reported poultry cases and apparent increase in human infections and deaths. There is also an apparent delay in the admission to hospital of suspected human cases and reporting of confirmed infections. FAO is closely working with relevant government counterparts encouraging them to revitalize field-level operations on HPAI. <p>Main progress made towards the achievement of project outcomes</p> <ul style="list-style-type: none"> • FAO has implemented, analysed and compiled numerous field level studies on livelihoods, poultry value chains and disease control constraints for use by GOVS. Project outputs have strengthened institutional capacities (manpower, infrastructure, etc.) of veterinary services at both central and governorate levels. • The assessment study on Ai vaccination of poultry in Egypt indicated that vaccination coverage and flock immunity level is low. The organization of vaccination campaigns is poorly managed. The study suggested that vaccination should be seen as only one of the many efforts required to make significant improvements to HPAI control and prevention in the country. FAO has developed and handed over to GOVS a risk-based, targeted vaccination scheme for the different production sectors, as well as an operational plan with an exit strategy. • FAO continually assesses its project implementation status and attempts to capture views of beneficiaries. Government counterparts operating at various levels and private sector players expressed the highest level of appreciation of and confidence in ECTAD approaches and value of the different project interventions. • FAO led the review of the animal health component of the integrated national plan. The revised <i>Animal Health and Sustainable Livelihood Strategy</i> reflects the endemicity of HPAI and the risk reduction measures needed for longer term. FAO was also instrumental in assisting GOVS to develop a three-year elaborated action plan based up on the revised HPAI strategy. • The current SAIDR IV project is based on the three-year action plan of the government and in line with the OIE Performance of the Veterinary Services (PVS) gap analysis report. • FAO and USAID provided advice to the veterinary authorities in the establishment of dedicated HPAI units at various levels and making the epidemiological information network functional.

Project Monitoring Sheet: **OSRO/GLO/707/USA**

Project Title: Continued support to the FAO/ECTAD Advocacy and Communication Unit to provide strategic technical assistance and strengthen in-country capacities, competencies and leadership in advocacy and advocacy-related communication against Highly Pathogenic Avian Influenza and other Emerging Infectious Diseases

Reporting period: October 2010 – March 2011

Country: Bangladesh, Egypt, Indonesia and Viet Nam
Project title: Continued support to the FAO/ECTAD Advocacy and Communication Unit to provide strategic technical assistance and strengthen in-country capacities, competencies and leadership in advocacy and advocacy-related communication against Highly Pathogenic Avian Influenza and other Emerging Infectious Diseases
Code: OSRO/GLO/707/USA
Budget: USD 1 500 000 (Phase I); USD 1 000 000 (Phase II)
Total budget: USD 2 500 000
Effective starting date: 1 October 2007
Planned end date: 30 September 2011
<p>Context of the project</p> <p>The current project is an extension of OSR/GLO/707/USA which commenced in October 2007. The project was initiated – and extended – to address the issue of limited core skills in advocacy and contemporary approaches to strategic communication planning within livestock departments/veterinary services of Ministries of Agriculture (MoA). Thus, they require capacity development to be able to provide leadership and coordination in developing and implementing evidence-based advocacy, strategic communication and extension campaigns.</p>
<p>Objectives of the project</p> <p>The core objectives which remain unchanged for the extension period are:</p> <ul style="list-style-type: none"> • Building in-country advocacy, communication and extension capacities, competencies and leadership. • Developing effective and evidence-based advocacy, communication and extension strategies and interventions. • Strengthening in-country collaboration and coordination. <p>These core objectives translate into the following key components of the project extension:</p> <ul style="list-style-type: none"> • Development, utilization and dissemination of advocacy training and capacity development modules/materials for veterinary services, epidemiology staff, extension staff, as well as FAO and civil society organizations, with a focus on HPAI/EIDs; • Production and dissemination of HPAI/EIDs advocacy and community extension and mobilization materials; • Production and dissemination of regional advocacy strategy and networking materials, and support in developing national advocacy strategies and plans; • Capacity development for Advocacy Extension Officers to provide in-country support for implementation of advocacy activities.
<p>Planned activities</p> <p>The project comprises three components with specific outputs and activities for each. This report contains implementation details only on those components/outputs, where activities have been implemented. Where components/outputs are not reported it can be assumed that no activities were conducted – as per the project timetable/workplan – during the reporting period.</p>

Component 1: Building in-country capacity, competencies and leadership in strategic advocacy and advocacy-related communication.

Output 1.1: Training and capacity development materials focusing on advocacy and advocacy-related strategic communication and planning/leadership for prevention and control of HPAI and EIDs are developed for training of and use by Ministry of Agriculture's Livestock departments, and veterinary services communication, extension and technical staff

Activity 1.1.1: Develop comprehensive, multi-disciplinary training and capacity development modules and materials on risk and outbreak communication for HPAI and EIDs preparedness, prevention and control for MoAs, livestock departments, and veterinary services

Activity 1.1.2: Develop and disseminate multi-media advocacy and community mobilization materials, for use by MoAs, livestock departments, and veterinary services in preparedness, prevention and control of HPAI and EIDs

Component 2: Developing effective and evidence-based regional and national advocacy strategies and a regional strategic communication framework for preparedness, prevention and control of HPAI and other EIDs.

Output 2.1: FAO Regional Advocacy Strategy is developed and disseminated

Activity 2.1.1: Conduct desk-based policy review

Activity 2.1.2: Conduct 15-20 Key Informant interviews across the region

Activity 2.1.4: Develop draft advocacy strategy

Output 2.2: National level communication and advocacy strategies are developed in Bangladesh, Indonesia and Vietnam

Activity 2.2.1 Conduct three communication and advocacy strategy development workshops in Bangladesh, Indonesia and Viet Nam (for five days, with 25 local participants)

Output 2.5: Regional Strategic Framework for Communication developed and disseminated (through DVD, website, presentations)

Activity 2.5.1: Conduct two-day dissemination workshop in Bangkok for 35-40 officials from EPT countries and others in the region to launch the strategic framework

Activity 2.5.2: Develop localization and adaptation guidelines and handbook

Output 2.6: The capacity of FAO Advocacy and Community Engagement Officers to provide in-country support for implementation of advocacy activities is developed.

Activity 2.6.1: Support FAO Advocacy Extension officers in developing national advocacy strategies; collaborate in capacity development workshops/mentor local capacity development

Activity 2.6.2: Develop local advocacy materials.

Output 2.7: New tools, processes and approaches are developed for communicating technical information on EIDs effectively.

Activity 2.7.1: Conduct three pilot workshops (in Egypt, Indonesia and Viet Nam) to develop curriculum modules for communicating technical information on EIDs to non-technical audiences; and to develop the outputs from the workshop already conducted in Bangladesh.

Activity 2.7.2: Conduct pre- and post-evaluation exercises to evaluate the effectiveness of the tools, processes, and approaches.

Activity 2.7.3: Share new tools with communication partners, government ministries and departments, CSOs and others, including through a local workshop for dissemination of curriculum processes for communicating on HPAI/EIDs/animal diseases, and engaging risk audiences in dialogue.

Output 2.8: *New multi-disciplinary data gathering protocols are developed to inform community communication interventions*

Activity 2.8.1: Conduct consultations with collaborators and partners: through a national workshop to develop new guidelines/SOPs for designing multi-disciplinary research protocols for gathering data about knowledge, culture, attitudes, practice, socio-economics and other aspects of affected communities.

Activities undertaken during the reporting period

All activities as indicated under Planned Activities above have been carried out except for Egypt (please see explanation under “Main Challenges encountered”. Full details of activities implemented and progress made are also listed under Section “Main progress made towards the achievement of project outcomes”.

Planned activities for the next six-month period

Component 1: Building in-country capacity, competencies and leadership in strategic advocacy and advocacy-related communication.

Output 1.1: *Training and capacity development materials focusing on advocacy and advocacy-related strategic communication and planning/leadership for prevention and control of HPAI and EIDs are developed for training of and use by Ministry of Agriculture’s Livestock departments, and veterinary services communication, extension and technical staff*

Activity 1.1.2: Disseminate multi-media advocacy and community mobilization materials, for use by MoAs, livestock departments, and veterinary services in preparedness, prevention and control of HPAI and EIDs

Activity 1.1.3 Disseminate training/capacity development materials on strategic advocacy and advocacy-related communication and planning for HPAI/EIDs

Output 1.2: *Technical capacities and capabilities of Ministry of Agriculture’s Livestock departments and veterinary services to plan and mount effective interventions in strategic advocacy and strategic communication interventions are strengthened*

Activity 1.2.1 Conduct six training workshops in four countries (Bangladesh, Egypt, Indonesia and Viet Nam) on strategic advocacy and advocacy-related communication planning and leadership for the prevention and control of HPAI and other EIDs

Component 2: Developing effective and evidence-based regional and national advocacy strategies and a regional strategic communication framework for preparedness, prevention and control of HPAI and other EIDs.

Output 2.2: *National level advocacy strategies are developed in Indonesia and Vietnam*

Activity 2.2.1 Conduct two advocacy strategy development workshops in Indonesia and Viet Nam (for five days, with 25 local participants)

Output 2.3: *Develop capacity in advocacy among veterinary, field epidemiology and extension staff, as well as FAO and civil society organisations, etc.*

Activity 2.3.1 Conduct four 4-day workshops in 4 countries to build capacity in advocacy, and communication planning and leadership for 20 persons per workshop (workshops to be used to develop national advocacy plans with goals, timeframes and related interventions).

Output 2.4: *Advocacy materials are developed, utilised and disseminated during the workshops outlined in Output 2.3/Activity 2.3.*

Activity 2.4.1 Develop advocacy material as identified and utilize in four 4-day workshops in four countries.

Output 2.6: *The capacity of FAO Advocacy Extension Officers to provide in-country support for implementation of advocacy activities is developed.*

Activity 2.6.1 Support FAO Advocacy Extension officers in developing national advocacy strategies; collaborate in capacity development workshops; and mentor local capacity development

Activity 2.6.2 Develop local advocacy materials

Output 2.7 New tools, processes and approaches are developed for communicating technical information on EIDs effectively.

Activity 2.7.1: Conduct three pilot workshops (in Egypt, Indonesia and Viet Nam) to develop curriculum modules for communicating technical information on EIDs to non-technical audiences; and to develop the outputs from the workshop already conducted in Bangladesh.

Activity 2.7.2: Conduct pre- and post-evaluation exercises to evaluate the effectiveness of the tools, processes, and approaches.

Activity 2.7.3: Share new tools with communication partners, government ministries and departments, CSOs and others, including through a local workshop for dissemination of curriculum processes for communicating on HPAI/EIDs/animal diseases, and engaging risk audiences in dialogue.

Component 3: Strengthening in-country collaboration and coordination.

Output 3.1: *Best practices are documented and disseminated*

Activity 3.1.2: Collect lessons learned and best practices from countries of the region

Main challenges encountered and response provided

No activities were undertaken in Egypt (one of the four project countries) due to the political situation in the country during the reporting period. The project activities have been rescheduled, with the first activities due to take place in May 2011. Preparations have already taken place, which include a mission in May to undertake filming of advocacy materials for the prevention of HPAI and other animal diseases.

Main progress made towards the achievement of project outcomes

In relation to the core objectives of the project, implementation to date has focused on the development of advocacy training and capacity development modules/materials for veterinary services, animal health officers, epidemiology staff, etc; community extension and mobilization materials; regional advocacy strategy and networking materials support in developing national advocacy strategies and plans; and capacity development for personnel to provide in-country support for implementation of advocacy activities. The methodologies developed are encapsulated in the materials produced within the project to date (see below). These key methodologies and materials form the basis of the project and its implementation, and represent new thinking, approaches and planning in addressing the threat of HPAI in endemic countries, together with that from EIDs and high-impact animal diseases.

In addition to ensuring the participation of stakeholders and beneficiaries in the planning of the project, the development of the novel approaches and strategies to advocacy/communication, and in developing materials, a series of capacity development workshops have been planned and organized in Bangladesh, Indonesia and Vietnam, for multidisciplinary and multisectoral stakeholders from Ministries of Agriculture and Health, international agencies, together with communication specialists, veterinarians, animal health officers, etc. The workshops aim to develop the capacity and capabilities of these stakeholders to plan and lead advocacy and communication interventions which impact upon the ultimate project beneficiaries – farmers, poultry/animal producers, bird/animal market workers, transporters, and other community-level stakeholders – through implementation of biosecurity and risk reduction measures to minimize the threat of HPAI and other high-impact animal diseases. The full details of achievements are:

Component 1: Building in-country capacity, competencies and leadership in strategic advocacy and advocacy-related communication.

Output 1.1 Training and capacity development materials focusing on advocacy and advocacy-related strategic communication and planning/leadership for prevention and control of HPAI and EIDs are developed for training of and use by Ministry of Agriculture's Livestock departments, and veterinary services communication, extension and technical staff

A final draft of the *FAO Outbreak Communication Guidelines* was produced following a consultative process. The publication is for the use of animal health and communication professionals to prepare for and respond to animal disease emergencies. The consultant based in FAO headquarters in Rome, under the USA project, organized the drafting of a policy 'White Paper' on *Risk Communication* during the reporting period, and which will be completed in mid-April. The 'White Paper' contributes to FAO's global and regional frameworks for communication against HPAI/EIDs and to capacity development materials. The consultant organized a consultative process for the 'White Paper', which will culminate in a seminar to be held in FAO Rome on 14 April 2011, with participants from AED, FAO, OIE, UNICEF, the World Food Programme (WFP), WHO and others. The FAO consultant further began developing community mobilization and advocacy materials for use by animal health and communication professionals. The completion date of the materials is scheduled for June 2011.

Component 2: Developing effective and evidence-based regional and national advocacy strategies and a regional strategic communication framework for preparedness, prevention and control of HPAI and other EIDs.

Output 2.1 FAO Regional Advocacy Strategy is developed and disseminated

A consultative workshop for FAO-ECTAD Country Team Leaders identified gaps in the area of regional advocacy apparent during the course of HPAI project implementation since 2003. Following this and other consultative processes an FAO Regional Advocacy Strategy is now in draft stage, and is expected to be ready in June 2011 for review and finalization. Based on the consultations above, a set of regional guidelines for developing a national level advocacy strategy is now at draft stage. This will be shared with individual countries at workshops scheduled in Bangladesh, Indonesia and Viet Nam.

Output 2.2 National level communication and advocacy strategies are developed in Bangladesh, Indonesia and Vietnam

Implementation update: Multidisciplinary, multisectoral workshops for stakeholders from Ministries of Agriculture and Health, as well as international agencies and communication specialists, are scheduled for April 26-27 in Bangladesh, and for April 29-30 in Indonesia, with four objectives: (a) to launch the *Regional Framework for a Communication Strategy against EIDs in Asia and the Pacific 2011-2016*; (b) to share the *Localization Guide* for developing a communication strategy based on the *Regional Framework*; (c) to share regional guidelines for developing a national advocacy strategy; and (d) to conduct a review of available advocacy materials, and new needs in the light of adopting the One Health approach.

Output 2.5 Regional Strategic Framework for Communication developed and disseminated

A draft *Regional Framework for a Communication Strategy against EIDs in Asia and the Pacific 2011-2016* was completed in February 2011, by an FAO-led collaboration that included inputs from AED, UNICEF, UNSIC and WHO-South East Asia Regional Office (SEARO). The document was the product of a consultative process and a literature review of communication evaluations conducted in relation to HPAI-related communication interventions. The *Regional Framework* was informed by the experiences of issues and gaps

identified by FAO Team Leaders of ECTAD-RAP in the area of communication since 2003. The literature review and recommendations were a key component and were informed by a consultative process involving AED, CARE, FAO, OIE, UNICEF, UNSIC, and senior veterinarians and livestock officers from MoAs/Livestock Departments (from Cambodia, India, Indonesia, Nepal, Philippines, Thailand and Viet Nam). The process recognized the need for a regional framework to harmonize strategic communication approaches across the region, for use by communication and non-communication professionals; and that international agencies/NGOs with communication expertise should work together on the framework with FAO taking the lead. A core group was formed comprising representatives from AED, CARE, FAO, UNICEF and WHO SEARO to implement the process. The *Regional Framework* will be introduced at the Bangladesh and Indonesia workshops scheduled for April 26-27 in Dhaka, and for April 29-30 in Jakarta; and at a regional event in Bangkok, May 2011.

Output 2.6 The capacity of FAO Advocacy and Community Engagement Officers to provide in-country support for implementation of advocacy activities is developed.

Three FAO Advocacy and Community Engagement (ACE) officers were appointed, in Bangladesh, Indonesia and Viet Nam, and participated in a meeting in Bangkok from 19-21 January 2011 (together with project funded FAO consultants from Bangkok and Rome) which included capacity building sessions, work planning, review of current activities, and documentation of success stories. Additional meetings are scheduled for May 2011 in Bangkok, to review project implementation progress, and July to plan the end phase of the project.

Output 2.7 New tools, processes and approaches are developed for communicating technical information on EIDs effectively.

Implementation update: Two process tools (Figureheads, Storytelling) and five dialogue-based session guides for communicating scientific knowledge to lay audiences have been developed and translated into Bangla for field testing in Bangladesh in the last week of April. The Figureheads process tool has been translated into Vietnamese and is being field tested in April. The complete set of new tools will be translated and field-tested in Indonesia in June.

Output 2.8 New multi-disciplinary data gathering protocols are developed to inform community communication interventions

FAO convened an interagency meeting (including AED, UNICEF, UNSIC and WHO SEARO) to discuss the updating of communication research protocols in order to make them more multidisciplinary, and incorporate community insights from anthropological, sociological and socio-economic perspectives. Recommendations included:

- FAO should commission desk research to identify available tools and protocols for community research, and identify their strengths and weaknesses, as well as gaps.
- A meeting should be convened to review these findings, and develop terms of reference for a new community research protocol.
- New data gathering and research protocol and process tools should be developed.
- New tools should be introduced regionally at a suitable regional meeting in Bangkok, as well as during project interactions in Bangladesh, Indonesia, and Viet Nam.

Component 3: Strengthening in-country collaboration and coordination.

Output 3.1 Best practices are documented and disseminated

The ACE meeting in Bangkok in January, developed criteria for defining and identifying success stories and best practices. These were consolidated into a data-gathering format which was then circulated back to the country teams to help them propose success stories for documentation through video and print. Stories identified include: **Bangladesh:** use of the SMS Gateway to speed up reporting; and the live bird market clean-up project in Dhaka; **Viet Nam:** Farmers' Clubs, which have proven self-sustaining and effective after

the end of project funding. More possible stories are being researched; **Indonesia:** Currently researching story possibilities. A reconnaissance visit has been scheduled in Bangladesh from mid-April to conduct still photography, as well as develop a video production schedule and identify individuals to be interviewed on camera. A visit is being scheduled in Viet Nam for filming in end May.

Project Monitoring Sheet: OSRO/INT/001/USA

Project title: EPT+ Characterizing influenza viruses posing risks as the next global pandemic

Reporting period: April 2013 to September 2013

Country: Bangladesh, China and Viet Nam
Project title: EPT+ Characterizing influenza viruses posing risks as the next global pandemic
Code: OSRO/INT/001/USA
Budget: Phase I: USD 2.75 million Phase II: USD 1 million Total: USD 3.75 million
Effective starting date: 1 November 2011
Planned end date: Phase I: 30 September 2013 Phase II: 30 September 2014
<p>Context of the project</p> <p>To improve our understanding of the role livestock play in serving as reservoirs for potential pandemic influenza viruses in Southeast, East and Southern Asia, the United States Agency for International Development (USAID) has provided funding to the Food and Agriculture Organization of the United Nations (FAO) to expand influenza surveillance activities through the EPT+ project, part of the broader emerging pandemic threat (EPT) programme. Approval of the initial EPT+ project proposal from USAID was received in November of 2011, and project activities were initiated by FAO in December 2011. The project contains four components: (1) improving the understanding of the fundamental drivers of influenza emergence through risk assessments and risk modelling; (2) conducting influenza surveillance in farm animals (swine and ducks) to improve knowledge about circulating viruses of pandemic potential in livestock; (3) developing and implementing questionnaires to improve the understanding of the risk for influenza transmission throughout multiple sectors; and (4) sharing information and contributing to major global influenza initiatives. The geographic scope of EPT+ initially included Viet Nam, China, and Bangladesh. The largest portion of the EPT+ project focuses on livestock surveillance activities and aims to detect and characterize animal influenza viruses circulating in targeted livestock systems.</p>
<p>Objective of the project</p> <p>The EPT+ project will contribute to the improvement of food security through the prevention, detection and control of, as well as the response to, animal and public health risks attributable to zoonoses and animal diseases. The main objective of the project is to improve characterization and surveillance of influenza-related pandemic threats at national and regional levels in livestock populations.</p>

Planned activities for the reporting period (April 2013 to September 2013)
OUTPUT 1: Fundamental drivers of influenza emergence refined, mapped and included in the risk analyses to improve geolocalization of potential pandemic emergence sites

- No activities during this period.

OUTPUT 2: Robust influenza surveillance strategy implemented at national/regional level to improve knowledge about circulating viruses of pandemic potential in livestock

- continue field sampling collection for the longitudinal study in Bangladesh;
- coordinate with FAO headquarters staff responsible for the Global Animal Disease Information System (EMPRES-i) in the implementation and use of the programme by the EPT+ field staff in all three recipient countries for analysis of test results of samples collected and questionnaires;
- coordinate with all partner laboratories from the three recipient countries in the timely submission of laboratory test results for influenza surveillance in livestock;
- conduct a national laboratory capacity assessment after the purchase and delivery of equipment and supplies necessary for handling and diagnosis of EPT+ samples;
- analyse field questionnaire data and laboratory test results that will be submitted by partner laboratories from all three recipient countries.

OUTPUT 3: Understanding of risk for influenza transmission improved among sectors

- Refer to Output 2.

OUTPUT 4: Information exchange and coordination improved among major global influenza initiatives

- coordinate contributions from EPT+ coordinators and other FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) staff responsible for the EPT+ project in the analysis of both field and laboratory surveillance data for the final report;
- write up the EPT+ project final report; and
- conduct Closing Project Workshop.

Activities undertaken during the reporting period (April 2013 to September 2013)
OUTPUT 1: Fundamental drivers of influenza emergence refined, mapped and included in the risk analyses to improve geolocalization of potential pandemic emergence sites

- There were no activities related to this output during this period.

OUTPUT 2: Robust influenza surveillance strategy implemented at national/regional level to improve knowledge about circulating viruses of pandemic potential in livestock

- Continued influenza virus surveillance (virological and sero-surveillance) in all three recipient countries.
- Procured additional expendable laboratory supplies and materials needed for laboratory diagnosis of EPT+ field samples collected in all three countries.
- Samples collected from pigs and ducks during surveillance activities in the three countries were tested for influenza viruses (by real time reverse transcription-polymerase chain reaction (RT-PCR) and virus isolation using MDCK cell lines and embryonated eggs) and for influenza antibodies (using IDEXX Laboratories enzyme-linked immunosorbent assay (ELISA) kits). The resulting data was then analysed by respective laboratory experts and epidemiologists. See Annex 1 for a summary of laboratory testing results from the three target countries.

- Preliminary results of the laboratory test data analyses from all countries were shared via power point presentation with the epidemiologist of the global component of the EPT+ project to facilitate a comprehensive analysis of the regional influenza surveillance. Viet Nam has shared data from the field questionnaires and laboratory results, while China has shared laboratory results.
- Full genome sequencing results from some Swine Influenza Virus (SIV) positive samples in Viet Nam were likewise included in the analysis. Full genome sequencing on the remaining influenza positive samples in all three countries is ongoing and expected to be completed in December 2013.
- An EPT+ project internal meeting was attended by the project national coordinators and FAO country staff in Bangladesh, China and Viet Nam who were directly involved in the EPT+ project. Progress in both regional and global components of the project was discussed, as well as work plans for EPT+ Phase II.

National programme progress in support of Output 2

Bangladesh

- Three of the five laboratory partners have completed laboratory activities.
- 62.86 percent of the 6 429 duck blood serum samples tested by ELISA were positive for antibodies against influenza A virus.
- 16.45 percent of the 4 234 pig blood serum samples tested were positive for antibodies against influenza A virus.
- Only 11 (1.55 percent) of the samples from ducks tested positive (M-gene) for influenza A virus by real time RT-PCR, while in pigs there were no virological positive samples reported.
- All M-gene positive samples were sent to the Bangladesh Livestock Research Institute for virus isolation and sub-typing. Testing is ongoing.
- The EPT+ project generated information on the current status and distribution of influenza viruses in ducks and swine, and identified hotspots in tested areas.
- The project also assisted in facilitating collaboration and networking of national animal diagnostic laboratories and other EPT partners' programmes in the country.
- The EPT+ project initiated the first nationwide pig disease surveillance in Bangladesh. The project also provided a platform for surveillance, including retrospective samples for H7N9 testing.

China

- Eleven pig farms from two provinces (Guangdong and Hunan) were chosen as sampling sites, and 10 of the 11 farms were positive for SIV.
- Random samples traced from 52 farms were collected in Guangdong slaughterhouses, and all 52 farms were positive for SIV.
- Random samples traced from 99 farms were collected in Hunan slaughterhouses, and 78 farms were positive for SIV.
- Fifty-five strains (0.55 percent) of SIVs were isolated from the total number of pig

samples collected in China for the EPT+ project; from the 55 strains isolated, 40 were Eurasian avian-like (H1N1) viruses (EA) H1N1 subtype; 12 were subtyped as 2009 pandemic H1N1 influenza virus (pH1N1/2009); three were subtyped as H1N2 SIVs.

- In Hunan province, 34.9 percent of pigs sampled were positive for antibodies against influenza A virus, while in Guangdong province, 36.1 percent of pigs sampled were positive. The overall sero-prevalence of Influenza A in the two provinces was 35.5 percent.
- Based on the above laboratory test results, multiple influenza virus subtypes were detected among pigs in China.
- The co-existence of 2009 pandemic H1N1 influenza virus and other subtypes viruses (e.g. avian-like H1N1 and H1N2) in pigs may cause new virus assortment with pandemic potential.
- The EPT+ project enabled collaboration with the PREDICT project China office. A joint sampling between animal health and public health sectors was established. Collaboration between the two sectors was established at national and provincial level with the agreement that samples will be shared by both sectors.
- The LoA for full genome sequencing work was cleared by the FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Regional Office for Asia and the Pacific. The second LoA stipulates that the partner laboratory will provide services for full genome sequencing for 30 EPT+ samples, and that data on the sequences will be made available in FAO's Global Animal Disease Information System (EMPRES-i) domain.

Viet Nam

- 12 Provinces (six in the north, six in the south) were selected as sampling sites.
- Large-scale pig farms (breeding and fattening) with low biosecurity were chosen as sampling farms.
- An EPT+ surveillance field questionnaire was translated into Vietnamese and implemented.
- A total of 8 640 pig samples were collected in 12 provinces from January 2013 to August 2013.
- Of the 60 farms sampled, four breeding farms and five fattening farms were positive for SIVs.
- 31.5 percent of the samples collected in 12 provinces were seropositive against influenza A virus.
- 103 SIVs were isolated from nine SIV-positive farms.
- According to results from the EPT+ influenza surveillance project, SIV is prevalent in breeding and fattening farms with low biosecurity levels.
- Genetic variation (different subtypes and lineages) of SIVs was present in Viet Nam pig populations sampled.
- An amendment to the original LoA was approved and signed between FAO and the Department of Animal Health (DAH), Ministry of Agriculture and Rural Development, Viet Nam. The amended LoA covers additional sample collection for the EPT+ study in

Viet Nam. Sampling was conducted in August and September 2013. Laboratory testing is ongoing.

OUTPUT 3: Understanding of risk for influenza transmission improved among sectors.

- Processing and analyses of data gathered through questionnaires administered in Viet Nam and Bangladesh is ongoing.

OUTPUT 4: Information exchange and coordination improved among major global influenza initiatives.

- Data was shared with international influenza networks, such as FAO's Network of Expertise on Animal Influenza (OFFLU) and the OFFLU Swine Influenza Group.
- Identification of gaps between various genetic databases and epidemiological data was completed.

Global activities in support of Output 4

Regional workshop to review EPT+ activities in Bangkok, August 2013

A closing workshop was conducted in Bangkok with EPT+ national teams and the regional and global coordinators. During the workshop, each country focal point provided details on the number of samples collected, production systems targeted and preliminary results obtained from laboratory testing (serology, virus isolation and sequencing). The results in China and Viet Nam imply the presence of genetic variation (different subtypes and lineages) among SIV in swine production systems. Virological testing of samples in Bangladesh is ongoing, with an expected completion date of December 2013.

Owing to budget restrictions in Phase II of EPT+, it was decided that follow-up activities to complete the risk modelling work will require exploration of alternative sources of funding. Potential sources include H7N9 projects and collaboration with the PREDICT component of the EPT programme.

Country teams presented their work plans for Phase II of the EPT+ project. Viet Nam will conduct surveillance in production systems found positive for SIV during Phase I, and expand surveillance to other areas in the country. In China, longitudinal studies will be conducted on all SIV-positive farms identified during Phase I in order to monitor virus evolution over time.

Based on these activities, during the workshop it was agreed that EPT+ Phase II will focus on: 1) identifying and fully characterizing progenitor influenza viruses detected in livestock; and 2) understanding factors of virus emergence and evolution in Asia through specific longitudinal studies and value chain analysis.

Planned activities for Phase II in support of Output 2

National Programme

- Contribute to the EPT+ Phase II proposal by providing surveillance plans for Phase II.
- Undertake the full sequencing of influenza virus isolates collected during Phase I EPT+ in China, Bangladesh and Viet Nam and share resulting data.

- Follow-up and coordinate with the EPT+ national coordinators in China and Viet Nam for updates on the activities and results of the services stated in the amended EPT+ Phase I LoAs.
- Organize a national stakeholder meeting to plan EPT+ surveillance activities in Viet Nam and China

Global Programme

- Coordinate the writing and submission of the EPT+ Phase II proposal. Obtain input from national EPT+ coordinators from each country, and other FAO ECTAD technical staff who are directly involved with the EPT+ project.
- Collect all raw data gathered during Phase I EPT+ from surveillance and questionnaires from all three countries (Bangladesh, China and Viet Nam) for collation and data analyses. Coordinate the preparation of a technical report of data gathered from surveillance activities in the three countries.
- Conduct a regional project workshop with regional stakeholders to share results of EPT+ Phases I and II. The purpose of the meeting is to share the results of country consultations in Bangladesh, China and Viet Nam, and to improve coordination among FAO, other EPT partners, World Health Organization, World Organisation for Animal Health, and the United States Centers for Disease Control and Prevention to address the animal-human interface (month six of Phase II).

Main challenges encountered and responses provided

1. Information sharing on EPT+ project laboratory test results will have to be cleared by the Governments of target countries.

- In Bangladesh, laboratory test results and data generated from the field questionnaires will be made available as agreed in the signed LoA. Results from virological and sero-surveillance, and some data generated from the questionnaires have been shared internally among FAO technical staff who are directly involved in the EPT+ project. However, the official release and sharing of results to all partners will still need clearance from national authorities. The FAO ECTAD Bangladesh team leader will communicate and seek clearance from the Chief Veterinary Officer for the official release of all laboratory test results that are generated by the five laboratory partners.
- In China, project partners (the national coordinator and one Harbin laboratory staff) participated and shared laboratory test results during the EPT+ project internal discussion meeting from 28 to 30 August 2013. The amended LoA for full genome sequencing services provided by the partner laboratory (Harbin) states that "the partner laboratory will write a report on the analysis of laboratory diagnostic testing results; will provide service to neighbouring countries for gene sequencing; and the full genome sequencing data should be available in FAO EMPRES-i." Levels of confidentiality of the data can be agreed and implemented.
- In Viet Nam, as stated in the signed LoA, all laboratory test results (including data that will be generated from the surveillance field questionnaires) will be made available to all partners. However, clearance from the DAH will still be needed for the official release and sharing of the information. The FAO ECTAD Viet Nam senior technical coordinator

will communicate and seek clearance from the Chief Veterinary Officer for the official release of all laboratory test results that are generated by both the National Center of Veterinary Diagnosis and Regional Animal Health Office Number 6 laboratories.

2. Delayed testing of field samples by some EPT+ laboratory partners in Bangladesh.

- All possible actions – including coordination, requests for assistance in troubleshooting lab equipment, and guidance on the use of EPT+ diagnostic protocols from other partner laboratories – are being taken to expedite the testing and submission of the EPT+ reports to national coordinators.

3. Difficulty collecting true information about disease status by interviewing farmers.

- Field questionnaires were translated into the local language in Bangladesh, China and Viet Nam.

4. Swine surveillance for influenza is not a priority for every EPT+ recipient country.

- At the stakeholders meeting and during field sample collection activities, EPT+ national coordinators explained the following information to national authorities and farmers in each country: the EPT+ project's main objectives; the possible role that pigs can play as a virus reservoir, and as a mixing vessel of the virus which could result in reassortment of a pandemic strain.

5. In Bangladesh, the Department of Livestock Services (DLS) had no previous experience in swine surveillance, including maintaining sample quality while in the field.

- The FAO ECTAD country team conducted training on swine surveillance (sample collection and management) for some DLS technical staff, together with 31 new local veterinarians hired for the EPT+ project field sample collections. Dry shipper boxes were purchased by Bangladesh FAO ECTAD for use by the field collection teams to transport field samples to laboratories.

Main progress made towards the achievement of EPT+ project outcomes

- Implemented influenza surveillance in livestock for each country, as agreed in the approved LoA between FAO and the respective national animal health institutions.
- The EPT+ influenza surveillance protocol was adapted and implemented in each country.
- All activities stated in the LoA have been completed in China and Viet Nam. In Bangladesh, reports are expected from two of the five partner laboratories on the results of the remaining EPT+ samples submitted by field collection teams.
- In Bangladesh, laboratory coordination and networking among the five government laboratories and other EPT partners were established through close coordination with the IDENTIFY project.
- In China, a second LoA was written and approved by FAO for the partner laboratory to provide services on full genome sequencing for 30 SIV positive samples. Results of the sequencing are expected in December 2013.
- In Viet Nam, an amendment to the original LoA was made for additional sampling in pigs. The reason for the additional sampling was to cover more sampling areas/farms in order to determine the extent of the genetic variation (different subtypes and lineages) of

SIVs in Viet Nam.

- An internal discussion meeting was attended by all FAO ECTAD country team staff, and some staff from partner laboratories that are directly involved in the EPT+ project.
- In Viet Nam, questionnaires were developed and a database was established.
- Coordination and information sharing was improved with partners and stakeholders in Viet Nam, and some international partners.
- In Bangladesh, the EPT+ project supported capacity building (diagnostic and surveillance activities, especially for pigs).

Annex 1. Results obtained from surveillance activities in Bangladesh, China and Viet Nam during Phase 1. Data presented represent only the results from the samples that have so far been tested.

Country	Species	Production system	No of Epi units sampled	Serology			Virology			No of viruses
				No. samples	No. positive	Epi unit +ve(%)	No. samples	No. positive	Epi unit +ve	
Bangladesh	Ducks	Low biosecure grazed *	119	3816	907(23.8)	79(66.4)	NA	2	2	NA
		Intensively non-grazed*	8	95	54(56.8)	7(87.5)	NA	0	0	NA
		Semi-Intensive*	2	89	54(60.7)	2(100)	NA	4	4	NA
		Backyard [#]	201	1769	1237(69.9)	116(57.7)	NA	13	13	NA
		total	330	4982	2896(58.1)	204(61.8)	7743	19	19	NA
	Pigs	nomadic [#]	28	493	77(15.6)	28(100)	NA	0	NA	NA
		Backyard*	659	2615	388(14.8)	461(70.0)	NA	0	NA	NA
		Semi-Intensive*	11	211	28(13.3)	10(90.9)	NA	0	NA	NA
		Slaughterhouse	3	460	313(68.0)	3(100)	NA	0	NA	NA
		total	698	3319	756(22.8)	502(71.9)	3161	0	NA	NA
China	Pigs	Farms	20	414 ^a	107(25.8)	20(100)	1000	16(1.6)	20(100)	16
		Slaughter house	9	9496	3411(35.9)	9(100)	9078	39(0.4)	9(100)	39
		total	29	9910	3518(35.5)	29(100)	10078	55(0.5)	9(100)	55
Viet Nam	Pigs	Breeding units*	23	349	131(37.5)	22(95.7)	1380	51(3.7)	4(17.4)	NA
		Fattening units*	37	368	95(25.8)	18(48.6)	2220	52(2.3)	6(16.2)	NA
		total	60	717	226(31.5)	40(66.7)	3600	103(2.9)	10(16.7)	103

*: refers to farms; # refers to villages; NA: details not yet available; viruses isolated in Viet Nam: H1N2, H3N2; viruses isolated in China: H1N1, H1N2, H1N1/2009; ^a serum collected from 11 farms.

I Quarter 2010

Project Monitoring Sheet: OSRO/INT/803/USA

Project Title: **Development of Integrated Desktop Simulation Exercise on Avian Influenza in Animal and Human Population in Europe and Eurasia**

Reporting period: **January – March 2010**

Regional component: Eastern Europe and Central Asia Project Title: Development of Integrated Desktop Simulation Exercise on Avian Influenza in Animal and Human Population in Europe and Eurasia. Code: OSRO/INT/803/USA
Budget: USD 130 000 (Phase I) Total budget: USD 130 000
Effective starting date: 1 November 2008
Planned end date: 30 June 2010
Context of the project <p>Emergency preparedness planning is crucial for the successful management of outbreaks of Highly Pathogenic Avian Influenza (HPAI) and for minimizing the outbreak's impact. Preparedness encompasses the development of contingency plans, operational procedures and engagement of national and local authorities in capacity building.</p> <p>The basis for the adequate implementation of measures and operations considering HPAI is a developed integrated action (contingency) plan that will clarify technical procedures, operational activities and the lines of command and communication channels. However, to test its efficiency the implementing capacity of the contingency plan should be monitored from time to time by conducting, for example, integrated desktop simulation exercises. These exercises provide an opportunity for the authorities to identify areas where cooperation and coordination needs to be improved as well as to test internal and external roles and responsibilities. Measurable outcomes need to reflect the technical and operational improvements, training and capacity building, the transparency of communication and the level of coordination between different government sectors and agencies involved. The Food and Agriculture Organization of the United Nations (FAO) and World Health Organization - Regional Office for Europe (WHO-EURO) are the focal points for the technical cooperation for animal and human cases of HPAI. Both organizations are involved in assisting UN Member States in enhancing their emergency preparedness and response capacity. The United States Government through the United States Agency for International Development (USAID) is one of the leading donors in strengthening the national capacity to respond to the risk of avian and pandemic influenza.</p> <p>The starting point of WHO's pandemic preparedness plan is to strengthen the capacity of countries to respond to seasonal influenza epidemic. FAO's activities in the field of avian influenza have targeted prevention, early detection and control of HPAI in animal populations. So far, the FAO, the World Organisation for Animal Health (OIE) and the WHO, are encouraging countries to develop or enhance existing national preparedness plans to fully consider an integrated approach by addressing animal and human health aspects as well as other sectors needed for the control of HPAI.</p>

This integrated approach allows:

- to improve the cooperation and communication of different sectors involved in HPAI emergency preparedness and response;
- To develop and implement integrated epidemiological surveillance and early warning systems for HPAI; and
- to ensure the most efficient implementation of measures and operations during an HPAI outbreak.

From December 2006, the FAO and WHO EURO have been developing and implementing integrated desktop simulation exercises within the ongoing OSRO/INT/603/USA B02 project. However, emergency preparedness is a continuous process, which needs to be adapted to prevailing conditions in a country and to new scientific insights.

The geographical scope of this project is limited to countries within the Eastern Europe and Central Asia regions of the FAO Headquarters (FAO/HQ) and WHO EURO, excluding the countries that have joined the European Union.

In the Central Asia region, during the beginning of 2006, two outbreaks of HPAI in humans have been observed in Turkey and Azerbaijan. The WHO and FAO missions to the region have indicated that the animal and human health sectors needed urgent strengthening. As in most countries, the relationship between the human and animal health sectors is fragmented, as is the cooperation in response to outbreaks. This leads to delays, thus increasing the impact of the disease in the poultry industry as well as the risk for human infection.

Since the first HPAI outbreaks, the Eastern Europe and Central Asia countries, with the guidance of FAO and WHO, have established Avian Influenza task forces or inter-ministerial AI working groups with the aim to prepare the country to face HPAI outbreaks. Furthermore, the development of contingency plans for HPAI and pandemic influenza preparedness plans has been promoted. However, only a limited number of countries have developed integrated multi-sectoral HPAI contingency plans or have tested their plans, while some of the existing plans still need to be revised or approved by their government.

Objectives of the project

This project ensures a continuous contribution to enhance the preparedness of targeted countries to respond when facing outbreaks of HPAI through testing the coordination and communication mechanisms amongst all involved in HPAI control, at national as well as at regional level. The project activities are conceived to reduce the risk of viral introduction or spread by improving coordination of actions to be taken. The ultimate goal of this proposal is to further develop and adapt an optimal model for HPAI desktop simulation exercises that could in the long-term strengthen the capacities of the veterinary and public health services as well as serve as a template for testing the preparedness for other emerging and re-emerging zoonotic diseases.

The expected outcomes of the project:

- inter-sectoral coordination and communication of stakeholders involved in the control of HPAI outbreaks improved;
- strengths and weaknesses of existing plans and response mechanisms for avian influenza in animals and humans identified;
- understanding and practice of command and coordination to respond to avian influenza identified;

<ul style="list-style-type: none"> existing national contingency plans for HPAI enhanced; veterinary and public health preparedness capacities for HPAI and other emerging and re-emerging animal and human diseases strengthened.
<p>Planned activities</p> <p>Output 1: Development and implementation of two national integrated tables top simulation exercise for HPAI</p> <p>Activities for the national integrated table top simulation exercise for HPAI:</p> <ul style="list-style-type: none"> defining with FAO and WHO local offices to recruit national focal points for logistical and administrative support (venue, dates, translations and letters); identifying possible participants including the scenario writers and facilitators; developing the exercise scenario, handbook materials for players and observers, printing and copying the materials (at least in two languages); preparing the exercise.
<p>Activities undertaken during the reporting period</p> <ul style="list-style-type: none"> The hybrid simulation exercise planned to be conducted in Ukraine in April was prepared during this reporting period. The venue and all the logistical arrangements as well as the elaboration of the scenarios and the required material were elaborated during this period. There was a close cooperation and regular communication between FAO and STOP AI in charge of conducting the field exercise. All the planned activities for this period were successfully undertaken.
<p>Planned activities for the next quarter</p> <ul style="list-style-type: none"> Integrated hybrid national desktop/field simulation exercise for avian influenza in animal and human populations, Kiev, Ukraine, from 12 to 16 April 2010.
<p>Main challenges encountered and response provided</p> <ul style="list-style-type: none"> A hybrid table-top and field exercise had been planned for November 2009, but the exercise had to be postponed in view of the occurrence of severe outbreaks of H1N1 in Ukraine.
<p>Main progress made towards the achievement of project outputs</p> <ul style="list-style-type: none"> All the preparations for the hybrid simulation exercise were undertaken.

Quarter III 2010

Project Monitoring Sheet: **OSRO/INT/803/USA**

Project Title: Development of integrated desktop simulation exercise on Avian Influenza in animal and human population in Europe and Eurasia

Reporting period: April – June 2010

Regional component: Eastern Europe and Central Asia
Project Title: Development of integrated desktop simulation exercise on Avian Influenza in animal and human population in Europe and Eurasia.
Code: OSRO/INT/803/USA
Budget: USD 130 000
Effective starting date: 1 November 2008
Planned end date: 31 December 2010
<p>Context of the project</p> <p>Emergency preparedness planning is crucial for the successful management of outbreaks of Highly Pathogenic Avian Influenza (HPAI) and for minimizing the outbreak's impact. Preparedness encompasses the development of contingency plans, operational procedures and engagement of national and local authorities in capacity building.</p> <p>The basis for an adequate implementation of measures and operations considering HPAI is a developed contingency plan that preferably integrates animal and human health aspects. The contingency plan should further specify technical procedures, operational activities, lines of command and communication channels.</p> <p>The efficiency and capacity of the country in implementing the contingency plan should be tested from time to time by conducting, for example, integrated desktop simulation exercises. These exercises provide an opportunity for the authorities to identify areas where cooperation and coordination need to be improved, as well as test internal and external roles and responsibilities and the existing procedures. Measurable outcomes need to reflect the technical and operational improvements, training and capacity building needs, the effectiveness and transparency of communication and coordination mechanisms between different government sectors and agencies involved. The Food and Agriculture Organization of the United Nations (FAO) and World Health Organization - Regional Office for Europe (WHO-EURO) are the focal points for the technical cooperation for animal and human health aspects of HPAI. Both organizations are involved in assisting UN Member States in enhancing their emergency preparedness and response capacity. The United States Government through the United States Agency for International Development (USAID) is one of the leading donors in strengthening the national capacity to respond to the risk of avian and pandemic influenza.</p> <p>The starting point of WHO's pandemic preparedness plan is to strengthen the capacity of countries to respond to seasonal influenza epidemic. FAO's activities in the field of HPAI have focused on prevention, early detection and rapid response to control HPAI in animal populations. So far, FAO, the World Organisation for Animal Health (OIE) and WHO are encouraging countries to develop or enhance existing national preparedness plans to fully consider an integrated approach by addressing animal and human health aspects, as well as other sectors needed for the control of HPAI (e.g. wildbirds).</p>

This integrated approach allows:

- to improve the cooperation and communication of different sectors involved in HPAI emergency preparedness and response;
- to develop and implement integrated epidemiological surveillance and early warning systems for HPAI; and
- to ensure the most efficient implementation of measures and operations during an HPAI outbreak.

From December 2006, FAO and WHO EURO have been developing and implementing integrated desktop simulation exercises within the ongoing OSRO/INT/603/USA B02 project. However, emergency preparedness is a continuous process, which needs to be adapted to prevailing/changing conditions in a country and to new scientific insights.

The geographical scope of this project is limited to countries within the Eastern Europe and Central Asia (EEACA) regions of the FAO Headquarters (FAO/HQ) and WHO EURO, excluding the countries that have joined the European Union.

In the Central Asia region, during the beginning of 2006, two outbreaks of HPAI in humans have been observed in Turkey and Azerbaijan. The WHO and FAO missions to the region have indicated that the animal and human health sectors needed urgent strengthening. As in most countries, the relationship between the human and animal health (domestic as well as wild animals) sectors is fragmented, as is the cooperation in response to outbreaks. This leads to delays, thus increasing the impact of the disease in the poultry industry as well as the risk for human infection.

Since the first HPAI outbreaks, the EEACA countries, with the guidance of FAO and WHO, have established Avian Influenza (AI) Task Forces or inter-ministerial AI working groups with the aim to prepare the country to face HPAI outbreaks. Furthermore, the development of contingency plans for HPAI and pandemic influenza preparedness plans has been promoted. However, only a limited number of countries have developed integrated multi-sectoral HPAI contingency plans or have tested their plans, while some of the existing plans still need to be revised or approved by their government.

Objectives of the project

The aim of this project is to enhance the preparedness of EEACA countries to respond to the outbreaks of HPAI through testing the coordination and communication mechanisms among all involved in HPAI control at national as well as regional level. The project activities were conceived to reduce the risk of viral introduction or spread by improving the coordination of actions to be taken. The ultimate goal of this proposal was to further develop and adapt an optimal model for HPAI desktop simulation exercises that could in the long-term strengthen the capacities of the veterinary and public health services and serve as a template for testing the preparedness for other emerging and re-emerging zoonotic diseases.

The expected outcomes of the project:

- Inter-sectoral coordination and communication of stakeholders involved in the control of HPAI outbreaks improved;
- strengths and weaknesses of existing plans and response mechanisms for HPAI in animals and humans identified;
- understanding and practice of command and coordination to respond to HPAI identified;
- existing national contingency plans for HPAI enhanced; and

<ul style="list-style-type: none"> • veterinary and public health preparedness capacities for HPAI and other emerging and re-emerging animal and human diseases strengthened.
<p>Planned activities</p> <p>Output 1: Development and implementation of two national integrated table-top simulation exercises for HPAI</p> <p>Activities for the national integrated table-top simulation exercise for HPAI:</p> <ul style="list-style-type: none"> • Liaising with FAO and WHO local offices to recruit national focal points for logistical and administrative support (venue, dates, translations and letters); • identifying prospective participants including scenario writers and facilitators; • developing the exercise scenario and handbook materials for players and observers; • developing a large map to visualize the outbreak scenario; • printing the respective materials (at least in two languages); and • preparing and holding the desktop and field exercises.
<p>Activities undertaken during the reporting period</p> <ul style="list-style-type: none"> • The hybrid simulation exercise in Kiev, Ukraine was carried out from 13 April to 15 April 2010. The exercise, carried out in collaboration with Stamping Out Pandemic and Avian Influenza (STOP AI) project, consisted of both tabletop and field components. This was the first time that FAO combined the tabletop with a field exercise, and it was regarded as a very useful combination as reflected in the participant feedback/evaluation received after the exercise.
<p>Planned activities for the next reporting period</p> <ul style="list-style-type: none"> • Finalization of the simulation exercise report; • translation and dissemination of the simulation exercise report; and • participation in a final lessons learned meeting to be organized by USAID, tentatively in December 2010, to build on the experiences of the USAID projects implemented by FAO and other implementing agencies with the participation of a wider donor community.
<p>Main challenges encountered and response provided</p> <ul style="list-style-type: none"> • A hybrid desktop and field exercise had been planned for November 2009, but the exercise had to be postponed in view of the occurrence of severe outbreaks of H1N1 in Ukraine. • Thanks to a good relationship with an FAO national consultant, a producer in the Kiev area, agreed to provide his farm as a location for the field exercise. The task of finding a suitable location, however, has proven to be challenging because of the biosecurity considerations and the effect that the teams dressed in personal protective equipment (PPE) might have.
<p>Main progress made towards the achievement of project outputs</p> <ul style="list-style-type: none"> • The conducting of the hybrid simulation exercise further contributed to the preparedness of the country to face HPAI outbreaks. The lessons learned during the exercise are communicated to the authorities, and it is expected that the contingency plan will be enhanced.

Project Monitoring Sheet: OSRO/BGD/902/USA

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance

Reporting period: October 2010 – March 2011

Country: Bangladesh
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance
Code: OSRO/BGD/902/USA + OSRO/RAS/605/USA Baby 01
Effective starting date: October 2009
Planned end date: September 2010
Budget OSRO/BGD/902/USA: USD 3 082 800 (Phase I)
Total budget: USD 3 082 800
Budget OSRO/RAS/605/USA Baby 01: USD 515 000 (Phase I), USD 1 365 000 (Phase II), USD 1 225 000 (Phase III)
Total Budget: USD 3 105 000
Effective starting date: July 2006
Planned end date: September 2011
<p>Context of the project</p> <p>At present, there are five high-risk countries that are still considered endemic for Highly Pathogenic Avian Influenza (HPAI) H5N1: Bangladesh, China, Egypt, Indonesia and Viet Nam. Since the first outbreak in March 2007, Bangladesh has experienced a total of 493 outbreaks (437 commercial and 56 backyard). Fifty one out of 64 districts and 170 out of 492 Upazilas/Thanas (subdistricts) have been affected thus far, resulting in the culling of over 2.2 million birds. Following the peak of HPAI H5N1 incidence in 2008, the number of annual outbreaks remains at around 30 in 2009 and 2010 respectively. However, as of January 2011 and after an absence of over six months, the number of outbreaks among poultry started to rise. The situation is compounded by the occurrence of crow die-offs and detection of a non-fatal second and a third human infection with H5N1 virus and a fourth one with H9N2 virus.</p>
<p>Objectives of the project</p> <p>The primary objective of the project is to improve control of infectious diseases by enhancing outbreak responses for preventing poultry diseases and developing awareness of HPAI in Bangladesh.</p> <p>Specific immediate objective is to improve the HPAI surveillance capacity of the Government of Bangladesh to respond more effectively to HPAI outbreaks and thereby reduce economic losses and a global human pandemic threat. Specifically, the project aimed to achieve the following:</p> <ul style="list-style-type: none"> • increasing the capacity of the Department of Livestock Services (DLS) to manage the surveillance programme without technical or operational help from the Food and Agriculture Organization of the United Nations (FAO); • early reporting of poultry diseases by door-to-door surveillance; • early HPAI detection by diagnostic specimen collection and testing to ensure a rapid and effective disease response to control HPAI;

- increasing awareness among the surveyed farmers and villagers to strengthen passive surveillance; and
- improving and monitoring minimum biosecurity standards in commercial farms.

Planned activities:

Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention

- Continue to provide expertise to the Government of Bangladesh, facilitate contacts between the Government and Donors and coordinate projects and regional activities.
- Increase coordination role to cover activities funded by the World Bank (WB) and the United States Agency for International Development (USAID).
- Complete geospatial farm mapping project and use the system for facilitating outbreak responses.

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- Support the Government in conducting outbreak investigation on avian influenza (AI).
- Improve post-outbreak investigation by collecting samples from free-ranging ducks in backyards in the vicinity of affected farms and inoculate samples into embryonated eggs to attempt virus isolation.
- Support the Government to design and conduct case control study to ascertain the risk factors.
- Conduct a longitudinal study in a selected district.
- Conduct 'simulation' or 'drill' to examine the standard operating procedures (SOPs) and train field staff for practicing SOPs during operations.
- Support the Government on any disease response and control efforts.
- Enhance collaboration between the USAID-supported staff and WB-supported staff according to the matrix developed in discussion between the two organizations.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the target areas

- Conduct biosecurity campaigns across the country targeting the large-, medium- and small-scale poultry farmers through Additional Veterinary Surgeons (AVSs)/ Community Animal Health Workers (CAHWs), expanding from 260 up to 306 Upazilas.
- Provide continuous assistance to Public-Private Partnership (PPP) and Cleaning and Disinfection (C&D) of LBM project (OSRO/INT/805/USA)
- Conduct training for farm managers to improve biosecurity of commercial farms.

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza and Human Pandemic Influenza Preparedness Plan

- Support continuously the Government in the execution of National Avian Influenza and Human Pandemic Influenza Preparedness Plan.

Output 5: Active surveillance of HPAI

- Assist in the implementation of the active surveillance programme in 306 Upazilas/ Metrothanas under the programme financed by WB under the Avian Influenza Preparedness and Response Project (AIPRP). Carry out active surveillance through 88 AVSs.
- Awareness building among school children in selected areas to encourage reporting of sickness and death in poultry.

Activities undertaken during the reporting period**Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention.**

- The Team Leader (TL)/Chief Technical Adviser (CTA) and FAO Representative visited the Japanese Ambassador to update him on the progress and explore possibilities for future funding.
- The TL/CTA liaised with the World Organisation for Animal Health (OIE) headquarters, OIE Representation for Asia and the Pacific to facilitate information sharing initiatives.
- Provided expertise on various issues, including vaccinations by attending national technical committee meetings or in direct consultation with the Director General (DG) DLS, the Secretary and the Minister for Fisheries and Livestock.
- Assisted the Chief Veterinary Officer (CVO) (Director Animal Health Administration) to attend “Regional Cooperation Programme on Highly Pathogenic and Emerging Diseases (HPED) in South Asia”, held on 30 September and 1 October 2010 in Colombo, Sri Lanka. Operationalization of a number of activities including the establishment of the Regional Support Unit (RSU), Regional Epidemiology Centre (REC) and the three Regional Reference Diagnostic Laboratories on priority transboundary animal diseases (TADs) was discussed.
- An international expert on AI was recruited in order to provide Technical Assistance Services (TAS) for AIPRP, Project Coordination Unit (PCU), DLS, supported by WB along with other national and international staff.
- Assisted the Secretary of the Ministry of Fisheries and Livestock to attend the “36th Session World Food Security Committee” held from 11 to 14 October 2010 in Rome.
- Assisted CVO (Director Animal Health Administration) to attend the Global Rinderpest Eradication Programme (GREP) held on 13 and 14 October 2010 in Rome.
- In the “USAID/Bangladesh” Lessons Learned and Disseminated Workshop: H5N1 Virus” held on 13 October 2010 in Dhaka, a national consultant presented the paper “Improved biosecurity and hygiene at production, collection points and live bird markets including decontamination”. The workshop was attended by the Minister for Fisheries and Livestock and the Mission Director of USAID.
- Co-organized the “Workshop on orientation of cross-border preparedness to HPAI control” with the Emergency Centre for Transboundary Animal Diseases (ECTAD) South Asian Association for Regional Cooperation (SAARC) component, FAO Nepal on 29 and 30 December 2010, and on 2 and 3 January 2011.
- A relevant government high official of Bangladesh and CTA participated in “High level regional consultation on the control of priority transboundary animal and other emerging infectious diseases in South Asia” held on 13 and 14 January 2011, Bangkok, Thailand. Both policy and technical issues related to a concerted and coordinated action plan for improved control of priority TADs in South Asia were

discussed.

- Co-organized with ECTAD/SAARC component the “Workshop on evaluation of Foot-and-Mouth Disease (FMD)-progressive Control Pathway” on 5 January 2011 to understand the current status of FMD control programmes in Bangladesh, India and Nepal.
- Co-organized with ECTAD/SAARC component “Sensitization workshop for media in Bangladesh for prevention and control of HPAI” held on 15 February 2011 in Dhaka. The TL/CTA presented a paper on the status of H5N1 HPAI outbreaks in Bangladesh. The opening ceremony was attended by the Minister for Fisheries and Livestock, Secretary of the Ministry of Fisheries and Livestock, DG and CVO, DLS.
- “AI situation report” was frequently updated and distributed among stakeholders, donors and others for sharing up-to-date information on AI in Bangladesh.
- Collaborated with other organizations including the United States Geological Survey (USGS), the International Centre for Diarrhoeal Disease Research Bangladesh (ICDDR), in assisting wild birds surveillance in relation with H5N1 HPAI.
- Maintained close contact with public health sectors such as DG Health, the Institute of Epidemiology, Disease Control and Research (IEDCR) and the World Health Organization (WHO) in sharing information on H5N1 infection in humans as well as other diseases, such as Nipah virus infection and anthrax.
- One oral and three poster presentations were held during the event “Vet2011” at Bangladesh Agriculture University, Mymensingh, held on 9 and 10 February 2011.
- The AI Technical Unit (TU) team actively participated in the 7th International Poultry Show and Seminar organized by the World’s Poultry Science Association-Bangladesh Branch (WAPSA-BB), and one consultant chaired a scientific session.
- CTA and other consultants investigated the decontamination status of several HPAI outbreaks.

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- A number of SOPs were updated/developed as follows:
 1. Culling and disposal
 2. Decontamination
 3. Restocking
 4. Outbreak investigation
 5. Post-outbreak/Infected place management (comments need to be incorporated)
 6. Laboratory and biosafety
- Assisted the national reference laboratory for AI, the Bangladesh Livestock Research Institute (BLRI), and the Central Disease Investigation Laboratory (CDIL) to be assessed for their biosafety by international expert to ensure laboratory safety.
- To facilitate outbreak response management, geo-spatial information from all commercial farms and major LBMs in the country was entered into a computer. The data was being further processed to compute the density of farms as well as LBMs in relation to affected farms to strengthen ongoing countrywide HPAI surveillance programme.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the targeted areas.

- Workshops on “Record keeping and biosecurity auditing in commercial poultry farm”

were held on 20 and 27 October 2010 and 23 December 2010. A record keeping template was developed in the workshop.

- “Biosecurity SOP’s writing workshop for poultry producers and service providers” was held from 19 to 21 January 2011.
- “Training on farm biosecurity and decontamination for poultry farm managers in HPAI affected areas” was held on 22 and 23 March 2011.
- In “Biosecurity training for poultry industry suppliers”, a total of 838 poultry industry suppliers were trained on biosecurity. The trained industry suppliers transferred their biosecurity knowledge to 5 500 poultry farmers.
- “Training of trainers (ToT) on biosecurity auditing for the Department of Livestock Services (DLS) officials”, 26 DLS officials at the District Livestock Office level were trained.

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza and Human Pandemic Influenza Preparedness Plan

- In response to an urgent request from the Government of Bangladesh, FAO Mission on “In-depth assessment of the present and past situation of the anthrax outbreak in Bangladesh” was dispatched to Bangladesh from 25 October to 3 November 2010.
- One of the FAO Mission members, FAO Representative and CTA of AI TU/Country Team Leader of ECTAD appeared in a TV talk show to disseminate evidence-based information to the general public, and the TV programme was repeatedly broadcast.
- Upon request from DLS, SOPs on culling and disposal, decontamination, restocking, outbreak investigation, post-outbreak/infected place were provided to be distributed to all District Livestock Offices in the country.

Output 5: Active surveillance on HPAI

- Assisted AIPRP in training on active surveillance using SMS Gateway for Avian Influenza Workers (AIWs; previously called “CAHWs”).
- Assisted AIPRP in refresher training for AVSs on active surveillance using SMS Gateway on 30 and 31 March 2011.
- “Training in HPAI active surveillance network programme” was conducted on 7 November and 27 December 2010.
- Technical Meeting on HPAI active surveillance programme was held on 6 January 2011 for AVSs.
- Assisted AIPRP in training AVSs on culling, safe disposal, biocontainment and biosecurity on HPAI (March 2011).
- Maintained the system receiving approximately 1 000 SMS messages per day from 1 035 AIWs in 306 Upazilas.
- Maintained the network of 88 AVSs supervising AIWs.
- Supported installation of transmitters in migratory birds in Hakaluki Haor in February 2011.
- An international expert was employed to integrate existing databases to design integrated and effective data entry and analysis.

Planned activities for the next six-month period

Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention

- Continue to provide expertise to the Government of Bangladesh, facilitate contacts between the Government and donors and coordinate projects and regional activities.
- Increase coordination role in activities funded by WB and USAID.
- Using geospatial farm mapping data, develop a system to enable outbreak responses to be carried out more efficiently.
- Collaborate and coordinate with public health and wild life sectors to develop a more holistic approach in line with the One Health initiative.

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- Support the Government in conducting outbreak investigation on AI.
- Ensure that affected farms are properly and repeatedly decontaminated after immediate post-outbreak decontaminations.
- Improve post-outbreak investigation by collecting samples from free-ranging ducks in backyards in the vicinity of affected farms and inoculate samples into embryonated eggs to attempt virus isolation.
- Develop a system to support the Government in any disease response and control efforts.
- Enhance collaboration between the USAID-supported staff and WB-supported staff according to the matrix developed in discussion between the two organizations.
- Further strengthen search for reservoirs of H5N1 HPAI as well as LPAI among free-ranging, scavenging ducks in backyards in the proximity of affected farms.
- Reduce the risk of re-occurrence of H5N1 HPAI outbreaks by removing hidden reservoirs, as well as by rapid disposal of dead wild birds.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the target areas

- Conduct biosecurity campaigns across the country targeting the large-, medium- and small-scale poultry farmers through AVSS/CAHWs, expanding from 306 up to 492 Upazilas.
- Continue to provide assistance to the Public-Private-Partnership (PPP) and C&D of LBM project (OSRO/INT/805/USA).

Output 4: Provision of assistance to the Government of Bangladesh in implementing the National Avian Influenza and Human Pandemic Influenza Preparedness Plan

- Continue to provide support to the Government in the implementation of National Avian Influenza and Human Pandemic Influenza Preparedness Plan.

Output 5: Active Surveillance on HPAI

- Assist in the implementation of the active surveillance programme across 306 Upazilas/Metrothanas under the programme financed by WB AIPRP.
- Assist in providing necessary refresher training to Avian Influenza Workers on the Active Surveillance using SMS Gateway system.
- Carry out active surveillance through 88 AVSS.

Main challenges encountered and response provided

- The post-outbreak decontamination and improvement of biosecurity are two main challenges encountered during the implementation of the project. Decontamination of affected sheds and premises need to be intensified as a part of post-outbreak responses. To ensure the chain of transmission is broken, decontamination needs to be repeated after immediate post-outbreak decontaminations. Further, FAO has developed Standard Operating Procedures (SOPs) for post outbreak decontamination and submitted to government for implementation in the field. FAO has already flagged the issue in different meetings with the government.
- Backyard poultry was considered secondary to the poultry on commercial farms. Awareness needs to be heightened among backyard farmers that they play critical roles in prevention of HPAI outbreaks in commercial farms in the vicinity. FAO has piloted school training programme for raising awareness for reporting poultry sickness and death. Technical support has been provided to develop communication materials to sensitize backyard farmers for disease reporting.
- Most of the backyard poultry are free-ranging and are allowed to scavenge in the environment. Risk of intermingling with wild migratory birds, as well as free-ranging ducks, need to be acknowledged by backyard farmers. Training of backyard farmers are needed. FAO has supported development of communication material to encourage separating terrestrial birds from aquatic fowls in backyards. Advocacy is also needed.
- Owing to a shortage of human and material resources at the field level, quick and appropriate response to disease events was lacking at times. Additional Veterinary Surgeons need to be advised to provide assistance to ascertain quick and appropriate response and to complement the veterinary services. FAO has raised the issue with the government and government is planning to reorganize DLS with more human and material resources.
- Motivation was weak among DLS staff to capture every disease event at the earliest stage. Awareness of DLS staff needs to be heightened by training.
- Compliance to animal disease regulation is weak. Compliance needs to be reinforced by training veterinary officers, raising public awareness, communication and farmer education. FAO has recruited one consultant to review legislation to recommend mitigation options of implementation bottlenecks.
- Registration of farms is not established. Farmers need to be encouraged to register their farms. Benefits of being registered need to be widely known through advocacy.
- Movement control in densely populated areas is difficult. Cooperation from communities needs to be sought by deploying community leaders. FAO has developed SOPs where directives have been given for implementation of movement control.
- Properties are often not easily accessible. Farms in remote places nevertheless need to be visited in an event of unusual mortality. Unwilling farmers need to be persuaded.

Main progress made towards the achievement of project outcomes

- FAO TU was established at DLS comprising a team of international and national experts and support staff.
- The office for the TU at DLS was refurbished including the provision of standby power supply. TU is fully computerized with high-speed reliable internet services.
- AI TU is technically and logistically supporting the DLS.
- Biosecurity and awareness of HPAI are reinforced and strengthened by: the Active Surveillance Programme, teachers training and dissemination of 50 000 leaflets, posters and stickers to schools and at various national and regional meetings.
- Door-to-door/farm-to-farm surveillance was initiated using a network of 1 035 AIWs (CAHWs). The CAHWs, 103 AVSs and respective 306 supervising Upazila livestock officers (ULOs), 32 veterinary officers of the “Strengthening of support service for combating avian influenza” (SSCAIB) project received the necessary training. As a result, disease surveillance enhanced disease reporting. Better surveillance combined with increased awareness and constant reinforcing of biosecurity messages helped to reduce the number of HPAI outbreaks.
- All 1 035 recruited AIWs (CAHWs) received training and refresher training by FAO consultants on basic communication skills, specifically on those related to HPAI and SMS gateway.
- Various laboratory supplies including polymerase chain reaction (PCR) kits, RNA extraction kits, primers and other consumables were provided to BLRI laboratory to support the increase in diagnostic workload.
- SOPs for laboratory tests for AI diagnosis were drafted and submitted to the Government.
- SOPs for outbreak response, disease investigation, culling, C&D were drafted and are being reviewed.
- FAO team facilitated the Laboratory Working Group meetings attended by BLRI, CDIL and the Field Disease Investigation Laboratory (FDIL) to provide advice on laboratory design and procurement.
- Technical officers of eight leading farms and selected government veterinarians received training on biosecurity and routine disinfection for poultry raising establishments.
- Two hundred government veterinarians received training on post-outbreak decontamination.
- FAO contributed to the development of the Second Communication Strategy for Avian and Pandemic Influenza.
- Web-based SMS gateway improved the early reporting system.
- Lowering of the number of HPAI H5N1 outbreaks was achieved without resorting to vaccination during the last three years.
- Strong partnership was established between the DLS and FAO allowing for smooth transmission of information and collective action.
- With the support of USAID and WB, a team was formed consisting of four international staff and 11 national staff members.
- All of the 780 CAHWs involved in the active surveillance programme using SMS Gateway were transferred from FAO to AIPRP, DLS as a part of the process of ownership transfer by the end of September 2010.
- For the improvement of LBMs, a solid collaboration was established with AIPRP, DLS.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 01**Project Title: **Support to Highly Pathogenic Avian Influenza Surveillance Programme in Cambodia**Reporting period: **October 2010 – March 2011**

Country: Cambodia
Project title: Support to Highly Pathogenic Avian Influenza Surveillance Programme in Cambodia
Code: OSRO/RAS/604/USA Baby 01
Budget: USD 1 150 000 (Phase I), USD 1 900 000 (Amendment I), USD 600 000 (Amendment II), USD 400 000 (Amendment III), USD 400 000 (Amendment IV)
Total budget: USD 4 450 000
Effective starting date: 1 October 2006
Planned end date: 30 September 2011
Context of the project <p>The sporadic outbreaks of Highly Pathogenic Avian Influenza (HPAI) in poultry and humans indicate that the H5N1 virus is still circulating in Cambodia. Therefore, it is necessary to detect the outbreaks as early as possible and ensure that immediate and appropriate containment measures are taken to prevent the spread of the disease. The continued improvement of capacities and capabilities in Cambodia to prevent and control HPAI in animal population is necessary to limit its impacts in poultry sectors and minimize the risk of an infection in humans. The Food and Agriculture Organization of the United Nations (FAO) Avian Influenza (AI) Programme in Cambodia is currently funded by the United States Agency for International Development (USAID) in Cambodia for surveillance activities and a World Bank funded project for Village Animal Health Workers' (VAHWs) training and strengthening of the laboratory capacities and capabilities.</p>
Objectives of the project <p>The main objective of the project is to reduce and stop the spread of H5N1 among and between flocks of birds in Cambodia and between Cambodia and the neighboring countries (Viet Nam, Thailand and the Lao People's Democratic Republic), thus reducing the risks of the pathogen spread to mammals and humans and of the emergence of pandemic influenza.</p>
Planned activities <p>Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.</p> <p>Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.</p> <p>Activity 2: Continue active surveillance activities focusing on sentinel flocks, live bird markets (LBMs) and border inspection posts in targeted provinces following a risk assessment approach.</p> <p>Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.</p> <p>Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at the National Veterinary Institute (NaVRI) and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.</p>

Activities undertaken during the reporting period

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.

No major action has been taken under Activity 1 during the reporting period. In coordination with the World Bank-funded project, Avian and Human Influenza Preparedness and Response Project, this activity will be summarized into the study of poultry market chain, which is going to be conducted later in 2011.

Activity 2: Continue active surveillance activities focusing on sentinel flocks, LBMs and border inspection posts in targeted provinces following a risk assessment approach.

- LBM Surveillance of AI in ducks in eight markets of Phnom Penh, Kampong Cham, Kampot, Prey Veng, Siem Reap and Takeo and the Sentinel Flock Surveillance in 12 commercial duck farms of Battambang, Kampong Cham, Kampot, Preah Sihanouk Prey Veng and Takeo were set up through Letters of Agreement (LOAs) with NaVRI to determine the presence of HPAI/H5N1 in the major duck producing regions of Cambodia as part of the national AI surveillance programme and to estimate the level of risk that ducks pose to poultry (chickens and ducks) in traditional and commercial enterprises.
- From 1 September 2010 to 31 March 2011, 3 325 cloacal, 3 325 tracheal swabs and 3 228 sera were collected from the above-mentioned markets, and all of them were found negative for A/H5N1 virus by egg-inoculation test and antibody of AI by haemagglutination (HA) and haemagglutination inhibition (HI) tests.
- From 1 September 2010 to 31 March 2011, 1 440 cloacal, 1 440 tracheal swabs and 1 440 sera were collected from sentinel duck flocks, and all of them were found negative for A/H5N1 virus by egg-inoculation test and antibody of AI by HA and HI tests.
- Both LOA with NaVRI were reviewed and renewed for a six-month period from January to June 2011.
- The contract on supplying fertilized eggs with Celagrid was extended for three months at no-cost from October to December 2010 and renewed for six months in support to the LOAs of surveillance signed with NaVRI.
- A new LOA with the Institut Pasteur du Cambodge (IPC) was signed, aimed at two months of environmental surveillance in two Phnom Penh markets (Deumkor and Orisey) to determine the presence of HPAI-H5N1 in the environment of the two LBMs as part of the national AI surveillance programme. In addition, the aim was to assess the risks that the virus poses to the humans (sellers and consumers) in surrounding markets and to enhance the public awareness of AI at LBMs. The outcomes of the surveillance activities could also be useful in the restructuring of the poultry selling places in LBMs.
- Following the first HPAI field simulation exercise organized in Svay Rieng in early September, two others were conducted during November and December in Kampong Cham and Preah Sihanouk provinces. The Chief of Office of Animal Health and Production of the 24 provinces, four officers from NaVRI and two officers from the Department of Animal Health and Production (DAHP) participated in the field simulation exercise.

Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.

- Two officers in the epidemiology unit of NaVRI/DAHP were sent to the Department of Livestock Development (DLD) Thailand, to attend a one-month training in Field Epidemiology Training Programme for Veterinarians (FETPV). The coming country FETPV is being discussed by the Emergency Centre for Transboundary Animal Diseases (ECTAD) in Cambodia.
- Coordinated the collection of weekly AI inputs from NaVRI for the United Nations Resident Coordination Office, which has the lead on AI update from the Ministry of Agriculture, Fisheries and Forestry (MAFF), the Ministry of Health (MOH), FAO and the World Health Organization (WHO), as well as other partners in Cambodia, to be included in AI bulletin and circulated to all concerned agencies.

Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at NaVRI and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

- The 27th HPAI outbreak occurred in a small poultry farm of Kandal province on 4 January 2011. The veterinary measures were applied, including investigation, culling, disinfection, banned animal movement and education.
- The 12th human case, a five-year old boy, and the 13th human case, a 19-year old mother with an 11-month old baby, were the three human cases that occurred respectively in the outskirts of Phnom Penh (Sang Kat Prek Leap) on 4 February 2011 and in Banteay Meanchey Province on 12 and 17 February 2011. The three cases were fatal and were experienced previously in contact with poultry. Following the human H5N1 cases, the animal health authorities carried out the investigation and collected samples from occurring and neighbouring locations. Preliminary results of 90 samples from Sangkat Prek Leap, 12 from Banteay Meanchey and ten from Prey Veng were negative. Further investigations and sample collections are still ongoing and were expanded to a 5 to 10 km radius.

Other related activities funded under the project

- A legislation mission was fielded in February 2011. The mission examined the chapters which did not conform to the World Organisation on Animal Health (OIE) and the World Trade Organisation (WTO) guidelines and requested further adjustments.
- A joint mission for the National Medium Term Priority Plan for Animal Health (NMTTP-AH) and the Strategy for Animal Production were fielded from 24 January to 4 February 2011. A full Cambodian Animal Production and Health Strategy will be ready for the country in mid-2011 after a completion of series of missions for the animal production strategy. More detailed information will be made available in the next progress report.
- The first Zoonotic Technical Working Group was held in December 2010 with the participation from NaVRI/DAHP, FAO, MOH and WHO. The working group is focusing on, not only HPAI-H5N1, but also zoonotic diseases in general.
- A Workshop on Human and Animal Health Collaboration on Zoonosis Diseases was co-organized by MAFF and MOH and co-financed by FAO and WHO. It is a first workshop aiming at sharing surveillance and response system of human and animal health and at designing the Terms of Reference (TOR) for the Human and Animal

Health Technical Committee and its roles and responsibilities. The technical working committee is composed of existing AI technical working group committee members (MAFF, MOH, FAO, WHO and IPC) and two prospective members, the Forestry Administration (FA) and the Wildlife Conservation Society (WCS).

- The certification of the biosafety cabinets in NaVRI was done under the Emerging Pandemic Threat (EPT) Identify Component of a FAO regional and USAID-funded programme, in collaboration with the Asia-Pacific Biosafety Association (APBA). The APBA organized the Biosafety Management Training in Singapore in mid October 2010 where two laboratory experts were sent to certify the four biosafety cabinets of NaVRI. The three of the four safety cabinets were certified by the team, and the fourth safety cabinet did not obtain certification in accordance with the regional standards.
- Three regulator auto voltages and electricity cables were installed in NaVRI building in order to ensure stable electricity power and therefore to reduce the risks of breakage for the laboratory equipment.

Planned activities for the next six-month period

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.

Activity 2: Continue active surveillance activities focusing on sentinel flocks, LBMs and border inspection posts in targeted provinces following a risk assessment approach.

Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.

Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at NaVRI and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

Main challenges encountered and response provided

As the communication component is not any more supported by this project because of reduced funding, a gap has been perceived in the AI Programme in Cambodia. The public awareness which is considered as an essential component in the AI control efforts has been neglected by the different stakeholders working in the country. It is important to maintain the momentum for the farmers, poultry traders and animal health authorities to understand the risks of transmission and continue funding public arenas/communication component.

Main progress made towards the achievement of project outcomes

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

- Eight LBMs and twelve duck commercial farms are being surveyed in six provinces.
- 4 765 cloacal, 4 765 tracheal and 4 668 sera collected were negative for H5N1.
- Signed new LOA for environmental surveillance in two LBMs of Phnom Penh with IPC.
- Produced an educational training video on HPAI field simulation, which was widely distributed in the country.
- Organized two more HPAI field simulations in Kampong Cham and Preah Sihanouk

Province, which covered all the provinces of Cambodia.

- Established zoonosis committee and regular monthly zoonosis technical working group meetings.
- Organized the workshop on human and animal health collaboration on zoonotic disease in January 2011.
- The Permanent Representatives of Bangladesh, Congo, Denmark, Finland, the United States of America and Uruguay to FAO headquarters visited NaVRT's facilities.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 01**

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Cambodia

Reporting period: April – September 2011

Country: Cambodia
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Cambodia
Code: OSRO/RAS/604/USA Baby 01
Budget: USD 1 150 000 (Phase I), USD 1 900 000 (Amendment I), USD 600 000 (Amendment II), USD 400 000 (Amendment III), USD 400 000 (Amendment IV)
Total budget: USD 4 450 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2012
<p>Context of the project</p> <p>The sporadic outbreaks of Highly Pathogenic Avian Influenza (HPAI) in poultry and humans indicate that the H5N1 virus is still circulating in Cambodia. Therefore, it is necessary to detect the outbreaks as early as possible and ensure that immediate and appropriate containment measures are taken to prevent the spread of the disease. The continued improvement of capacities and capabilities in Cambodia to prevent and control HPAI in animal population is necessary to limit its impacts in poultry sectors and minimize the risk of infection in humans. The Food and Agriculture Organization of the United Nations (FAO) Avian Influenza (AI) Programme in Cambodia is currently funded by the United States Agency for International Development (USAID) in Cambodia for surveillance activities and a World Bank-funded project for Village Animal Health Workers' (VAHWs) training and strengthening of the laboratory capacities and capabilities.</p>
<p>Objectives of the project</p> <p>The main objective of the project is to reduce and stop the spread of H5N1 among and between flocks of birds in Cambodia and between Cambodia and the neighboring countries (Viet Nam, Thailand and the Lao People's Democratic Republic), thus reducing the risks of the pathogen spread to mammals and humans and of the emergence of pandemic influenza.</p>
<p>Planned activities</p> <p>Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.</p> <p>Activity 1: Promote (whenever and if possible) a pre-notification system for trade purposes between Cambodia and neighboring countries.</p> <p>Activity 2: Continue active surveillance activities focusing on sentinel flocks, live bird markets (LBMs) and border inspection posts in targeted provinces following a risk assessment approach.</p> <p>Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.</p> <p>Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at the National Veterinary Institute (NaVRI) and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.</p>

Activities undertaken during the reporting period

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

Activity 1: Promote (whenever and if possible) a pre-notification system for trade purposes between Cambodia and neighboring countries.

- No major action has been taken under Activity 1 during the reporting period. In coordination with the World Bank-funded project, Avian and Human Influenza Preparedness and Response Project are conducting the study of poultry value chain analysis for the Phnom Penh market. Information on traded poultry products, volumes, sources and disease transmission-related trading behavior was collected from vendors in three different poultry wholesale/retail markets in Phnom Penh. A preliminary data analysis identified the region where the poultry is sourced and the middleman who supplies poultry to markets. Questionnaires for middlemen supplying poultry and poultry products to market vendors in Phnom Penh markets were subsequently developed and used for data collection.
- USAID and FAO convened a meeting with the Department of Animal Health and Production (DAHP) in early September 2011 to explore the possibility of using the existing mechanism (Governmental bilateral meeting between Cambodia and Viet Nam) to improve the trade and to minimize the risk of spreading diseases.

Activity 2: Continue active surveillance activities focusing on sentinel flocks, LBMs and border inspection posts in targeted provinces following a risk assessment approach.

- **Environmental Sampling Surveillance from LBM in Cambodia with IPC**
From 22 March to 4 May 2011, a total of 502 specimens were collected from four markets (Kampong Cham [1], Phnom Penh [2] and Takeo [1]). Among these, 147 were water specimens, 120 feather samples, 117 feces specimens and 118 mud or soil specimens. The primary result showing that 396 out of 502 specimens were tested by real-time polymerase chain reaction (RT-PCR). Among them, 107 samples were positive for H5N1 virus by RT-PCR and had to be further tested for virus isolation. The positivity rate was higher in water samples (37%), followed by poultry feather specimens (25%) and feces (14.5%). The remaining samples to be tested are soil and mud specimens.
- **LBM Surveillance of AI in ducks in eight markets of Phnom Penh, Kampong Cham, Kampot, Prey Veng, Siem Reap and Takeo, and the Sentinel Flock Surveillance in 12 commercial duck farms of Battambang, Kampong Cham, Kampot, Preah Sihanouk Prey Veng and Takeo** were set up through Letters of Agreement (LoAs) with NaVRI to determine the presence of HPAI/H5N1 in the major duck producing regions of Cambodia as part of the national AI surveillance programme and to estimate the level of risk that ducks pose to poultry (chickens and ducks) in traditional and commercial enterprises.
- From 1 April 2011 to 30 June 2011, 2 280 cloacal, 2 280 tracheal swabs and 2 182 sera were collected from the above-mentioned markets, and all of cloacals and tracheal swabs were found negative for A/H5N1 virus by egg-inoculation test and RT-PCR. Some 175 of 2 182 (8%) serum samples were antibody positive for AI by haemagglutination (HA) and haemagglutination inhibition (HI) tests.
- The FAO signed a local purchasing order (LPO) with a local chicken producer in Takeo province for the supply of 3 360 fertilized eggs to the Institut Pasteur du Cambodge (IPC) from 27 June to 8 September 2011 under Environment Sampling Surveillance.

Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities

- Apart from technical support to NaVRI's laboratory, FAO launched the procurement of reagents of antiserum subtype H1, H2, H3, H5, H7, H9 and the Newcastle Disease Virus (NDV) to be supplied to NaVRI in early October 2011.
- To have a better HPAI active surveillance system, FAO is processing the recruitment of an Epidemiologist to review the in-place surveillance system.
- FAO supported the participation of a laboratory officer of NaVRI in a joint regional laboratory network training on quality assurance and standardization of diagnostic reagent in the Australian Animal Health Laboratory (AAHL).

Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at NaVRI and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

- During the reporting period, five AI outbreaks in humans took place in the province of Bateay Mean Chey (1), Kampong Cham (2) and Preyveng (2), which caused five human deaths. From animal side, three AI outbreaks took place in Phnom Tamao zoo (waterfowl zone 1) of Takeo (1) and Banteay Mean Chey (2) Province. FAO team closely worked with NaVRI/DAHP to grant technical expertise and logistics as part of the veterinary measures, including investigation, culling, disinfection, banned animal movement and education. Distance support from FAO Regional Office was provided to the country during the two latest outbreaks in poultry.
- FAO sought DAHP's written consent for NaVRI participation in the regional proficiency testing programme for priority animal disease.

Other related activities funded under the project

- The comments of FAO Legal Officers on the Cambodian Legislation were addressed to the Ministry of Agriculture, Forestry and Fisheries (MAFF) Legislation Committee. MAFF hosted a consultative workshop with concerned stakeholders in June 2011 to gather their perspectives.
- The National Medium-term Priority Plan for Animal Health was completed and is being translated into the national language. The two versions are expected to be submitted to the Government counterpart in October 2011.
- FAO plans to upgrade the LBM of Chbar Ampov to minimize the risk of contamination of HPAI as a model market in Cambodia. Three meetings with the Market Committee, poultry sellers and municipality veterinarians were convened to set up the Committee for Improved Biosecurity in LBM and to examine the priority activities to be addressed for this purpose.
- The Zoonotic Diseases Technical Planning workshop of the USAID Emerging Pandemic Threat (EPT) programme is jointly organized by MAFF and the Ministry of Health (MOH) with the financial support of the USAID. This workshop is aiming at launching EPT programme to the Government of Cambodia, building on the progress made during the first workshop on Human and Animal Health Collaboration on the zoonotic diseases and strengthening partnerships between the Government of Cambodia, the United States Government and other organizations working in the field of zoonotic diseases.

Planned activities for the next six-month period

Output 1: Strengthened planning and cross-sectoral coordination at national and international levels

- Activity 1.1. Support the Emergency Centre for Transboundary Animal Diseases (ECTAD) Country Team Leader (CTL) and the team to provide inputs for planning the coordination required at country level
- Activity 1.2. Support national and international coordination related to disease control

Output 2: Strengthened laboratory capacity

- Activity 2.1. Strengthen laboratory management through technical and management advice
- Activity 2.2. Support Cambodia to participate in laboratory quality assurance and quality control system (QA/QC) for HPAI and regional HPAI laboratory network which includes support of sample sharing with the International Reference Laboratory and support proficiency testing
- Activity 2.3. Procure necessary laboratory supplies (when needed).

Output 3: Strengthened veterinary epidemiology capacity

- Activity 3.1. Support veterinary epidemiology training at regional and country levels
- Activity 3.2. Support community-based surveillance and response activities

Output 4: Improved surveillance system

- Activity 4.1. Review disease surveillance strategy in collaboration with human health sector.
- Activity 4.2. Support risk-based surveillance activities focusing on where human cases are reported and along the areas identified as high-risk supply chains
- Activity 4.3. Conduct workshops and training exercises to follow up on new surveillance modalities and facilitate planning of field work
- Activity 4.4. Organize forums and media spots on TV or radio to communicate the risks being identified by the results of surveillance through public awareness campaign particularly during festivals period
- Activity 4.5. Provide logistic support to field activities (when needed)

Output 5: Improved policy and legislation for trade purposes between Cambodia and its neighbouring countries

- Activity 5.1. Support activities related to policy and legislation for trade purposes between Cambodia and neighbouring countries through the expertise to be provided to finalize the international animal trade component of the main law

Main challenges encountered and response provided

While overall coordination is shared between MOH and MAFF, FAO still plays an important role during the outbreak investigation and response in advising DAHP on the best approach. The World Health Organization (WHO) and FAO are the two United Nations agencies still involved in the disease surveillance on H5N1. However, the public awareness component of the national programme is not being addressed fully, as no donor is supporting it, therefore creating a gap vis-à-vis the strategy.

Main progress made towards the achievement of project outcomes

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

- From 1 April to 30 June 2011, 2 280 cloacal, 2 280 tracheal swabs and 2 182 sera were collected from the above-mentioned markets, and all of cloacal and tracheal swabs were found negative for A/H5N1 virus by egg-inoculation test and RT-PCR. Some 175 of 2 182 (8%) serum samples were antibody positive for AI by HA and HI tests.
- From 22 March to 4 May 2011, a total of 502 specimens were collected from four

markets (Kampong Cham [1], Phnom Penh [2] and Takeo [1]). Among these, 147 were water specimens, 120 feather samples, 117 feces specimens and 118 mud or soil specimens. The primary results showed that 396 out of 502 specimens were tested by RT-PCR. Among them, 107 samples were positive for H5N1 virus by RT-PCR and had to be further tested for virus isolation. The positivity rate was higher in the water sample (37%), followed by poultry feather specimens (25%) and feces (14.5%). The remaining samples to be tested were soil and mud specimens.

- A joint training workshop was organized between DAHP, FAO and the United States Department of Agriculture (USDA) on AI Biosecurity for 24 chiefs of provincial Animal Health and Production Office, two lecturers from the Royal University of Agriculture and the Kampong Cham Agricultural School, four district veterinarians of Preah Sihanouk province and six duck flock owners (Takeo, Kampot, Preah Sihanouk, Kampong Cham, Prey Veng and Battambang) who were expected to pass on the key messages of biosecurity to district veterinarians, VAHWs and stock keepers of their respective province.
- Joint investigation and response were conducted in three AI outbreaks in poultry and five AI outbreaks in humans with NaVRI/DAHP.
- Four Zoonotic Technical Working Group Meetings were held.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 02**

Project title: **Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **April 2011 – September 2011**

Country: People's Republic of China
Project title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 02
Budget: USD 500 000 (Phase I), USD 500 000 (Phase II), USD 650 000 (Phase III), USD 1 150 000 (Phase IV), USD 1 250 000 (Phase V) Total budget: USD 4 050 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2012
<p>Context of the project</p> <p>Despite efforts by the Government of the People's Republic of China to improve the surveillance and control of Highly Pathogenic Avian Influenza (HPAI), the disease is still endemic in some areas of the country. Some basic understanding of the disease, including key ecological risk factors, is still lacking. Vaccination has been widely used throughout the country to dampen down the infection and bring the disease under control. However, the virus is still circulating in some production systems where the implementation of the vaccination policy requires major effort and where regulation enforcement is difficult. This project was designed to improve the country's capacities to detect and control HPAI infection and disease in identified high-risk ecological and production systems at an early stage, through the implementation of intensified surveillance activities, epidemiological studies, socio-economic activities, capacity building and training.</p>
<p>Objectives of the project</p> <p>The main objectives under Phase V of the United States Agency for International Development (USAID)-funded project are to continue working in Hunan, Yunnan, Guangxi and Chongqing while extending activities to Guangdong province in order to increase the scope and impact of project activities in Southern China and provide technical assistance and support in the areas of HPAI epidemiological investigation, disease risk analysis and control strategy. In addition, Phase V of the project is expected to increase support to training activities under the China Field Epidemiology Training Programme for Veterinarians (FETPV) umbrella and provide a significant leap in understanding of HPAI ecology.</p> <p>Through project activities, the Government's early detection and response capacity will be strengthened, thereby minimizing production losses and risk to human health and safety. The immediate objective of the project is to improve the understanding of HPAI infection and disease distribution, assist the country in defining high-risk areas for targeted control activities in order to minimize the risk to human health and produce skilled and experienced veterinary field epidemiologists, who can provide the Government of China with expertise and service to address transboundary animal diseases (TADs) and emerging infectious diseases (EIDs).</p>
<p>Planned activities (Phase V)</p> <p>Output 1: Strengthened cross-sectoral coordination at the national and international level</p> <p>Activity 1.1 Support national consultants to assist in coordinating project implementation with the Government</p> <p>Activity 1.2 Organize regular meetings with the Ministry of Agriculture (MoA), the Veterinary Bureau, the State Forestry Administration (SFA), and the Department of International Cooperation (DIC) to discuss project activities</p>

Activity 1.3 Contribute to and facilitate the coordination of surveillance and research activities at the wild bird/domestic poultry interface at Poyang Lake Reserve including joint meeting with SFA, provincial veterinary and wildlife authorities to discuss, plan and coordinate field activities

Activity 1.4 Strengthen cooperation with the Food Agriculture Organization of the United Nations (FAO)/the World Organisation for Animal Health (OIE) Network of Expertise on Animal Influenza (OFFLU) and other laboratories and epidemiology networks - discuss and define joint scientific collaboration perspectives and opportunities

Activity 1.5 Organize project steering committee meetings and inception workshop (involving MoA, the Veterinary Bureau, China Animal Health and Epidemiology Center (CAHEC), Harbin National Reference Laboratory (HNRL), provincial Centres for Animal Disease Prevention and Control (ACDCs) and other project partners and stakeholders)

Activity 1.6 Coordinate the newly created United Nations sub-working group on diseases at the human-animal interface

Activity 1.7 Foster exchange of experiences with Viet Nam and Indonesia on vaccination strategy and market chain analysis

Activity 1.8 Improve public-private partnership cooperation through case-study activities (e.g. live bird market [LBM] restructuring) and missions of the international experts on Public-Private Partnership (PPP)/biosecurity

Activity 1.9 Engage in joint collaboration activities with Guangdong Province and use the province as a model for PPP activities; engage Guangdong province in China FETPV

Output 2: Capacity building in epidemiology: implementation of the China FETPV programme

Activity 2.1 The first module of FETPV: short-term training course in basic epidemiology

Activity 2.2 Training through services (TTS): field surveillance and outbreak investigation

Activity 2.3 The second module of FETPV: short-term training course in the geographic information system (GIS) and participatory epidemiology

Activity 2.4 International expert in veterinary epidemiology from the Netherlands will develop case studies for outbreak investigation during the third module of the China FETPV

Activity 2.5 Introduce and promote the concepts of diseases at the human-animal interface through training and multidisciplinary approach to disease surveillance and control

Activity 2.6 The third module of FETPV: advanced training on epidemiology, socio-economic studies, risk assessment and understanding diseases at the human-animal interface

Activity 2.7 Support the participation of one Chinese national to the regional FETPV training in Bangkok in August 2011

Output 3: Improved knowledge of HPAI epidemiological, ecological and socio-economic risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies

Activity 3.2 Strengthen existing risk-based surveillance approach through the longitudinal monitoring of selected LBMs in order to identify seasonal changes in infection distribution in winter and define early warning indicators associated to HPAI emergence

Activity 3.3 Follow-up socio-economic studies in Guangdong province: compile key information on poultry sector and its structure, analyse product flow among the market chains and determine the implications for disease surveillance and control issues

Activity 3.4 Facilitate the implementation of epidemiological studies at the domestic poultry/wildlife interface in Poyang Lake Reserve to uncover risk factors associated with the emergence of new virus strains and their subsequent spread

Output 4: Improved HPAI surveillance and control strategy through focused control actions

Activity 4.1 Assist in refining the strategic vision for the national vaccination campaign, provide guidance on improving the progressive control of HPAI H5N1 through vaccination and share views on establishing a vaccination exit strategy

Activity 4.2 Organize training on biosafety, management and test validation for laboratories in project provinces

Activity 4.3 Organize ring trial between provincial laboratories and HNRL

Activity 4.4 Establish GIS-based system at provincial level (Chongqing municipality) to support HPAI surveillance activities

Activity 4.5 Procurement of necessary laboratory equipment and supplies for HPAI diagnosis, data analysis and information sharing for provincial laboratories

Activity 4.6 Organize the PPP stakeholder meeting and group discussion for the development of minimum biosecurity standards for LBMs

Activities undertaken during the reporting period (April 2011 – September 2011)

Output 1: Strengthened cross-sectoral coordination at the national and international level

Activity 1.1: Initiated the recruitment of National Programme/Operations Officer in March 2011. The new National Programme/Operations Officer joined the team on 5 July 2011.

Activity 1.2 :

- Several meetings with MoA, SFA, UN agencies, embassies and donors based in Beijing were held during the reporting period.
- An internal discussion meeting was held with MoA on 4 August 2011, during which planned activities of the second year of China FETPV were discussed. The initial findings of the PPP project in Guangdong and the subsequent plan of action were also shared.
- Further discussion meeting with MoA and CAHEC was held in Qingdao on 16 August 2011 to discuss further coordination and implementation of TTS for China FETPV.

Activity 1.5:

- The fourth FETPV Steering Committee Meeting was held in June 2011 to discuss the progress of and other key issues pertaining to China FETPV.
- A Mentor Workshop will be held on 23 September 2011 to define the roles and responsibilities of mentors in assisting trainees to conduct field surveillance and outbreak investigation in the framework of the TTS activities.

Activity 1.8:

- One PPP expert from Canada visited China from 11 to 27 April 2011 and initiated the PPP activities in Guangdong.
- Three PPPs and biosecurity experts visited China in July-August 2011 to assist the Emergency Centre for Transboundary Animal Diseases (ECTAD) China in launching the project activities. The PPP Launching Workshop was held on 18 July 2011 in Beijing.

Activity 1.9:

- Guangzhou Animal Health Inspection Institute and local agencies actively joined PPP project's activities; Technicians/experts from Guangdong Province were also invited to participate in the next two training modules of China FETPV. A laboratory expert from Guangdong province also participated in the biosafety laboratory training that was organized in Chongqing from 13 to 16 September 2011.

Output 2: Capacity building in epidemiology: the China FETPV programme

Activity 2.2:

- Trainees' field surveillance plans for the first Phase of TTS activities were submitted and reviewed by MoA and national mentors in August. The TTS activities will be carried out by trainee's locally from August 2011 until the end of March 2012.

Activity 2.3:

- The second module of FETPV was organized from 28 March to 29 April 2011, and focused on participatory epidemiology, risk analysis, basic statistical analysis, data management and applied surveillance as well as outbreak investigation.

Activity 2.4:

- Real case-studies on rabies surveillance in China were developed by an expert from the Netherlands during the third module of China FETPV in July 2011; Two qualified trainees were selected and approved by MoA to attend a 10-day exchange visit under the International Fellowship provided by the Netherlands in October 2011.

Activity 2.5:

- A one-week workshop on the concept of “One Health (OH)” was held from 20 to 24 June 2011 for 15 FETPV trainees within the framework of the third module of the programme. Participants from the Chinese Academy of Sciences, the Public Health Institute and SFA also joined this one-week training.
- An UN China OH event was organized to sensitize different national agencies, ministries and institutes about the OH concept and suggest a framework of implementation of OH activities in the country. The meeting was held on 29 and 30 June 2011 and gathered more than 70 participants. The OH meeting had a great impact and not only attracted the attention of the international and national scientific communities, but also generated interest among policy makers. In addition, an UN position paper on OH implementation in China is being produced.

Activity 2.6:

- The third module started from June 20 to July 16 2011 and focused on the management and analysis of epidemiological data, spatial data management and analysis and outbreak investigation demonstration.

Activity 2.7:

- One national veterinarian attended the regional FETPV training from 1 to 26 August 2011 (26 days).

Output 3: Improved knowledge of HPAI epidemiological and ecological and socio-economic risk factors**Activity 3.1:**

- HNRL finished the analysis of 1 190 samples collected from three provinces during the LBM survey conducted in January 2010 and identified six viruses of subtype H6 and H4 (no H5N1 detected). It also finished the sequencing analysis of H5, H6 and H9 subtype viruses isolated from the LBM survey conducted in 2009.

Activity 3.3:

- A preliminary market chain analysis was conducted in Guangdong province during the mission of PPP experts and ECTAD China staff in July 2011, which led to the production of a series of maps describing LBM networks in the province.

Output 4: Improved HPAI surveillance and control strategy through focused control actions**Activity 4.2:**

- A four-day training workshop on laboratory biosafety was organized from 13 to 16 September 2011 in Chongqing ACDC for provincial laboratories, and 30 national staff members were trained.

Activity 4.3:

- Reagents for ring trail were procured by HNRL in May 2011 and distributed to Chongqing, Hunan and Guangxi in July 2011. All experiment from provincial laboratories will be finished before the end of September 2011 and results will be analysed in October 2011.

Activity 4.4:

- A training on GIS techniques applied to epidemiology was organized during the third module of the China FETPV for 15 trainees and 10 additional participants from other provinces.

Activity 4.5:

- Biosecurity equipment and supplies were procured for Guangzhou Animal Health Inspection Institute and Jiangcun Poultry Wholesale Market to facilitate the training and LBM restructuring in October 2011 under the PPP project.

Activity 4.6:

- Formal Action Plan was presented to all stakeholders during the PPP Stakeholder Meeting held on 2 August 2011.

Planned activities for the next six-month period**Output 1: Strengthened cross-sectoral coordination at the national and international level**

- Organize regular meetings with MoA to discuss China FETPV and other programmatic/operational matters of the new phase
- Foster experience exchange and dialogue with Viet Nam through joint forum, study tours, or missions
- Coordinate and organize the UN Team Group on Health meetings every two months
- Further enhance the translation of the OH concept into a concrete action plan within the country by coordinating with other national and international stakeholders.

Output 2: Capacity building in epidemiology: the China FETPV programme

- Organize the fourth training module of China FETPV in November 2011.
- Two trainees will be sent to the Netherlands for a 10-day exchange visit under the International Fellowship in October 2011.
- The first phase of TTS activities on field surveillance will be carried out by trainees locally from August 2011 and finished before the end of March 2012.

Output 3: Improved knowledge of HPAI epidemiological and ecological and socio-economic risk factors

- Produce the China HPAI Quarterly Bulletin-update on HPAI situation
- Discuss with MoA, SFA, provincial veterinary, and wildlife authorities the implementation of epidemiological studies in Poyang Lake Reserve.

Output 4: Improved HPAI surveillance and control strategy through focused control actions

- Finalize the analysis of ring trials between provincial laboratories
- Further support the implementation of the PPP project in Guangdong Province

Main challenges encountered and responses provided

There are no major issues at present.

Main progress made towards the achievement of project outcomes

The project has made noticeable progress towards achieving the expected outcomes, which can be summarized as follows:

- Increased MoA's involvement and support in the implementation of current and future project activities pertaining to policy support and financial and technical inputs.
- Strengthened communication and cooperation among national, provincial and international partners. International partners, such as Canada, the Netherlands, the United States Center for Disease Control (USCDC), other UN agencies and the European Union contributed to the successful rollout of the FETPV training.
- Fifteen key veterinary staff from national and provincial veterinary services were systematically trained through China FETPV. Moreover, 10 additional technicians from eight provincial ACDCs (Shandong, Qingdao, Henan, Guangdong, Zhejiang, Xinjiang, Heilongjiang and Qinghai) were invited to participate in the third training module of

China FETPV in July 2011, which demonstrated the importance of China FETPV for education and training of veterinary staff in China.

- The capacities of field surveillance and outbreak investigation of national and provincial veterinarians were enhanced as a result of the TTS activities under China FETPV.
- The bilateral dialogue offered by the China-Viet Nam discussion forum was considered as a major step forward in sharing data and information on HPAI H5N1 and the use of vaccination in an endemic situation;
- The linkages and opportunities for collaboration between the animal health sector and the public health sector through the OH approach were strengthened as a result of the organization of the UN OH event; and
- Reduced virus circulation and improved food safety were noted in Guangdong, where, the PPP project assisted in establishing a model market. This activity has resulted in tangible and applicable outcomes that can be reproduced in other LBMs.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 02**

Project title: **Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **October 2010 – March 2011**

Country: People's Republic of China
Project title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 02
Budget: USD 500 000 (Phase I), USD 500 000 (Phase II), USD 650 000 (Phase III), USD 1 150 000 (Phase IV), USD 1 250 000 (Phase V) Total budget: USD 4 050 000
Effective starting date: October 2010
Planned end date: September 2011
<p>Context of the project</p> <p>Despite efforts by the Government of the People's Republic of China to improve the surveillance and control of Highly Pathogenic Avian Influenza (HPAI), the disease is still endemic in some parts of the country, and some basic understanding about the disease and key ecological risk factors is still lacking. Vaccination has been used widely throughout the country to dampen down the infection and bring the disease under control. However, the virus is still circulating in some production systems where the implementation of the vaccination policy requires major effort and where regulation enforcement is difficult. This project was designed to improve the country's ability to detect and control HPAI infection and disease in identified high-risk ecological and production systems at an early stage, through the implementation of intensified surveillance activities, epidemiological studies, socio-economic activities, capacity building and training.</p>
<p>Objectives of the project</p> <p>The main objectives of the assistance under Phase V of the United States Agency for International Development (USAID) project are to continue working in Hunan, Yunnan, Guangxi and Chongqing while extending activities to Guangdong province in order to increase the scope and impact of project activities in Southern China and provide technical assistance and support in the areas of HPAI epidemiological investigation, disease risk analysis and control strategy. In addition, Phase V of the project is expected to increase support to training activities under the China Field Epidemiology Training Programme for Veterinarians (FETPV) umbrella and provide a significant leap in understanding of HPAI ecology.</p> <p>Through project activities, a strengthened early detection and response mechanism will enable China to increase its capacity to detect and eliminate the disease in a timely manner, thereby minimizing production losses and risk to human safety. The immediate objective of the project is to improve the understanding of HPAI infection and disease distribution, assist the country in defining high-risk areas for targeted control activities in order to minimize the risk to human health and produce skilled and experienced veterinary field epidemiologists who can provide China with expertise and service to address transboundary and emerging infectious diseases among animals.</p>
<p>Planned activities (Phase V)</p> <p>Output 1: Strengthened cross-sectoral coordination at the national and international level</p> <p>Activity 1.1 Support national consultants to assist in coordinating project implementation with the Government</p>

Activity 1.2 Organize regular meetings with the Ministry of Agriculture (MoA), the Veterinary Bureau, the State Forestry Administration and the Department of International Cooperation (DIC) to discuss project activities

Activity 1.3 Contribute to and facilitate the coordination of surveillance and applied research activities at the wild bird/domestic poultry interface at Poyang Lake reserve including joint meeting with the State Forest Administration (SFA), provincial veterinary and wildlife authorities to discuss, plan and coordinate field activities

Activity 1.4 Strengthen cooperation with the FAO/ the World Organization for Animal Health (OIE) Network of Expertise on Animal Influenza (OFFLU) and other laboratory and epidemiology networks - discuss and define joint scientific collaboration perspectives and opportunities

Activity 1.5 Organize steering committee workshop and inception workshop (involving MoA, the Veterinary Bureau, the China Animal Health Epidemiology Center (CAHEC), Harbin, provincial Centres for Animal Disease Prevention and Control (CDCs) and other project partners and stakeholders)

Activity 1.6 Coordinate the newly created United Nations subworking group on diseases at the human-animal interface

Activity 1.7 Foster exchange of experiences with Viet Nam and Indonesia on vaccination strategy and market chain analysis

Activity 1.8 Improve public-private partnership cooperation through case-study activities (e.g. live bird market [LBM] restructuring) and missions of the international expert on public private partnership (PPP)/biosecurity

Activity 1.9 Engage in joint collaboration activities with Guangdong Province and use the province as a model for PPP activities; engage Guangdong in FETPV

Output 2: Capacity building in epidemiology: implementation of the China FETPV programme

Activity 2.1 1st module of FETPV: short-term basic training course in epidemiology

Activity 2.2 Training through services

Activity 2.3 2nd module of FETPV: short-term training course in the geographic information system (GIS) and epidemiology. Presentation of investigations and research activities performed in the framework of the training through services (see 2.2)

Activity 2.4 International experts in veterinary epidemiology from the Netherlands will develop case studies for outbreak investigation during March-April

Activity 2.5 Introduce and promote the concepts of diseases at the human-animal interface through training and multidisciplinary approach to disease surveillance and control

Activity 2.6 3rd module of FETPV: advanced training on epidemiology, socio-economic studies, risk assessment and understanding diseases at the human-animal interface

Activity 2.7 Support the participation of two Chinese national to the regional FETPV training in Bangkok

Output 3: Improved knowledge of HPAI epidemiological, ecological and socio-economic risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies

Activity 3.2 Strengthen existing risk based surveillance approach through the longitudinal monitoring of selected LBMs in order to identify seasonal changes in infection distribution in winter and define early warning indicators associated to HPAI emergence

Activity 3.3 Facilitate the implementation of epidemiological studies at the domestic poultry/wildlife interface in Poyang Lake Reserve to uncover risk factors associated with the emergence of new virus strains and their subsequent spread

Output 4: Improved HPAI surveillance and control strategy through focused control actions

Activity 4.1 Assist in refining the strategic vision for the national vaccination campaign, provide guidance on improving the progressive control of HPAI, H5N1 through vaccination and share views on establishing a vaccination exit strategy

Activity 4.2 Organize training on biosafety, management and test validation for project province laboratories

Activity 4.3 Organize ring trial between provincial laboratory and Harbin National Reference laboratory

Activity 4.4 Establish GIS-based system at provincial level (Chongqing municipality) to support HPAI surveillance activities

Activity 4.5 Procurement of necessary laboratory equipment and supplies for HPAI diagnosis, data analysis and information sharing including for Guangxi CDC laboratory

Activity 4.6 In the framework of the PPP activities, organize a stakeholder meeting and group discussion for the development of minimum biosecurity standards for LBMs

Activities undertaken during the reporting period (October 2010 – March 2011)

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1 Support national consultants to assist in coordinating project implementation with the government

- Initiated the recruitment of National Programme/Operations Officer in March. The new Programme/Operations Officer is expected to join the team in April.

Activity 1.2 Organize regular meetings with MoA, the Veterinary Bureau, the State Forestry Administration and DIC to discuss project activities

- Maintained close contact/communication with MoA, the project team ensured smooth implementation of the planned activities during the first six months.

Activity 1.5 Organize steering committee workshop and inception workshop (involving MoA, Veterinary Bureau, CAHEC, Harbin, provincial CDCs and other project partners and stakeholders)

- Hold three Steering Committee Meetings in September, November and January. These meetings discussed progress and other key issues regarding FETPV at regular intervals.

Activity 1.6 Coordinate the newly created UN sub-working group on diseases at the human-animal interface

- Coordinated the United Nations Theme Group on Health (UNTGH) 4th Subworking group meetings (diseases at the human-animal interface) in October, December and March. The newly created subworking group will be used as a forum of exchange of scientific information on animal and human health related issues.

Activity 1.7 Foster exchange of experiences with Viet Nam and Indonesia on vaccination-strategy and market chain analysis

- Organized the China-Vietnam Discussion Forum on HPAI Risk Management and Control on 8 and 9 March. The meeting reviewed the scientific progress made in HPAI H5N1 control and explored avenues for joint collaborations.

Output 2: Strengthened HPAI Disease Surveillance System and capacity building

Activity 2.1 1st module of FETPV: short-term basic training course in epidemiology

- 15 trainees from the national institutions and provincial veterinary departments attended the first module of FETPV. The focus of the training was mainly on basic concepts of field epidemiology was held from 29 November to 23 December 2010.

Activity 2.2 Training through Services

- FETPV trainees' surveillance plans of first Phase of training through services (TTS)

were reviewed by MoA. Three trainees' surveillance plans are under improvement, the rest of the trainees' surveillance plans have been submitted to their international mentors for review and comments.

Activity 2.3 2nd module of FETPV

- The second module of FETPV which focuses on participatory epidemiology, risk analysis, basic statistical analysis, data management and applied surveillance, as well as outbreak investigation started on 28 March 2011. An English communication training was provided to the 15 trainees on 26 and 27 2011 March to enhance their language abilities and presentation skills.

Activity 2.4 International experts in veterinary epidemiology from the Netherlands will develop case studies for outbreak investigation during March-April 2011.

- Two Dutch experts conducted their first mission to China from 21 to 25 March 2011. Field mission to Guangxi Province was implemented to discuss with local China Animal Disease Control Centre (CADC) officials about work plan for the next step.

Activity 2.5 Introduce and promote the concepts of diseases at the human-animal interface through training and multidisciplinary approach to disease surveillance and control

- Addressed the One Health concept at the human-animal interface in the framework of FETPV.

Activity 2.7 Support the participation of two Chinese nationals to the regional FETPV training in Bangkok

- One Chinese national expert from CAHEC, Qingdao participated in the third annual regional training course from 17 January to 11 February 2011 in Bangkok.

Output 3: Improved knowledge of HPAI epidemiological and ecological and socio-economic risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies.

- Produced and disseminated China HPAI highlights to donors, animal health units at FAO RAP, headquarters and MoA.

Output 4: Improved HPAI surveillance and control strategy through focused control actions

Activity 4.1 Assist in refining the strategic vision for the national vaccination campaign, provide guidance on improving the progressive control of HPAI, H5N1 through vaccination and share views on establishing a vaccination exit strategy.

- Recommendations on how best to sustain the efforts to control HPAI H5N1 in China and Vietnam were provided during the China-Vietnam Discussion Forum in March.

Activity 4.5 Procurement of necessary laboratory equipment and supplies for HPAI diagnosis, data analysis and information sharing including for Guangxi CDC laboratory.

- Procured laboratory equipment and materials for Guangxi CACD, the National Harbin Reference Laboratory (NHRL) and CAHEC; 15 laptop computers were also procured for FETPV trainees.

Planned activities for the next six-month period

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.2 Organize regular meetings with MoA, the Veterinary Bureau, the State Forestry Administration and DIC to discuss project activities

- Regular meetings with MoA to discuss China FETPV and other programmatic/operational matters of Phase V.

Activity 1.4 Strengthen cooperation with OFFLU and other laboratory and epidemiology networks - discuss and define joint scientific collaboration perspectives and opportunities

- Organize a ring trial between Harbin National laboratory and provincial laboratories under the guidance of the Istituto Zooprofilattico Sperimentale (IZS), Padova Reference Laboratory on AI.

Activity 1.6 Coordinate the newly created UN subworking group on diseases at the human-animal interface

- Regular working group meeting will be held every two months.

Activity 1.8 Improve public private partnership cooperation through case-study activities (e.g LBM restructuring) and missions of the international expert on PPP/biosecurity

- The PPP expert will visit Guangdong Province in April.

Output 2: Capacity building in epidemiology: implementation of the China FETPV program

Activity 2.2 Training through services

- The first Phase of TTS activities will be implemented from May to August.

Activity 2.6 3rd module of FETPV

- 3rd module of FETPV will start at the end of June.

Output 4: Improved HPAI surveillance and control strategy through focused control actions

Activity 4.2 Organize training on biosafety, management and test validation for project province laboratories

- Organize the biosafety laboratory training for provincial laboratory staff in May.

Activity 4.6 In the framework of the PPP activities, organize a stakeholder meeting and group discussion for the development of minimum biosecurity standards for LBMs.

- Conducted field mission to Guangdong Province in April with the PPP expert.

Main challenges encountered and responses provided

There are no major issues at present.

Main progress made towards the achievement of project outcomes

The project has made noticeable progress towards achieving the expected outputs of the project. Main progress can be summarized as follows:

- Increased MoA's involvement and support to the implementation of project activities of the current phase. MoA has shown strong commitment to FETPV programme and has allocated resources (RMB 500 000) to this programme in both 2010 and 2011.
- Strengthened the cooperation with MoA, provincial partners and international partners. International partners such as Canada, the Netherlands, the United States Center for Disease Control (USCDC) and the European Union have contributed to the successful rollout of the FETPV training.
- Trained 15 key veterinary staff from national institutions and provincial veterinary departments through China FETPV.
- Promoted exchange of experiences on HPAI H5N1 control, especially on the use of vaccination in endemic situation through the organization of China-Vietnam Discussion Forum of HPAI Risk Management and Control.
- Strengthened the link and collaboration between the animal health sector and public health sector, addressed the One Health approach at the human-animal interface through regular meetings involving a wide range of disciplines and scientific communities.
- More project information/event sharing with MoA, national counterparts, RAP, headquarters and donors through the production of China HPAI Highlights.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 02**

Project title: **Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **April 2011 – September 2011**

Country: People's Republic of China
Project title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 02
Budget: USD 500 000 (Phase I), USD 500 000 (Phase II), USD 650 000 (Phase III), USD 1 150 000 (Phase IV), USD 1 250 000 (Phase V) Total budget: USD 4 050 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2012
<p>Context of the project</p> <p>Despite efforts by the Government of the People's Republic of China to improve the surveillance and control of Highly Pathogenic Avian Influenza (HPAI), the disease is still endemic in some areas of the country. Some basic understanding of the disease, including key ecological risk factors, is still lacking. Vaccination has been widely used throughout the country to dampen down the infection and bring the disease under control. However, the virus is still circulating in some production systems where the implementation of the vaccination policy requires major effort and where regulation enforcement is difficult. This project was designed to improve the country's capacities to detect and control HPAI infection and disease in identified high-risk ecological and production systems at an early stage, through the implementation of intensified surveillance activities, epidemiological studies, socio-economic activities, capacity building and training.</p>
<p>Objectives of the project</p> <p>The main objectives under Phase V of the United States Agency for International Development (USAID)-funded project are to continue working in Hunan, Yunnan, Guangxi and Chongqing while extending activities to Guangdong province in order to increase the scope and impact of project activities in Southern China and provide technical assistance and support in the areas of HPAI epidemiological investigation, disease risk analysis and control strategy. In addition, Phase V of the project is expected to increase support to training activities under the China Field Epidemiology Training Programme for Veterinarians (FETPV) umbrella and provide a significant leap in understanding of HPAI ecology.</p> <p>Through project activities, the Government's early detection and response capacity will be strengthened, thereby minimizing production losses and risk to human health and safety. The immediate objective of the project is to improve the understanding of HPAI infection and disease distribution, assist the country in defining high-risk areas for targeted control activities in order to minimize the risk to human health and produce skilled and experienced veterinary field epidemiologists, who can provide the Government of China with expertise and service to address transboundary animal diseases (TADs) and emerging infectious diseases (EIDs).</p>
<p>Planned activities (Phase V)</p> <p>Output 1: Strengthened cross-sectoral coordination at the national and international level</p> <p>Activity 1.1 Support national consultants to assist in coordinating project implementation with the Government</p> <p>Activity 1.2 Organize regular meetings with the Ministry of Agriculture (MoA), the Veterinary Bureau, the State Forestry Administration (SFA), and the Department of International Cooperation (DIC) to discuss project activities</p>

Activity 1.3 Contribute to and facilitate the coordination of surveillance and research activities at the wild bird/domestic poultry interface at Poyang Lake Reserve including joint meeting with SFA, provincial veterinary and wildlife authorities to discuss, plan and coordinate field activities

Activity 1.4 Strengthen cooperation with the Food Agriculture Organization of the United Nations (FAO)/the World Organisation for Animal Health (OIE) Network of Expertise on Animal Influenza (OFFLU) and other laboratories and epidemiology networks - discuss and define joint scientific collaboration perspectives and opportunities

Activity 1.5 Organize project steering committee meetings and inception workshop (involving MoA, the Veterinary Bureau, China Animal Health and Epidemiology Center (CAHEC), Harbin National Reference Laboratory (HNRL), provincial Centres for Animal Disease Prevention and Control (ACDCs) and other project partners and stakeholders)

Activity 1.6 Coordinate the newly created United Nations sub-working group on diseases at the human-animal interface

Activity 1.7 Foster exchange of experiences with Viet Nam and Indonesia on vaccination strategy and market chain analysis

Activity 1.8 Improve public-private partnership cooperation through case-study activities (e.g. live bird market [LBM] restructuring) and missions of the international experts on Public-Private Partnership (PPP)/biosecurity

Activity 1.9 Engage in joint collaboration activities with Guangdong Province and use the province as a model for PPP activities; engage Guangdong province in China FETPV

Output 2: Capacity building in epidemiology: implementation of the China FETPV programme

Activity 2.1 The first module of FETPV: short-term training course in basic epidemiology

Activity 2.2 Training through services (TTS): field surveillance and outbreak investigation

Activity 2.3 The second module of FETPV: short-term training course in the geographic information system (GIS) and participatory epidemiology

Activity 2.4 International expert in veterinary epidemiology from the Netherlands will develop case studies for outbreak investigation during the third module of the China FETPV

Activity 2.5 Introduce and promote the concepts of diseases at the human-animal interface through training and multidisciplinary approach to disease surveillance and control

Activity 2.6 The third module of FETPV: advanced training on epidemiology, socio-economic studies, risk assessment and understanding diseases at the human-animal interface

Activity 2.7 Support the participation of one Chinese national to the regional FETPV training in Bangkok in August 2011

Output 3: Improved knowledge of HPAI epidemiological, ecological and socio-economic risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies

Activity 3.2 Strengthen existing risk-based surveillance approach through the longitudinal monitoring of selected LBMs in order to identify seasonal changes in infection distribution in winter and define early warning indicators associated to HPAI emergence

Activity 3.3 Follow-up socio-economic studies in Guangdong province: compile key information on poultry sector and its structure, analyse product flow among the market chains and determine the implications for disease surveillance and control issues

Activity 3.4 Facilitate the implementation of epidemiological studies at the domestic poultry/wildlife interface in Poyang Lake Reserve to uncover risk factors associated with the emergence of new virus strains and their subsequent spread

Output 4: Improved HPAI surveillance and control strategy through focused control actions

Activity 4.1 Assist in refining the strategic vision for the national vaccination campaign, provide guidance on improving the progressive control of HPAI H5N1 through vaccination and share views on establishing a vaccination exit strategy

Activity 4.2 Organize training on biosafety, management and test validation for laboratories in project provinces

Activity 4.3 Organize ring trial between provincial laboratories and HNRL

Activity 4.4 Establish GIS-based system at provincial level (Chongqing municipality) to support HPAI surveillance activities

Activity 4.5 Procurement of necessary laboratory equipment and supplies for HPAI diagnosis, data analysis and information sharing for provincial laboratories

Activity 4.6 Organize the PPP stakeholder meeting and group discussion for the development of minimum biosecurity standards for LBMs

Activities undertaken during the reporting period (April 2011 – September 2011)

Output 1: Strengthened cross-sectoral coordination at the national and international level

Activity 1.1: Initiated the recruitment of National Programme/Operations Officer in March 2011. The new National Programme/Operations Officer joined the team on 5 July 2011.

Activity 1.2 :

- Several meetings with MoA, SFA, UN agencies, embassies and donors based in Beijing were held during the reporting period.
- An internal discussion meeting was held with MoA on 4 August 2011, during which planned activities of the second year of China FETPV were discussed. The initial findings of the PPP project in Guangdong and the subsequent plan of action were also shared.
- Further discussion meeting with MoA and CAHEC was held in Qingdao on 16 August 2011 to discuss further coordination and implementation of TTS for China FETPV.

Activity 1.5:

- The fourth FETPV Steering Committee Meeting was held in June 2011 to discuss the progress of and other key issues pertaining to China FETPV.
- A Mentor Workshop will be held on 23 September 2011 to define the roles and responsibilities of mentors in assisting trainees to conduct field surveillance and outbreak investigation in the framework of the TTS activities.

Activity 1.8:

- One PPP expert from Canada visited China from 11 to 27 April 2011 and initiated the PPP activities in Guangdong.
- Three PPPs and biosecurity experts visited China in July-August 2011 to assist the Emergency Centre for Transboundary Animal Diseases (ECTAD) China in launching the project activities. The PPP Launching Workshop was held on 18 July 2011 in Beijing.

Activity 1.9:

- Guangzhou Animal Health Inspection Institute and local agencies actively joined PPP project's activities; Technicians/experts from Guangdong Province were also invited to participate in the next two training modules of China FETPV. A laboratory expert from Guangdong province also participated in the biosafety laboratory training that was organized in Chongqing from 13 to 16 September 2011.

Output 2: Capacity building in epidemiology: the China FETPV programme

Activity 2.2:

- Trainees' field surveillance plans for the first Phase of TTS activities were submitted and reviewed by MoA and national mentors in August. The TTS activities will be carried out by trainee's locally from August 2011 until the end of March 2012.

Activity 2.3:

- The second module of FETPV was organized from 28 March to 29 April 2011, and focused on participatory epidemiology, risk analysis, basic statistical analysis, data management and applied surveillance as well as outbreak investigation.

Activity 2.4:

- Real case-studies on rabies surveillance in China were developed by an expert from the Netherlands during the third module of China FETPV in July 2011; Two qualified trainees were selected and approved by MoA to attend a 10-day exchange visit under the International Fellowship provided by the Netherlands in October 2011.

Activity 2.5:

- A one-week workshop on the concept of “One Health (OH)” was held from 20 to 24 June 2011 for 15 FETPV trainees within the framework of the third module of the programme. Participants from the Chinese Academy of Sciences, the Public Health Institute and SFA also joined this one-week training.
- An UN China OH event was organized to sensitize different national agencies, ministries and institutes about the OH concept and suggest a framework of implementation of OH activities in the country. The meeting was held on 29 and 30 June 2011 and gathered more than 70 participants. The OH meeting had a great impact and not only attracted the attention of the international and national scientific communities, but also generated interest among policy makers. In addition, an UN position paper on OH implementation in China is being produced.

Activity 2.6:

- The third module started from June 20 to July 16 2011 and focused on the management and analysis of epidemiological data, spatial data management and analysis and outbreak investigation demonstration.

Activity 2.7:

- One national veterinarian attended the regional FETPV training from 1 to 26 August 2011 (26 days).

Output 3: Improved knowledge of HPAI epidemiological and ecological and socio-economic risk factors**Activity 3.1:**

- HNRL finished the analysis of 1 190 samples collected from three provinces during the LBM survey conducted in January 2010 and identified six viruses of subtype H6 and H4 (no H5N1 detected). It also finished the sequencing analysis of H5, H6 and H9 subtype viruses isolated from the LBM survey conducted in 2009.

Activity 3.3:

- A preliminary market chain analysis was conducted in Guangdong province during the mission of PPP experts and ECTAD China staff in July 2011, which led to the production of a series of maps describing LBM networks in the province.

Output 4: Improved HPAI surveillance and control strategy through focused control actions**Activity 4.2:**

- A four-day training workshop on laboratory biosafety was organized from 13 to 16 September 2011 in Chongqing ACDC for provincial laboratories, and 30 national staff members were trained.

Activity 4.3:

- Reagents for ring trail were procured by HNRL in May 2011 and distributed to Chongqing, Hunan and Guangxi in July 2011. All experiment from provincial laboratories will be finished before the end of September 2011 and results will be analysed in October 2011.

Activity 4.4:

- A training on GIS techniques applied to epidemiology was organized during the third module of the China FETPV for 15 trainees and 10 additional participants from other provinces.

Activity 4.5:

- Biosecurity equipment and supplies were procured for Guangzhou Animal Health Inspection Institute and Jiangcun Poultry Wholesale Market to facilitate the training and LBM restructuring in October 2011 under the PPP project.

Activity 4.6:

- Formal Action Plan was presented to all stakeholders during the PPP Stakeholder Meeting held on 2 August 2011.

Planned activities for the next six-month period**Output 1: Strengthened cross-sectoral coordination at the national and international level**

- Organize regular meetings with MoA to discuss China FETPV and other programmatic/operational matters of the new phase
- Foster experience exchange and dialogue with Viet Nam through joint forum, study tours, or missions
- Coordinate and organize the UN Team Group on Health meetings every two months
- Further enhance the translation of the OH concept into a concrete action plan within the country by coordinating with other national and international stakeholders.

Output 2: Capacity building in epidemiology: the China FETPV programme

- Organize the fourth training module of China FETPV in November 2011.
- Two trainees will be sent to the Netherlands for a 10-day exchange visit under the International Fellowship in October 2011.
- The first phase of TTS activities on field surveillance will be carried out by trainees locally from August 2011 and finished before the end of March 2012.

Output 3: Improved knowledge of HPAI epidemiological and ecological and socio-economic risk factors

- Produce the China HPAI Quarterly Bulletin-update on HPAI situation
- Discuss with MoA, SFA, provincial veterinary, and wildlife authorities the implementation of epidemiological studies in Poyang Lake Reserve.

Output 4: Improved HPAI surveillance and control strategy through focused control actions

- Finalize the analysis of ring trials between provincial laboratories
- Further support the implementation of the PPP project in Guangdong Province

Main challenges encountered and responses provided

There are no major issues at present.

Main progress made towards the achievement of project outcomes

The project has made noticeable progress towards achieving the expected outcomes, which can be summarized as follows:

- Increased MoA's involvement and support in the implementation of current and future project activities pertaining to policy support and financial and technical inputs.
- Strengthened communication and cooperation among national, provincial and international partners. International partners, such as Canada, the Netherlands, the United States Center for Disease Control (USCDC), other UN agencies and the European Union contributed to the successful rollout of the FETPV training.
- Fifteen key veterinary staff from national and provincial veterinary services were systematically trained through China FETPV. Moreover, 10 additional technicians from eight provincial ACDCs (Shandong, Qingdao, Henan, Guangdong, Zhejiang, Xinjiang, Heilongjiang and Qinghai) were invited to participate in the third training module of

China FETPV in July 2011, which demonstrated the importance of China FETPV for education and training of veterinary staff in China.

- The capacities of field surveillance and outbreak investigation of national and provincial veterinarians were enhanced as a result of the TTS activities under China FETPV.
- The bilateral dialogue offered by the China-Viet Nam discussion forum was considered as a major step forward in sharing data and information on HPAI H5N1 and the use of vaccination in an endemic situation;
- The linkages and opportunities for collaboration between the animal health sector and the public health sector through the OH approach were strengthened as a result of the organization of the UN OH event; and
- Reduced virus circulation and improved food safety were noted in Guangdong, where, the PPP project assisted in establishing a model market. This activity has resulted in tangible and applicable outcomes that can be reproduced in other LBMs.

Project Monitoring Sheet: **OSRO/INT/805/USA**Project title: **Developing and maintaining public-private partnerships for the prevention and control of Highly Pathogenic Avian Influenza H5N1**Reporting period: **March 2011 to September 2011**

Global component: Global cross-country
Countries: Bangladesh, Cambodia, China, Indonesia, Lao People's Democratic Republic (PDR), Myanmar, Nepal and Viet Nam
Project title: Developing and maintaining public-private partnerships for the prevention and control of Highly Pathogenic Avian Influenza (HPAI) H5N1
Code: OSRO/INT/805/USA
Budget: USD 765 690 ¹
Effective starting date: 1 January 2009
Planned end date: 31 March 2012
<p>Context of the project</p> <p>The Public-Private Partnership (PPP)-Biosecurity Project (October 2010-September 2011) is a no-cost extension of two projects: OSRO/INT/805/USA - <i>Developing and Maintaining Public-Private Partnerships for the Prevention and Control of HPAI H5N1 and other Emerging Infectious Animal Diseases (EIADs) (PPP Project)</i> and OSRO/GLO/802/USA - <i>Improved biosecurity and hygiene at production, collection points and live bird markets (LBMs), including decontamination (Decon Project)</i>. The current no-cost extension had a duration of 12 months, from 1 October 2010 to 30 September 2011 with a total budget of USD 765 690. While USAID continued to support activities related to PPP and biosecurity, it had requested that new funding be provided at the country level. As a result, countries have integrated PPP and biosecurity-related activities in their 2010-2011 proposals for the period from October 2010 to September 2011. The no-cost extension allowed technical expertise to be provided to high-burden countries in Asia, and to a smaller extent to the high-risk countries in Asia, for their activities involving collaboration between the public and private sector and involving work on biosecurity/good hygiene practices on farm and along marketing chains. The no-cost extension also allowed implementation of a limited number of activities that have not been included in country proposals in Bangladesh, China, Lao PDR, Myanmar and Nepal for a total amount of USD 255 000, distributed in the following way: Bangladesh (USD 80 000), Cambodia (USD 20 000), China (USD 100 000), Lao PDR (USD 25 000), Myanmar (USD 25 000) and Nepal (USD 25 000).</p>

¹ The Government of the United States of America contributed in Financial Year 2009 to FAO a total of USD 1 600 000 through project OSRO/INT/805/USA and a total of USD 2 500 000 through project OSRO/GLO/802/USA; the unspent balances of these two projects amounting to USD 115 341 and USD 650 349 constitute the budget of the no-cost extension.

Objectives of the project

To create, strengthen and maintain Public Private Partnerships and promote Biosecurity to support poultry health and production systems in countries affected by Highly Pathogenic Avian Influenza (HPAI), within a functional animal health system led by official veterinary services.

Planned activities

Output A: Expertise, technical advice and organizational support on PPPs and biosecurity will be available to countries for implementation of activities funded under Amendment 6 (country project proposals).

An expert in commercial poultry production and biosecurity will operate from FAO headquarters. Consultant time for a PPP specialist will be available. They will:

- provide information and guidance on PPPs to government departments, the private sector and Food and Agriculture Organization of the United Nations (FAO) country teams; and
- assist in the improvement of biosecurity (including C&D) in commercial production and marketing chains, as biosecurity has proven to be a major area of interest to the private commercial poultry sector, as well as the public sector.

Output B: PPPs for safer poultry production will be supported. Poultry production and marketing will be made safer in high-burden and high-risk countries.

VIET NAM

Output A - Activities:

- Participate in a review of a pilot poultry supply chain strengthening project as part of a multi-project biosecurity review process implemented by FAO and the Department of Livestock Production (DLP). This will also serve as an orientation to the field situation and current situation in Viet Nam and highlight the challenges of upgrading poultry supply chains.
- Provide technical support to a collaborative approach to hatchery strengthening in two select provinces (in close collaboration with FAO's implementing partner Abt Associates). This will include the review of existing hatchery management and biosecurity training materials and the development of a province-level training programme for hatcheries.
- Develop a training-of-trainers (TOT) biosecurity training course for public and private sector veterinarians to strengthen biosecurity practices in small-scale commercial farms.
- Develop an approach to strengthen technical support provided to small-scale commercial poultry farmers through strengthening technical and advisory capacity of private agrivet store owners in two/three pilot districts of Ha Nam Province.
- Conduct a rapid assessment of two to three key live bird markets (LBMs) in Quang Tri province including a stakeholder mapping analysis and develop options for risk reduction control measures in those markets (the potential control options will be reviewed through a stakeholder process, finalized into an action plan and implemented over the next seven months).
- Participate in a technical consultation meeting on experiences and lessons learned on upgrading LBMs, focusing on Viet Nam, and provide additional lessons learned from Bangladesh and Egypt, where considerable progress has been made.
- Support the establishment of a National Poultry Quality Improvement Plan.

LAO PDR**Output A - Activities:**

- Assess the biosecurity situation in selected LBMs in Vientiane capital and Savanaket.
- Provide recommendations for biosecurity improvements at LBMs.
- Train LBM authorities and traders associations on biosecurity.
- Training workshop for the public and private sectors on poultry production and biosecurity measures to be implemented in commercial poultry farms in Vientiane and Savanaket areas for better production and profitability.

CAMBODIA**Output A - Activities:**

- Assess the biosecurity situation in selected LBMs in Phnom Penh.
- Provide recommendations for biosecurity improvements or restructuring of LBMs.
- Train LBM traders in the Phnom Penh area on biosecurity.
- Assess the biosecurity situation of housed duck farms in Sihanouk Ville.
- Provide recommendations for farm biosecurity improvements.

NEPAL**Output A - Activities:**

- Facilitate the development of national biosecurity guidelines.
- Train private and the Department of Livestock Services (DLS) veterinarians and poultry producers on farm biosecurity.
- Train selected veterinarians on biosecurity auditing and reviews.
- Assess the biosecurity situation in LBMs in eastern provinces (their gaps and needs) and provide recommendations for biosecurity improvements.

BANGLADESH**Output A - Activities:**

- Assist in the improvement, organize and facilitate a workshop for the development of biosecurity standard operating procedures (SOPs) that will support the implementation of the national biosecurity guidelines.
- Develop, update and revise training materials on biosecurity for layer farms and LBMs.
- Support the establishment of National Poultry Improvement Plans.
- Facilitate and extend the process related to farm registration and licensing, including the revision of the existing farm registration protocol and link the farm registration system with the geospatial database of commercial farms and LBMs.
- Facilitate dialogue on compartmentalization and develop SOPs for the implementation of disease-free compartments.
- Support the upgrade of selected LBMs.
- Support biosecurity (including C&D) in commercial production and marketing chains, as biosecurity has proven to be the major area of interest to the private commercial poultry sector, as well as the public sector.
- Develop a new and equitable compensation plan.

INDONESIA

Indonesia has not requested any assistance from the project.

CHINA

Output A – Activities: as planned.

Output B - Activities:

- Map stakeholders in selected LBMs, analyse existing platforms to establish a dialogue among the public and private stakeholders, propose platform improvements if required, use the platform to plan the restructuring of the markets.
- Develop monitoring and evaluation tools and indicators of the impact of restructuring on livelihoods of producers, sellers, as well as on virus circulation and spread.
- Provide training to public sector staff on PPPs and explore opportunities to work on compartmentalization.

MYANMAR**Output A - Activities:**

- Review biosecurity practice in poultry production areas in Yangon, Monywa and Shwebo Districts and provide recommendations for biosecurity improvement in poultry production areas in Myanmar.
- Review biosecurity practice at the live poultry wholesale market in Yangon and provide recommendations for biosecurity improvement.
- Develop and deliver biosecurity TOT for government veterinarians and poultry producers.

Activities undertaken during the reporting period

Output A: Expertise, technical advice and organizational support on PPPs and biosecurity will be available to countries for implementation of activities funded under Amendment 6 (country projects proposals).

An expert in commercial poultry production and biosecurity will operate from the headquarters. Consultant time for a PPP specialist will be available. They will:

- provide information and guidance on PPPs to government departments, the private sector and FAO country teams; and
- assist in the improvement of biosecurity (including C&D) in commercial production and marketing chains, as biosecurity has proven to be a major area of interest to the private commercial poultry sector, as well as the public sector.

BANGLADESH**Output A - Activity 1:**

- Technical support was provided to the national consultant in developing a *Standard Operating Procedures Manual* for biosecurity on the farm that will facilitate the implementation of the existing *national biosecurity guidelines*. An earlier workshop was organized in Sirajganj and was facilitated by the project, with the participation of members from the DLS and the private sector, including broiler and layer producers, breeding farm managers, feed and poultry dealers. During the workshop the methodology and templates for the development of these SOPs were introduced. Following to the workshop a selected

group of participants was recruited and completed the SOPs. In the near future the newly developed SOPs will be tested in selected farms.

Output A - Activity 2:

- Since the first HPAI outbreak in Bangladesh in March 2007, the previously active export of poultry and poultry products to Middle Eastern countries has stopped. During this semester, numerous meetings with stakeholders from the public and private sectors took place, and the concept of establishing disease free compartments, in accordance with the World Organisation for Animal Health (OIE) Terrestrial Code, was introduced. The establishment of compartments would enable the resumption of export of fertile eggs and day old chicks. The owners of the three largest poultry companies in Bangladesh, namely, Kazzi farms, Paragon poultry and M.M. Agha Poultry, expressed great interest in joining this initiative and the Director General of the Department of Livestock also expressed his interest in and support for this project. *Guidelines for compartmentalization in Bangladesh* were drafted, containing components of compartment management, enhanced biosecurity plan, surveillance and auditing plan. The guideline was developed with reference to the *National biosecurity guidelines for the commercial poultry industry in Bangladesh* (April 2010) developed during an earlier phase of this project; the relevant chapters in the OIE 'Terrestrial Animal Health Code' (Terrestrial Code) and 'Manual of Diagnostic Tests and Vaccines for Terrestrial Animals' (Terrestrial Manual) (2010). The structure of the guidelines is based on the 'Compartments for protection against avian influenza and Newcastle disease in poultry breeding companies in Great Britain' (DEFRA, 2010).

CAMBODIA

Output A - Activity 1:

- The Chbar Ampov LBM in Phnom Penh is a combined wholesale and retail market that operate under two managerial structures. The wholesale market is the largest in Phnom Penh, and supplies live poultry to the Chbar Ampov retail section and to many other retail markets in the capital. In recent surveillance activities on markets, environmental samples were collected, and a significant number was found positive to HPAI, which put this market in high risk category in terms of potential bird-bird and bird-human transmission.
- Following a market visit for risk assessment and stakeholders' interviews, an *intervention strategy for biosecurity improvement* was developed, for both, the wholesale and retail sections of the market. The intervention includes a) infrastructure improvement such as the installation of water points, birds' holding cages and washable working benches; b) setting procedures, such as daily market C&D programme, traffic control within the market during certain hours of the day, etc.; and c) training and education about biosecurity for traders and authorities, and the formation of a committee, composed of all stakeholders' representatives, that will guide the market improvement process.

NEPAL

Output A - Activity 1:

A two-days workshop was held in Kathmandu on 3 and 4 May 2011 to develop *Biosecurity Guidelines for Nepal*. Thirty-five participants from the public sector, DLS and the private sector, including poultry producers, poultry associations, hatchery and feed operators, and representatives from the veterinary school and research institute, took part in the workshop. These *national biosecurity guidelines* provide minimum biosecurity standards to be

implemented by the different segments of poultry production, such as breeding, laying and broiler farms.

- The *national biosecurity guidelines* include the following components:
 - principles of biosecurity guidelines;
 - policy application of the biosecurity guidelines;
 - operational application of the biosecurity guidelines;
 - roles and responsibilities of all stakeholders involved;
 - biosecurity implementing committee and workgroups structure.

A copy of the final version of the *national biosecurity guidelines* was presented to the DG of DLS for approval and endorsement. Once the guidelines are agreed upon by all stakeholders and endorsed by the veterinary services and the ministry of agriculture, their promotion will require the formation of an overseeing *biosecurity committee*, and additional three working groups to ensure the development of *biosecurity SOPs*, *communication and training materials*, and a *biosecurity auditing programme*.

Output A - Activity 2:

- A three-days TOT on Biosecurity was conducted in the Chitwan District, which is the largest poultry production area in Nepal (About 70 percent of the national eggs and poultry meat production). Eighteen veterinarians from the DLS, diagnostic laboratory, veterinary school and private practitioners with strong poultry health and production skills were trained on the principles of biosecurity, C&D, and safe disposal of dead chickens and manure by composting. Farm *biosecurity auditing* was discussed in depth and was practiced on a poultry farm by using a *biosecurity check-list*.
- Following to the above mentioned TOT, two participants were selected to be part of the FAO training team and took part in the two days biosecurity training programme for 22 poultry producers from breeding, layer and broiler farms in the Chitwan district. The participants were trained on the principles of biosecurity, C&D, and safe disposal of dead chickens and manure by composting. Farm biosecurity risk assessment was practiced by all participants during a farm visit, using the provided *biosecurity check-list*, and suggestions for risk mitigation were discussed.
The selected trainers delivered one presentation each on farm C&D procedures and led the discussions within small producers' groups.

Output A - Activity 3:

- Two LBMs and three collection yards in the town of Damak at the eastern province of Jhapa were visited for an assessment of biosecurity gaps. All of them showed very little evidence of implementation of any biosecurity measures, as no running water, drainage or solid waste disposal facilities are available, and no washing and disinfection procedures are implemented in these sites, equipment or vehicles used for the transportation of poultry are implemented.
- Three sites were assessed for their suitability for the establishment of a centralized collection point with a birds' inspection and vehicle and crates washing facilities, to ensure that only certified healthy poultry (native chickens) are sent in a safe manner from the Damak district to Kathmandu and Pokhara. The three proposed sites were visited and one site was recommended for the construction of the collection point, based on the topographic location and relative isolation from residential area. It was agreed that no birds will be slaughtered for local consumption at this site.

LAO PDR**Output A - Activity 1:**

A two-days workshop for the development of *Biosecurity Guidelines for the Commercial Poultry Industry in Lao PDR* was held in the Lanxang hotel in Vientiane on 15 and 16 June 2011. Thirty-two participants from the public sector, DLF, PAFO and DAFO, and the private sector, including poultry producers and poultry associations, attended the workshop.

The content and approach for approval and implementation of these guidelines are the same as the ones used for the *National Biosecurity Guidelines for Nepal (see above)*

The *national biosecurity guidelines* were translated and presented to the Director General of the Department of Livestock and Fisheries (DLF) and to the Secretary of the Minister for Agriculture and Forestry for approval and endorsement. After approval, 3000 copies in Lao and 1000 copies in English were printed and circulated across the country to all poultry producers and partners.

Output A - Activity 2:

Two sessions of a two-days biosecurity training programmes, targeting provincial and district livestock officers (PAFO and DAFO), poultry producers, veterinary and feed shop owners, were conducted in Vang-vieng (22 participants) and in Savannaketh (25 participants). The participants were trained on the principles of biosecurity, C&D, and safe disposal of dead chickens and manure by composting. Farm biosecurity risk assessment was practiced by all participants during the farm visit, using the provided biosecurity check list, and suggestions for risk mitigation were discussed.

VIET NAM**Output A - Activity 1:**

A two-days workshop on development of *biosecurity guideline for small poultry production sites of up to 300 birds (chickens and ducks) in Viet Nam* was held at the Army hotel in Hanoi, including participants from the public and private sectors. These guidelines were developed through a consultative process to complement the already existing *farm biosecurity legislation and standards in Viet Nam - Decision 1405-QD-TTg* of 2007 and its amendment, Circular 60/2008/TT-BNN of 2008, and the *Standards and SOPs for biosecurity in large industrial poultry production farms* that was developed by the Viet Nam Avian and Human Influenza Control and Preparedness (VAHIP) project. The set of guidelines is still in draft form and will be finalized in the near future.

Output A - Activity 2:

Two farm biosecurity training sessions in the Kien Giang and Quang Tri provinces were attended by the participants from the public sector, provincial and district veterinary officers, and from the private sector, duck and chicken producers, Agri-vet shop owners and poultry clubs members. The two-day programme included the following modules: introduction to biosecurity, C&D, correct calculation and application of disinfectants and safe disposal of dead birds and manure by composting. The in-class training session was followed by a field trip to duck farms, where the participants conducted a biosecurity risk assessment to identify and quantify the risk points present at those farms. The participants also provided suggestions on

how to mitigate those risks.

Output A - Activity 3:

A *hatchery biosecurity auditing check list* was developed and tested in two traditional hatcheries in Hung Yen province. This auditing checklist will enable a trained auditor to perform a rapid and effective assessment of the biosecurity status of a hatchery. A training programme for auditors, DLP and DAH provincial or district officers, is in the process of development.

Additionally, a set of *biosecurity guidelines for hatcheries* was drafted and circulated to stakeholders for comments and adoption; these guidelines will complement the existing *legislation and standards for biosecurity in hatcheries in Viet Nam - Decision 1405-QD-TTg* of 2007 and its amendment, Circular 60/2008/TT-BNN of 2008.

CHINA

Output A - Activity 1:

A series of missions have been undertaken by PPP experts to Beijing, Guangdong and Hong Kong during the past six months, and several meetings/workshops were held with MoA, local veterinary services of Guangdong province and other relevant stakeholders, covering both the public and the private sectors. Each and all these activities have produced concrete action plans or results as below:

The first mission of the PPP expert took place from 11 to 27 April 2011 to kick-start the PPP activities in the country. During this mission, meetings were held with several representatives from both the public and the private sectors in Beijing, Guangzhou and Hong Kong to introduce the PPP concept and to assess the local situation. Based upon the initial findings and discussions, following documents were produced:

- A project concept note and a work plan, outlining the critical elements in the process of the engagement of all stakeholders in a structured way; and
- A detailed Action Plan serving as a proposed roadmap for consideration of MoA, FAO and other potential stakeholders.

On 18 July 2011, a PPP Project Launching Workshop was organized in Beijing by The Emergency Centre for Transboundary Animal Diseases (ECTAD) China, with the participation of three international experts (the PPP expert, a Biosecurity Technical Advisor and an Animal Disease Management expert), ECTAD China staff, representatives from the World Health Organization (WHO), MoA, Guangdong Provincial Veterinary Services and Guangzhou Animal Health Inspection Institute. During the meeting, the PPP concept note and its application in LBMs were presented and discussed. A formal Action Plan was shared with the participants, and a wholesale LBM (the Jiangcun Poultry Wholesale Market in Guangzhou) was identified in Guangdong province as a pilot site for the PPP project.

From 19 to 22 July 2011, the PPP experts and ECTAD China staff conducted a field mission to Guangzhou. A market visit was carried out to identify the biosecurity, animal health and human health issues of the targeted market following a critical control point (CCP) analysis. Discussions were held with the Guangzhou Jiangcun Poultry Wholesales Market management and traders as well as with the Guangzhou Administration for Industry and Commerce to obtain more detailed information about the market management, institutional framework and bio-

security issues; Additional information was gathered about the poultry flow into and out of the market as a basis for social networking mapping; The mission ended with a PPP Stakeholder Meeting on 22 July, which involved the PPP mission team, staff from Guangdong Provincial Veterinary Services and Guangzhou Animal Health Inspection Institute, and stakeholders from Jiangcun Poultry Wholesales Market. Findings and recommendations as well as a proposed business model for changes in the market were shared with the various stakeholders.

In late July, based on discussions in Guangzhou, the PPP team developed an action plan with a proposed time frame and estimated costing to be further discussed with the stakeholders and to agree on the different roles and shares between public and private partners.

In early August, the PPP mission team visited Guangdong again to collect additional information on the market flow and to present the action plan to the veterinary authorities and relevant stakeholders:

In a meeting held on 2 August, the Action Plan for LBM restructuring was presented, including the seven biosecurity critical control points (CCPs) to be addressed:

1. Single entry and single exit-one way flow;
2. Establish a vehicle cleaning and disinfection(C&D) station;
3. Training on biosecurity and C&D practices;
4. Bamboo crate decommissioning;
5. C&D of market sheds;
6. Introduction of SOPs for water testing and improve waste water flow in the waterfowl area;
7. Improve waste disposal management.

ECTAD China staff also conducted a market survey using social network analysis method, collected questionnaires related to market chain in order to obtain baseline information about vendor's trading practices, which led to the production of a series of maps describing LBM networks in the province.

On 4 August 2011, a meeting was held in MoA, with the participation of the PPP Expert, ECTAD China team and the Veterinary Bureaus of MoA. The project results and findings from Jiangcun Poultry Wholesales Market were shared and discussed. The feedback for PPP project from MoA were positive; MoA recognized that the PPP project enables to involve more stakeholders into the planned activities, which benefits not only the public but also the private sector; MoA also agreed that a collaborative mechanism can be established through joint project activities, and the relationships between the public and private sectors will be harmonized and enhanced. Both national and provincial authorities agreed to support this activity and actively contribute to the project activities. In addition, Guangdong province already promised to contribute financially to the project and MoA also mentioned it will include some funding for next year's work plan.

Biosecurity equipment and supplies for Jiangcun Poultry Wholesales Market were confirmed by PPP experts and were procured by ECTAD China in September 2011.

Planned activities for the next six-month period**BANGLADESH****Output A - Activities:**

- Facilitate the implementation of a *compartmentalization plan* that will enable the resumption of export of fertile eggs and day old chicks by the Bangladeshi poultry industry. The establishment of disease free compartments, using the developed guidelines, will require a close collaboration between the DLS, large poultry companies and reference laboratories.
- Support the establishment of *National Poultry Improvement Plans*.
- Facilitate and extend the process related to farm registration and licensing, including the revision of the existing farm registration protocol and link the farm registration system with the geospatial database of commercial farms and LBMs and the implementation of minimum biosecurity standards.

NEPAL**Output A - Activities:**

- No additional activities are anticipated to take place in Nepal.

LAO PDR**Output A - Activities:**

- No additional activities are anticipated to take place in Lao PDR.

CAMBODIA**Output A - Activities:**

- No additional activities are anticipated to take place in Cambodia.

CHINA**Output A - Activities:**

- Biosecurity equipment and suppliers will be procured and delivered to Guangzhou Health Inspection Institute and Jiangcun Poultry Wholesales Market in October before training.
- A four-day training on biosecurity and cleaning and disinfection practices will be organized for market supervisors and cleaners (total 30 person) in late October 2011.
- A vehicle cleaning station at the exit of the Jiangcun market will be designed, and possible companies for the construction identified.
- Laboratory testing issues in the market as well as improvements of the slaughter area will be discussed further.
- Jiangcun Poultry Wholesales Market will be set as a model in the pilot province.
- Finalize the PPP project and submit the final project report to MoA and other stakeholders.

MYANMAR

Output A - Activities:

- Develop and deliver TOT on biosecurity for private and public veterinarians and leading producers at poultry production zones.
- Support the establishment of washing station at the wholesale LBM of Yangon.
- Support the establishment of a model farm for better temperature control and improved performances.

VIET NAM

Output A - Activities:

- Conduct hatchery biosecurity and management training programme for traditional hatcheries owners and DLP and DAH officers, in Quang Tri province and possibly also in Hung Yen province.
- Finalize the development of the *biosecurity guidelines for hatcheries* and support the implementation.
- Develop and deliver biosecurity auditing training programme for hatcheries DLP and DAH officers.
- Support the implementation of the *biosecurity guidelines for small poultry production sites*.
- Support the establishment of biosecured model farm/s and hatchery in Quang Tri province.
- Develop a set of *fact sheets about biosecurity and good farming practices* to be delivered to poultry producers by Agri-vet shops, as part of a strengthening technical and advisory capacity of private Agri-vet store owners in Quang Tri Province.
- Develop a simplified field *"Farm C&D manual"* for poultry producers and DLP and DAH officers.

Main challenges encountered and response provided

The candidate for the PPP consultancy position declined the offer, which left the project without a dedicated person to coordinate activities and support the countries in this area. The biosecurity consultant fills this role in biosecurity activities that overlap with PPP activities.

CHINA

In China the following challenges were encountered:

- LBMs in China are being jointly supervised by the State Administration of Industry and Commerce (SAIC), the Ministry of Health (MoH) and the Ministry of Agriculture (MoA) under the Central Government and departments of industry and commerce administration, health and agriculture from the local government. After consultation with MoA and local authorities in Guangzhou, the pilot project was proposed to be carried out in a wholesale poultry market instead of a regular retail LBM.
- Challenges encountered in the wholesale market are related to the potential negative impact of changes in the market on the sales process, and thus on the buy-in of the vendors: some proposed changes will therefore be implemented on a trial basis, such as the substitution of bamboo crates by plastic crates. The proposed one-way traffic flow in the market was not accepted owing to the negative impact on the sales for the vendors.

Main progress made towards the achievement of project outcomes**BANGLADESH**

- A full set of *biosecurity SOPs* has been developed and is currently being field tested. These SOPs will support the implementation of the *national biosecurity guidelines* for the commercial poultry industry.
- A series of meetings with stakeholders from the public and private sectors took place in Dhaka, regarding the establishment of disease-free compartments. These compartments will enable the resumption of export of fertile eggs and day old chicks.
- A *set of guidelines for compartmentalization* (based on the OIE manuals) which outlines all the requirements for the establishment of compartments has been developed.

MYANMAR

- Biosecurity practices at production zones in *three districts* were reviewed and *recommendations for biosecurity improvements* provided.
- Biosecurity practices at the Yangon wholesale market were reviewed and recommendations for biosecurity improvements were provided, including the support in establishment of a washing station for the departing vehicles and crates. This will greatly reduce the risk of disease transmission (HPAI) from markets to farms.

NEPAL

- *National guidelines for biosecurity in the commercial poultry industry* have been developed.
- Two farm biosecurity training sessions were delivered in Chitwan district, where 70% of all poultry in Nepal is reared. The first session was a TOT programme, while the second session targeted poultry producers.
- A suitable site for the establishment of poultry health inspection yard was identified in the Dainak district which supply large amount of native type chickens to Kathmandu and Pokhara.

LAO PDR

- A national biosecurity guideline for the commercial poultry industry has been developed.
- Two farm biosecurity training sessions for producers, livestock officers, feed suppliers and traders were delivered in Vang-vieng and Savanaket.

CAMBODIA

- Supported by the project, the Chbar Ampov LBM in Phnom Penh has gone through a biosecurity improvement plan which includes improvements in infrastructure, such as the installations of water points, holding cages and work benches, and procedural improvements, such as new C&D programme and restricted traffic through the market.

VIET NAM

- A set of *guidelines for biosecurity on small poultry production sites of chickens and ducks* has been developed with the participation of stakeholders from the public and private sectors.
- Two farm biosecurity training sessions for participants from the public sector, provincial and district veterinary officers and from the private sector, duck and chicken producers, agri-vet shop owners and poultry clubs members were delivered in the Kien Giang and Quang Tri provinces.
- A set of *guidelines for biosecurity in hatcheries* has been developed
- A *hatchery biosecurity auditing checklist* has been developed and tested in Hung Yen province.

CHINA

- The launching of PPP project in Guangdong province has further increased the scope and impact of USAID funded project activities in Southern China, which has already significantly contributed to the prevention and control of HPAI within the country.
- MoA recognized that both the public and the private sectors can benefit from this project.
- The involvement and commitment of various stakeholders from both the public and the private sectors towards the elimination of H5NI HPAI viruses has been reaffirmed. Both national and provincial support for this project is currently available. Guangdong Province is ready to provide financial support and to actively participate in the coordination and organization of several project missions and activities; MoA is also considering to fund LBM restructuring in the future.
- The implementation of the PPP project will increase the understanding of risk factors in the poultry sector through market/value chain analysis and LBMs restructuring.

Project Monitoring Sheet: **OSRO/GLO/707/USA**

Project Title: Continued support to the FAO/ECTAD Advocacy and Communication Unit to provide strategic technical assistance and strengthen in-country capacities, competencies and leadership in advocacy and advocacy-related communication against Highly Pathogenic Avian Influenza and other Emerging Infectious Diseases

Reporting period: **April – September 2011**

Country: Bangladesh, Egypt, Indonesia and Viet Nam
Project title: Continued support to the FAO/ECTAD Advocacy and Communication Unit to provide strategic technical assistance and strengthen in-country capacities, competencies and leadership in advocacy and advocacy-related communication against Highly Pathogenic Avian Influenza and other Emerging Infectious Diseases
Code: OSRO/GLO/707/USA
Budget: USD 1 500 000 (Phase I); USD 1 000 000 (Phase II)
Total budget: USD 2 500 000
Effective starting date: 1 October 2007
Planned end date: 31 December 2011
<p>Context of the project</p> <p>The current project is an extension, which commenced in October 2007. The project was initiated and extended to address the issue of limited core skills in advocacy and contemporary approaches to strategic communication planning within livestock departments/veterinary services of the Ministries of Agriculture (MoAs). Thus, they require capacity development in order to be able to provide leadership and coordination in developing and implementing evidence-based advocacy, strategic communication and extension campaigns.</p>
<p>Objectives of the project</p> <p>The core objectives which remain unchanged for the extension period are:</p> <ul style="list-style-type: none"> • Building in-country advocacy, communication and extension capacities, competencies and leadership. • Developing effective and evidence-based advocacy, communication and extension strategies and interventions. • Strengthening in-country collaboration and coordination. <p>These core objectives translate into the following key components of the project extension:</p> <ul style="list-style-type: none"> • Development, utilization and dissemination of advocacy training and capacity development modules/materials for veterinary services, epidemiology staff, extension staff, as well as the Food and Agriculture Organization of the United Nations (FAO) and civil society organizations, with a focus on Highly Pathogenic Avian Influenza (HPAI)/Emerging Infectious Diseases (EIDs); • Production and dissemination of HPAI/EIDs advocacy and community extension and mobilization materials; • Production and dissemination of regional advocacy strategy and networking materials, and support in developing national advocacy strategies and plans; and • Capacity development for Advocacy Extension Officers (AEOs) to provide in-country support for implementation of advocacy activities.
<p>Planned activities</p> <p>The project comprises three components with specific outputs and activities for each. This report contains implementation details only on those components/outputs, where activities have been implemented. Where components/outputs are not reported, it can be assumed that no activities were conducted as per the project timetable/work plan during this reporting period.</p>

Component 1: Building in-country capacity, competencies and leadership in strategic advocacy and advocacy-related communication

Output 1.1: Training and capacity development materials focusing on advocacy and advocacy-related strategic communication and planning/leadership for prevention and control of HPAI and EIDs are developed for training of and use by MoA's livestock departments and veterinary services communication, extension and technical staff

Activity 1.1.2: Disseminate multi-media advocacy and community mobilization materials for use by MoAs livestock departments and veterinary services in preparedness, prevention and control of HPAI and EIDs

Activity 1.1.3 Disseminate training/capacity development materials on strategic advocacy and advocacy-related communication and planning for HPAI/EIDs

Output 1.2: Technical capacities and capabilities of MoA's livestock departments and veterinary services to plan and mount effective interventions in strategic advocacy and strategic communication interventions are strengthened

Activity 1.2.1 Conduct six training workshops in four countries (Bangladesh, Egypt, Indonesia and Viet Nam) on strategic advocacy and advocacy-related communication planning and leadership for the prevention and control of HPAI and other EIDs

Component 2: Developing effective and evidence-based regional and national advocacy strategies and a regional strategic communication framework for preparedness, prevention and control of HPAI and other EIDs

Output 2.1: FAO Regional Advocacy Strategy is developed and disseminated

Activity 2.1.6 Conduct two-day stakeholder workshop with 30 participants involved in the 12-monthly advocacy strategy review

Output 2.2: National level advocacy strategies are developed in Indonesia and Viet Nam

Activity 2.2.1 Conduct two five-day advocacy strategy development workshops in Indonesia and Viet Nam with 25 local participants

Output 2.3: Develop capacity in advocacy among veterinary, field epidemiology and extension staff, as well as FAO and civil society organizations, etc.

Activity 2.3.1 Conduct four four-day workshops in four countries to build capacity in advocacy and communication planning and leadership for 20 persons per workshop (workshops to be used to develop national advocacy plans with goals, timeframes and related interventions)

Output 2.4: Advocacy materials are developed, utilized and disseminated during the workshops outlined in Output 2.3/Activity 2.3

Activity 2.4.1 Develop advocacy material as identified and utilized in four four-day workshops in four countries

Output 2.6: The capacity of FAO AEOs to provide in-country support for implementation of advocacy activities is developed

Activity 2.6.1 Support FAO AEOs in developing national advocacy strategies, collaborate in capacity development workshops and mentor local capacity development

Activity 2.6.2 Develop local advocacy materials

Output 2.7 New tools, processes and approaches are developed for communicating technical information on EIDs effectively

Activity 2.7.1 Conduct three pilot workshops (in Egypt, Indonesia and Viet Nam) to develop curriculum modules for communicating technical information on EIDs to non-technical audiences and to develop the outputs from the workshop already conducted in Bangladesh

Activity 2.7.2 Conduct pre- and post-evaluation exercises to evaluate the effectiveness of the tools, processes and approaches

Activity 2.7.3 Share new tools with communication partners, government ministries and departments, community service organizations (CSOs) and others, including through a local workshop for dissemination of curriculum processes for communicating on HPAI/EIDs/animal diseases and engaging risk audiences in dialogue

Output 2.8 New multi-disciplinary data gathering protocols are developed to inform community communication interventions

Activity 2.8.1 Conduct consultations with collaborators and partners: through a national workshop to develop new guidelines/standard operating procedures (SOPs) for designing multi-disciplinary research protocols for gathering data about knowledge, culture, attitudes, practice, socio-economics and other aspects of affected communities

Component 3: Strengthening in-country collaboration and coordination

Output 3.1 Best practices are documented and disseminated

Activity 3.1.2 Collect lessons learned and best practices from countries of the region

Activity 3.1.3 Develop a dissemination format that enables other countries to replicate practices in their own setting

Activities undertaken during the reporting period

Component 1: Building in-country capacity, competencies and leadership in strategic advocacy and advocacy-related communication

Output 1.1: Training and capacity development materials focusing on advocacy and advocacy-related strategic communication and planning/leadership for prevention and control of HPAI and EIDs are developed for training of and use by MoA's livestock departments and veterinary services communication, extension and technical staff

Activity 1.1.2: Disseminate multi-media advocacy and community mobilization materials for use by MoAs, livestock departments and veterinary services in preparedness, prevention and control of HPAI and EIDs

Activity 1.1.3 Disseminate training/capacity development materials on strategic advocacy and advocacy-related communication and planning for HPAI/EIDs

- A dissemination platform to enable MoAs, livestock departments and veterinary services involved in preparedness, prevention and control of HPAI and EIDs was developed to access advocacy and community mobilization materials. The platform will be launched on the FAO Web site during the next reporting period. The platform is web-based, incorporating audio-visual materials including video, photography and audio and constituting a unique training and capacity development resource for animal health/veterinary services personnel. The resource will support the personnel in combating animal diseases and EIDs by advocating for innovative participatory approaches to disease prevention and in providing tools and replicable methodologies. The FAO consultant based at Rome headquarters, funded under the United States Agency for International Development (USAID) project, produced the capacity development for community mobilization and advocacy materials for use by animal health and communication personnel. The materials comprise: an advocacy process guide on social mobilization interventions to enhance biosecurity for the prevention of animal diseases; a case study on the effectiveness of utilizing advocacy and social mobilization processes to enhance the implementation of biosecurity measures in at-risk farming communities; and an advocacy guide to partnerships with the media for livestock and veterinary services.

Output 1.2: Technical capacities and capabilities of FAO's livestock departments and veterinary services to plan and mount effective interventions in strategic advocacy and strategic communication interventions are strengthened

Activity 1.2.1 Conduct six training workshops in four countries (Bangladesh, Egypt, Indonesia and Viet Nam) on strategic advocacy and advocacy-related communication planning and leadership for the prevention and control of HPAI and other EIDs

- This activity was integrated into outputs 2.2 and 2.3 in order to reduce the number of workshops in each country. No workshop activity was carried out in Egypt owing to the political situation.

Component 2: Developing effective and evidence-based regional and national advocacy strategies and a regional strategic communication framework for preparedness, prevention and control of HPAI and other EIDs

Output 2.1 FAO Regional Advocacy Strategy is developed and disseminated

Activity 2.1.6 Conduct two-day stakeholder workshop with 30 participants to conduct 12-monthly advocacy strategy review

- This activity evolved beyond the original expectations of the project, leading to a regional advocacy initiative involving all countries of the region. Regional advocacy gaps were discussed at a meeting in Bangkok on 9 and 10 August 2011, involving senior public/animal health officials from seven countries (and Bangladesh), with a view to developing a regional advocacy plan. The importance of the subject attracted over 70 senior participants (instead of the planned 35). Additional collaborative funding was leveraged from USAID RESPOND initiative through Development Associates International, Bangkok. The regional discussion focused on operationalizing the One Health approach and exploring opportunities and mechanisms for greater collaboration between human health, animal health and the wildlife sectors. The Bangkok meeting in August 2011 further consolidated the process of building an advocacy action plan for promoting One Health at the national level through gaining consensus on four major issues important at the national and regional levels: One Health coordination, joint planning, understanding of One Health and sustainability of One Health initiatives. It was agreed that all four areas would be developed further at the national levels, with FAO's technical support if required, into a country-level action plan. The meeting also launched "Seeing around corners", the regional communication strategy framework against EIDs in Asia and the Pacific, 2011–2016, developed by FAO with inputs from the United Nations Children's Fund (UNICEF), the World Health Organization (WHO), the Academy for Educational Development (AED) and others.

Output 2.2 National level communication and advocacy strategies are developed in Bangladesh, Indonesia and Viet Nam

Activity 2.2.1 Conduct two five-day advocacy strategy development workshops in Indonesia and Viet Nam with 25 local participants

- The Viet Nam workshop was conducted on 12 and 13 July 2011 with the objectives of: (i) reviewing/assessing existing communication strategies for HPAI and other EIDs to identify gaps, strengths and opportunities; (ii) reviewing and assessing existing needs in advocacy; (iii) introducing the FAO Regional Framework for a Communication Strategy against EIDs, 2011–2016; and (iv) creating an understanding of strategic new advocacy and communication needs and challenges in the context of One Health. It was attended by 26 participants from the human health, animal health and wildlife sectors, together with the United Nations and other partner agencies. The meeting concluded with an agreement on the need for Viet Nam to develop a One Health-based communication and advocacy strategy against infectious diseases.

Activity 2.3.1 Conduct four four-day workshops in four countries to build capacity in advocacy and communication planning and leadership for 20 persons per workshop (workshops to be used to develop national advocacy plans with goals, timeframes and related interventions)

- No workshop activity was carried out in Egypt owing to the political situation in the country. Capacity development workshops are planned for Bangladesh (December 2011), Indonesia (December 2011) and Viet Nam (October 2011) on the subjects of advocacy and advocacy-related communication building. The three planned workshops were reduced to a duration of three days following requests from national governments, who did not wish to lend staff for a longer duration. They were postponed to October–December 2011 to allow the participation of senior government officials from various ministries and departments in each country.

Output 2.4 Advocacy materials are developed, utilized and disseminated during the workshops outlined in Output 2.3/Activity 2.3

Activity 2.4.1 Develop advocacy materials as identified and utilize in four four-day workshops in four countries

- The following advocacy materials were developed during the project period and will be shared during the upcoming workshops: (i) Seeing around corners, the regional communication strategy framework. Already shared and will be revisited during the workshop; (ii) two video films, Messages from the farm and Farmers in dialogue, representing best identified practices from Bangladesh and Viet Nam; (iii) two eight-page A4-sized brochures, Messages from the farm and Farmers in dialogue, representing best identified practices from Bangladesh and Viet Nam; (iv) a 13-session curricular module for introducing a basic technical framework for understanding health, disease transmission and prevention in socially and culturally acceptable terms for non-technical audiences; and (v) a draft report of a One Health advocacy action plan to be developed further by the countries in the region.

Output 2.6 The capacity of FAO AEOs to provide in-country support for implementation of advocacy activities is developed

Activity 2.6.1 Support FAO AEOs in developing national advocacy strategies; collaborate in capacity development workshops; and mentor local capacity development

Activity 2.6.2 Develop local advocacy materials

- A second capacity development workshop for FAO AEOs from Bangladesh, Indonesia and Viet Nam was conducted on 11 August 2011 at FAO in Bangkok. The meeting included detailed discussions and demonstrations of dialogue processes and tools, including the curricular tools to be tested in Bangladesh (see Output 2.7). There was also a discussion of advocacy and a demonstration of the Figureheads discussion tool.

Output 2.7 New tools, processes and approaches are developed for communicating technical information on EIDs effectively

Activity 2.7.2 Conduct pre- and post-evaluation exercises to evaluate the effectiveness of the tools, processes and approaches

Activity 2.7.3 Share new tools with communication partners, government ministries and departments, CSOs and others, including through a local workshop for dissemination of curriculum processes for communicating on HPAI/EIDs/animal diseases and engaging risk audiences in dialogue

- A curricular module to impart a basic conceptual framework on microorganisms and their roles in human and animal disease was developed for testing in the field. The objectives of developing these tools were to: (i) develop socially and culturally

acceptable processes for communicating information about health, disease and prevention to lay audiences; (ii) develop dialogue-based approaches to increase participation in and ownership by audiences; and (iii) develop an integrated, multi-disciplinary approach from the outset, so that future modules could avoid a narrow single-disease focus. The first of the tool testing workshops was conducted from 13 to 16 September 2011 in Bangladesh and attended by 25 community members, comprised of backyard farmers, commercial farmers, community animal health workers, public health assistants, vendors and market committee members. The FAO Technical Team from Bangladesh served as observers and co-facilitators of the workshop. Participants were tested in a field exercise involving visiting farms and markets and developing a risk map and recommending safety measures. There were quantitative pre- and post-tests of knowledge as well qualitative assessments based on the final risk map output by participants. The quantitative test methodology was later found to have flaws, and recommendations were made for changing the testing process in the remaining two tests (in Viet Nam and Indonesia) which will be carried out in December 2011. The qualitative assessments by the FAO Technical Team and participants indicated that the new tools were effective in imparting a comprehensive conceptual framework for a deeper understanding of microorganisms, infection and prevention. The curricular modules are currently being designed and will be printed and ready for further testing by the end of October 2011.

Output 2.8 New multi-disciplinary data gathering protocols are developed to inform community communication interventions

Activity 2.8.1 Conduct consultations with collaborators and partners: through a national workshop to develop new guidelines/SOPs for designing multi-disciplinary research protocols for gathering data about knowledge, culture, attitudes, practice, socio-economics and other aspects of affected communities

- The exercise for developing new data gathering protocols was postponed partly because of insufficient collaboration. The closure of the United Nations System Influenza Coordination (UNSIC), as well as the dissolution of AED made it difficult to convene further collaborative meetings in the absence of key partners. This exercise will be continued and developed as soon as a more stable quorum of partners are identified.

Component 3: Strengthening in-country collaboration and coordination

Output 3.1 Best practices are documented and disseminated

Activity 3.1.2 Collect lessons learned and best practices from countries of the region

Activity 3.1.3 Develop a dissemination format that enables other countries to replicate practices in their own setting

- Two outstanding best practices, Farmers Clubs in Viet Nam and the SMS Gateway in Bangladesh for fighting HPAI, were researched thoroughly. A print presentation format was developed that helped readers quickly grasp the salient features and benefits of the practice. Based on this format, two video films have been produced, *Farmers in dialogue* (in Viet Nam) and *Messages from the farm* (in Bangladesh). They will be available to partners and donors for use and dissemination by the end of October 2011 and posted on FAO Web site. Both films will be translated and dubbed in Vietnamese, Bangla and Bahasa Indonesia for sharing with community audiences in those countries. In addition, two booklets were printed on the above practices and will be available as part of the advocacy package. The booklets, bearing the same name as the films, are eight pages, A4-sized and in full color, and will be available in English, Bangla, Bahasa Indonesia and Vietnamese.

Planned activities for the next three-month period (the project will be completed on 31 December 2011)

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Component 1: Building in-country capacity, competencies and leadership in strategic advocacy and advocacy-related communication

Output 1.1: Training and capacity development materials focusing on advocacy and advocacy-related strategic communication and planning/leadership for prevention and control of HPAI and EIDs are developed for training of and use by MoA's livestock departments and veterinary services communication, extension and technical staff

Activity 1.1.2: Disseminate multi-media advocacy and community mobilization materials for use by MoAs, livestock departments and veterinary services in preparedness, prevention and control of HPAI and EIDs

Activity 1.1.3 Disseminate training/capacity development materials on strategic advocacy and advocacy-related communication and planning for HPAI/EIDs

Component 2: Developing effective and evidence-based regional and national advocacy strategies and a regional strategic communication framework for preparedness, prevention and control of HPAI and other EIDs

Output 2.3 Develop capacity in advocacy among veterinary, field epidemiology and extension staff, as well as FAO and civil society organizations

Activity 2.3.1 Conduct four four-day workshops in four countries to build capacity in advocacy and communication planning and leadership for 20 persons per workshop (workshops to be used to develop national advocacy plans with goals, timeframes and related interventions)

- Conduct capacity development workshops in Bangladesh (December 2011), Indonesia (December 2011) and Viet Nam (October 2011) on the subjects of advocacy and advocacy-related communication building.

Output 2.4 Advocacy materials are developed, utilized and disseminated during the workshops outlined in Output 2.3/Activity 2.3

Activity 2.4.1 Develop advocacy material as identified and utilized in four four-day workshops in four countries

- No workshop activity will be carried out in Egypt. Share the advocacy materials described in 'Main progress made towards the achievement of project outcomes' under Output 2.4 in workshops taking place during October–December 2011.

Output 2.7 New tools, processes and approaches are developed for communicating technical information on EIDs effectively

Activity 2.7.1 Conduct three pilot workshops (in Indonesia and Viet Nam) to develop curriculum modules for communicating technical information on EIDs to non-technical audiences; and to develop the outputs from the workshop already conducted in Bangladesh

Activity 2.7.2 Conduct pre- and post-evaluation exercises to evaluate the effectiveness of the tools, processes and approaches

Activity 2.7.3 Share new tools with communication partners, government ministries and departments, CSOs and others, including through a local workshop for dissemination of curriculum processes for communicating on HPAI/EIDs/animal diseases and engaging risk audiences in dialogue

- Conduct tools testing workshops in Indonesia and Viet Nam in December 2011. Design of curricular modules is currently in process; print and prepare curricular modules for further testing by the end of October 2011.

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Output 2.8 New multi-disciplinary data gathering protocols are developed to inform community communication interventions

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Activity 2.8.1 Conduct consultations with collaborators and partners through a national workshop to develop new guidelines/SOPs for designing multi-disciplinary research protocols for gathering data about knowledge, culture, attitudes, practice, socio-economics and other aspects of affected communities.

- Continue and develop as soon as a more stable quorum of partners are identified, following the closure of UNSIC and AED.

Component 3: Strengthening in-country collaboration and coordination

Output 3.1: Best practices are documented and disseminated

- Make available two outstanding best practices, Farmers Clubs in Viet Nam and the SMS Gateway in Bangladesh for fighting HPAI, for dissemination via video/DVDs, FAO Web site and printed booklets during October 2011. Make the materials available in English, Bangla, Bahasa Indonesia and Vietnamese languages.

Main challenges encountered and response provided

During the reporting period, delays were experienced in Egypt owing to the political situation in the country. For this reason, a mission to undertake the production of advocacy materials for the prevention of HPAI and other animal diseases could not take place in May 2011. However, project activities commenced during the reporting period and will continue. Furthermore, government-related delays occurred in Bangladesh, Indonesia and Viet Nam, which affected the timing of the final project workshops. The workshops required the participation of senior government officials from various ministries and departments in each country, and the organization of such workshops depended on their availability. Consequently, the timing of the workshops was postponed from September 2011 to October December 2011.

Main progress made towards the achievement of project outcomes

Component 1: Building in-country capacity, competencies and leadership in strategic advocacy and advocacy-related communication

- The following training/capacity development materials on strategic advocacy and advocacy-related communication and planning for HPAI/EIDs were developed for use by animal health and communication personnel: an advocacy process guide on social mobilization interventions enhancing biosecurity; a case study on the effectiveness of utilizing advocacy and social mobilization processes to enhance the implementation of biosecurity measures in at-risk farming communities; and an advocacy guide on partnerships with the media for livestock and veterinary services.
- An innovative multi-media, web-based dissemination platform was developed to enable MoAs, livestock departments and veterinary services involved in preparedness, prevention and control of HPAI and EIDs to access the advocacy and community mobilization materials and serve as a training and capacity development resource. It advocates for participatory approaches to disease prevention and provides tools and replicable methodologies.

Component 2: Developing effective and evidence-based regional and national advocacy strategies and a regional strategic communication framework for preparedness, prevention and control of HPAI and other EIDs

- Regional Advocacy Strategy was discussed at a two-day stakeholder workshop in Bangkok on 9 and 10 August 2011 with 70 participants (instead of the initially planned

1st Inter-FAO meeting involving senior public/animal health officials from seven countries (and Bangladesh) with a view to developing a regional advocacy plan. Consensus was gained on four major issues of the advocacy plan important at national and regional levels to be developed further, with FAO's technical support, into a country-level action plan. The meeting also launched "Seeing around corners", the regional communication strategy framework against EIDs in Asia and the Pacific, 2011–2016, developed by FAO with inputs from UNICEF, WHO, AED and others.

- A five-day communication/advocacy strategy development workshop was conducted in Viet Nam on 12 and 13 July 2011 with 26 local participants from the human health, animal health and wildlife sectors, together with United Nations and other partner agencies. It was agreed that there was the need for Viet Nam to develop a One Health-based communication and advocacy strategy against infectious diseases.
- The following advocacy materials were developed during the project period and will be shared during the upcoming workshops: (i) *Seeing around corners*, the regional communication strategy framework; (ii) two video films, *Messages from the farm* and *Farmers in dialogue*, representing best identified practices from Bangladesh and Viet Nam; (iii) two eight-page A4-sized brochures, *Messages from the farm* and *Farmers in dialogue*, representing best identified practices from Bangladesh and Viet Nam; (iv) a 13-session curricular module for introducing a basic technical framework for understanding health, disease transmission and prevention in socially and culturally acceptable terms for non-technical audiences; and (v) a draft report of a One Health advocacy action plan to be developed further by the countries in the region.
- A second capacity development workshop for FAO AEOs from Bangladesh, Indonesia and Viet Nam was conducted on 11 August 2011 at FAO in Bangkok. The meeting included detailed discussions and demonstrations of dialogue processes and tools, including the curricular tools to be tested in Bangladesh (see Output 2.7). There was also a discussion of advocacy and a demonstration of the Figureheads discussion tool.
- A curricular module to impart a basic conceptual framework on microorganisms and their roles in human and animal disease was developed for testing in the field. The first of the tools testing workshops was conducted from 13 to 16 September 2011 in Bangladesh and attended by 25 community members, comprised of backyard and commercial farmers, community animal health workers, public health assistants, vendors and market committee members. The FAO Technical Team from Bangladesh served as observers and co-facilitators of the workshop. Participants were tested at the end in a field exercise involving visiting farms and markets and developing a risk map and recommending safety measures. The qualitative assessments by the FAO Technical Team and participants indicated that the new tools were effective in imparting a comprehensive conceptual framework for a deeper understanding of microorganisms, infection and prevention.
- Two outstanding best practices, Farmers Clubs in Viet Nam and the SMS Gateway in Bangladesh for fighting HPAI, were researched thoroughly. A print presentation format was developed helping readers to quickly grasp the salient features and benefits of the practice. Based on this format, two videos were produced, *Farmers in dialogue* (in Viet Nam) and *Messages from the farm* (in Bangladesh). In addition, two booklets of eight pages and A4-sized were printed on the above practices and will be available as part of the advocacy package.

Project Monitoring Sheet: **OSRO/IND/802/USA**

Project Title: **Immediate technical Assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India**

Reporting period: **October 2010 – March 2011**

Country: India
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India
Code: OSRO/IND/802/USA
Budget: USD 1 220 000 (Phase I)
Total budget: USD 3 000 000 ¹
Effective starting date: 28 June 2010
Planned end date: 30 June 2013 (current NTE of Phase I – 30 September 2011)
<p>Context of the project</p> <p>This project will focus on the eastern Indian states of Assam and West Bengal in the short-term with a longer term capacity building of animal health personnel, especially in the field of surveillance, epidemiological analysis and in-depth disease investigation. The project focuses on understanding the dynamic patterns of the poultry production systems, value/supply chains and trade in poultry and poultry products within India.</p> <p>The project is expected to provide information on infection and transmission dynamics of the virus in the local environment where the virus persists and to consolidate the capacity to establish and conduct risk-based surveillance programmes. The aim of building capacity to strengthen surveillance and epidemiological analysis will lead to an improved tracking of the virus movement, greater virus isolations and better molecular information on the virus evolution. Such information is critical for rational and targeted control of the disease. With the strategic inputs in the project, the country would be better placed to take a leadership role in supporting regional efforts to control HPAI.</p>
<p>Objectives of the project</p> <p>The project aims to build capacity to improve surveillance and epidemiological analysis in both domestic and wild birds. The overall objective of the programme is to contribute to the elimination of the threat posed by HPAI by controlling the disease in poultry, to ensure that India no longer presents a risk for the development of human pandemic influenza from the H5N1 virus.</p>
<p>Planned activities</p> <p>Output 1: Establishment of an HPAI (Epidemiology) Unit in India</p> <p>Activity 1.1 Establishment of an HPAI (Epidemiology) Unit.</p> <p>Activity 1.2 Coordination of the country programme.</p> <p>Activity 1.3 Management and operations support.</p> <p>Activity 1.4 Capacity building in project/programme management.</p> <p>Output 2: Improved epidemiological capacity within the Department of Animal Husbandry, Dairying and Fisheries (DADF), Ministry of Agriculture (MoA) of India</p> <p>Activity 2.1 Conduct Field Epidemiology Training Programme for Veterinarians (FETPV).</p> <p>Activity 2.2 Conduct outbreak investigation courses for Field/District Veterinary Officers.</p> <p>Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray</p>

¹ This project has a three year duration. Total budget of USD 3 000 000 is subdivided as follows: USD 1 220 000 for year I, USD 948 134 for year II and USD 831 866 for year III. Funds have been committed for year I only; activities planned for years II and III will be implemented based on project performance and fund availability.

surveillance, Indonesia for participatory disease surveillance and response (PDSR) and Viet Nam for grassroots level surveillance).

Activity 2.4 Conduct trainings for grassroots level disease detection and reporting (e.g. community based animal health workers).

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.1 Develop a grassroots level surveillance programme.

Activity 3.2 Undertake structured virus isolation and characterization.

Activity 3.3 Establish a disease information system dedicated to HPAI.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

Activity 4.1 Study the poultry value chains to include wet markets.

Activity 4.2 Map the farming sectors and socio-economic background along the market and value chains.

Activity 4.3 Conduct data analysis for mapping disease outbreaks and distribution of virus clades.

Activity 4.4 Define infection and transmission dynamics in the context of the various poultry farming systems and socio-economic background.

Activity 4.5 Identify critical points for intervention to control HPAI.

Activities undertaken during the reporting period

Output 1: Establishment of an HPAI (Epidemiology) Unit in India

Activity 1.1: Establishment of an HPAI (Epidemiology) Unit.

Recruitment of national and international staff

- The Chief Technical Advisor (CTA)/Team Leader/International Epidemiology Expert was recruited in October 2010.
- A temporary International Operations Officer worked for the project from October until the end of December 2010. A permanent International Operations Officer was identified, and the recruitment is pending governmental clearance; the anticipated starting date is April 2011.
- The International Geographic Information System (GIS) Expert is expected to commence duties on 3 April 2011.
- A National Operations Officer (finance/administration assistant) was recruited on 1 January 2011.
- Initially, MoA nominated a candidate for the position of national Project Coordinator, but after a new Joint Secretary was appointed at DADF, this nomination was withdrawn. DADF has now requested to fill the post with a mutually agreed candidate.
- Two national staff candidates (HPAI Epidemiology and HPAI Surveillance) received an offer for this position, but they were unable to obtain the necessary release from their current Government positions and had to decline the offer. The project is considering other candidates for these positions.

Renovation of the building at the Animal Quarantine Certification and Service Station, Kapashera

- All the preparatory work required for renovation of the premises assigned to the project by the Government of India is completed. The necessary budget revision was cleared by the United States Agency for International Development (USAID) in November 2010. All technical specifications were cleared by FAO Rome in March 2011. The renovation work was retendered mid-March 2011. It is anticipated that a contract with preferred bidder will be

signed in April 2011. The renovation should be completed by August 2011.

- The HPAI (Epidemiology) Unit will commence working from the Animal Quarantine and Certification Services (AQCS) station in April in a temporary office space. Procedures to purchase equipment for the office commenced in late February 2011.

Activity 1.2 Coordination of the country programme.

- To ensure full cooperation and collaboration with the Government of India, regular contact was maintained with all the officials of DADF. The new Joint Secretary of DADF was updated on the progress of the project regularly. The Joint Secretary was also invited by FAO to represent India at a regional ECTAD meeting in Bangkok in January 2011. Meetings were held with USAID India to inform about the status of the project, the animal disease situation and the Government Veterinary Service capacities.

Activity 1.3 Management and operations support.

- Frequent meetings were held and technical meetings and workshops attended to provide support to the Government of India.

Activity 1.4 Capacity building in project/programme management.

- The Joint Secretary was supported with managerial and technical matters in India and during an overseas meeting.

Output 2: Improved epidemiological capacity within DADF, MoA of India

Activity 2.1 Conduct FETPV.

- The senior regional epidemiologist in charge of the regional FETPV programme visited India twice in the reporting period. Meetings were held with ten stakeholders and organizations to explore future partnerships.

Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray surveillance, Indonesia for PDSR and Viet Nam for grassroots level surveillance).

- The Government of India was officially contacted to nominate eight policy makers and technical staff to visit Viet Nam and Thailand in May 2011. The Governments of Thailand and Viet Nam were contacted and agreed to the visit. In both Thailand and Viet Nam, a national coordinator was appointed.

Activity 2.4 Conduct trainings for grassroots level disease detection and reporting (e.g. community based animal health workers).

- In March 2011, the CTA/TL and national operations manager visited Agartala and Tripura and studied the outbreak response of the HPAI outbreaks in the area. The findings will aid in identifying gaps in the current disease surveillance, which will be addressed in future trainings.

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

- The Government of India was officially contacted to nominate two technical staff to undergo an advanced 3-month epidemiology training in New Zealand from June until August 2011.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.1 Develop a grassroots level surveillance programme.

- FAO studied the three currently existing surveillance programmes in India and recommendations for improvement are forthcoming. Assistance was provided in the process

of preparing for a Government official to travel to Thailand to learn about the Thai X-ray surveillance programme.

Activity 3.2 Undertake structured virus isolation and characterization.

- FAO had requested from the Government of India to undertake structured virus isolation and characterization at the High Security Animal Disease Laboratory, Bhopal of the isolates from the Agartala HPAI H5N1 outbreaks.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

Activity 4.3 Conduct data analysis for mapping disease outbreaks and distribution of virus clades.

- Current and past HPAI outbreaks were mapped. Virus clade identification and phylogenetic tree analysis is pending.

Activity 4.4 Define infection and transmission dynamics in the context of the various poultry farming systems and socio-economic background.

- This research was initiated and will continue.

Activity 4.5 Identify critical points for intervention to control HPAI.

- Report was submitted for technical clearance.

Planned activities for the next six-month period

Output 1: Establishment of an HPAI (Epidemiology) Unit in India

Activity 1.1 Establishment of an HPAI (Epidemiology) Unit.

- Complete the recruitment of international/national staff and the renovation of the building at AQCS station, Kapashera. Move the Epidemiology Unit from its current building to AQCS station and launch its official opening.

Output 2: Improved epidemiological capacity within DADF, MoA of India

Activity 2.1 Conduct FETPV.

- A third visit by the regional senior epidemiologist is planned for May 2011, to recruit trainers and lectures. The first one month training course will be held in August for 30 participants.

Activity 2.2 Conduct outbreak investigation courses for Field/District Veterinary Officers.

- Develop the curriculum and training materials.

Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray surveillance, Indonesia for PDSR and Viet Nam for grassroots level surveillance).

- Conduct a study tour to Thailand and Viet Nam with eight government officials.

Activity 2.4 Conduct trainings for grassroots level disease detection and reporting (e.g. community based animal health workers).

- Develop the curriculum.

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

- Provide training to two technical staff from MoA in advanced epidemiology at Massey University, New Zealand, from June until August 2011.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.1 Develop a grassroots level surveillance programme.

Activity 3.2 Undertake structured virus isolation and characterization.

- Undertake structured virus isolation and characterization for the HPAI outbreaks from Agartala.

Activity 3.3 Establish a disease information system dedicated to HPAI.

- Organize an expert visit to the Project Directorate on Animal Disease Monitoring and Surveillance in Bangalore to assess the current disease information system and recommend enhancements. Assess the need for a disease information system dedicated to HPAI, based on the existing systems and the frequency of HPAI outbreaks.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

Activity 4.3 Conduct data analysis for mapping disease outbreaks and distribution of virus clades.

- Depending on the HPAI situation, conduct this activity at the national or regional level at the Epidemiology Unit.

Activity 4.4 Define infection and transmission dynamics in the context of the various poultry farming systems and socio-economic background.

- Depending on the HPAI situation, undertake this activity at the national or regional level at the Epidemiology Unit.

Activity 4.5 Identify critical points for intervention to control HPAI.

- Depending on the HPAI situation in the reporting period, perform analysis using data gathered prior to this reporting period and the current data.

Main challenges encountered and response provided

- Delay in the clearances for recruitment of international staff from the Government of India was resolved after productive meetings with the Regional Manager and renewed correspondence with the FAO Representative. Government clearance for the international Operations Officer is expected in April 2011.
- Delays in the renovation process of the AQCS station Kapashera owing to the pending FAO technical clearance were resolved.
- Delays in national staff hiring, owing to selected candidates not been released from their Government positions. Other candidates are being considered for the positions.
- Activity 4.1 (Study the poultry value chains to include wet markets) and Activity 4.2 (Map the farming sectors and socio-economic background along the market and value chains) could not be carried out in the reporting period, as the money allocated for this project will be used for the renovation of the AQCS Kapashera offices. These studies are expected to be conducted during the next funding cycle.

Main progress made towards the achievement of project outcomes (from the start of the project activities)

- Signing of the project document of the USAID project OSRO/IND/802/USA.
- Government support in the establishment of an HPAI Epidemiology Unit received.
- Recruitment of international staff.
- Research in HPAI started.

Project Monitoring Sheet: **OSRO/IND/802/USA**

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India

Reporting period: March 2011 - September 2011

Country: India
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India
Code: OSRO/IND/802/USA
Budget: USD 1 220 000 (Phase I)
Total budget: USD 3 000 000 ¹
Effective starting date: 28 June 2010
Planned end date: 30 June 2013
<p>Context of the project</p> <p>This project will focus on the eastern Indian states of Assam and West Bengal in the short term with a longer-term capacity building of animal health personnel, especially in the field of surveillance, epidemiological analysis and in-depth disease investigation. The project focuses on understanding the dynamic patterns of the poultry production systems, value/supply chains and trade in poultry and poultry products within India.</p> <p>The project is expected to provide information on infection and transmission dynamics of the Highly Pathogenic Avian Influenza (HPAI) virus in the local environment where the virus persists and to consolidate the capacity to establish and conduct risk-based surveillance programmes. The aim of building capacity to strengthen surveillance and epidemiological analysis will lead to an improved tracking of the HPAI virus movement, greater virus isolations and better molecular information on the HPAI virus evolution. Such information is critical for rational and targeted control of HPAI. With the strategic inputs in the project, the country would be better placed to take a leadership role in supporting regional efforts to control HPAI.</p>
<p>Objectives of the project</p> <p>The project aims to build capacity to improve surveillance and epidemiological analysis within the Central and State Veterinary Services. The overall objective of the programme is to contribute to the elimination of the threat posed by HPAI by controlling the disease in poultry, such that India no longer presents a risk for the development of human pandemic influenza from the H5N1 virus.</p>
<p>Planned activities</p> <p>Output 1: Establishment of an HPAI (Epidemiology) Unit in India</p> <p>Activity 1.1 Establishment of an HPAI (Epidemiology) Unit.</p> <p>Activity 1.2 Coordination of the country programme.</p> <p>Activity 1.3 Management and operations support.</p> <p>Activity 1.4 Capacity building in project/programme management.</p> <p>Output 2: Improved epidemiological capacity within the Department of Animal Husbandry, Dairying and Fisheries (DAHD), Ministry of Agriculture (MoA) of India</p> <p>Activity 2.1 Conduct Field Epidemiology Training Programme for Veterinarians (FETPV).</p> <p>Activity 2.2 Conduct outbreak investigation courses for Field/District Veterinary Officers.</p> <p>Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray surveillance, Indonesia for participatory disease surveillance and response [PDSR] and Viet Nam for grassroots level surveillance).</p>

¹ This project has a three year duration. Total budget of USD 3 000 000 is subdivided as follows: USD 1 220 000 for year I, USD 948 134 for year II and USD 831 866 for year III. Funds have been committed for year I only; activities planned for years II and III will be implemented based on project performance and fund availability.

Activity 2.4 Conduct training for grassroots level disease detection and reporting (e.g. community based animal health workers).

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.1 Develop a grassroots level surveillance programme.

Activity 3.2 Undertake structured virus isolation and characterization.

Activity 3.3 Establish a disease information system dedicated to HPAI.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

Activity 4.1 Study the poultry value chains to include wet markets.

Activity 4.2 Map the farming sectors and socio-economic background along the market and value chains.

Activity 4.3 Conduct data analysis for mapping disease outbreaks and distribution of virus clades.

Activity 4.4 Define infection and transmission dynamics in the context of the various poultry farming systems and socio-economic background.

Activity 4.5 Identify critical points for intervention to control HPAI.

Activities undertaken during the reporting period

Output 1: Establishment of an HPAI (Epidemiology) Unit in India

Activity 1.1: Establishment of an HPAI (Epidemiology) Unit.

Recruitment of national and international staff

- The International Geographic Information System (GIS) expert was recruited and commenced his duties on 3 April 2011.
- The International Operations officer was recruited in April 2011, working from the Food and Agriculture Organization of the United Nations (FAO) office in Rome and joined the team in India on 9 August 2011 upon receipt of Government clearance.
- Three national staff candidates (national Project Coordinator, HPAI Epidemiology and HPAI Surveillance) were selected and received an offer to join FAO. It is expected that they will be released from their current Government position early October.

The complete team is expected to be fully functional from October 2011.

Renovation of the building at the Animal Quarantine Certification and Service Station, Kapashera

- All the preparatory work required for renovation of the premises was completed during the reporting period. The renovation work was retendered mid-March 2011. The local procurement committee approved procedures and the contract with the preferred bidder was signed on 16 September 2011. The renovation should be completed by January 2012.
- The HPAI (Epidemiology) Unit started working from the Animal Quarantine and Certification Services (AQCS) station in April 2011 in a temporary office. Procedures to purchase office and specialized epidemiology equipment are continuing.

Activity 1.2 Coordination of the country programme.

- To ensure full cooperation and collaboration with the Government of India, regular contact was maintained with all the officials of DADF. The new Joint Secretary of DADF was updated on the progress of the project regularly. Meetings were held with the United States Agency for International Development (USAID) India to inform about the status of the project, the animal disease situation, the upcoming FETPV and the Government Veterinary Service capacities.

Activity 1.3 Management and operations support.

- The project ensured alignment of national animal disease control strategies at the local level under the regional and global frameworks: by interacting with local partners (MoA), regional partners -the South Asian Association for Regional Cooperation (SAARC) and the FAO

regional support unit, and globally with the World Organisation for Animal Health (OIE) under the Global Framework for Transboundary Animal Diseases (GF-TADs).

Activity 1.4 Capacity building in project/programme management.

- The Joint Secretary and the Animal Husbandry Commissioner were technically supported in India and before overseas meetings.
- There was continued collaboration with partners (the Centre for Disease Control (CDC), the World Health Organization (WHO) and the International Livestock Research Institute [ILRI]) regarding issues of reduction of recurring highly pathogenic emerging diseases (including HPAI) and transboundary animal diseases threats.

Output 2: Improved epidemiological capacity within DADF, MoA of India

Activity 2.1 Conduct FETPV.

- The senior regional epidemiologist in charge of the regional FETPV programme visited India three times in the reporting period.
- The National Institute of Epidemiology at Chennai has been selected as partner to implement FETPV with FAO and the DADF.
- The DADF nominated 70 veterinarians to be enrolled in the programme.
- A high-level consultation meeting was held to inform and obtain endorsement of participants of the MoA, the Veterinary Council and other human and public health institutions.
- The first three-week FETPV will be conducted in February 2012 for 20 students from the Eastern States.

Activity 2.2 Conduct outbreak investigation courses for Field/District Veterinary Officers.

- The FETPV will conduct outbreak investigation field training starting in February 2012.
- HPAI surveillance training for 400 state veterinarians will be conducted in October and November 2011.

Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray surveillance, Indonesia for PDSR and Viet Nam for grassroots level surveillance).

- Two policy makers, nominated by the MoA, conducted country visits to study best practices for surveillance (in Thailand for X-ray surveillance and Viet Nam for surveillance and vaccination). A report of the mission is available.

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

- Two technical staff, nominated by the MoA, received advanced epidemiology training at Massey University in New Zealand for three months from June until September 2011.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.1 Develop a grassroots-level surveillance programme.

- FAO studied the existing surveillance programme at Project Directorate on Animal Disease Monitoring and Surveillance at Bangalore. A FAO expert from Rome was recruited to assist in improving the animal disease database system. A one-week training was provided for all staff in Spatial Epidemiology.
- Grassroots level surveillance training will be conducted for 400 state veterinarians in October and November 2011.

Activity 3.2 Undertake structured virus isolation and characterization.

- FAO has requested the Government of India to undertake structured virus isolation and characterization at the High Security Animal Disease Laboratory (HSADL) in Bhopal of the isolates from the Assam and West Bengal HPAI H5N1 outbreaks in August and September

2011. Results are pending.

Activity 3.3 Establish a disease information system dedicated to HPAI.

- An expert visit was conducted to the Project Directorate on Animal Disease Monitoring and Surveillance in Bangalore to assess the current disease information system and recommend enhancements.
- The MOA is developing a computer network surveillance system linking all 60 000 state veterinarians at block level. This system will be functional at the end of 2011. FAO will assess this system and decide if it is still necessary to establish a disease information system dedicated to HPAI.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

- No major improvements in understanding of the epidemiology of HPAI were made in the reporting period owing to:
 - delays in hiring specialized staff; and
 - lack of funding to employ socio-economist to conduct value chain studies.

Planned activities for the next six-month period

Output 1: Establishment of an HPAI (Epidemiology) Unit in India

Activity 1.1 Establishment of an HPAI (Epidemiology) Unit.

- Complete the recruitment of national staff and the renovation of the building at AQCS station, Kapashera. Move the Epidemiology Unit from its current temporary accommodations to the designated renovated building and launch its official opening.
- Continue constructive interaction and technical support with the Government, partners, SAARC, sub-regional and regional FAO offices.

Output 2: Improved epidemiological capacity within DADF, MoA of India

Activity 2.1 Conduct FETPV.

- The first three-week training course will be held in February 2012 for 20 participants at the National Institute of Epidemiology at Chennai. The second course will be held later that year at the National Centre for Disease Control in New Delhi.

Activity 2.2 Conduct outbreak investigation courses for Field/District Veterinary Officers.

- HPAI surveillance training will be held for 50 veterinarians of each of the eight Eastern States of India in October and November 2011.

Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray surveillance, Indonesia for PDSR and Viet Nam for grassroots level surveillance).

- A study tour will be organized for 12 technical staff of the DADF and state veterinarians to Thailand and Viet Nam.

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

- The project will provide training to two technical staff from MoA in advanced epidemiology at an overseas University in 2012.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.2 Undertake structured virus isolation and characterization.

- Undertake virus characterization for the HPAI outbreaks from Assam (August 2011) and West Bengal (September 2012) and all other HPAI events in the reporting period.

Activity 3.3 Establish a disease information system dedicated to HPAI.

- Assess the need for a disease information system dedicated to HPAI depending on the existing

systems (PD ADMAS), the newly State Veterinarian Computer linked system and the frequency of HPAI outbreaks.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

Activity 4.1 Study the poultry value chains to include wet markets.

- In 2012, a socio-economic consultant will conduct a poultry value chains and wet market study.

Activity 4.2 Map the farming sectors and socio-economic background along the market and value chains.

- Under the guidance of the international spatial epidemiologist and with technical inputs from the socio-economic consultant, the national surveillance manager and the national epidemiologist will collect data and map farms and markets.

Activity 4.3 Conduct data analysis for mapping disease outbreaks and distribution of virus clades.

- Depending on the willingness of the Government of India to share data, the Government requests and the HPAI situation, data analysis for mapping disease outbreaks and distribution of virus clades at the national or regional level will be conducted at the Epidemiology Unit.

Activity 4.4 Define infection and transmission dynamics in the context of the various poultry farming systems and socio-economic background.

- At completion of activities 4.1, 4.2 and 4.3, further analytical research will be conducted at the Epidemiology Unit to define infection and transmission dynamics.

Activity 4.5 Identify critical points for intervention to control HPAI.

- Depending on the HPAI situation in the reporting period and the progress of completing the activities 4.1, 4.2, 4.3 and 4.4, further analysis will identify critical points for intervention to control HPAI.

Main challenges encountered and response provided

- Communication with the DADF has been improved through frequent meetings and assistance from the FAO Representative.
- Delays in the renovation process of the AQCS station Kapashera, owing to the pending FAO technical clearance, were resolved.
- Delays in national staff hiring have been experienced, as the selected candidates had not been released from their Government positions. The three candidates who are still awaiting clearance or lien are expected to start work in October 2011.

Main progress made towards the achievement of project outcomes (from the start of the project activities)

- Signing of the project document of the USAID project OSRO/IND/802/USA.
- Government support in the establishment of an HPAI Epidemiology Unit received.
- Recruitment of international staff.
- Research on HPAI started.
- Enhancement of epidemiology capacity in India.

Project Monitoring Sheet: **OSRO/INS/604/USA**

Project Title: **Reinforcement and expansion of the avian influenza participatory disease surveillance and response programme in Indonesia**

Period: **April 2011 - September 2011**

Country: Indonesia
Project title: Reinforcement and expansion of the avian influenza participatory disease surveillance and response programme in Indonesia
Code: OSRO/INS/604/USA
Budget: USD 44.2 million ¹
Effective starting date: 9 June 2006
Planned end date: 31 December 2011
Context of the project The purpose of the project is to enhance the capacity and ability of the Government of Indonesia and partners to control Highly Pathogenic Avian Influenza (HPAI) in order to help safeguard the health and livelihoods of the Indonesian population by providing broadbased support to the Food and Agriculture Organization of the United Nations (FAO) Indonesia HPAI Control Programme, implemented by the Emergency Centre for Transboundary Animal Diseases (ECTAD) Indonesia.
Objectives of the project Output A: Sustainable surveillance, prevention and control of HPAI in village poultry Output B: Improved biosecurity and vaccination practices in commercial sectors Output C: Improved HPAI surveillance and control along the poultry marketing chain Output D: Engagement with duck producers for improved control of HPAI Output E: Sustainable virus monitoring and vaccine development Output F: Coordinated and enhanced management of the HPAI control programme
Planned Activities Output A: Sustainable surveillance, prevention and control of HPAI in village poultry <i>A.1 Maintain, develop and adapt local government prevention, passive surveillance and outbreak control capacity for village poultry across endemic areas of Indonesia, prioritized by level of HPAI risk; manage a staged transition of costs to local government</i> <i>A.2 Strengthen the capacity of Puskesmas (animal health centres) by integrating the Participatory Disease Surveillance and Response (PDSR) approach; pilot system first in ten Puskesmas animal centres</i> <i>A.3 Increase local government veterinary service competency to detect, diagnose, report and control other animal diseases of zoonotic and economic importance in villages</i> <i>A.4 Develop locally-realistic methods and communication materials for prevention and control of HPAI and other animal diseases of zoonotic and economic importance to enable communities to make informed decisions together and supported by local government</i> Output B: Improved biosecurity and vaccination practices in commercial sectors <i>B.1 Provide specialized technical support to selected layer farmers to enhance production efficiency and quality of layer vaccination and biosecurity measures</i> <i>B.2 Support local government veterinary and laboratory services to engage more effectively with poultry farmers on disease prevention and outbreak investigations (a local government commercial poultry veterinary programme [PVUK])</i> <i>B.3 Facilitate trial of private sector-funded compensation programme</i> <i>B.4 Facilitate government and industry to establish a functional public-private partnership via the National</i>

¹ The breakdown of the total contribution is as follows: USD 4 million for first year (June 2006–May 2007), USD 11 million for second year (June 2007–May 2008), USD 2.7 million for interim extension (June –September 2008), USD 7.5 million for third year (October 2008–May 2009), USD 11 million (June 2009–September 2010) and USD 8 million (October 2010–September 2011).

Poultry Quality Improvement Programme (NPQIP), including regular Biosecurity Coordination meetings
B.5 Evaluate effectiveness of biosecurity measures implemented by poultry producers
B.6 Facilitate design of local government-implemented poultry farm profiling and certification system
B.7 Assist central government to monitor commercial poultry producer compliance with avian influenza (AI) vaccination regulations

Output C: Improved HPAI surveillance and control along the poultry marketing chain

C.1 Support local government to conduct longitudinal surveillance and trace-back for H5 subtype virus and HPAI in live bird markets (LBMs), collector yards and slaughterhouses
C.2 Support implementation of minimum standards of biosecurity and sanitation in selected LBMs, collector yards and slaughterhouses
C.3 Facilitate poultry market restructuring with emphasis on food safety in DKI Jakarta and surrounding areas
C.4 Explore mechanisms to improve interprovincial movement control out of HPAI high-risk provinces

Output D: Engagement with duck producers for improved control of HPAI

D.1 Assess role of ducks in the epidemiology of HPAI in selected areas of Java
D.2 Conduct duck vaccination field trial in one identified high-risk HPAI-endemic area

Output E: Sustainable virus monitoring and vaccine development

E.1 Assist public and private sectors to develop a centrally-managed system to monitor circulating viruses and sustain vaccine efficacy
E.2 Increase knowledge of best practices for AI vaccination in poultry

Output F: Coordinated and enhanced management of the HPAI control programme

F.1 Facilitate implementation of integrated HPAI control plan on one island where the HPAI situation is considered readily controllable
F.2 Strengthen government capacity to conduct veterinary services training and continuing education
F.3 Improve competencies of local government decision-makers to manage sustainable and effective HPAI control programmes and to promote understanding of the economic impact of animal diseases on livelihoods and public health
F.4 Assist central and local governments to design and implement a national veterinary service strategy
F.5 Develop and integrate emerging databases into the national veterinary information system
F.6 Provide technical assistance for establishment of local cold chain capacity
F.7 Increase public visibility of the HPAI control programme
F.8 Provide operational support to enable implementation of the ECTAD Indonesia programme

Activities undertaken during the reporting period

Output A: Sustainable surveillance, prevention and control of HPAI in village poultry

A.1 Maintain, develop and adapt local government prevention, passive surveillance and outbreak control capacity for village poultry across endemic areas of Indonesia, prioritized by level of HPAI risk; manage a staged transition of costs to local government

- A modified PDSR approach for low HPAI incidence areas was developed for Papua and the Introductory I training was carried out in March 2011. As a follow up, the Introductory II training was carried out for 21 participants in July 2011. This training equipped the PDSR to recognize and control an HPAI outbreak, but they were also given guidance on how to recognize hog cholera (a priority disease locally) in order to sustain surveillance in the absence of HPAI. All training costs were funded by the Papua provincial government.
- Introductory I and II trainings (14 persons) and Continuing Education A and B (13 persons) took place in Samarinda, East Kalimantan. All training costs were covered by the local government.
- West Bandung district continued to support PDSR officers from its own budget: Introductory I and II training for 15 participants, and Continuing Education B for 10 participants were carried out.
- PDSR refresher training for 29 participants in DKI Jakarta reviewed experiences and introduced the Participatory Community Engagement (PCE) communication modules.
- The Local Government (LG) team worked with the Market team to carry out a training-of-trainers

(ToT) for 15 Market Surveillance Private Sector Partnership (PSP) and Cleaning and Disinfection (C&D) Officers in Jabodetabek who were trained as facilitators.

- Master Trainers (MTs) assisted in all trainings. This included the three MTs working at the national level, and requests were sent to the respective local government offices for several local MTs to assist in the various trainings. This strengthened the training skills of the MTs and improved their understanding of the broader HPAI control programme.

A.2 Strengthen the capacity of Puskesmas (animal health centers) by integrating PDSR techniques; pilot system first in ten Puskesmas

- The development of *Puskesmas*-focused training was delayed while awaiting clear guidance from the Directorate of Animal Health (DAH). However, the required PCE material was developed and tested and is now ready to train *Puskesmas* veterinarians in communication and participation. The PCE modules were used in PVUK training, rapid response training of PDSR in Bali and with the DKI Jakarta refresher training in Bogor.

A.3 Increase local government veterinary service competency to detect, diagnose, report and control other animal diseases of zoonotic and economic importance in villages

- Seven standard operating procedures (SOPs) to guide the rabies control programme were drafted with stakeholders in Bali and subsequently approved by the Directorate General of Livestock and Animal Health Services (DGLAHS). PDSR expertise developed through the HPAI control programme was leveraged to strengthen the rapid response and post-vaccination surveillance components of the rabies control programme.
- Building on the PDSR and Local Disease Control Centre (LDCC) systems used for HPAI control, a model for rabies eradication in Indonesia is being gradually developed based on the experiences in Bali.
- Assisted DAH to develop a draft work plan to support implementation of the new National Veterinary Service (NVS) system. Components of the NVS system were piloted in the Bali rabies control programme.
- Based on the HPAI control strategy and lessons learned from field implementation, specific parameters were proposed by ECTAD Indonesia for revising the PDSR system to enable more effective control of HPAI in village poultry and the ability to detect and report other animal diseases of importance. The proposal will be discussed further with DAH before moving to the next phase of information system and training programme revision.

A.4 Develop locally-realistic methods and communication materials for prevention and control of HPAI and other animal diseases of zoonotic and economic importance to enable communities to make informed decisions together and supported by local government

- Discussed the development of communication strategy to pass information from the central government to commercial poultry farmers through the LDCC system with the Commercial Poultry Health team. It was concluded that there was a need for increased mutual trust first between the Government and the poultry farmers before such strategy can be developed.
- Completed and distributed Information, Education and Communication (IEC) material as part of piloting the NVS concept in Bali. The NVS concept in Bali was shifted to rabies, as it is the main zoonosis there and the most appropriate disease to target for NVS pilot implementation. IEC work in Bali included:
 - Developed and produced 110 sets of "Vaccination helps to prevent rabies" flipchart to support rapid response team and extension workers in conducting community education sessions on rabies awareness.
 - Developed and produced 6 000 "Have you vaccinated your dogs?" posters to promote the second round of mass dog vaccination.
 - Developed and produced 2 000 rabies factsheets, both in Bahasa Indonesia and English, to help raise community awareness on rabies and its control.
 - Developed and produced three radio announcements on rabies and the mass dog vaccination campaign in Bali, working together with a private local radio station.
- Reviewed the existing communication materials with the Local Government/PVUK team in relation to the proposed changes in PDSR and development of NVS. It was agreed that some of the existing materials also addressed problems in commercial poultry, and were therefore still relevant. The need

to develop new materials would be determined through direct discussion with commercial farmers and PVUK officers.

- Production of a disease transmission video for sector 3 layer farm workers was discussed with the commercial poultry health team; the video would be based on the interviews conducted in January 2011 with farmers. A listing of transmission risks in such farms was compiled, and the format of the film determined. The storyboard for the video will be developed, pending the approval of SOPs for good practices to control disease transmission.

Output B: Improved biosecurity and vaccination practices in commercial sectors

B.1 Provide specialized technical support to selected layer farmers to enhance production efficiency and quality of layer vaccination and biosecurity measures

- Assessment report for each farm was completed and reviewed with each farmer individually.
- A management plan meeting was conducted in Solo. Each farmer's top priorities were identified and approved. A technical management and health plan (non-biosecurity issues) for each farm was developed and approved.
- Specific technical support and advice were provided to participating layer farmers to resolve inconsistencies in vaccination and management practices.
- In response to the weak data management encountered on each farm, a poultry production management database was designed, tested, trained and installed in computers on each farm.
- The Commercial Poultry Health (CPH) team engaged with farmers and other stakeholders in the commercial poultry industry at industry workshops and conferences by giving presentations and distributing materials on best practices for vaccination against HPAI in poultry.

B.2 Support local government veterinary and laboratory services to engage more effectively with poultry farmers on disease prevention and outbreak investigations (PVUK programme)

- Three levels of PVUK training for government staff to support commercial poultry farmers were developed and tested. All 40 PVUK officers were trained in Levels 1 and 2 and commenced working in the field. In general, the poultry farming community was very positive towards the programme. Twenty-five PVUK officers from Lampung and Central Java were trained in the advanced poultry health skills of Level 3 and commenced conducting poultry health problem investigations and support to poultry vaccination programmes.
- To establish the relationship between PVUK staff and the commercial sector, representatives of poultry associations and commercial farmers were invited to the opening and closing ceremonies, as well as to observe many of the PVUK training courses. A stakeholder meeting was held in Lampung for 19 farmers following the training to discuss future opportunities for the PVUK programme.
- The technical modules were developed with the assistance of the CPH team, who have also assisted with the Level 3 training.
- Twenty-three data managers for PVUK, representing all provinces and districts in the pilot programme, were trained in data entry from the PVUK forms and general usage of the PVUK database.
- Two joint mentoring visits were conducted by FAO and the Campaign Management Unit (CMU) to observe and support the PVUK officers, as they implement the pilot programme.

B.3 Facilitate trial of private sector-funded compensation programme

- The newly established National Poultry Health Committee (see below) includes a compensation trial as a component of the national programme; however, partner private sector participants have not yet been identified.
- During FAO's HPAI programme planning workshops with stakeholders, it was agreed that efforts to establish a private sector-funded compensation programme must continue as a disease control priority despite limited progress thus far. Efforts to establish a pilot under the umbrella of the National Poultry Health Committee will continue during the next project cycle.

B.4 Facilitate government and industry to establish a functional public-private partnership via NPQIP, including regular Biosecurity Coordination meetings

- This activity was implemented in close collaboration with the United States Department of Agriculture (USDA). To facilitate collaboration between the public and private sectors, NPQIP was taken forward

by the *Asosiasi Dokter Hewan Perunggasan Indonesia* (Indonesian Poultry Veterinary Association [ADHPI]) and further developed into the *Komite Kesehatan Unggas Nasional* (National Poultry Health Committee [KKUN]) following an agreement between the DGLAHS and the commercial poultry industry. KKUN is comprised of the commercial poultry industry, government and academia with the vision of strengthening and increasing the competitiveness of national poultry production. The committee aims to coordinate the interests and promote collaboration between the fields of the poultry industry, government and academia; provide recommendations to policy-makers on regulations, standards and solutions of national poultry health problems; and encourage stakeholders to improve poultry health so that the resulting poultry products will be of higher quality in terms of both production efficiency and safety. KKUN also aims to oversee continuing education for private sector poultry veterinarians and test the private sector-funded culling compensation programme as described above.

- During FAO's HPAI programme planning workshops, stakeholders agreed to establish an MT development programme for private-sector based veterinarians. This new activity will be supported in the next project cycle under the auspices of the National Poultry Health Committee.

B.5 Evaluate effectiveness of biosecurity measures implemented by poultry producers

- Continued monitoring the implementation of management plans as agreed on each farm for Phase I of the cost-effectiveness study.
- Continued monitoring the implementation of the study of farmer's perception and decision-making (Phase I).
- Analysed data and finalized draft baseline report on biosecurity cost-effectiveness study.
- Finalized report on farmers' perception and decision-making study. Findings from this study are now being taught in the PVUK training program and are also being used to inform the design of outreach materials for poultry farmers.
- Conducted bacteriological sampling of participating farms to complete Phase I sample collection.
- Polymerase chain reaction (PCR) testing for influenza viruses was conducted at all participating farms with all samples negative. Owing to these results, PCR testing for influenza viruses will not be conducted in subsequent phases of the study.

B.6 Facilitate design of local government-implemented poultry farm profiling and certification system

- This activity was integrated within the pilot of the PVUK programme as reported in the previous project progress report. Additional commercial farm profiling was implemented by local governments in western Java with support from the Indonesia Dutch Partnership (IDP) project, however data from this profiling is not yet available at the national level.

B.7 Assist central government to monitor commercial poultry producer compliance with AI vaccination regulations

- This activity has been underway in collaboration with the joint World Organization for Animal Health (OIE)/FAO worldwide scientific network for the control of AI (OFFLU)-related activities. The CPH team actively participated in the Indonesian Livestock Exposition 2011 in Surabaya, sharing best practices for vaccination with farmers and gathering feedback on vaccine usage on farms.
- Level 3 training for the PVUK pilot programme included guidance from DAH on DGLAHS vaccination regulations, as well as best practices for vaccination identified by the CPH team. PVUK will continue to support vaccination policy compliance via increased competence and stronger communication with commercial poultry farmers during the next project phase.

Output C: Improved HPAI surveillance and control along the poultry marketing chain

C.1 Support local government to conduct longitudinal surveillance and trace-back for H5 subtype virus and HPAI in LBMs, collector yards and slaughterhouses

- Conducted monthly LBM surveillance in Jabodetabek area and collected 201 samples from 262 listed markets.
- Identified and selected the best H5-positive samples from the LBM surveillance study for virus isolation and sequencing.
- Coordinated with the Disease Investigation Centre (DIC) Subang on the technical and logistic aspects of shipment of LBM surveillance samples for virus isolation.

- Epidemiology consultant was successfully recruited to complete analysis of collector yard surveillance study. Identified samples from the collector yard study which needed to be retested by the laboratory.
- Updated LBM profiling database for the revision of the LBM surveillance design planned for the next project cycle.
- Provided recapitulation and complete analysis of C&D activities at collector yards in Jabodetabek based on monitoring forms collected by the market surveillance officers.
- Conducted site inspection at LBMs as a basis for developing a monitoring form on C&D activities in LBMs.
- Conducted monthly coordination and monitoring visits to market surveillance officers and the animal health laboratory in Jabodetabek in order to improve their activity in the field.
- Developed a monitoring form for markets with C&D activities and determined the samples.

C.2 Support implementation of minimum standards of biosecurity and sanitation in selected LBMs, collector yards and slaughterhouses

- Improved facilities at Anyar Market (Tangerang City) and Bonang Market (Tangerang District), followed by training and awareness raising on hygienic carcass processing for poultry vendors at those markets.
- Conducted further supervision of hygienic carcass processing activities at Bonang and Anyar Markets and C&D station operations at Barokah Pitikku Slaughterhouse (Bekasi City), a small private truck cleaning station at Ciseeng (Bogor District), Pulo Gadung and Rawa Keping collector yards in collaboration with PD Pasar and district livestock services.
- Conducted C&D training in collaboration with the World Health Organization (WHO) at eight pilot LBMs: Gunung Kidul DKI Yogyakarta Province, Payakumbuh West Sumatera Province, Malang East Java Province, Pekalongan Central Java Province, Metro City Lampung Province, Sragen Central Java Province, Bontang East Kalimantan Province and Gianyar Bali Province.
- Conducted C&D training for C&D workers at Cibinong and Ciseeng slaughterhouses (Bogor District), Grogol Market (West Jakarta) and HEK Kramatjati Collector Yards (East Jakarta).
- Prepared C&D station designs for Cibinong and Ciseeng slaughterhouses (Bogor district) and Petukangan slaughterhouse (South Jakarta).
- Rehabilitated facilities at poultry markets in Kranggan (Bekasi City), Parung Panjang (Bogor District) and Anyar (Bogor City) markets.
- Conducted a ToT on C&D activities for livestock service officers and cleaning workers for sustainable C&D activities in each district throughout the Jabodetabek area.
- Supported local government to conduct monitoring visits to assess C&D activities at C&D stations, small collector yards and LBMs in Jabodetabek.
- Assisted the CPH team in providing design and analysis of biosecurity practices at selected layer farms in Central Java.
- Conducted site inspection at LBMs as a basis for revising the monitoring form for C&D activities in LBMs.

C.3 Facilitate poultry market restructuring with emphasis on food safety in DKI Jakarta and surrounding areas

- Identified new locations for promotion of “healthy chicken meat” (*ayam ASUH*), cold chain techniques and market activation at Petojo (Central Jakarta) and Grogol (West Jakarta) Markets; a pilot was initiated with selected poultry vendors at Grogol market.
- Conducted an awareness raising workshop on healthy chicken meat (*ayam ASUH*) for 50 participants from the family welfare association at Grogol village in collaboration with the West Jakarta Livestock and Fisheries service.
- Held a workshop and provided recommendations on cold chain design from slaughterhouses to traditional markets based on the Jakarta situation assessment. The findings were validated by representatives of the different stakeholder groups. Research and a trial were also conducted along the cold chain system from poultry relocation centres to traditional markets to determine the cost-effectiveness of small-scale cooling systems for the relocation centres. Cool-box equipment for poultry carcass transportation was adapted, and carcass display systems were introduced in the traditional markets, including trials of high density polyethylene resins (HDPE) plastic insulation and acrylic displays.

- Conducted a training on the importance of good cold chain system design for poultry vendors in Kopro Market and Grogol village (West Jakarta), Petukangan Utara Slaughterhouse (South Jakarta) and a training on proper poultry carcass storage using chilled storage, cold storage and blast freezing in Rawa Kepiting slaughterhouse.
- Established forums and related focus group discussions (FGDs) with key actors and stakeholders to promote additional relocation centres in line with the recommendations made by the Governor of DKI Jakarta.
- Provided technical assistance to local government on how to upgrade the Rawa Kepiting and HEK Kramatjati (East Jakarta) collection yard/slaughterhouse to meet national food safety standards; defined basic layout and adapted national standards to local conditions.
- Conducted the food safety control and inspection pilot programme at seven markets in DKI Jakarta. This included training on food safety for 134 poultry vendors from these markets.
- Facilitated a workshop with public and private stakeholders on the Future of a Healthy Poultry Sector 2011–2015 in Jabodetabek. The workshop indicated the commitment of the Government and private stakeholders to continue with Jakarta market restructuring.
- Provided technical assistance to local government on identification and selection of three collector yards at Pintu Air and HEK Kramatjati (East Jakarta) and five markets at Grogol (West Jakarta), Sukapura and Kelapa Gading (North Jakarta), Ciracas and Klender Perumnas (East Jakarta) as additional relocation centres for the market restructuring programme.
- Conducted communication skills' training for field officers to increase their knowledge and skills on how to communicate intensively as the frontline staff, both of the government and the poultry business stakeholders.

C.4 Explore mechanisms to improve interprovincial movement control out of HPAI high-risk provinces

- Finalized recommendations to local government for redesign of Semanggi collector yard in Surakarta city to reduce risks of native chickens transported to Jakarta.
- Conducted follow-up meeting with Surakarta City Agricultural Service regarding feasibility study results for upgrading of Semanggi collector yard.
- Held an advocacy meeting with the Mayor of Surakarta City to increase local government support for upgrading of the Semanggi collector yard.

Output D: Engagement with duck producers for improved control of HPAI

D.1 Assess role of ducks in the epidemiology of HPAI in selected areas of Java

- Final report produced and circulated to relevant stakeholders.

D.2 Conduct duck vaccination field trial in one identified high-risk HPAI-endemic area

- Based on the results of the Java duck study (Activity D.1), vaccination of ducks is not justified at this time. Therefore, this vaccination trial was cancelled in agreement with CMU.

Output E: Sustainable virus monitoring and vaccine development

E.1 Assist public and private sectors to develop a centrally-managed system to monitor circulating viruses and sustain vaccine efficacy

- Completed biological and molecular virus characterization of 32 isolates (including sequencing and high-resolution haemagglutination inhibition data for antigenic cartography) from viruses selected from the Round 1 national pre-screening results. Influenza virus data was analysed between the Australian Animal Health Laboratory (AAHL) and with the Indonesian laboratories in support of the continued capacity building efforts and quality assurance. This activity will be ongoing as part of the Influenza Virus Monitoring Laboratory Network in Indonesia. The upload of haemagglutinin gene sequences into the public domain was initiated by AAHL/OFFLU following the confirmation by DGLAHS.
- DICs continue the virus pre-screening process, submitting raw data for the haemagglutination inhibition (HI) assay conducted using cartography antisera on H5-positive fluids isolated from their ongoing diagnostic activities. Round 3 analyses were conducted in August 2011 with identification of ~60 potential candidates representing six of the eight labs for further antigenic characterization. DIC Subang's participation in the AI Laboratory Network was formalized, and on-site support visits for

data analysis and evaluation of procedures for virus isolation, pre-screening and high-resolution HI data for cartography (DIC Wates) were conducted in May and August 2011.

- A Laboratory Network meeting with bench side work and joint data analysis was jointly conducted (FAO-OFFLU/AAHL) for sequencing partners in support of the effort to monitor antigenic variation of circulating viruses. Major outcomes include: evaluation of capacity by laboratories, identification of limiting factors, ability to generate comparable sequence data between AAHL and partner participating laboratories and identification of reagent requirements. DAH confirmed the selection of Pusvetma as the primary laboratory for sequencing of viruses identified through the AI Laboratory Network in July 2011.
- Supported participation of the DIC Representative at the Regional Training Course on Advanced Bioinformatics and Laboratory Data Management for Enhanced Quality Assurance and Quality Control at the International Atomic Energy Agency (IAEA) and FAO Agriculture and Biotechnology Laboratory in Vienna/Seibersdorf, Austria, in July 2011.
- Contributed to the development of a free-standing web-based module for the recoding, sharing and networking of all DIC results for antigenic analysis (to be called: Infolab Pre-screen); and engaged a working group of DIC staff to contribute to the interface in June 2011.
- Training in Excel and user group development for Infolab Pre-screen conducted for 30 DIC, DKI, Pusvetma, the National Veterinary Drug Assay Laboratory for Indonesia (BPM SOH) and Bbalitvet staff in June 2011.
- The National OFFLU Technical Facilitator coordinated OFFLU activities with representatives from DAH-CMU and other relevant public sector structures and private sector stakeholders. Outputs included: technical support visits to AI network laboratories, assistance with preparing a Material Transfer Agreement (MTA) between DGLAHS and vaccine industry, presentation of OFFLU-related activities at a meeting sponsored by Trobos and the Indonesian Poultry Veterinary Association (ADPHI), compilation of documents required for biological material importation and assistance with joint workshops and meetings.
- Backstopping and ongoing support for the transfer of technology to Indonesia provided by the FAO-OFFLU scientist from July to August 2011. Outputs included technical support visits to AI Network Laboratories and project partners, project planning meetings for evolution of the ECTAD laboratory component, meetings with the DAH and other relevant government officials as needed and with partners for coordination of ongoing activities and preparation of documents needed for importation of reverse-genetic strains to Indonesia.

E.2 Increase knowledge of best practices for AI vaccination in poultry

- Following the DGLAHS announcement in November 2010, characterized isolates selected as candidate vaccines (n=4 from Pusvetma) and challenge viruses (n=2 from BPM SOH) were distributed to each of four national vaccine manufacturers (Sanbio, Caprifarmindo, Vaksindo and Medion) under an MTA between each of the companies and the Ministry of Agriculture (MOA).
- Preparations were made for a focus group meeting on vaccines and vaccination to be held during the next project cycle in November 2011.
- Preparation was ongoing for documents in support of importing reverse genetic virus strains generated at the USDA's Southeast Poultry Research Laboratory (SEPRL) (which generate protective titres, significantly reduce virus shedding and provide equivalent protection against challenge viruses selected in the November 2009 Technical Meeting as compared to conventional inactivated vaccines generated using the same seed strains). This included planning for SEPRL to provide assistance to MOA designated laboratories for the preparation of vaccine master seeds from reverse genetic (RG) H5N1 AI constructs provided through the project and to provide didactic and on-site challenge test training for efficacy and potency determination in order to demonstrate efficacy and potency of vaccines for the purposes of registration and licensing.
- Preparations continued to update the recommended antigen for serosurveillance in coordination with DGLAHS.

Output F: Coordinated and enhanced management of the HPAI control programme

F.1 Facilitate implementation of integrated HPAI control plan on one island where the HPAI situation is considered readily controllable

- Recommendations for HPAI control were developed and will be discussed with Bali authorities to

develop an integrated HPAI control plan during the next project cycle.

F.2 Strengthen government capacity to conduct veterinary services training and continuing education

- The programme worked closely with the three national MTs allocated to work with the LG team and CMU. These MTs significantly improved their training skills by learning new teaching methods and the processes involved in the development of modules and post-training mentoring.
- Modules to improve training skills were developed and tested. Eight MTs were trained to conduct rabies vaccination campaigns, bringing the number of MTs with improved training skills to 15. These MTs were crucial in the trainings carried out by the FAO LG team for PDSR, PCE and NVS programmes. An additional refresher training for seven MTs was held in Bali to improve confidence in dog handling and management, and this increased their confidence in training others.
- Selection of ten to eleven MTs to assist the LG team in the forthcoming year commenced, and names and performance were assessed for final selection.

F.3 Improve competencies of local government decision-makers to manage sustainable and effective HPAI control programmes and to promote understanding of the economic impact of animal diseases on livelihoods and public health

- Following a consultation meeting with stakeholders from central and local governments, FAO technical advisors met and agreed on the design of a new module for Decision-maker Meetings (DMM) which will assist disease controllers in the local government to make more evidence-based and efficient decisions for allocation of limited resources for HPAI control activities. Development of the new module is now underway and will be introduced in DMMs during the next project cycle.
- No DMMs were held during this reporting period, however they will continue during the next project phase with the inclusion of the new module described above.
- A national meeting of LDCC Coordinators was held in May 2011 to review current disease control strategy, future training plans, proposals for increasing local government funding of HPAI control activities and strategic reduction of FAO-based financial support for PDSR activities in line with HPAI risk in village poultry. Following agreement of all coordinators, FAO officially announced to DGLAHS that DSA for PDSR would be reduced by 33 percent and that support to PDSR field activities would be reduced during low-risk times of the year in areas with seasonal HPAI outbreaks.

F.4 Assist central and local governments to design and implement a national veterinary service strategy

- Guidelines on NVS, establishment by the Veterinary Authority, and the appointment of the Authorized Veterinarian were discussed between DGLAHS and the Ministry of Internal Affairs (MOIA). The content of the guidelines was approved in principle by MOIA. The next step is for the technical team to finalize the guidelines.
- Guidelines for the Control Strategy for rabies, anthrax, brucellosis and hog cholera were drafted and discussed between the DGLAHS NVS Task Force and FAO. The plan is to stipulate the guidelines in a DGLAHS Decree.
- Guidelines for the Issuance of Veterinary Certificates were drafted and discussed by the DGLAHS NVS Task Force and FAO. The plan is to discuss further with representatives of Dinas Peternakan West Java and Jabodetabek and stipulate the guidelines in a MOA Decree.

F.5 Develop and integrate emerging databases into the national veterinary information system

- The single page surveillance form (Animal Disease Surveillance) was developed and is being field tested in PVUK and rabies programmes.
- Participated in DAH workshop on development of the updated clinical surveillance database of the National Animal Health Information System (SIKHNAS) in Bandung.
- Further progress on this task is pending further development of the SIKHNAS system and results of field testing.

F.6 Provide technical assistance for establishment of local cold chain capacity

- Continued to provide technical support for cold chain training to local government staff and capacity strengthening in Bali province.
- Provided advice to cold chain MTs on best practices for maintaining optimal vaccine temperature in cooler boxes during field vaccination activities.
- Assisted with coordination between WHO, JSI-Deliver and provincial government for delivery of cold chain equipment for Bali local authorities.

F.7 Increase public visibility of the HPAI control programme

- Completed content and design for the ECTAD Indonesia Annual Report.
- Participated in the Indonesia Livestock Exposition 2011 in Surabaya. The Communication team and CPH teams displayed supporting materials, project photos and videos at the exhibition, as well as presented two technical sessions for the visitors on updates of the HPAI situation in Indonesia and poultry health consultations.

F.8 Provide operational support to enable implementation of the ECTAD Indonesia programme

- Letters of Agreement and Service Contracts were signed with partner organizations and vendors to facilitate various project activities, which included market rehabilitation works in Anyer, Parung Panjang and Kranggan located within the Jabodetabek area, laboratory testing of samples in support of market surveillance activities and commercial poultry health studies, and training of government officials in implementing SOPs for poultry collection and slaughtering.
- The renewal process for vehicle registration for 632 motorcycles and 39 cars continued.
- In line with technical activities implemented during the period, project personnel were recruited, and various project equipment/supplies were procured and distributed.

Main challenges encountered and response provided

The most significant challenge faced this reporting period was planning for implementation of the next project cycle despite delays in project clearance by the Indonesian Government and transfer of funds from the new project, as well as the increased technical and operational support required for the new Bali rabies control programme. This core challenge was addressed in the following ways: (1) recruitment of additional national staff and one international advisor to support the rabies control programme; (2) empowering and supporting central and local government staff to assume greater responsibility for management of HPAI and rabies programme activities; (3) ensuring that field activities for HPAI control activities continue into the next project cycle, while official clearance of the project document by the Indonesian Government is pending; and (4) enabling national staff to continue supporting HPAI control programme activities despite international advisors being absent at the onset of the next project cycle. The delay of funds transfer is more challenging to overcome; without funds from the new project being made available to the field in a timely manner, some field activities will have to be suspended. Considering that HPAI control prevention efforts during the month of October are critical for reducing the subsequent surge of cases at the onset of the influenza season in Indonesia, delay in project approval by the Indonesian Government, fund transfer and activity implementation will likely have immediate detrimental impacts for both public health and poultry production in Indonesia with a concomitant increase in pandemic risk.

Main progress made towards the achievement of project outcomes (from the start of the current project phase)**Output A: Sustainable surveillance, prevention and control of HPAI in village poultry**

- Activities have been designed to increase passive surveillance of HPAI. As active surveillance activities will be reduced, the PDSR and other local government staff will be trained to work closely with villages to encourage village-based solutions to HPAI prevention and control.
- There is now strong commitment, support and integration at the local government level (e.g. between the LDCC and provincial/district livestock services) in animal health and HPAI disease control programmes as a direct result of the FAO project.
- The PDSR programme has strengthened veterinary services capacity to detect and respond to HPAI outbreaks in village poultry throughout HPAI-endemic areas of Indonesia.
- The LDCC system has enabled more effective communication and coordination between central and local governments within the highly decentralized Indonesian governance system.
- Additional local governments have allocated funding specifically to support the establishment and operations of LDCC and PDSR activities, thereby contributing to sustainable disease control.
- Parameters for the next version of the PDSR system design were developed based on current HPAI control strategy and lessons learned.

Output B: Improved biosecurity and vaccination practices in commercial sectors

- The commercial poultry health programme team has built rapport and trust with participating farmers, ensuring a healthy veterinarian-client relationship required for further progress in improving biosecurity and vaccination practices in commercial sectors.

- The understanding of the role of commercial poultry production in the maintenance and spread of HPAI has improved.
- The PVUK pilot programme has been developed in close collaboration with farmers, central and local governments in order to improve communication and cooperation between farmers and local government animal health services.
- Government-farmer communication and cooperation have improved in PVUK pilot areas.
- Databases profiling the commercial poultry farms in each pilot district have been established by district livestock services.
- Public sector collaboration with commercial poultry producers has been accelerated. In particular, public sector disease controllers and international agencies are both more aware of the complexity of commercial poultry production in Indonesia and more engaged with private sector stakeholders involved in commercial poultry production.
- As CPH programme activities have shown, one of the key constraints poultry farmers are facing is a very limited capacity to track and interpret their farm's productivity and profit. Training and engagement activities are being adjusted to directly address this fundamental weakness.
- Best practices for commercial poultry vaccination have been identified based on both technical and practical field considerations. These best practices are being advocated regularly to farmers and other commercial poultry stakeholders.

Output C: Improved HPAI surveillance and control along the poultry marketing chain

- Test results from the DKI Jakarta category B animal health laboratory were distributed to all livestock services at district level throughout Jabodetabek to increase local government awareness and responsiveness to market chain contamination and veterinary public health issues.
- A targeted research activity to test collector yard-based surveillance methods to assess relative risk of poultry production areas and poultry type was developed and successfully implemented.
- Improved understanding of poultry market dynamics in DKI Jakarta by the public sector.
- Increased private and public sector C&D capacity and increased implementation of C&D practices along the poultry market chain in greater Jakarta.
- Critical weaknesses in the DKI Jakarta market restructuring preparations were identified and corrective measures proposed and subsequently implemented by the Government.
- A specific high-risk poultry market system has been identified as a result of project-implemented surveillance activities and is now being addressed with the relevant government stakeholders.

Output D: Engagement with duck producers for improved control of HPAI

- The database of duck flocks developed from the study area provides a sample frame for the prevalence study and other future activities to be undertaken in duck populations by animal health authorities; knowledge of locations of high-density duck populations is a critical first step to identifying critical control points for targeted interventions to control HPAI.
- According to the research implemented by the project, the ducks did not appear to be the immediate disease control priority in HPAI-endemic areas of Indonesia. The role of ducks in other areas of Indonesia is still unclear.

Output E: Sustainable virus monitoring and vaccine development

- Development of a safe and efficacious vaccine for use in Indonesia.
- Characterization of AI viruses circulating in Indonesia.
- Increased capacity of Indonesian laboratories to perform antigenic and genetic characterization of viruses and analyse results.
- Improved collaboration between Indonesian private and public sectors on field virus monitoring.

Output F: Coordinated and enhanced management of the HPAI control programme

- The human resource capacity of the local government livestock services has been improved through PDSR training and preparation of MTs to lead training and continuing education activities within the HPAI control programme.
- Improved knowledge of factors associated with outbreaks of HPAI in village poultry to be used to inform and refine surveillance and control strategies.
- Critical control points identified. Data and subsequent analysis leading to identification of further

points for disease control efforts to be targeted.

- Significant improvement in technical capacity and management of local government human resources working in the field throughout all known HPAI-endemic areas.
- Guidelines for the implementation of the NVS have been prepared by DGLAHS under the direction of the NVS Task Force with technical advice provided by ECTAD Indonesia.
- The NVS approach has been made operational via the rabies control programme in Bali, allowing capacities developed by the project to be utilized for other major Indonesian public health priorities in addition to H5N1 HPAI.
- As a result of both increased local government funding support and more efficiently allocated support from the project, external funding support to maintain the PDSR system has progressively and significantly decreased over the course of the OSRO/INS/604/USA project.

Project Title: Expansion of the avian influenza participatory disease surveillance and response program in Indonesia

Extension Title: Reinforcement and expansion of the avian influenza participatory disease surveillance and response program in Indonesia

Period: October 2010 - March 2011

Country: Indonesia
Project title: Reinforcement and expansion of the avian influenza participatory disease surveillance and response program in Indonesia
Code: OSRO/INS/604/USA
Budget: USD 44.2 million ¹
Effective starting date: 9 June 2006
Planned end date: 30 September 2011
Context of the project The purpose of the project is to enhance the capacity and ability of the Government of Indonesia and partners to control HPAI in order to help safeguard the health and livelihoods of the Indonesian population by providing broad-based support to the FAO Indonesia HPAI Control Programme implemented by ECTAD Indonesia.
Objectives of the project Output A: Sustainable surveillance, prevention and control of HPAI in village poultry Output B: Improved biosecurity and vaccination practices in commercial sectors Output C: Improved HPAI surveillance and control along the poultry marketing chain Output D: Engagement with duck producers for improved control of HPAI Output E: Sustainable virus monitoring and vaccine development Output F: Coordinated and enhanced management of the HPAI control programme
Planned Activities Output A: Sustainable surveillance, prevention and control of HPAI in village poultry <i>A.1 Maintain, develop and adapt local government prevention, passive surveillance and outbreak control capacity for village poultry across endemic areas of Indonesia, prioritized by level of HPAI risk; manage a staged transition of costs to local government</i> <i>A.2 Strengthen the capacity of Puskesmas (animal health centres) by integrating participatory diseases surveillance and response techniques; pilot system first in ten Puskesmas animal centres</i> <i>A.3 Increase local government veterinary service competency to detect, diagnose, report and control other animal diseases of zoonotic and economic importance in villages</i> <i>A.4 Develop locally-realistic methods and communication materials for prevention and control of HPAI and other animal diseases of zoonotic and economic importance to enable communities to make informed decisions together and supported by local government</i> Output B: Improved biosecurity and vaccination practices in commercial sectors <i>B.1 Provide specialized technical support to selected layer farmers to enhance production efficiency and quality of layer vaccination and biosecurity measures</i> <i>B.2 Support local government veterinary and laboratory services to engage more effectively with poultry farmers on disease prevention and outbreak investigations (PVUK programme)</i> <i>B.3 Facilitate trial of private sector-funded compensation programme</i> <i>B.4 Facilitate government and industry to establish a functional public-private partnership via a</i>

¹ The breakdown of the total contribution is as follows: USD 4 million for first year (June 2006-May 2007), USD 11 million for second year (June 2007-May 2008), USD 2.7 million for interim extension (June -September 2008), USD 7.5 million for third year (October 2008-May 2009), USD 11 million (June 2009-September 2010) and USD 8 million (October 2010-September 2011).

National Poultry Quality Improvement Programme, including regular Biosecurity Coordination meetings

B.5 Evaluate effectiveness of biosecurity measures implemented by poultry producers

B.6 Facilitate design of local government-implemented poultry farm profiling and certification system

B.7 Assist central government to monitor commercial poultry producer compliance with avian influenza vaccination regulations

Output C: Improved HPAI surveillance and control along the poultry marketing chain

C.1 Support local government to conduct longitudinal surveillance and trace-back for H5 subtype virus and HPAI in live bird markets, collector yards and slaughterhouses

C.2 Support implementation of minimum standards of biosecurity and sanitation in selected live bird markets, collector yards and slaughterhouses

C.3 Facilitate poultry market restructuring with emphasis on food safety in DKI Jakarta and surrounding areas

C.4 Explore mechanisms to improve inter-provincial movement control out of HPAI high risk provinces

Output D: Engagement with duck producers for improved control of HPAI

D.1 Assess role of ducks in the epidemiology of HPAI in selected areas of Java

D.2 Conduct duck vaccination field trial in one identified high risk HPAI-endemic area

Output E: Sustainable virus monitoring and vaccine development

E.1 Assist public and private sectors to develop a centrally-managed system to monitor circulating viruses and sustain vaccine efficacy

E.2 Increase knowledge of best practices for avian influenza vaccination in poultry

Output F: Coordinated and enhanced management of the HPAI control programme

F.1 Facilitate implementation of integrated HPAI control plan on one island where the HPAI situation is considered readily controllable

F.2 Strengthen government capacity to conduct veterinary services training and continuing education

F.3 Improve competencies of local government decision-makers to manage sustainable and effective HPAI control programmes and to promote understanding of the economic impact of animal diseases on livelihoods and public health

F.4 Assist central and local governments to design and implement a national veterinary service strategy

F.5 Develop and integrate emerging databases into the national veterinary information system

F.6 Provide technical assistance for establishment of local cold chain capacity

F.7 Increase public visibility of the HPAI control programme

F.8 Provide operational support to enable implementation of the ECTAD Indonesia programme

Activities undertaken during the reporting period

Output A: Sustainable surveillance, prevention and control of HPAI in village poultry

A.1 Maintain, develop and adapt local government prevention, passive surveillance and outbreak control capacity for village poultry across endemic areas of Indonesia, prioritized by level of HPAI risk; manage a staged transition of costs to local government

- A meeting was held on the initial design to improve village-based decision making for the prevention and control of HPAI in sector 4 poultry.
- Local government capacity was strengthened through the training of 25 PDSR officers in West Bandung; initial training for these officers was carried out in August 2010 and this training, Continuing Education A and the training of ten PDSR officers in Continuing Education B, reinforced the skills learned in the introductory training.
- A modified PDSR training module was developed for low risk areas to focus on HPAI rapid response and control and 20 local government livestock service staff in Papua Province were trained in the Introductory I module in February 2011.
- Cost-sharing methods between FAO and local government to ensure sustainability of the PDSR programme were developed and presented at the Yogyakarta Decision Makers' Meeting (DMM) in December 2010; the concept of cost-sharing was agreed to during the meeting by the

participants present.

- A draft plan for rewarding the districts which are early-adopters of cost-sharing agreements was developed and discussed at the LDCC Coordinators' meeting held in October 2010 in Semarang. West Bandung, Papua and Samarinda districts have allocated funds to cover the costs of PDSR officers.

A.2 Strengthen the capacity of Puskesmas (animal health centres) by integrating participatory diseases surveillance and response techniques; pilot system first in ten Puskesmas

- Individual reports on structured active surveillance for HPAI in village poultry conducted in 6 selected districts on Java were completed.
- The Participatory Community Engagement (PCE) training course, which uses elements of PDSR training and will underpin training for the National Veterinary Service (NVS), was developed and the curriculum for three levels of training agreed. Ten modules have been prepared for levels 1 and 2 and tested as part of the pilot PVUK training programme.
- An evaluation of human and capital resources of all NVS Puskesmas has been carried out based on Government information.

A.3 Increase local government veterinary service competency to detect, diagnose, report and control other animal diseases of zoonotic and economic importance in villages

- The USDA/Cornell University Sample Collection and Necropsy Videos with narration in Bahasa Indonesia were produced. These videos were distributed to 40 PVUK trainees as a training aid and to assist them with their field work.
- The Directorate General of Livestock and Animal Health Services (DGLAHS) NVS Task Force agreed on a tiered training approach for all local government veterinarians, including those who have received PDSR training.
- The NVS Task Force also agreed to pilot the new approach with the rabies control programme in Bali.
- Seven draft SOPs, work flow and technical guidelines and training curricula have been developed to train PDSR staff in the detection and control of rabies as a pilot of the NVS concept. These will be tested in Bali and linked to PCE training.
- Avian Influenza Bulletin Vol. 7, in Bahasa Indonesia and English, was produced and distributed to PDSR officers, laboratories and government offices.

A.4 Develop locally-realistic methods and communication materials for prevention and control of HPAI and other animal diseases of zoonotic and economic importance to enable communities to make informed decisions together and supported by local government

- Plans developed for biosecurity communication material based on experience in South Sulawesi.
- Overview video of FAO Indonesia communication activities produced and shared with DGLAHS during Technical Briefing Meeting in December.
- With the proposed changes in PDSR and development of NVS, the existing communication material is being reviewed for relevance in the new system. Material on rabies in Bali is being developed.
- Development of communication material for farmers to complement PVUK training is ongoing.
- Interviewed farmers and workers at commercial poultry farms in Central Java to get better understanding on the communication needs and methods/materials suitable for commercial poultry farms.

Output B: Improved biosecurity and vaccination practices in commercial sectors

B.1 Provide specialized technical support to selected layer farmers to enhance production efficiency and quality of layer vaccination and biosecurity measures

- Farm profiling of six participating layer farms was completed.
- Farm flock health status was tested in collaboration with participating farmers.
- Feed and water samples were quality tested in collaboration with participating farmers.
- Farm assessments for each participating farm were completed.

- Meetings were held with each farmer to identify their top priorities and a Phase I management plan was agreed to address non-biosecurity issues for each participating farm.
- Assistance was provided to each farm to implement their Phase I management plan.
- Baseline bird and environmental sampling was carried out to determine the presence of H5-subtype virus on each farm.

B.2 Support local government veterinary and laboratory services to engage more effectively with poultry farmers on disease prevention and outbreak investigations (PVUK programme)

- PVUK teams were established in eight districts from four provinces.
- The training module outlines and methodologies were agreed. The curriculum for three levels of training was agreed and modules were prepared for the three levels.
- Ten PVUK trainees were given level 1 and 2 training in Lampung and the remaining 30 participants received level 1 training in Solo.
- The ten trainees in Lampung commenced work and are being backstopped by the training team as they begin to implement the pilot project. Data collection forms were tested and refined to produce final formats.

B.3 Facilitate trial of private sector-funded compensation programme

- Agreed with ADPHI (Indonesian Poultry Veterinary Association) to include a private-sector compensation pilot as a signature activity of the National Poultry Quality Improvement Programme (NPQIP).
- Met with GOPAN-associated broiler farmers to further discuss the opportunities and constraints to establishing a private-sector funded compensation programme.

B.4 Facilitate government and industry to establish a functional public-private partnership via a National Poultry Quality Improvement Programme, including regular Biosecurity Coordination meetings

- Responsibility for NPQIP development has now been assumed by ADPHI with USDA and FAO providing technical support.
- Agreed with ADPHI to focus on five signature activities, including a compensation scheme for producers and a continuing education programme for poultry veterinarians, on which immediate progress can be made in order to increase farmer support and enthusiasm for the NPQIP.
- Draft Terms of Reference (TOR) for Commercial Poultry Health Master Trainers were developed.
- The NPQIP concept was discussed with the DGLAHS and is now fully supported by the Director-General.

B.5 Evaluate effectiveness of biosecurity measures implemented by poultry producers

- The baseline collection of economic data on six layer farms was completed
- A farmers' feedback meeting was conducted to discuss the baseline findings and to present the findings of production cost data analysis and the overall productivity assessment
- The farmers' perception and decision-making study on the commercial layer chicken production system was drafted.

B.6 Facilitate design of local government-implemented poultry farm profiling and certification system

- Twenty-four data managers, assisted in the training and supervision of 358 enumerators to collect profiling data on commercial farms in the eight PVUK districts. Profiling information from a total of 11,130 farms was collected and entered into district-level databases.
- Draft maps showing the distribution of poultry farms were produced for each district.
- Vector layers were installed on the PVUK computers in all districts and refresher training for data managers was carried out in all districts.

B.7 Assist central government to monitor commercial poultry producer compliance with avian influenza vaccination regulations

- To complete this activity, FAO ECTAD's Commercial Poultry Health programme is reviewing

the vaccine selection and vaccination practices of layer farmers participating in the programme.

Output C: Improved HPAI surveillance and control along the poultry marketing chain

C.1 Support local government to conduct longitudinal surveillance and trace-back for H5 subtype virus and HPAI in live bird markets, collector yards and slaughterhouses

- Local government market surveillance officers (PSP) collected and tested environmental samples from 260 LBMs every month in the Jabodetabek area as part of the live bird market surveillance programme.
- A National Technical Advisor for Market Chain Surveillance was successfully recruited.
- The analysis of collector yard surveillance and targeted research data was continued (Phase II).
- A rapid field assessment of the Semanggi Collector Yard in Central Java was carried out.
- The LBM database was evaluated to improve LBM surveillance in Jabodetabek by holding meetings with the Jakarta category B Animal Health Laboratory and with Data Encoders (DE) from LDCC Jakarta, Bogor and Serang.
- The new list of LBMs to participate in the surveillance programme was finalized.
- A coordination meeting was held with PSP, LDCC and the Jakarta category B animal health laboratory to evaluate the implementation of LBM surveillance in Jabodetabek.
- Refresher training was conducted for all PSP staff and additional training of new PSP officers in Jabodetabek was carried out.

C.2 Support implementation of minimum standards of biosecurity and sanitation in selected live bird markets, collector yards and slaughterhouses

- Conducted field assessment to introduce improved cleaning and disinfection (C&D) practices in 21 collection yards, 17 LBMs and three vehicle C&D stations in Jabodetabek.
- Conducted training on C&D practices and public awareness activities for cleaning workers and owners of 21 collector yards, 17 LBMs and three vehicle C&D stations. Local Agricultural Dinas officials were also included in the trainings.
- Distributed 41 high pressure washers, 163 metal cages as well as C&D tools and materials to 21 collector yards, three C&D stations and 17 live bird markets in Jabodetabek.
- FAO supported local government monitoring and evaluation of market chain C&D activities in 31 collector yards in Jabodetabek.
- Focus group discussions were held at five LBMs in Jabodetabek to develop appropriate market rehabilitation designs.
- The design and budget estimates were finalized for the establishment of two vehicle C&D stations and the rehabilitation of five LBMs in Jabodetabek.
- Training materials were prepared and a schedule for collaboration with WHO and MOH on live bird market C&D training was agreed.
- Two vehicle C&D stations were established in Bekasi and Bogor.
- The construction of two rehabilitated LBMs in Tangerang was supervised.
- On-site refresher training was conducted for staff at 21 collector yards and 17 LBMs previously equipped with high pressure washer machines.
- Recruitment for the National Engineer and Assistant National Engineer positions was completed
- The DKI market restructuring programme supported market C&D training and a food safety inspection workshop in accordance with DKI Jakarta regulation No. 5/1992.
- Meetings were held with the West Java Agriculture Service in Bandung regarding an assessment plan for C&D activities and field assessments at collector yards/ slaughterhouses in high-risk areas in Western Java were carried out.

C.3 Facilitate poultry market restructuring with emphasis on food safety in DKI Jakarta and surrounding areas

- Assistance was provided in the adaptation of the Jakarta poultry markets restructuring strategy, moving towards an increase in the number of designated relocation / slaughtering centres.
- A targeted public awareness campaign for the promotion of "healthy chicken meat" was continued via editorials in Jakarta newspapers similar to the previous semester and the publicity

campaign in markets was continued. A comprehensive promotion campaign for “healthy chicken meat” was successfully implemented with consumers and traders in two traditional markets (Klender, November 2010 and Kramat Jati, February 2011) selling poultry meat.

- The market programme continued its close collaboration with the private sector and the local government administration in the development of adapted cold chain equipment and restructuring of distribution channels, including the cold chain. The distribution channel from one of the five collection yards/ slaughterhouses to two traditional markets (Rawa Keping to Klender & Kramat Jati) was trialed this semester.
- Technical support was provided to local government to strengthen food safety measures and government structures. The national food safety expert assessed the situation and formulated a number of recommendations for food safety and meat inspection improvements and tried them out during the pilot activity in the slaughterhouse and traditional market. In February 2011 a workshop was held to validate the assessment of the capacity of the Jakarta Livestock Service staff and the law enforcement structures on food safety and proposing the gradual strengthening of food safety information, inspection and law enforcement in relocation centres and traditional markets.
- Plans for collaboration on the establishment and promotion of relocation centres (collection yards with slaughtering facilities) in the sub-districts of Tangerang Kota, Tangerang Kabupaten, Tangerang Selatan and Depok were downsized because of delays in the implementation of the Jakarta poultry restructuring process and expected programme budget constraints.

C.4 Explore mechanisms to improve inter-provincial movement control out of HPAI high risk provinces

- Recommendations were developed to renovate the Semanggi collector yard in Surakarta city in order to reduce the risk of viral amplification along the native chicken market chain.
- A technical meeting was conducted with Central Java provincial Dinas and the Agricultural Dinas and Market Dinas of Surakarta city regarding the epidemiological situation of the native chicken trade originating at the Semanggi collector yard and the high priority need to renovate the collector yard in order to reduce risk.
- An initial meeting was held with Jabodetabek agricultural Dinas and DAH on improving Animal Health Certification (SKKH) for poultry entering Jabodetabek.
- Meetings were held with the West Java Agriculture Dinas in Bandung regarding an assessment plan for checkpoint operation and Animal Health Certification (SKKH).
- In collaboration with DAH, a meeting was held with the mayor of Surakarta city to advocate for support for the initiation of high-priority renovations to the Semanggi collector yard.

Output D: Engagement with duck producers for improved control of HPAI

D.1 Assess role of ducks in the epidemiology of HPAI in selected areas of Java

- The Java duck survey was re-analysed.
- The PCR test results produced by the DKI laboratory on samples from the Java duck survey were verified
- The conclusions were completed and the draft final report produced.

D.2 Conduct duck vaccination field trial in one identified high risk HPAI-endemic area

- Further progress on this task is pending finalization of the Java duck study (Activity D.1).

Output E: Sustainable virus monitoring and vaccine development

E.1 Assist public and private sectors to develop a centrally-managed system to monitor circulating viruses and sustain vaccine efficacy

- The characterization of 244 H5N1 isolates (total of 266 viruses) from 317 samples representing approximately 90 districts predominantly from backyard chickens during 2007-08 was reported upon during the final OFFLU technical review meeting Oct 2010. This contributed to the ongoing efforts to monitor field viruses.
- Backstopping and ongoing support for the transfer of technology to Indonesia was provided by the FAO-OFFLU scientist in October-November 2010. Outputs included the following:

facilitating meeting with DGLS, CMU, BPM SOH, Pusvetma, FAO, OFFLU to discuss disposition of candidate vaccine and challenge strains, the status of avian influenza vaccine registration in Indonesia and the provision of reverse genetics constructs to Indonesia; prepared and conducted workshops for the laboratory network and the Final Technical Review meeting; meetings with the DAH and other relevant government officials as needed and with partners for coordination of ongoing activities.

- Laboratory Network meetings with bench-side work were jointly conducted (FAO-OFFLU /AAHL) for sequencing (25-27 October) and pre-screen HI partners (1-3 November) in support of the effort to monitor antigenic variation of circulating viruses. Standardized reagents were provided to all collaborating laboratories.
- Viruses selected from the Round 1 national pre-screen results were sent to AAHL for parallel generation of antigenic and genetic data for capacity building purposes (Feb 2010). The DIC Wates produced full panel antigenic cartography data on these 32 isolates with support from an AAHL scientist (March 2011). The DICs continued the pre-screening process, submitting raw data for the haemagglutination inhibition (HI) assay conducted using cartography sera on H5-positive fluids isolated through their ongoing diagnostic activities. Round 2 analysis was conducted in March 2011.
- Six Indonesian scientists participated in bench-side sequencing training at AAHL during November 2010.
- The national OFFLU technical facilitator coordinated OFFLU activities with representatives from the DAH/National HPAI Campaign Management Unit (CMU) and other relevant public sector units and private sector stakeholders. Outputs included the following: receipt of letter from the DG to release virus sequences characterized by the project into the public domain; approval to receive the reverse genetic construct viruses at the Pusvetma laboratory; securing the material transfer agreement and ensuring shipment of selected viruses to AAHL; and assisting in preparations for the workshops and meetings.
- A proposal was received from the three sequencing partners on continued molecular sequencing activities in addition to support of HPAI monitoring to include a more strategic approach, communication and sharing of biologic materials between partners. This will contribute to recommendations on establishing the mechanism for sustainable virus characterization.
- A paper titled "Initial study of antigenic diversities of avian influenza virus H5N1 in Indonesia using reference antisera produced for antigenic cartography" was presented by a national scientist at the National Scientific Conference organized by the Indonesian Veterinary Medical Association in Semarang, October 2010.
- A presentation on "OFFLU: Contributions toward improved vaccine strain selection for poultry" was made by an international scientist in collaboration with OFFLU at the 1st International One Health Congress in Melbourne, Australia, February 2011.

E.2 Increase knowledge of best practices for avian influenza vaccination in poultry

- The final OFFLU project technical review meeting was conducted 28-29 October 2010 and recommendations were produced including guidance on registration and licensing for efficacious poultry vaccines.
- Clearance was received from the Director General to deliver the reverse genetics (RG) virus seed strains, generated at SEPRL, to Pusvetma.
- Following a meeting on 5 November 2010 facilitated by FAO/OFFLU, the DGLAHS informed vaccine manufacturers of the availability of the candidate vaccine and challenge viruses and invited them to retrieve the viruses from Pusvetma and BPM SOH. However, these strains have still not been released.

Output F: Coordinated and enhanced management of the HPAI control programme

F.1 Facilitate implementation of integrated HPAI control plan on one island where the HPAI situation is considered readily controllable

- The analysis of the market chain network study on Bali was completed. This was the last piece of work for phase I of the Bali project.

F.2 Strengthen government capacity to conduct veterinary services training and continuing education

- The curriculum for communication and improved training skills for Master Trainers (MT) has been developed and was approved and nine modules were prepared and tested. Linked to the Improved Training Skills, three Training of Trainers (TOT) sessions (GPS, sample submission and SMS gateway) have been developed so that the MTs can carry out these trainings at the provincial or district levels.
- Three national MTs have developed TOT skills and a further four MTs have been trained in Improved Training Skills.
- Three National MTs have returned to Jakarta and are learning how to develop training modules and have developed their abilities in module preparation and training. Two MTs in Bandung were given on-the-job support to improve their training skills. Data managers trained for the PVUK programme were supported to train enumerators in data collection.
- A need has been identified for a training module on understanding data which will build skills in data analysis and culminate in Quantum GIS training for Provincial and District staff. The curriculum for this training has been developed and module preparation commenced.

F.3 Improve competencies of local government decision-makers to manage sustainable and effective HPAI control programmes and to promote understanding of the economic impact of animal diseases on livelihoods and public health

- One Decision Makers' Meeting (DMM) for Yogyakarta was held on 21 and 22 December 2010. The meeting underlined the fact that backyard chickens are the main livestock species of the majority of people in Yogyakarta and are kept traditionally as an additional economic source or as a source of animal protein for the household. In addition, there are still many traditional markets in the province selling live chickens or birds.
- The meeting further highlighted the efforts made by the provincial and district Livestock Services (included PDSR-trained staff) in implementing effective HPAI control programmes with community participation and the need to implement more IEC activities to raise public awareness and to build off existing community cadres / volunteers at the village level. There is also a need to improve disease surveillance, control poultry movements in the market chain and build the capacity of Livestock Service officers (to be funded by local government).
- The output of this DMM meeting was a document signed by local government decision makers, stating that the provincial and district governments are ready with their 2011 and 2012 local government budgets to continue operational support of the PDSR programme.

F.4 Assist central and local governments to design and implement a national veterinary service strategy

- The NVS workplan was completed and approved by the Director of Animal Health.
- Guidelines on National Veterinary Services, establishment of Veterinary Authority and appointment of the Authorized Veterinarian were drafted and the content has been agreed in principle by DGLAHS NVS Task Force.
- Guidelines for the Control Strategy for rabies, anthrax, brucellosis and hog cholera were drafted by the DGLAHS NVS Task Force.

F.5 Develop and integrate emerging databases into the national veterinary information system

- The draft plan for the national animal disease surveillance system was completed.
- Database design for a generic animal disease surveillance system was initiated.
- Work on standardization of data collection to ensure compatibility of databases was continued.

F.6 Provide technical assistance for establishment of local cold chain capacity

- Inclusion of Bali in USAID-funded cold chain capacity strengthening activities was promoted
- Technical support was provided for the cold chain TOT implemented by JSI-Deliver.
- In collaboration with DAH/CMU and JSI-Deliver, a field assessment of the cold chain in Bali province was conducted.

F.7 Increase public visibility of the HPAI control programme

- FAO participated in the Indonesian Veterinary Medical Association conference and exhibition

in October 2010, establishing the programme's booth and disseminating public materials related to the project.

- The 2009 ECTAD Indonesia Annual Report (Indonesian version) distributed to partners and government offices.
- A Media Gathering on Market Restructuring was held in February 2011.
- Work has started on preparation of the 2010 ECTAD Indonesia Annual Report.

F.8 Provide operational support to enable implementation of the ECTAD Indonesia programme

- Service contracts were signed with vendors and partner organizations to facilitate various project activities, including the establishment of four cleaning and disinfection stations in East Jakarta, Bekasi and Tangerang, renovation of two markets in Tangerang, laboratory testing of samples for surveillance activities and a publicity campaign to promote "Ayam ASUH" (healthy chicken meat) in the Jabodetabek area.
- 355 IT equipment packages were procured and distributed to 29 provincial livestock service offices.
- The renewal of vehicle registration for 632 motorcycles and 38 cars was initiated.
- A Memorandum of Understanding (MOU) for testing of samples from layer farms participating in the biosecurity cost-effectiveness study was signed.
- In line with technical activities undertaken during the quarter, project personnel were recruited, project equipment and supplies were procured and distributed and Letters of Agreement (LOA) were signed with partner organizations.

Planned activities for the next six-month period

Output A: Sustainable surveillance, prevention and control of HPAI in village poultry

A.1 Maintain, develop and adapt local government prevention, passive surveillance and outbreak control capacity for village poultry across endemic areas of Indonesia, prioritized by level of HPAI risk; manage a staged transition of costs to local government

- Village empowerment strategies to be developed for incorporation into a modified version of PDSR that will evolve over the semester to focus on improving passive reporting and reducing amount of time spent on active reporting. New and simplified reporting methods will be developed to allow PDSR staff to work to empower the village community to take a greater role in decision-making. Strategies to develop village decision-making skills will be developed.
- Fourteen new PDSR staff will be trained in West Bandung and 39 officers in Samarinda. A review of existing PDSR coverage will be carried out to determine future needs for ongoing training. Twenty livestock service officers in Papua will be given Intro II training.
- Further DMMs will be held in Banten, West and Central Java to discuss cost-sharing.

A.2 Strengthen the capacity of Puskesmas by integrating participatory diseases surveillance and response techniques; pilot system first in ten Puskesmas

- Implementation of PCE field training will be linked to the development of the NVS. Initially this will take place in Bali to control rabies and this will serve as a model for other areas affected by rabies that are included within the NVS programme.

A.3 Increase local government veterinary service competency to detect, diagnose, report and control other animal diseases of zoonotic and economic importance in villages

- Eleven SOPs for the prevention and control of rabies will be completed and used in the NVS rabies eradication programme in Bali.
- Sixty-nine PDSR staff will be trained to carry out vaccination, rapid response and vaccination to control rabies in Bali.
- A system will be developed to increase passive reporting of suspect rabies cases and increase the communities' understanding of herd immunity amongst vaccinated dogs.
- PDSR Disease Transmission Video will be transitioned to commercial poultry and PVUK programmes following further discussion with the CPH and Local Government teams.
- SOP, workflow and technical guidelines and training will be developed for detection and control of rabies as a pilot of the NVS concept. These will be tested in Bali and linked to PCE

training.

A.4 Develop locally-realistic methods and communication materials for prevention and control of HPAI and other animal diseases of zoonotic and economic importance to enable communities to make informed decisions together and supported by local government

- An overall communication strategy will be developed to pass information from central government to commercial farmers through the LDCC system.
- Completion and distribution of IEC material as part of piloting the NVS concept in Bali.
- With the proposed changes in PDSR and development of NVS, the existing communication material will be reviewed for relevance in the new system.
- Development of communication material for farmers and farm workers to complement PVUK training and the CPH programme.

Output B: Improved biosecurity and vaccination practices in commercial sectors

B.1 Provide specialized technical support to selected layer farmers to enhance production efficiency and quality of layer vaccination and biosecurity measures

- Meet with each farmer to identify the farmer's top priorities and agree on a management plan to address biosecurity issues for each participating farm (phase-2 period).
- Continue to assist each farm to implement management plan phase-1 and phase-2.
- Sample birds and environment to determine presence of H5-subtype virus at end of phase 1 and 2 periods.
- Begin implementation study of farmers' perceptions and decision-making.

B.2 Support local government veterinary and laboratory services to engage more effectively with poultry farmers on disease prevention and outbreak investigations (PVUK programme)

- Complete final introductory level (level 3) training of pilot PVUK officers so they can formally begin to work as PVUK officers.
- Conduct Knowledge, Attitudes and Practices (KAP) study in selected districts as a baseline to later assess changes attributable to PVUK activities.
- A project evaluation will be carried out to document the impact of the PVUK pilot and make recommendations for scale-up.
- The PVUK database will be developed and managed at the district level.

B.3 Facilitate trial of private sector-funded compensation programme

- Further discuss opportunities to pilot a compensation system with GOPAN-associated broiler farmers.
- Identify early adopter farmers based on discussions above and initiate design.

B.4 Facilitate government and industry to establish a functional public-private partnership via a National Poultry Quality Improvement Programme, including regular Biosecurity Coordination meetings

- Continue development of the NPQIP document.
- Hold consultation meeting with farmers in collaboration with ADPHI, USDA and DGLAHS.
- Finalize TOR for Commercial Poultry Health Master Trainers in collaboration with ADPHI and USDA.

B.5 Evaluate effectiveness of biosecurity measures implemented by poultry producers

- Continue monitoring the implementation of the cost-effectiveness study.
- Analyze data from study and begin preparing preliminary report.
- Meet the farmers and key stakeholders to share study analyses and findings.
- Provide farmers with digital production cost data management system (database).
- Continue monitoring farmer decision-making patterns and conduct preliminary analysis.

B.6 Facilitate design of local government-implemented poultry farm profiling and certification system

- Further training for data managers on encoding the data generated by the PVUK officers will be carried out.
- Data managers will be given “understanding data” training to enable them to make best use of the profiling data.

B.7 Assist central government to monitor commercial poultry producer compliance with avian influenza vaccination regulations

- Prepare report to DGLAHS on findings of vaccination practices of farmers participating in CPH programme.

Output C: Improved HPAI surveillance and control along the poultry marketing chain

C.1 Support local government to conduct longitudinal surveillance and trace-back for H5 subtype virus and HPAI in live bird markets, collector yards and slaughterhouses

- Continue to support monthly LBM surveillance by local government in Jabodetabek.
- Conduct coordination meeting with Provincial Livestock Services of West Java, Jakarta and Banten, district/city livestock services and PSP in Jabodetabek.
- Complete analysis of collector yard surveillance data (Phase II) once PCR results are verified and then design Phase III market chain surveillance based on Phase II findings.
- Prepare training for Phase III market chain surveillance.
- Conduct Phase III market chain surveillance.

C.2 Support implementation of minimum standards of biosecurity and sanitation in selected live bird markets, collector yards and slaughterhouses

- Conduct market C&D training at ten pilot LBMs in collaboration with the MOH-WHO healthy markets programme.
- Supervise the operation of the new C&D stations in Bekasi and Bogor.
- Continue to develop C&D station design, budget estimation and contractor selection for 3 slaughterhouses in Jabodetabek.
- Develop minimum standards guidelines for sanitation along the poultry market chain.
- Support ongoing local government monitoring and evaluation of market chain C&D activities in Jabodetabek.
- Continue to oversee construction works at Anyar market in Tangerang City and Bonang market in Tangerang District.
- Develop and supervise the bidding process and contractor selection for Parung Panjang market (Bogor district), Anyar market (Bogor city) and Kranggan Market (Bekasi city).
- Conduct monitoring and evaluation of the implementation of cleaning day at LBMs in Jabodetabek.
- Provide documented lessons learned and recommendations to improve implementation of C&D activities.

C.3 Facilitate poultry market restructuring with emphasis on food safety in DKI Jakarta and surrounding areas

- Continue to provide assistance in the consolidation of the Jakarta poultry market restructuring strategy, which has agreed an increase in the number of designated relocation centres as a more accommodating approach towards the poultry operators.
- Help identify and assess potential locations proposed by collectors and slaughterers that can become official relocation centers.
- Continue to implement comprehensive promotion campaigns for “healthy chicken meat” with consumers and traders in other traditional markets selling poultry meat.
- Continue to collaborate closely with the private sector and the local administration in the restructuring of distribution channels, including the cold chain; continue the trial of a new distribution channel from one of the five collection yards to the traditional markets (Rawa Keping to four more traditional markets) and adoption of adapted cold chain equipment.
- Continue to collaborate closely with local government to strengthen food safety measures by ensuring the government relocation centres comply by food safety standards, develop training

programmes for meat inspectors and enforce specific inspection for the markets and slaughterhouses.

- Continue to assist provincial government to identify alternative income-generating activities for poultry stakeholders who may become unemployed by the market restructuring programme and design support programmes accordingly.

C.4 Explore mechanisms to improve inter-provincial movement control out of HPAI high risk provinces

- Hold focus group discussions with traders and vendors in Semanggi collector yard once the requisite support has been obtained from local government.
- Explore the possibility of establishing a poultry health monitoring system for all poultry entering Semanggi collector yard.
- Conduct follow-up meetings with central and local government on Animal Health Certification (SKKH) and field assessment to check points in Western Java.
- Follow up the agreement between FAO, DAH and local government of Surakarta city regarding Semanggi collector yard upgrading plan.
- Provide inputs to the local government of Western Java regarding checkpoint operation improvement.

Output D: Engagement with duck producers for improved control of HPAI

D.1 Assess role of ducks in the epidemiology of HPAI in selected areas of Java

- Clear and circulate the final report to partner organizations.
- Review the potential value and feasibility of AI vaccination of ducks in Indonesia.

D.2 Conduct duck vaccination field trial in one identified high risk HPAI-endemic area

- Further investigate decrease in detected HPAI cases in Yogyakarta province during the 2009-2010 influenza season.
- Reassess value of targeted duck vaccination trial once Java duck study and Yogyakarta assessment complete.

Output E: Sustainable virus monitoring and vaccine development

E.1 Assist public and private sectors to develop a centrally-managed system to monitor circulating viruses and sustain vaccine efficacy

- Facilitate ongoing Laboratory Network meetings in support of the effort to monitor antigenic variation in circulating viruses (May - Sequencing Network; Jul-Aug Pre-screening Network); and follow-up on the characterization of isolates selected based upon pre-screen data from DIC Wates as part of the parallel data generation for capacity building.
- Conduct "Communicating Science - Scientific Writing Workshop".
- The FAO-OFFLU Scientist will continue to provide support to the ongoing transfer of technology to Indonesia. The next inputs are scheduled for July-August 2011.
- Conduct workshop for improvement of laboratory data management including Excel, EMPRES-i Asia and InfoLabPlus.
- Assist AAHL to conduct workshop on quality reagent production at Pusvetma.
- Expand pre-screen effort to partner labs (e.g. industry/university) with DAH approval.
- Develop a module for InfoLabPlus to record and network all DIC results for the pre-screening and antigenic cartography (to be called Infolab Cartography) and provide training for DIC staff in the use of this new module (contingent upon DAFF support for InfoLabPlus).

E.2 Increase knowledge of best practices for avian influenza vaccination in poultry

- Confirm disposition of candidate vaccine and challenge strains returned to Indonesia for vaccine industry to develop updated vaccines.
- Support SEPRL to provide assistance to MoA designated laboratories for the preparation of vaccine master seeds from RG H5N1 avian influenza constructs provided through the project and to provide didactic and on-site challenge test training for efficacy and potency

determination to demonstrate efficacy and potency of vaccines for purposes of registration/licensing.

- Facilitate workshop on practical aspects of vaccines and vaccination. This workshop will increase the knowledge of poultry veterinarians and industry representatives on all practical aspects of vaccines and vaccination in poultry for improved control of avian influenza.
- Provide technical support for serosurveillance using homologous vaccine antigen and Wates-1 antigen and coordinate with existing vaccination efforts when possible.
- Prepare updated technical recommendations on vaccination strategy based upon recent field vaccine trials, continued epidemiological analysis of the disease situation in Indonesia and global epidemiological knowledge on HPAI.

Output F: Coordinated and enhanced management of the HPAI control programme

F.1 Facilitate implementation of integrated HPAI control plan on one island where the HPAI situation is considered readily controllable

- Write the report for phase 1 of the Bali project.
- Plan activities for phase 2 (intervention phase) of the project.
- Develop the plan with the Bali authorities.
- Start interventions depending on funds availability.

F.2 Strengthen government capacity to conduct veterinary services training and continuing education

- Provide the remaining 49 MTs with Improved Training Skills training and TOT training in GPS, SMS gateway and sample submission. They will then be able to carry out trainings of PDSR-trained staff at the local level.
- Assist DAH to recruit more National MTs to participate in the in-service training programme in Jakarta.
- Complete the “understanding data” modules, field test and begin field implementation.
- Hold DMM in the provinces of Banten, Lampung and East Java.

F.3 Improve competencies of local government decision-makers to manage sustainable and effective HPAI control programmes and to promote understanding of the economic impact of animal diseases on livelihoods and public health

- Revise DMM model to incorporate epidemiology and disease management training and NVS development, as well as the redesigning of the PDSR system. Conduct at least two newly designed DMMs in the next reporting period.
- Plan three DMMs to be attended by local government decision makers [representatives of provincial planning authorities (BAPPEDA), provincial parliaments (DPRD I and II) and the Assistant Governor for economic development] for Lampung, Banten and East Java provinces.

F.4 Assist central and local governments to design and implement a national veterinary service strategy

- Revise PDSR system to incorporate the NVS approach.
- Complete development of PCE training module.
- Implement pilot PCE training in Bali province.
- Facilitate meeting between MoA and Ministry of Internal Affairs to discuss NVS and the issuing of Joint Circular Letter.
- Finalize Joint Circular Letter of Minister of Agriculture and Minister of Internal Affairs on Guidelines on National Veterinary Services.
- Finalize guidelines for control strategy for rabies, anthrax, brucellosis and hog cholera.
- Develop reporting forms for rabies, anthrax, brucellosis and hog cholera.
- Advocate with Local Government on National Veterinary Services plan in pilot areas.

F.5 Develop and integrate emerging databases into the national veterinary information system

- Complete version 1.0 of the database for the animal disease surveillance system.
- Continue work on standardization of data collection to ensure compatibility of databases.
- Commence training on the new animal disease surveillance system in NVS pilot areas.

- Commence field trial of the new animal disease surveillance system in NVS pilot areas.

F.6 Provide technical assistance for establishment of local cold chain capacity

- In collaboration with DAH/CMU and JSI-Deliver, provide technical support for cold chain training to local government staff and capacity strengthening in Bali province.

F.7 Increase public visibility of the HPAI control programme

- Produce and distribute the Programme's Promotional Video Vol. 2.
- Produce and distribute the 2010 FAO ECTAD Indonesia Annual Report.

F.8 Provide operational support to enable implementation of the ECTAD Indonesia programme

- Facilitate service contracts and provide operational support to activities, such as the establishment of three cleaning and disinfection stations in South Jakarta, West Java and Tangerang and renovation of three markets in Bekasi and Bogor.
- Complete renewal of vehicle registrations for project vehicles and motorcycles.
- Complete distribution of 355 IT equipment packages to district livestock service offices.
- In line with planned technical activities for the next quarter, continue to recruit project personnel, procure and distribute project equipment and supplies and facilitate signing of Letters of Agreements (LOA) with partner organizations.
- Commence transfer of OSRO/INS/604/USA project assets to government.

Main challenges encountered and response provided

The most significant challenge faced this quarter was moving forward with timely implementation of multiple programmes and close collaboration with and in support of, our government counterparts. By combining timely technical expertise with experience facilitating cooperation between the Government of Indonesia and the international community, as well as intra-governmental cooperation, ECTAD Indonesia has been successful in making progress in all major areas of the HPAI Control Programme. Specific technical difficulties continue to be encountered with data management and diagnostic testing procedures in partner laboratories. As previously reported, these difficulties have caused delays in finalizing analyses for target research on collector yard surveillance, as well as the epidemiology of HPAI in ducks. Better progress in this area can be expected with more focused technical support tailored to the individual needs of each laboratory, as well as a greater focus on improving data management practices in general. Finally, the FAO programme is now facing the challenge of increasing the positive impact of activities, while faced with a significant budget reduction for FY 12 budget. ECTAD Indonesia is working closely with the DGLAHS and USAID to conduct a programme review and planning exercise for 2011-2012, which should enable the limited funds available to be focused on those activities which will have greatest impact in terms of both H5N1 risk reduction and long-term sustainability. Consultation on activities to be included in a new follow-on HPAI project will take place this semester and a project document will be drafted.

Main progress made towards the achievement of project outcomes (from the start of the current project phase)

Output A: Sustainable surveillance, prevention and control of HPAI in village poultry

- Activities have been designed to increase passive surveillance of HPAI. As active surveillance activities will be reduced, the PDSR and other local government staff will be trained to work closely with villages to encourage village-based solutions to HPAI prevention and control.
- There is now strong commitment, support and integration at the local government level (e.g. between the LDCC and provincial/district livestock services) in animal health and HPAI disease control programmes as a direct result of the FAO project.
- The PDSR programme has strengthened veterinary services capacity to detect and respond to HPAI outbreaks in village poultry throughout HPAI-endemic areas of Indonesia.
- The LDCC system has enabled more effective communication and coordination between central and local governments within the highly decentralized Indonesian governance system.
- Additional local governments have allocated funding specifically to support the establishment and operations of LDCC and PDSR activities, thereby contributing to sustainable disease control.

Output B: Improved biosecurity and vaccination practices in commercial sectors

- The commercial poultry health programme team has built rapport and trust with participating farmers, ensuring a healthy veterinarian-client relationship required for further progress in improving biosecurity and vaccination practices in commercial sectors.
- The understanding of the role of commercial poultry production in the maintenance and spread of HPAI has improved.
- The PVUK pilot programme has been developed in close collaboration with farmers, central and local governments in order to improve communication and cooperation between farmers and local government animal health services.
- Databases profiling the commercial poultry farms in each pilot district have been established by district livestock services.
- Public sector collaboration with commercial poultry producers has been accelerated. In particular, public sector disease controllers and international agencies are both more aware of the complexity of commercial poultry production in Indonesia and more engaged with private sector stakeholders involved in commercial poultry production.
- As a result of CPH programme activities, the HPAI Control Programme now understands that one of the key constraints poultry farmers are facing is a very limited capacity to track and interpret their farm's productivity and profit. Training and engagement activities are being adjusted to directly address this fundamental need.

Output C: Improved HPAI surveillance and control along the poultry marketing chain

- Test results from the DKI Jakarta category B animal health laboratory were distributed to all livestock services at district level throughout Jabodetabek to increase local government awareness and responsiveness to market chain contamination and veterinary public health issues.
- A targeted research activity to test collector yard-based surveillance methods to assess relative risk of poultry production areas and poultry type was developed and successfully implemented.
- Improved understanding of poultry market dynamics in DKI Jakarta by the public sector.
- Increased private and public sector C&D capacity and increased implementation of C&D practices along the poultry market chain in greater Jakarta.
- Critical weaknesses in the DKI Jakarta market restructuring preparations were identified and corrective measures proposed and subsequently implemented by the Government.
- A specific high-risk poultry market system has been identified as a result of project-implemented surveillance activities and is now being addressed with the relevant government stakeholders.

Output D: Engagement with duck producers for improved control of HPAI

- The database of duck flocks developed from the study area provides a sample frame for the prevalence study and other future activities to be undertaken in duck populations by animal health authorities; knowledge of locations of high density duck populations is a critical first step to identifying critical control points for targeted interventions to control HPAI.

Output E: Sustainable virus monitoring and vaccine development

- Development of a safe and efficacious vaccine for use in Indonesia.
- Characterization of AI viruses circulating in Indonesia.
- Increased capacity of Indonesian laboratories to perform antigenic and genetic characterization of viruses and analyse results.
- Improved collaboration between Indonesian private sector and public sector on field virus monitoring.

Output F: Coordinated and enhanced management of the HPAI control programme

- The human resource capacity of local government livestock services has been improved through PDSR training and preparation of Master Trainers to lead training and continuing education activities within the HPAI Control Programme.
- Improved knowledge of factors associated with outbreaks of HPAI in village poultry to be used to inform and refine surveillance and control strategies.

- Critical control points identified. Data and subsequent analysis leading to identification of further points for disease control efforts to be targeted.
- Significant improvement in technical capacity and management of local government human resources working in the field throughout all known HPAI-endemic areas.
- Guidelines for the implementation of the NVS have been prepared by DGLAHS under the direction of the NVS Task Force with technical advice provided by ECTAD Indonesia.
- The NVS approach has been made operational via the rabies eradication programme in Bali, allowing capacities developed by the project to be utilized for other major Indonesian public health priorities in addition to H5N1 HPAI.

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 03

Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: April 2011 – September 2011

Country: Lao People's Democratic Republic
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 03
Budget: USD 1 000 000 (Phase I), 1 284 990 (Phase II), 900 000 (Phase III), 800 000 (Phase IV), 550 000 (Phase V), USD 372 000 (Phase VI)
Total budget: USD 4 906 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2012
Context of the project The project assists the Government in responding to the consequences of a possible poultry disease epidemic that could not only cause serious damage to the poultry sector, but also cause serious consequences to human health and household livelihoods.
Objectives of the project The specific objectives of the project are to: <ul style="list-style-type: none"> • strengthen coordination of and support avian influenza (AI) control policy development; • strengthen risk-based surveillance for Highly Pathogenic Avian Influenza (HPAI) in target provinces; • improve disease response capability; and • strengthen risk management measures, including biosecurity measures and cross-border movement.
Planned activities Output 1: Coordinated project implementation and policy support <ul style="list-style-type: none"> • Continue the weekly meetings among the HPAI project staff • Conduct two backstopping missions: the first for a month in April 2011 and the second for three months from July to September 2011 • Support bilateral meetings with Thailand and Viet Nam • Continue to participate in the discussion meetings coordinated by the National Emerging Infectious Disease Coordination Office (NEIDCO) for the development of Zoonosis Collaboration Mechanism (ZCM) concept • Participate at the NEIDCO final wrap-up meeting of the National Five Year Work Plan (2011-2015) for emerging infectious diseases (EID) and Public Health Emergency Preparedness and Response on 21 April 2011 • Participate in the United States Agency for International Development (USAID) Emerging Pandemic Threats (EPT) programme for Lao People's Democratic Republic (PDR) on 26 April 2011 • Recruitment of an International Consultant on Veterinary Legislation for one month in June-July 2011 to assist the Department of Livestock and Fisheries (DLF) in completing the veterinary legislation framework based on the gap analysis carried out in phase IV • Organize final wrap-up meeting at the end of the project and develop and produce HPAI booklet on the achievement of the project from phase I to V

Output 2: Strengthened surveillance and response

- Participate at the Surveillance Working Group (SWG) meeting for sharing surveillance data and updating on surveillance issues with other partners on 5 April 2011
- Continue to conduct the second round of active surveillance in ten provinces for phase V from 20 June to 1 July 2011
- Recruitment of an International Consultant on Veterinary Epidemiology for one month in May 2011 to provide recommendations on surveillance activities and data management
- Conduct two training courses for outbreak investigation for the Provincial Agriculture and Forestry Office (PAFO) and District Agriculture and Forestry Office (DAFO) staff in the provinces of Xayabouly and Bolikhamxay in May 2011
- Continue to support the Field Veterinary Epidemiology in Action training in Khon Kaen University of Thailand in June 2011
- Provide laboratory diagnostic training in Phongsaly province for laboratory staff from northern provinces in August 2011
- Support two National Animal Health Centre (NAHC) laboratory staff to learn the laboratory management and operational strategy of the Bio-Safety Level 3 facility at the Virology Research Institute (VRI) in Pakchong, Thailand on June-July 2011
- Provide necessary equipment and supplies for surveillance and rapid response

Output 3: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- Conduct a workshop to review the pilot implementation of biosecurity improvement at the live bird market (LBM) in Oudomxay province in April 2011
- Start the activities relating to the pilot implementation of biosecurity improvement in Luang Namtha province in May 2011 by conducting:
 - training on biosecurity for PAFO and DAFO officers in May 2011;
 - training for market manager, vendors and cullers/slaughterers in May 2011;
 - construction of stall at selected LBM as a prototype for biosecurity improvement in June 2011; and
 - monitoring of progress of pilot activities in July 2011
- Organize training for LBM authorities and trader associations on biosecurity
- Organize training workshop for the public and private sectors on poultry production and biosecurity measures in Vientiane Capital and Savannakhet

Output 5: Strengthening capabilities to manage cross-border trade

- Organize a scoping workshop in Vientiane Capital in April 2011 to map out the domestic poultry value chain to link with the cross-border trade for HPAI risk assessment
- Continue to support a study to be conducted in Vientiane Capital to link the Thai cross-border poultry trade to in-country poultry production profile and its market chain
- Recruit an International Consultant for Cross-border Activities for one month in July 2011 to prepare and supervise cross-border activities
- Organize training to improve capabilities of border check points staff in July 2011
- Organize evaluation workshop to discuss the effectiveness of measures introduced and currently implemented at the border check points in July 2011
- Make provision of equipment and supplies for border check points

Activities undertaken during the reporting period**Output 1: Coordinated project implementation and policy support**

- The International Operation Officer has concluded his five-month backstopping mission to

assist in daily operation of the project from 5 May 2011 to 30 September 2011

- The project AI weekly meetings with staff to discuss technical and operational issues has continued.
- A no-cost extension of the project ending in 31 December 2011 was approved.
- During project's no-cost extension period, project staff was reduced by 50 percent. New contracts until 31 December 2011 were issued for two National Consultants, one National Operations Assistant, one Administrative Assistant and two drivers
- The Team Leader (TL) and National Project Coordinator (NPC) participated in the USAID Emerging Pandemic Threat (EPT) meeting organized on 27 April 2011 to discuss the EPT work plan 2011-2015
- The final concept on ZCM as part of the National Five Year Work Plan for EIDs and Public Health Preparedness and Response was jointly developed by the human and animal health sector from the Government of Lao PDR and development agencies
- The Team Leader attended the Team Leader meeting in FAO headquarters in Rome, Italy from 9 to 11 May 2011
- The TL and NPC participated in the European Union Highly Pathogenic and Emerging Diseases (HPED) project on anthrax organized by NEIDCO on 23 May 2011
- The Final Joint Implementation Review (JIR) of the National Avian Influenza Control and Pandemic Preparedness Plan 2006-2010 was undertaken from 6 to 14 June 2011 and FAO is the leading agency in Strategy 1
- The International Consultant on Veterinary Legislation completed the one-month assignment from 16 June to 12 July 2011 to review and advise on the development of the secondary legislation under the umbrella of Livestock and Veterinary Law
- A workshop on the development of secondary legislation under the Livestock Production and Veterinary Law was organized in Vientiane province on 7 and 8 July 2011 and attended by 17 participants
- The project supported the participation of 20 Lao PDR's delegation to the bilateral meeting with Viet Nam on disease control and Sanitary and Phytosanitary (SPS) matters on 25 and 26 August 2011 in Luang Prabang
- The National Mid-Term Priority Plan for Animal Health (NMTPP-AH) document was cleared by the FAO Regional Office for Asia and the Pacific (RAP), and the TL delivered a short presentation for DLF staff on 14 September 2011
- One Health symposium was organized on 21 September 2011 by NEIDCO in collaboration with the World Health Organization (WHO) and FAO
- World Rabies Day was celebrated in Lao PDR on 30 September 2011 and FAO supported DLF with 300 doses of rabies vaccines for free vaccination campaign

Output 2: Strengthened surveillance and response

- The second sampling of active surveillance in ten provinces (Vientiane Capital, Vientiane, Savannakhet, Champasak, Luang Prabang, Luang Namtha, Xayabouly, Xiengkhouang, Oudomxay and Phongsaly) was conducted from 20 June to 1 July 2011
- The third Field Veterinary Epidemiology in Action course in collaboration with the Faculty of Veterinary Medicine Khon Kaen University (KKU) Thailand was organized for ten provincial officers from 17 May to 8 June 2011
- Training on Animal Disease Diagnosis to improve the capabilities of 13 staff from provincial animal disease diagnostic laboratories of Phongsaly, Oudomxay, Luang Namtha and Luang Prabang was organized in Phongsaly from 16 to 19 May 2011
- The International Consultant on Veterinary Epidemiology completed the three-week assignment from 9 to 27 May 2011 to review the active surveillance programme and advise

on data management and analysis

- Training on outbreak investigation for HPAI and other transboundary animal diseases (TADs) was organized in Vientiane province for 15 district staff from seven provinces from 28 to 30 June 2011
- The TL and two National Consultants participated at the Surveillance Working Group (SWG) meeting for sharing surveillance data and updating on surveillance issues with human health sectors and other partners on 27 July 2011
- An overseas training on laboratory biosafety for two laboratory staff members was conducted at the Thailand Regional Reference Laboratory Pakchong from 1 to 12 August 2011 in order to support the management of the new NAHC's laboratory with a higher level of biosafety

Output 3: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry population

- The construction of the prototype stall model for live poultry marketing as part of the pilot activity on biosecurity improvement at Nongleng LBM in Oudomxay province was completed in November 2010 and the poultry vendors are utilizing the new stall since December 2010
- A workshop to evaluate the pilot activity on biosecurity improvement in Oudomxay province was organized on 25 and 26 April 2011
- Training on the introduction of biosecurity guidelines for LBM for 13 participants was organized in Luang Namtha on 3 and 4 May 2011
- The Biosecurity Expert from FAO headquarters conducted a three-week mission from 31 May to 17 June 2011
- Under OSRO/INT/805/USA no-cost extension projects, three activities were carried out:
 - biosecurity training in Vientiane province on 6 and 7 June 2011
 - biosecurity training in Savannakhet province on 9 and 10 June 2011
 - workshop on the development of biosecurity guidelines for Lao PDR in Vientiane Capital on 15 and 16 June 2011
- 3 000 copies of the manual on biosecurity guidelines for poultry commercial farm were printed in the Lao language and 1 000 copies in the English language

Output 4: Strengthening capabilities to manage cross-border trade

- The International Consultant for Cross-border Activities completed the three-week assignment from 4 to 22 July 2011 to assist in strengthening the cross-border control capacity of Lao PDR
- The second training workshop for 26 staff at the international and national border check point was organized in Savannakhet province on 19 and 20 July 2011

Planned activities for the next six-month period

Output 1: Planning, Coordination and policy support

- Continue the weekly meetings among the HPAI project staff
- Process the Government of Lao PDR approval for the phase VI of the project
- Extend contract of the national consultants and other project staff until 30 September 2012
- Organize an inception workshop to formally start the activities of the phase VI of the project
- Continue to support bilateral meeting with Thailand
- Participate at the NEIDCO final meeting of the National 5 Year Work Plan for EID and Public Health Emergency Preparedness and Response on 10 October 2011

- Participate at the USAID EPT program meeting for Lao PDR on 23 November 2011
- Develop and produce HPAI booklet on the project achievements from phase I to V

Output 2: Strengthen veterinary legislation for animal disease control

- Recruit a National Consultant on Veterinary Legislation
- Continue to develop the draft decree of animal and animal commodities movement and control and temporary seizures of animal commodities and animal quarantine

Output 3: Strengthen laboratory capacity

- Under EPT IDENTIFY project, two biosafety cabinets of NAHC laboratory which failed the testing conducted by Asia-Pacific Biosafety Association (APBA) will be replaced, and the delivery is expected before the end of 2011
- Under EPT IDENTIFY project, a backstopping mission by the Australian Animal Health Laboratory (AAHL) expert is planned on 6 and 7 October 2011
- Under EPT IDENTIFY project, conduct a training for DLF staff on the Laboratory Information Management System (LIMS)

Output 4: Strengthen veterinary epidemiology capacity

- Recruit National Consultant on Veterinary Epidemiology
- Organize a planning workshop to support risk-based active surveillance in high-risk provinces and longitudinal surveillance in one province
- Conduct the first sampling of risk-based active surveillance in high risk provinces
- Conduct the monthly sampling of the longitudinal active surveillance in one province
- Participate at the SWG meeting for sharing surveillance data and updating on surveillance issues with human health sector and other partners
- Provide necessary equipment and supplies for surveillance and rapid response

Main challenges encountered and response provided

- Failure to report HPAI outbreak early and insufficient outbreak investigation are still gaps that need to be overcome in order to improve the capacity to respond to HPAI outbreak and other TADs.
- The limited availability of national veterinary human resources is a constraint to the absorption capacity of the governmental services in the country. The activities carried out under Output 2 in phase III, IV and V of this project addressed some of the capacity building needed.
- There are gaps in knowledge on the process by which H5N1 virus enters Lao PDR and how it remains and spreads within the country owing to insufficient outbreak investigation. More evidence is being gathered through active surveillance, but this needs to be reinforced by the specific socio-economic studies planned on cross-border movements and value chains.
- There is a very limited local capacity to manage and analyse data. The limited capacity of of an effective epidemiology unit at the central level and the heavy workload of the technical staff at the provincial level have exacerbated the problem. Phase VI of the project should help to address this issue.
- Legislative support to animal health control still remains a challenge - although progress is being made in this area.

Main progress made towards the achievement of project outcomes**Output 1: Coordinated project implementation and policy support**

- A proposal for phase VI was developed taking into account the other related projects (i.e. EPT Identify, EU HPED, Asian Development Bank SPS).
- The NMTPP-AH was finalized, cleared by RAP and presented to DLF for comments and endorsement; It is currently in the process of being co-signed by FAO Representative and the Director-General/DLF.
- Six new drafts of sub-laws/decrees under the new Law on Livestock and Animal Health were developed.
- The agreement on the slaughter of animals and meat hygiene inspection was signed by the MAFF and is in force.

Output 2: Strengthened surveillance and response

- Letters of Agreement (LoAs) for two rounds of active surveillance between the project and the ten provinces were finalized.
- LoA for laboratory testing of active surveillance samples between the project and the NAHC laboratory was finalized.
- The implementation of risk-based active surveillance with similar design as of 2010, but only in two samplings in phase V produced significant results.
- The global positioning system (GPS) tools provided by the project were utilized for recording the geo-coordinates of the active surveillance sites.
- The central and provincial staff capabilities in conducting field surveillance were improved.

Output 3: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- A prototype stall model for biosecurity improvement was successfully operating in one LBM in Oudomxay province.
- Biosecurity guidelines for poultry commercial farm for Lao PDR were developed and printed.

Output 4: Strengthening capabilities to manage cross-border trade

- The international and national border check point staff have a better understanding and awareness of the country's needs to satisfy the requirements of the SPS agreement in order to obtain the accession to the WTO membership.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 03**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **October 2010 – March 2011**

Country: Lao People's Democratic Republic
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 03
Budget: USD 1 000 000 (Phase I), USD 1 284 990 (Phase II), USD 900 000 (Phase III), USD 800 000 (Phase IV), 550 000 (Phase V)
Total budget: USD 4 534 990
Effective starting date: 1 August 2006
Planned end date: 30 September 2011
Context of the project The project assists the Government in responding to the consequences of a possible poultry disease epidemic that could not only cause serious damage to the poultry sector, but also cause serious consequences to human health and household livelihoods.
Objectives of the project The specific objectives of the project are to: <ul style="list-style-type: none"> • strengthen coordination of and support avian influenza (AI) control policy development; • strengthen risk-based surveillance for Highly Pathogenic Avian Influenza (HPAI) in target provinces; • improve disease response capability; and • strengthen risk management measures, including biosecurity measures and cross-border movement.
Planned activities Output 1: Coordinated project implementation and policy support <ul style="list-style-type: none"> • continue the weekly meetings among the HPAI project staff • extend the contracts of the project staff until 30 September 2011 • support the bilateral meeting between Lao People's Democratic Republic (PDR) and People's Republic of China • support the development of the National Five Year Plan (2011-2015) on communicable diseases organized and coordinated by the National Emerging Infectious Disease Coordination Office (NEIDCO) • support the United States Agency for International Development (USAID) Partners' meeting from 3 to 5 November 2010 in Luang Prabang province Output 2: Strengthened surveillance and response <ul style="list-style-type: none"> • continue to conduct the fourth round of active surveillance in nine provinces from 29 November to 12 December 2010 • conduct training for laboratory staff to improve HPAI and other basic diagnostic capacity in Champasak province in November 2010 • Standard Operating Procedures (SOPs) and sublaws/decrees approved by the Government, printed and disseminated

Output 4: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- construction of the stall at the live bird market (LBM) as part of the pilot implementation on biosecurity improvement in Oudomxay province to start in October 2010
- monitor pilot activities by project staff together with the Provincial Agriculture and Forestry Office (PAFO) and District Agriculture and Forestry Office (DAFO) staff to follow up on the progress of the biosecurity improvement at LBM in Oudomxay province

Output 5: Strengthening capabilities to manage cross-border trade

- international consultant on cross-border activities together with the national Project Director will undertake two visits to Boten, Luang Namtha province and to Kaysone, Savannakhet province to meet and liaise with PAFO/DAFO and the check point staff
- organize training for staff at border check points

Activities undertaken during the reporting period

Output 1: Coordinated project implementation and policy support

- The International Operations Officer concluded his backstopping mission to assist in daily operation of the project from 20 October 2010 to 16 January 2011.
- Continued conducting of the AI weekly meetings staff to discuss technical, as well as operational issues.
- All contracts of national consultant and other project staff were extended until 30 September 2011.
- The Government of Lao PDR's approval for the Phase V of the project was received on 11 November 2010.
- An inception workshop to evaluate the activities implemented during Phase IV and to plan the activities to be implemented during Phase V of the project was organized on 9 and 10 December 2010.
- The project team revised the 2011 work plan, based on the inputs during the inception workshop.
- The Team Leader attended the Ecohealth Emerging Infectious Diseases Research Proposal Development workshop in Siem Reap, Cambodia, from 18 to 22 October 2010, supported and organized by the Canada's International Development Research Centre (IDRC).
- The Team Leader and the National Project Coordinator participated at the Tripartite Review Mission meeting organized by the Food and Agriculture Organization of the United Nations (FAO) Environmental Animal Health Initiative Management for Enhanced Smallholder Production (EAHMI) project on 25 October 2010.
- The Team Leader and the National Project Coordinator were in Bangkok on 29 and 30 November 2010 to attend:
 - inception workshop for the Regional Cooperation Programme on Highly Pathogenic and Emerging Diseases (HPED) in Southeast Asia on 29 November 2010; and
 - closing workshop on Technical Cooperation Project (TCP) on Emergency assistance for Surveillance of Novel Influenza A Subtype H1N1 Viruses in Pig and Poultry Production Sectors in High Risk Southeast Asian Countries on 30 November 2010.
- The Team Leader delivered a lecture on the application of the One Health approach to control zoonoses at the Study Conference for One Health Master programme at Massey University, New Zealand, on 14 December 2010. This visit was sponsored by Massey University.
- The Team Leader (sponsored by IDRC and the International Livestock Research Institute [ILRI]) and the National Project Coordinator (sponsored by the European Union)

participated at the One Health Congress 2011 in Melbourne, Australia, from 14 to 16 February 2011.

- The Team Leader attended the 5th Annual Regional Emergency Centre for Transboundary Animal Diseases (ECTAD) meeting for Asia and the Pacific in Bangkok from 22 to 24 February 2011 and participated in the PEMS training on 25 February 2011.
- The Team Leader and the National Project Coordinator attended the Preparation Meeting Emerging Pandemic Threats (EPT) Program coordinated by NEIDCO in collaboration with USAID in Vientiane on 28 February 2011.
- The Team Leader and the National Project Coordinator participated in several discussion meetings for the development of Zoonosis Collaboration Mechanism (ZCM) concept as part of the National 5-Year Work Plan for the emerging infectious diseases (EID) and Public Health Emergency Preparedness and Response during February to March 2011.

Output 2: Strengthened surveillance and response

- A Field Veterinary Epidemiology in Action course in collaboration with the Faculty of Veterinary Medicine Khon Kaen University (KKU) Thailand was organized for ten provincial officers from 4 to 22 October 2010.
- Training for Animal Disease Diagnosis to improve the capabilities of 12 staff from provincial animal disease diagnostic laboratories of Champasak and Savannakhet was organized in Champasak from 22 to 26 November 2010.
- The fourth sampling of active surveillance in nine provinces (Vientiane Capital, Vientiane, Savannakhet, Champasak, Luang Prabang, Luang Namtha, Xiengkhouang, Oudomxay and Phongsaly) was conducted from 29 November to 12 December 2010.
- The Team Leader and the Director of NAHC attended the Regional workshop on Surveillance Network Analysis Tool (SNAT) organized by the Agricultural Research for Development Centre (CIRAD) in Hanoi, Vietnam, on 4 to 5 October 2010.
- A Zoonosis Risk Assessment workshop was organized jointly by the World Health Organization (WHO) and FAO in Vientiane province from 27 to 29 October 2010.
- The project supported five follow-up outbreak investigations carried out by PAFO as part of the passive surveillance to Xiengkhouang (19 October 2010 and 29 and 30 November 2010); Xayabouly (from 13 to 16 December 2010); Phongsaly (14 December 2010); and Luang Namtha (10 January 2011).
- The Regional Project Coordinator carried out two missions to assist in data management and analysis of the active surveillance; the first mission was on 30 and 31 August 2010 and the second mission from 20 to 24 December 2010.
- Under the TCP project on H1N1, the National Animal Health Center (HC) staff conducted training and cross-sectional studies in pig population in four provinces (Vientiane Capital, Luang Prabang, Savannakhet and Champasak) between 28 September and 19 October 2010. Also bi-weekly visits and disease investigations to monitor suspected cases of swine influenza conducted in two provinces (Bolikhamxay and Khammouane) between 20 September and 22 November 2010.
- Under the IDENTIFY regional project, two biosafety experts from Asia-Pacific Biosafety Association (APBA) conducted two missions to the NAHC laboratory to demonstrate the correct use of biosafety equipments and supplies; the first mission was on 13 and 14 December 2010 and the second mission on 26 to 28 January 2011.
- One Department of Livestock and Fisheries (DLF) staff member was supported to attend a short training course on 'Veterinary Epidemiology in Action' under the Field Epidemiology Training Programme for Veterinarians (FETPV) from 17 January to 11 February 2011.

- The Evaluation and Planning workshop for HPAI surveillance to better understand the active surveillance plan, improve data and sample collection and improve coordination at all levels was organized from 3 to 5 February 2011 and attended by 45 participants.
- A field simulation exercise for HPAI rapid response team was conducted in Xiengkhouang province from 7 to 10 March 2011 with a total of 48 participants. The risk communication activity in this simulation exercise carried out in collaboration with the Academy for Educational Development (AED).
- The first round of active surveillance in ten provinces (previous nine provinces in phase IV plus Xayabouly province) was conducted from 22 March to 2 April 2011.
- Four missions were conducted by the national consultants to monitor the implementation of data and sampling collection process by PAFOs and DAFOs during the active surveillance activities in ten provinces from 22 March to 2 April 2011.

Output 3: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry population

- The construction of the stall at LBM Nongleng as part of the pilot implementation on biosecurity improvement in Oudomxay province was completed by 29 November 2010.
- Two project staff together with PAFO/DAFO staff monitored the progress of the pilot implementation of the biosecurity improvement and inspected the new stall construction at LBM Nongleng in Oudomxay province from 2 to 5 December 2010.

Output 4: Strengthening capabilities to manage cross-border trade

- The International Consultant for Cross-border Activities completed a two-month mission from 27 September to 26 November 2010 and submitted his recommendations for improvement of cross-border capacity.
- The International Consultant for Cross-border Activities carried out visit to Boten, Luang Namtha province from 9 to 15 October 2010 and to Kaysone, Savannakhet province from 17 to 20 October 2010 to meet and liaise with PAFO/DAFO and the check point staff.
- Training workshop for 28 staff at the International and National Border Check-point was organized in Vientiane province from 9 to 11 November 2010.

Planned activities for the next six-month period

Output 1: Coordinated project implementation and policy support

- continue the weekly meetings of the HPAI project staff
- conduct two backstopping missions, first for a month in April 2011 and then for three months, from July to September 2011
- support bilateral meetings with Thailand and Viet Nam
- continue to participate in the discussion meetings coordinated by NEIDCO for the development of ZCM concept
- participate at the NEIDCO final wrap-up meeting of the National 5-Year Work Plan for EID and the Public Health Emergency Preparedness and Response on 21 April 2011
- participate in the USAID EPT programme for Lao PDR on 26 April 2011
- recruit an International Consultant on Veterinary Legislation for one month in June-July 2011 to assist DLF in completion of the veterinary legislation framework based on the gap analysis carried out in Phase IV
- organize final wrap-up meeting at the end of the project
- develop and produce an HPAI booklet on the achievement of the project from Phase I to V

Output 2: Strengthened surveillance and response

- participate in the Surveillance Working Group (SWG) meeting for sharing surveillance data and updating surveillance issues with other partners on 5 April 2011
- continue to conduct the second round of active surveillance in ten provinces for Phase V, from 20 June to 1 July 2011
- recruit an International Consultant on Veterinary Epidemiology for one month in May 2011 to provide recommendations on surveillance activities and data management
- conduct two training courses for outbreak investigation for PAFO and DAFO staff in the provinces of Xayabouly and Bolikhamxay in May 2011
- continue to support the Field Veterinary Epidemiology in Action training in Khon Kaen University of Thailand in June 2011
- provide laboratory diagnostic training in Phongsaly province for laboratory staff from northern provinces in August 2011
- support two NAHC laboratory staffs to learn the laboratory management and operational strategy of BSL3 facility at the Virology Research Institute (VRI) in Pakchong, Thailand on June-July 2011
- provide necessary equipment and supplies for surveillance and rapid response

Output 3: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry population

- conduct the workshop to review the pilot implementation of biosecurity improvement at LBM in Oudomxay province in April 2011
- start the activities relating to the pilot implementation of biosecurity improvement in Luang Namtha province in May 2011 by conducting:
 - training on biosecurity for PAFO and DAFO officers in May 2011;
 - training for market managers, vendors and cullers/slaughterers in May 2011;
 - construction of stall at selected LBM as a prototype for biosecurity improvement in June 2011;
 - monitor progress of pilot activities in July 2011
- organize training for LBM authorities and traders associations about biosecurity
- organize training workshop for the public and private sectors on poultry production and biosecurity measures in Vientiane Capital and Savannakhet

Output 4: Strengthening capabilities to manage cross-border trade

- organize a scoping workshop in Vientiane Capital in April 2011 to map out the domestic poultry value chain to link with the cross-border trade for HPAI risk assessment
- continue to support a study to be conducted in Vientiane Capital to link the Thai cross-border poultry trade to in-country poultry production profile and its market chain
- recruit an International Consultant for Cross-border Activities for one month in July 2011 to prepare and supervise cross-border activities
- organize training to improve capabilities of border check points staff in July 2011
- organize evaluation workshop to discuss the effectiveness of measures introduced to and currently implemented at the border check points in July 2011
- provide equipment and supplies for border check points

Main challenges encountered and response provided

- Limited early reports on HPAI outbreak and insufficient outbreak investigation still need to be overcome in order to improve the capacity to respond to HPAI outbreaks and other

TADs.

- The limited availability of national veterinary human resources is a constraint to the absorption capacity of the governmental services in the country. The activities carried out under Output 2 in Phase III, IV and V of this project have addressed some of the capacity building needed.
- Gaps in knowledge have been identified regarding the process by which the H5N1 virus enters Lao PDR and how it remains and spreads within the country, owing to insufficient outbreak investigation. More evidence is being gathered through active surveillance, but this needs to be reinforced by the specific socio-economic studies planned on cross-border movements and value chains.
- There is a very limited local capacity to manage and analyse data. The absence of an effective epidemiology unit at the central level and the heavy workload of the technical staff at the provincial level have exacerbated the problem. Phase IV and V of the project should help to address this issue.
- Legislative support to animal health control still remains a challenge, although progress is being made in this area.

Main progress made towards the achievement of project outcomes

Output 1: Coordinated project implementation and policy support

- The project team revised the work plan for 2010 and reached an agreement with the Government on the schedule of implementation of the work plan.
- The draft of sublaws/decrees under the new legislation Law on Livestock and Animal Health Matters was developed and finalized.
- The National Animal Health Roadmap (NAHR) for Lao PDR was drafted based on the inputs from the veterinary services staff.
- The HPAI Prevention and Control Programme is incorporated into Strategy 1 of the National Avian Influenza Control and Pandemic Preparedness Plan 2006-2010 and will be further developed and expanded for the next five years.

Output 2: Strengthened surveillance and response

- LoAs for two rounds of active surveillance during phase V were signed between the project and the ten provinces.
- The improved risk-based active surveillance design, which incorporated the spatial and temporal distribution of HPAI and focused on duck species and LBM, was implemented and produced significant results.
- The global positioning system (GPS) tools provided by the project were utilized for recording the geo-coordinates of the active surveillance sites.
- The central and provincial staff capabilities in animal virus influenza diagnosis were improved.
- SOPs were completed and are ready to be used for control zones, culling, disease investigation in backyard poultry and commercial poultry farms and sample collection.

Output 3: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- Practical biosecurity guidelines for LBMs, slaughter point and duck farms were developed with regard to the local situation. This was used as operational guidance for pilot implementation in Oudomxay province.

- A prototype stall model for biosecurity improvement was constructed and operated in one LBM in Oudomxay province.

Output 4: Strengthening capabilities to manage cross-border trade

- Cross-border trade flows and their links to domestic poultry value chain were mapped and documented for selected borders, such as with China (Luang Namtha and Oudomxay) and with Thailand and Viet Nam (Savannakhet). In Phase V, similar activity will be carried out in Vientiane Capital.
- Legislative support and technical inputs provided to revise the current decree on inspection of animal, animal products and other related products imported to and in transit through Lao PDR.

Project Monitoring Sheet: **OSRO/MYA/702/USA**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **October 2010 – March 2011**

Country: Myanmar
Project: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/MYA/702/USA
Budget: USD 500 000 (Phase I), USD 750 000 (Phase II), USD 375 000 (Phase III), USD 150 000 (Phase IV)
Total budget: USD 1 775 000
Effective starting date: January 2008
Planned end date: 30 September 2011
<p>Context of the Project</p> <p>Myanmar experienced four waves of Highly Pathogenic Avian Influenza (HPAI) outbreaks in 2006, 2007, 2010 and 2011. The most recent, in January-March 2011, occurred in four separate locations and required the culling of over 100 000 poultry as part of control measures. While the Myanmar Government has responded promptly to outbreaks, the country remains at-risk from duck populations in which the virus is endemic, migrating wild birds and trade with neighbouring countries. The Food and Agriculture Organization of the United Nations (FAO) is implementing an integrated AI control programme, consisting of three projects with complementary activities: OSRO/MYA/702/USA, OSRO/MYA/801/WBK and OSRO/MYA/601/AUL. The programme is being implemented in collaboration with the Livestock Breeding and Veterinary Department (LBVD) of the Ministry of Livestock and Fisheries. The report describes activities funded or co-funded by the project in the context of the overall programme.</p>
<p>Objectives of the project</p> <p>The major objective of the project is to address the urgent short-term actions to strengthen Myanmar's capacity to rapidly detect HPAI and minimize its spread. Specifically, the project aims to provide necessary assistance in:</p> <ul style="list-style-type: none"> • strengthening HPAI prevention and control in Myanmar, particularly the capacity to effectively contain the outbreak, including animal surveillance, collaboration and communication between the animal and human health sectors; • strengthening the capacity of the veterinary services at the field level; and • mobilizing stakeholders towards building a community-based rapid warning and response system to meet the challenge of an avian influenza (AI) outbreak in Myanmar.
<p>Planned Activities</p> <p>Output 1: Strengthened cross-sectoral coordination at the national level</p> <p><i>Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the Government.</i></p> <ul style="list-style-type: none"> • The entire project team will continue its work, and the project will support one national consultant for Animal Health Management. <p><i>Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals.</i></p> <ul style="list-style-type: none"> • The operational work plan for 2011 will be agreed upon with the World Health Organization (WHO) and the Ministry of Health (MoH) on cross-sectoral collaboration.

- Two joint workshops will take place in the next six months.

Activity 1.3: Support the review and revision of the National Strategy, Contingency plan and Standard Operating Procedures (SOPs) related to HPAI control measures.

- Ongoing review of SOPs on compensation and surveillance and outbreak guidelines.

Activity 1.4: Support national staff of LBVD to participate and give presentations/share information in international conferences, meetings or workshops.

- No activities planned.

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- No activities planned.

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- National consultants continue to provide support to the expanded surveillance and outbreak investigation programme.

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- Ongoing implementation of a Letter of Agreement (LoA) providing epidemiology support to the expanded surveillance and outbreak investigation programme.

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- No activities planned.

Activity 2.5: Support national staff to participate in Regional Field Epidemiology Training Programme for Veterinarians (FETPV).

- The two LBVD staff will continue their FEPTV.

Activity 2.6: Support passive and active surveillance for the high-risk areas including wetlands, duck-raising and border areas.

- See 2.3.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

Activity 3.1: Organize local training by trainees previously trained overseas.

- Ongoing on-the-job training.

Activity 3.2: Conduct semi-annual proficiency testing (PT) and quality assessment (QA) for serological and rapid tests by linking national labs with the Australian Animal Health Laboratory (AAHL).

- No planned activities.

Activity 3.3: Manage a local quality assessment/quality control (QA/QC) programme for the national laboratory network.

- Ongoing laboratory support to the expanded surveillance programme and to the ongoing domestic QA/QC programmes.
- Undertake field visits to the laboratories to monitor sample testing and post-mortem examination.
- QA/QC proficiency testing samples among laboratories in the country to be completed by the end of the year.

Activity 3.4: Procure necessary laboratory equipment and supplies.

- Delivery of required supplies and equipment.

Output 4: Enhanced risk management measures including biosecurity improvement among the high-risk poultry population and selected live bird markets (LBMs)

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- Meetings and workshops will be held related to the Yangon-Mandalay market risk assessment and the production zone biosecurity studies.

Activity 4.2: Support activities related to biosecurity improvement in selected LBMs and production zones.

- Finalize the Yangon-Mandalay LoA and implement stakeholder feedback meetings.
- Finalize and begin implementation of an LoA on production zone/biosecurity.

Activity 4.3: Recruit an international consultant (epidemiology).

- No activities planned.

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- See 4.2.

Activities undertaken during the reporting period October 2010 – March 2011

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the Government.

- The project team, including the CTA, the International Programme Officer and the national consultants, was in place throughout the reporting period.
- The project team facilitated a USAID monitoring mission in December 2010. The project team briefed the mission in Yangon and accompanied the mission on a field trip to Mandalay and Sagaing. The mission visited production zones, observed a duck survey in the field, observed a township meeting of Community Animal Health Workers (CAHWs), met with regional LBVD officers and visited a diagnostic lab in Mandalay.

Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals

- The 6th National Steering Committee (NSC) meeting was held in January 2011. The meeting reviewed progress and work plans and provided recommendations for future actions. In addition to LBVD senior officials, staff from the Department of Health (DoH), WHO, the United Nations Children's Fund (UNICEF), Myanmar Livestock Federation and Yangon City Development Council also participated.
- The project facilitated the completion of a final draft of the operational work plan on "Integrated Diseases Surveillance and Human and Animal Pandemic Influenza Preparedness and Response for Myanmar 2011-12" between FAO, WHO and UNICEF. The plan describes activities and funding gaps for AI control for the next two years.
- A joint animal-human health sector technical meeting was held in October with WHO, FAO and LBVD.

Activity 1.3: Support the review and revision of the National Strategy, Contingency plan and Standard Operating Procedures (SOPs) related to HPAI control measures.

- Guidelines on compensation were delivered to LBVD in October 2010 and discussion within the Government is ongoing taking into account the recent outbreaks.
- Surveillance and outbreak investigation guidelines were drafted.
- Contingency plan has been tested in the recent outbreaks, and suggestions for updates have been made.

Activity 1.4: Support national staff of the Livestock Breeding and Veterinary Department (LBVD) to participate and give presentations/share information in international conferences, meetings or workshops.

- LBVD staff participated in several international conferences and shared information related to the project. For example, the project briefed the Deputy Director-General of LBVD in advance of the Federation of Asian Veterinarians Association conference in March in the Philippines.
- The project provided technical support to the 2009 FETPV trainee who participated in the One Health conference in Melbourne in February.

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level.

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- No activities were foreseen.

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- Surveillance review workshops were held in Upper and Lower Myanmar in September.
- Surveillance planning workshops were held in Upper and Lower Myanmar in December.
- A total of 228 LBVD staff were trained on outbreak response in March.
- Staff from LBVD epidemiology and laboratory sections received training on data management in November.

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- Technical support was provided to the four HPAI outbreak responses in January-March. The national commercial farm global positioning system (GPS) database established in 2010 was a significant source of assistance for the outbreak response.

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- Supplies for CAHWs training (posters, booklets) and software licenses were procured.

Activity 2.5: Support national staff to participate in Regional Field Epidemiology Training Programme for Veterinarians (FETPV).

- The 2009-enrolled FETPV trainee completed his final session in Bangkok and completed outbreak investigations and field studies on Foot-and-Mouth Disease (FMD). He presented the result of his secondary data study on HPAI outbreaks during the One Health conference in Melbourne.
- The 2010-enrolled FETPV trainee finished his second session and conducted an investigation of the HPAI Sittwe outbreak.
- The 2011-enrolled FETPV trainee completed the epidemiology short course and conducted an investigation of the Porcine Reproductive and Respiratory Syndrome outbreak in Mandalay. Further field studies and secondary data analysis related to pigs and PRRS are planned.

Activity 2.6: Support passive and active surveillance for the high-risk areas including wetlands, duck-raising and border areas

- The surveillance programme in 78 townships was completed in March.
- Epidemiology and laboratory support to the surveillance programme is finalized, and the progress report has been received.
- Laboratory support to the surveillance programme is finalized, and the progress report has been received.
- The epidemiology activity improvement LoA is ongoing, and the progress report has been received.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

Activity 3.1: Organize local training by trainees previously trained overseas.

- Ongoing through on-the-job training.

Activity 3.2: Conduct semi-annual PT and QA for serological and rapid tests by linking national labs with AAHL.

- Samples from the Sittwe outbreak were submitted to the National Institute of Animal Health, Thailand (NIAH) and AAHL, Geelong, Australia.
- The project supported LBVD linkages with AAHL and discussed future activities with AAHL experts during their mission to Myanmar.

Activity 3.3: Manage a local QA/QC programme for the national laboratory network.

- Domestic QA/QC programme is ongoing. National consultant travelled to Mandalay to

conduct QA/QC on serology, virology and poultry post-mortem.

Activity 3.4: Procure necessary laboratory equipment and supplies.

- Laboratory supplies (primers and probes, QRT-PCR, filters) were purchased under the project.

Output 4: Enhanced risk management measures including biosecurity improvement among the high-risk poultry population and LBMs

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- The LoA on risk assessment in Yangon and Mandalay was completed.
- The LoA on risk assessment on Inle and Ayerwadday was completed.
- A feedback meeting on HPAI risk assessment study in Inle and Ayerwadday areas was conducted in November.
- A feedback workshop on biosecurity improvement in production zones was held in October.
- A rapid risk assessment meeting was held with district LBVD staff in Sittwe in December.
- An international consultant from the global project visited production zones in Yangon and Sagaing and LBMs in Yangon in March to review and make recommendations on biosecurity.
- Several meetings with duck hatchery owners from Bago division were held in October.

Activity 4.2: Support activities related to biosecurity improvement in selected LBMs and production zones.

- Several planning meeting were held for the design of a new LoA aimed at improving biosecurity in production zones.

Activity 4.3: Recruit an international consultant (epidemiology).

- No planned activities.

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- See 4.1.

Planned activities for the next six-month period

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the Government.

- Management team in place.
- Three national consultants will be either funded or co-funded.

Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals.

- The 7th NSC meeting will be organized with participation from private sector partners, DoH and WHO.

Activity 1.3: Support the review and revision of the National Strategy, Contingency plan and SOPs related to HPAI control measures.

- Review the contingency plan and SOPs in light of the recent outbreaks and conduct an assessment on outbreak management in backyard or duck farms.

Activity 1.4: Support national staff of LBVD to participate and give presentations/share information in international conferences, meetings or workshops.

- FAO staff will support LBVD staff as required.

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- No activities planned.

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- Finalize LoA on HPAI surveillance in Upper Myanmar

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- Conduct a workshop on outbreak response if there continue to be outbreaks during the period March-September

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- Supplies for surveillance and response will be procured

Activity 2.5: Support national staff to participate in Regional FETPV.

- The 2009 FETPV trainee will participate in an International Fellowship study tour.
- The 2010 LBVD staff member will attend third session of the FETPV in Bangkok in August for one month and be involved in HPAI outbreak investigations, field studies and data analysis.
- The 2011 FETPV will continue outbreak investigation, field studies and data analysis on pigs and PRRS. She will attend the two-month course session.
- The project will launch the in-country field epidemiology training programme.

Activity 2.6: Support passive and active surveillance for the high-risk areas including wetlands, duck-raising and border areas.

- Finalize LoAs on HPAI surveillance in Upper Myanmar, surveillance and outbreak investigation technical assistance and epidemiology activity improvement.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

Activity 3.1: Organize local training by trainees previously trained overseas.

- Ongoing through on-the-job training.

Activity 3.2: Conduct semi-annual PT and QA for serological and rapid tests by linking national labs with AAHL.

- Finalize the LoA on laboratory support to field surveillance programmes.

Activity 3.3: Manage a local quality assessment/quality control (QA/QC) programme for the national laboratory network.

- Domestic QA/QC programme is ongoing as part of the LoAs on laboratory and technical support to surveillance (see 3.2).

Activity 3.4: Procure necessary laboratory equipment and supplies.

- Procurement of laboratory supplies (primers and probes for AI).

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected LBMs

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- Conduct small group training on biosecurity based on the recommendations of the expert from the global project. These trainings will be conducted in areas that have experienced recent outbreaks, as well as other high-risk areas.

Activity 4.2: Support activities related to biosecurity improvement in selected LBMs and production zones.

- Implement the follow-up LoA on production zones biosecurity improvement.

Activity 4.3: Recruit an international consultant (epidemiology).

- Recruitment of a Risk Management expert to provide training based on advice from the expert from the global project.

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- The field studies to be conducted under the in-country epidemiology training programme will encompass poultry chain risk assessment.

Main challenges encountered and response provided

The main challenge has been to provide support to LBVD in responding effectively to the wave of outbreaks from January-March. The emphasis of the project has been on the epidemiological and reporting aspects of the outbreaks themselves, while ensuring that lessons learned from the outbreaks are communicated effectively to a wide group of LBVD staff. The lack of a compensation scheme is an ongoing issue, and with the formation of a new government in the next quarter, this is expected to be on the agenda.

Previous to the outbreaks, the main challenge in the period October-December was to evaluate the effectiveness of the large-scale surveillance programme and determine the shape of future control and surveillance strategies.

The project's response to the changing situation is to continue to focus more on the smallholder layer sector as the high-risk group and decrease emphasis on duck and backyard systems.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

Overall, the project is considered to be progressing well, with a list of major achievements in capacity building. However, what appears to be an upswing in the number of outbreaks is of concern and this highlights the need for ongoing support.

Output 1: Strengthened cross-sectoral coordination at the national level

There continue to be good relations with the Government. The coordination between the animal-human sectors has further improved with additional meetings, but further work needs to be done.

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level.

There is now a much better understanding of the epidemiology of HPAI based on the national duck survey, which was a major achievement. Added to this, the national surveillance programme involving CAHWs was implemented on such a scale for the first time and offered valuable insights into the epidemiology of the disease and the nature of surveillance programmes. The national commercial farm database proved to be an invaluable tool, when it came to responding to the outbreaks and identifying high-risk areas. Response capacity has developed well. In the recent outbreaks in Sagaing, it appears that the virus spread from the initial outbreak site through poultry movements; however, two more outbreak sites have been well contained as of the time of this report. Reporting of response activities has improved considerably. The establishment of an in-country epidemiology training programme is a major step forward.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

The laboratory system is operating well, with recent outbreaks rapidly diagnosed and samples from field surveys being processed effectively.

Output 4: Enhanced risk management measures including biosecurity improvement among the high-risk poultry population and selected LBMs

The LBVD now has a good understanding of the concept of risk and of the interaction between supply chains and disease spread. The LBVD has a better understanding of risks associated with LBMs. The biosecurity in production zones has increased, although further work needs to be done in this area.

Project Monitoring Sheet: **OSRO/MYA/702/USA**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **April – September 2011**

Country: Myanmar
Project: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/MYA/702/USA
Budget: USD 500 000 (Phase I), USD 750 000 (Phase II), USD 375 000 (Phase III), USD 150 000 (Phase IV), 279 000 (Phase V)
Total budget: USD 2 054 000
Effective starting date: January 2008
Planned end date: 30 September 2012
<p>Context of the Project</p> <p>Myanmar experienced four waves of Highly Pathogenic Avian Influenza (HPAI) outbreaks in 2006, 2007, 2010 and 2011. The most recent, in January-March 2011, occurred in four separate locations and required the culling of over 100 000 poultry as part of control measures. While the Myanmar Government has responded promptly to outbreaks, the country remains at-risk from duck populations in which the virus is endemic, migrating wild birds and trade with neighbouring countries. The Food and Agriculture Organization of the United Nations (FAO) is implementing an integrated avian influenza (AI) control programme, consisting of three projects with complementary activities: OSRO/MYA/702/USA, OSRO/MYA/801/WBK and OSRO/MYA/601/AUL. The programme is being implemented in collaboration with the Livestock Breeding and Veterinary Department (LBVD) of the Ministry of Livestock and Fisheries. The report describes activities funded or co-funded by the project in the context of the overall programme. The section on “Planned Activities for the next six-month period” follows the outputs and activities of the recently approved amendment, which extended the project to September 2012.</p>
<p>Objectives of the project</p> <p>The major objective of the project is to address the urgent short-term actions to strengthen Myanmar’s capacity to rapidly detect HPAI and minimize its spread. Specifically, the project aims to provide necessary assistance in:</p> <ul style="list-style-type: none"> • strengthening HPAI prevention and control in Myanmar, particularly the capacity to effectively contain the outbreak, including animal surveillance, collaboration and communication between the animal and human health sectors; • strengthening the capacity of the veterinary services at the field level; and • mobilizing stakeholders towards building a community-based rapid warning and response system to meet the challenge of an AI outbreak in Myanmar.
<p>Planned activities</p> <p>Output 1: Strengthened cross-sectoral coordination at the national level</p> <p><i>Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the Government.</i></p> <ul style="list-style-type: none"> • Management team in place. • Three national consultants will be either funded or co-funded. <p><i>Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals.</i></p> <ul style="list-style-type: none"> • The 7th National Steering Committee (NSC) meeting will be organized with participation

from private sector partners, the Department of Health (DoH) and the World Health Organization.

Activity 1.3: Support the review and revision of the National Strategy, Contingency plan and standard operating procedures (SOPs) related to HPAI control measures.

- Review the contingency plan and SOPs in light of the recent outbreaks and conduct an assessment on outbreak management in backyard or duck farms.

Activity 1.4: Support national staff of LBVD to participate and give presentations/share information in international conferences, meetings or workshops.

- FAO staff will support LBVD staff as required.

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- No activities planned.

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- Finalize the Letter of Agreement (LoA) on HPAI surveillance in Upper Myanmar

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- Conduct a workshop on outbreak response if there continue to be outbreaks during the period March-September

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- Supplies for surveillance and response will be procured

Activity 2.5: Support national staff to participate in Regional Field Epidemiology Training Programme for Veterinarians (FETPV).

- The 2009 FETPV trainee will participate in an International Fellowship study tour.
- The 2010 LBVD staff member will attend third session of the FETPV in Bangkok in August for one month and be involved in HPAI outbreak investigations, field studies and data analysis.
- The 2011 FETPV will continue outbreak investigation, field studies and data analysis on pigs and Highly Pathogenic Porcine Reproductive and Respiratory Syndrome (PRRS). She will attend the two-month course session.
- The project will launch the in-country field epidemiology training programme.

Activity 2.6: Support passive and active surveillance for the high-risk areas including wetlands, duck-raising and border areas.

- Finalize LoAs on HPAI surveillance in Upper Myanmar, surveillance and outbreak investigation technical assistance and epidemiology activity improvement.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

Activity 3.1: Organize local training by trainees previously trained overseas.

- Ongoing through on-the-job training.

Activity 3.2: Conduct semi-annual proficiency training (PT) and quality assessment (QA) for serological and rapid tests by linking national labs with the Australian Animal Health Laboratory (AAHL).

- Finalize the LoA on laboratory support to field surveillance programmes.

Activity 3.3: Manage a local quality assessment/quality control (QA/QC) programme for the national laboratory network.

- Domestic QA/QC programme is ongoing as part of the LoAs on laboratory and technical support to surveillance (see 3.2).

Activity 3.4: Procure necessary laboratory equipment and supplies.

- Procurement of laboratory supplies (primers and probes for AI).

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected live bird markets (LBMs)

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- Conduct small group training on biosecurity based on the recommendations of the expert from the global project. These trainings will be conducted in areas that have experienced recent outbreaks, as well as other high-risk areas.

Activity 4.2: Support activities related to biosecurity improvement in selected LBMs and production zones.

- Implement the follow-up LoA on production zones biosecurity improvement.

Activity 4.3: Recruit an international consultant (epidemiology).

- Recruitment of a Risk Management expert to provide training based on advice from the expert from the global project.

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- The field studies to be conducted under the in-country epidemiology training programme will encompass poultry chain risk assessment.

Activities undertaken during the reporting period April –September 2011

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the Government.

- The project team, including the CTA, and the national operations and technical consultants, were in place throughout the reporting period, co-funded by other projects.
- The CTA attended a planning session in Rome in May 2011 where plans were presented and discussed for the next year United States Agency for International Development (USAID) country projects.

Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals

- The 7th NSC meeting was held in August 2011. The meeting reviewed progress and work plans and provided recommendations for future actions. The meeting approved an expansion of the mandate of the NSC to cover all animal diseases and zoonoses. The NSC therefore becomes the “Animal Health Programme Steering Committee” giving strategic oversight to implementation of the FAO-LBVD Animal Health Priority Plan (2011-15) through a series of task forces on specific animal health and zoonoses issues, including HPAI and cattle and pig diseases. The NSC meeting was chaired by the Deputy Minister of the Ministry of Livestock and Fisheries. In addition to LBVD senior officials, staff from DoH, the Myanmar Livestock Federation (MLF) and the Livestock Feedstuffs and Milk Products Enterprises (LFME).

Activity 1.3: Support the review and revision of the National Strategy, Contingency plan and SOPs related to HPAI control measures.

- The outbreaks in 2011 may have had some involvement of wild birds, and agreement was reached at the NSC meeting that staff with wild bird experience from the Ministry of Forestry would be involved in surveillance in two of the 2011 outbreak areas.
- After due consideration and discussion with FAO and senior government officials, the government will not be providing compensation to farmers affected by HPAI.

Activity 1.4: Support national staff of LBVD to participate and give presentations/share information in international conferences, meetings or workshops.

- The project provided technical support to LBVD staff participating in workshops on One Health (Thailand, May and August 2011), laboratory quality assurance (Australia, September 2011) laboratory networking (Malaysia, September 2011).

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- No activity.

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- Project staff and staff from the central epidemiology unit of LBVD visited the 2011 outbreak sites and gave local LBVD staff, health authorities and local authorities updated training on outbreak management procedures, funded by other projects.
- The CTA made a presentation at a World Rabies Day event organized by the LBVD in September 2011.

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- Project and LBVD staff provided awareness training to farmers in the 2011 outbreaks areas during four meetings in September 2011, funded by other projects. (see 2.2)

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- No supplies were procured

Activity 2.5: Support national staff to participate in Regional FETPV.

- The 2009 FETPV trainee travelled to Thailand in May 2011 to graduate from the two-year programme.
- The 2010 LBVD staff member attended the third session of the FETPV in Bangkok in August 2011 and returned to continue his secondary data analysis and prepare final reports of the outbreak investigation and to design the field study.
- The 2011 FETPV was in Bangkok for two months over June to August 2011. She returned and began her secondary data study on reported outbreaks in cattle and buffalo.
- The project continued planning for the Integrated Disease Control (IDC) on-the-job training programme involving epidemiology, lab and planning staff.

Activity 2.6: Support passive and active surveillance for the high-risk areas including wetlands, duck-raising and border areas.

- The LoA on epidemiology support to the active surveillance programme was completed in July 2011. Under this LoA, staff of the epidemiology unit conducted field trips to support field activities and managed data generated from the active surveillance programme.
- The reporting period is the low-risk period for HPAI, so only passive surveillance was conducted during this period.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

Activity 3.1: Organize local training by trainees previously trained overseas.

- Ongoing through on-the-job training.

Activity 3.2: Conduct semi-annual PT and QA for serological and rapid tests by linking national labs with AAHL.

- The LoA on laboratory support to field surveillance programmes was completed in July 2011. Under this LoA, laboratory staff provided field support to field surveillance teams and processed samples collected by the teams.

Activity 3.3: Manage a local quality assessment/quality control (QA/QC) programme for the national laboratory network.

- Domestic QA/QC programme was part of the LoA support to surveillance, which was completed in July 2011 (see 3.2).

Activity 3.4: Procure necessary laboratory equipment and supplies.

- No laboratory supplies were procured.

Output 4: Enhanced risk management measures including biosecurity improvement among the high-risk poultry population and selected LBMs

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- A series of four small group meetings were held in August 2011 to update information on border livestock trade, supported by other projects.

Activity 4.2: Support activities related to biosecurity improvement in selected LBMs and production zones.

- Plans were made to hold small group meetings and trainings on biosecurity during October 2011, during the planned mission of an international biosecurity expert who would focus on production zones and LBMs.

Activity 4.3: Recruit an international consultant (epidemiology).

- The project began recruitment of a biosecurity expert to undertake a mission in October 2011.

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- The field studies to be conducted under the in-country epidemiology training programme will encompass poultry chain risk assessment.

Planned Activities for the next six-month period (October 2011–March 2012):

Output 1: Strengthened Planning and Cross-Sectoral Coordination:

Activity 1.1: Support the Emergency Centre for Transboundary Animal Diseases (ECTAD) Country Team Leader and the team to provide inputs for planning coordination required at country level

- The project team will be in place, consisting of CTA, national operations and technical consultants, co-funded by other projects.
- The Animal Health Programme Steering Committee (successor to National HPAI Steering Committee) will be held. This meeting will incorporate the HPAI Task Force report and give strategic direction on progress and plans.

Activity 1.2 Support national and international coordination related to disease control

- The project will link to regional FAO programmes on animal health issues, through participation in regional workshops, trainings and networking.

Activity 1.3 Support in-country linkages between public-private and animal-human health sectors relevant to HPAI control

- The project will continue to link to farmers groups in the poultry production zones and will link to the human health authorities through their involvement in relevant trainings and through their participation in the Animal Health Programme Steering Committee Meeting.

Output 2: Strengthened laboratory capacity:

Activity 2.1 Support improvement of laboratory management, including through technical advice of international experts to be provided through other regional projects related to regional laboratory networks

- The project will provide administrative support to international expert missions and coordinate in-country training and follow up as required.

Activity 2.2 Support development of a laboratory QA/QC for HPAI, including through regional HPAI laboratory networks and through support of sample submissions to an International Reference Laboratory as part of the proficiency testing

- Samples will be submitted according to the advice received from regional projects
- The project will support improved data management of domestic QA/QC activities and progress.

Activity 2.3 Procurement of necessary laboratory equipment and supplies for HPAI activities as necessary

- Requirements for supplies and equipment will be reviewed and procured as necessary.

Output 3: Strengthened disease control management capacity:

Activity 3.1 Support regional veterinary epidemiology trainees through in-country training and field work

- The 2010 trainee will complete the secondary data and outbreak investigation studies and present a poster on the outbreak investigation at an international conference in the United States in December 2011.
- The 2011 trainee will continue her secondary data study and finalize the field study plans.
- The project team will provide ongoing support to the FETPV trainees for field trips and technical meetings in conjunction with the in-country mentor

Activity 3.2 Support Integrated Disease Control Training Programme (IDC-TP) in Myanmar, encompassing application of epidemiology, supply chain and institutional aspects to field disease control

- The project will formalize the IDC-TP for endorsement by both the LBVD and the Animal Health Programme Steering Committee

Activity 3.3 Support risk-based biosecurity and surveillance activities

- The project will provide updated HPAI reporting and outbreak management training to LBVD staff in high-risk areas, and this will be followed up by training to key stakeholder groups including farmers, traders and private veterinarians as required.
- Project and LBVD staff will conduct missions to 2011 outbreaks areas for specific active surveillance in November-December 2011, as the high-risk season approaches.
- An international biosecurity expert will make a two-week mission to Myanmar in October 2011 to visit LBMs and production zones and provide training on disinfection practices.
- Training on disinfection practices and other biosecurity practices will be provided to farmers, zone committee as a follow-up to the biosecurity expert mission.
- The project will link to the global biosecurity project to upgrade key infrastructure at the LBM in Yangon and at the largest poultry production zone in Sagaing.

Activity 3.4 Support response activities

- In the event of outbreaks, the project will provide support for outbreak investigations and management of data arising from the outbreak and for follow-up on biosecurity issues.

Main challenges encountered and response provided

Challenges to project implementation were related to the general context of Myanmar during the reporting period, the sectoral context and to some particular issues related to HPAI control. In the general context, political changes brought new institutional arrangements to which LBVD had to adapt. At a sectoral level, the outbreak of PRRS in pigs challenged the capacity of LBVD, as it is a new disease for the country and control policies and programmes needed to be rapidly developed. With respect to HPAI, after lengthy discussions with LBVD, it was decided by the Government that a compensation scheme would not be established. In terms of disease risk in the farming systems prevalent in Myanmar, the question remains as to the extent that ducks pose a threat to chicken flocks or humans and under which conditions the threat can increase. Also, the possibility that wild birds were the source of the virus in the first outbreak (on the Bay of Bengal, isolated from the rest of Myanmar, and in areas where ducks had previously been found to be seronegative) raised the challenge of how to engage with agencies dealing with wild birds. The significance of the appearance of Clade 2.3.2 as potentially the

dominant strain in Myanmar is yet to be determined. Functional linkages with the human health sector are a challenge. Given that the last human case was in 2007, and that there have been relatively few outbreaks since that year, maintaining a close linkage based only on HPAI is not easy. The linkages established under the HPAI programme were, however, invaluable when H1N1 appeared as a pandemic strain in 2009, as they can be activated quickly when required. The mutual understanding between the two sectors was improved.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

Overall, the project is considered to be progressing well, with a list of major achievements in capacity building. However, what appears to be an upswing in the number of outbreaks is of concern, and this highlights the need for ongoing support.

Output 1: Strengthened cross-sectoral coordination at the national level

There continue to be good relations with the Government. The coordination between the animal-human sectors has further improved with additional meetings, but further work needs to be undertaken.

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level

There is now a much better understanding of the epidemiology of HPAI based on the national duck survey and national surveillance programme, both of which were major achievements. The national commercial farm database proved to be an invaluable tool in responding to the outbreaks and identifying high-risk areas. Response capacity has developed well. In the recent outbreaks in Sagaing, it appears that the virus spread from the initial outbreak site through poultry movements; however, two more outbreak sites have been well contained as of the time of this report. Reporting of response activities has improved considerably. The establishment of an in-country IDC-TP is a major step forward.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

The laboratory system is operating well, with recent outbreaks rapidly diagnosed and samples from field surveys being processed effectively.

Output 4: Enhanced risk management measures including biosecurity improvement among the high-risk poultry population and selected LBMs

The LBVD now has a good understanding of the concept of risk and of the interaction between supply chains and disease spread. The LBVD has a better understanding of risks associated with LBMs. The biosecurity in production zones has increased, although further work needs to be undertaken in this area.

Project Monitoring Sheet: **OSRO/RAS/605/USA Baby 03**

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: April – September 2011

Country: Nepal
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/605/USA Baby 03
Budget: USD 965 000 (Phases I-IV) and USD 250 000 (Phase V)
Total budget: USD 1 215 000
Effective Starting Date: 1 October 2006
Planned End Date: 30 September 2012
<p>Context of the Project</p> <p>The project is addressing the short- and medium-term actions of the Government of Nepal required to strengthen its capacity in preventing the introduction of Highly Pathogenic Avian Influenza (HPAI) and minimize its spread in the event of its occurrence. During the first quarter of 2009, the first outbreaks in Nepal were recorded. After a disease-free period of ten months, multiple outbreaks occurred during the period of January to March 2010. In contrast to the previous year, the 2010 outbreaks were attributed to clade 2.3.2 of the H5N1 virus, previously unrecorded in South Asia, suggesting an introduction through infected migrating wildfowl, rather than a cross-border one. In October 2010, the clade 2.3.2 virus reappeared in a previously infected district, indicating its persistence in reservoir species. The Government's resources, including those provided by international donors, have been severely stretched. The project has provided essential capacity building for preparedness and response. However, the scenario of declining international support for HPAI control is alarming, coupled with an increasing danger of the disease becoming endemic in Nepal, with negative consequences for the livelihoods of smallholder farmers and the control efforts of neighbouring countries.</p>
<p>Objectives of the Project</p> <p>The project has assisted the Ministry of Agriculture and Cooperatives (MOAC) in the implementation of the National Contingency Plan for HPAI. The main objective of the project is to contribute to rural development in the country by preventing and controlling the detrimental consequences of HPAI and raising awareness of other emerging infectious diseases in poultry. The expected outcome of the project is to create an effective mechanism for planning and coordination across sectors and key stakeholders involved in HPAI control activities, particularly with the United States Agency for International Development (USAID)-supported projects in Nepal and the South and Southeast Asia region.</p>
<p>Planned activities for April 2011 – September 2011</p> <p>Output 1: Support the Department of Livestock Services (DLS) in planning, coordinating and managing strategies to prevent, control and eliminate outbreaks of HPAI.</p> <p><i>Activity 1.1. Conduct regular meetings with DLS and MOAC.</i></p> <ul style="list-style-type: none"> Continue close collaboration with DLS and its relevant directorates. Changing epidemiological status of HPAI in Nepal may have an impact on the currently adopted measures for early detection and rapid response, such that standard operating procedures (SOPs) and the existing legal framework may need to be updated. <p><i>Activity 1.2. Maintain and further develop linkages with all avian influenza (AI)-related projects operating in Nepal.</i></p> <ul style="list-style-type: none"> Maintain contacts with AI-related initiatives and possible future Asian Development

Bank (ADB)-funded Technical Assistance (TA) projects. The major funding source for the government interventions in the field of AI control, the World Bank-funded Avian Influenza Control Project (AICP) concludes in July 2011. No other AI-specific projects are extant at this time, or envisaged in the midterm. As the disease is now well entrenched in Nepal, there is a concern over future support to this sector. Some support may become available through programmes dedicated to emerging pandemic threats (EPT), such as the USAID EPT programme, and the Highly Pathogenic Emerging and Re-emerging Animal Diseases (HPED) project funded by the European Union (EU).

Activity 1.3. Advise and support the DLS in planning and implementing AI-related activities through conferences, meetings and seminars.

- Conduct three workshops in the period June-August 2011 to examine the progress made on the prevention of HPAI and other emerging diseases, the gaps remaining and the way ahead as part of the process of project conclusion and handover.

Activity 1.4. Update and distribute relevant AI documentation, bulletins and reports including updated compendium of AI documents.

- Complete the updating and translation of the final edition of the compendium of key AI documents to produce and distribute to the target audience.

Output 2: Strengthen HPAI emergency preparedness and response capacity in Nepal.

Activity 2.1. Review the AI strategy and SOPs to keep up-to-date with the changing disease situation in the country and in the region and lessons learned from previous outbreaks.

- Encourage further debate on this issue through working group meetings and relevant workshops. The re-occurrence of HPAI owing to H5N1 clade 2.3.2 after a gap of seven months suggests that the virus is established in at least some parts of Nepal, most probably with ducks acting as a reservoir species. Efforts should be made to confirm this situation, and initial results of a duck antibody survey are already lending support to this hypothesis. This has major implications for targeted surveillance and disease risk management.

Activity 2.2. RRT to field staff in high/medium risk districts.

- Organize two further training sessions in order to maintain the outbreak response capacity and assist in the disease detection efforts.

Activity 2.3. Plan, train, conduct and evaluate a further simulation exercise.

- Complete the final AI outbreak simulation exercise during the next semester.

Activity 2.4. Encourage and guide the development of the emergency disease investigation concept.

- Develop a more structured approach with the Directorate of Animal Health (DAH). The Department has been slow in adopting this concept, but now greater emphasis is given to this area.

Output 3: Strengthen disease surveillance.

Activity 3.1. Enhance surveillance in high-risk zones.

- Continue as planned for the remaining month of the high-risk period and evaluate the outcome and performance of the programme. Address the ways in which known weaknesses in the implementation of the programme may be overcome, while at the same time seeking to increase its efficiency by making it more sustainable without losing effectiveness.

Activity 3.2. Surveillance in buffer zones around migratory bird stop-over points, markets and

resident duck populations.

- Resources remain insufficient to carry out this element of the surveillance programme in a comprehensive manner. Consideration will be given to targeting key markets and ensuring that the active surveillance programme is working effectively in those districts where the disease has surfaced in the past, prioritizing them where possible.

Output 4: Safe live bird market (LBM) development.

Activity 4.1 Expand model market concept.

- Complete this first initiative together with the training of market stall operators and inspectors. The slow progress of this programme in association with the Kathmandu municipality was not an encouraging approach in the Kathmandu valley.
- Continue to build on preliminary proposals to address the issue of inspection and certification and onward transportation of live birds, particularly backyard raised birds, from the high-risk district of Jhapa in Eastern Nepal. This will be coordinated with the no-cost extension phase of the OSRO 802 and OSRO 805 projects.

Activities undertaken during the reporting period (April 2011 – September 2011)

Output 1: Support DLS in planning, coordinating and managing strategies to prevent, control and eliminate outbreaks of HPAI.

Activity 1.1. Conduct regular meetings with DLS and MOAC.

- The project management team have continued to meet regularly at DAH to address issues arising and to plan and prepare for activities carried out jointly, including simulation exercises and training modules. The team leader has consistently and strongly advised that material submitted from the field or through regional laboratories from cases associated with mortality in poultry and giving a positive rapid antigen test should be routinely submitted to an international reference laboratory until CVL and reference laboratory results are consistently in conformity.

Activity 1.2. Maintain and further develop linkages with all AI-related projects operating in Nepal.

- Meetings were held with the World Bank AICP monitoring mission in June 2011. Although the AICP project has now terminated, the World Bank has shown a willingness to continue support to the livestock sector in Nepal, initially through a Technical Cooperation Programme (TCP) with the possibility of a larger Livestock project targeting extension services but including provision for animal health to follow. The project has functioned in a coordinated manner with the FAO/Government of Nepal technical assistance agreement in support of the AICP until the closure of that project. The project management maintains frequent contacts with the EU-funded, FAO implemented, HPED project. No other AI-specific projects are extant at this time, or envisaged in the midterm.

Activity 1.3. Advise and support the DLS in planning and implementing AI-related activities through conferences, meetings and seminars.

- During the period the following workshops, meetings, seminars and field visits were conducted during which the project team interacted with the participants and other stakeholders and which provided opportunities to share information relating to HPAI.

Field Visits:

- 25-27 April: Simulation planning in Gaighat with regional and district livestock department staff and other public and private sector stakeholders was held.
- 15 May: Damak municipality and poultry market to discuss the way forward for live bird marketing from Jhapa district. Damak municipality authorities, poultry

entrepreneurs, poultry traders and the District Livestock Service Office (DLSO) Jhapa staff met.

- 1-3 September: Surveillance sensitization programme in Tanahu and Kaski districts. Meetings with surveillance teams, DLSO and Regional Veterinary Laboratory (RVL) staff.
- 11-17 September: Surveillance sensitization programme in remaining five districts (Kailali, Banke, Rupandehi, Nawalparasi and Kaski).

Workshops:

- 15 June: Workshop to evaluate current HPAI status in Nepal and identify key issues to be addressed in modifying SOPs and guidelines. 45 participants, mainly DLS officers.
- 6-8 July: Workshop on upgrading SOPs with 15-member working group and nine evaluators.
- 14 July: Seminar in Pokhara on project progress and key outcomes. Attended by 26 participants from district, regional and central offices and colleagues from HPED Regional Support Unit (RSU).
- 21 July: Second workshop on upgrading SOPs with 14-member working group.
- 18-19 Aug: Working group (13 members) session on updating AI order.

Meetings:

- 9-11 May: Team Leaders meeting at FAO headquarters focusing on planning for the next USAID fiscal year. During this time, side meetings were held with several FAO staff members on project issues and operations.
- 5 June: Meeting with the World Bank monitoring mission on project progress.
- 17 Aug: Meeting with the South Asia Association for Regional Cooperation (SAARC) Secretariat in Kathmandu on HPED project issues (with FAO Representative).
- 22 Aug: United States Armed Forces Research Institution of Medical Sciences to discuss zoonotic diseases in Nepal.

Activity 1.4. Update and distribute relevant AI documentation, bulletins and reports including updated compendium of AI documents.

- The training film on simulation exercises continued to be aired on national television on a number of occasions and shown at workshops organized by the project team.
- There is considerable demand for the compendium of HPAI-related documents that the project has assembled and updated. However, further printings are on hold until current in-progress updates of the SOPs, guidelines and legislation have been completed, and the sections presently in English are translated into Nepali language so as to widen the readership.

Output 2: Strengthen HPAI emergency preparedness and response capacity in Nepal.

Activity 2.1. Review the AI strategy and SOPs to keep up-to-date with the changing disease situation in the country and in the region and lessons learned from previous outbreaks.

- A workshop conducted on 15 June 2011 served to identify the main issues requiring updating and modification.
- Two working group meetings were held in July 2011 for three days to develop proposals for submission to the Department and MOAC to bring the SOPs in line with updated strategies and practices reflecting practical experience and lessons learned.
- A two-day meeting of the technical legislation group in August 2011 finalized amendments proposed to the Bird Flu Order to be submitted to the DLS/MOAC and

subsequently to the cabinet for approval.

Activity 2.2. RRT to field staff in high/medium risk districts.

- Rapid response team (RRT) training modules (culling, disposal, decontamination, sampling and surveillance) were conducted in Pokhara for field technicians from Parbat, Baglung, Myagdi and Lamjung districts in the Western Region and in Kathmandu for Kavre, Rasuwa and Ramechhap districts with a total of 93 technicians attending.

Activity 2.3. Plan, train, conduct and evaluate a further simulation exercise.

- Jointly with DLS, the second of the two planned AI outbreak simulation exercises was carried out in Udayapur district in the Eastern Region over a five day period in May 2011 and involved 80 participants from technical offices and stakeholder groups from the Eastern Region districts.

Activity 2.4. Encourage and guide the development of the emergency disease investigation concept.

- The EDIT team was not active during this period, as no suspect outbreaks were reported.

Output 3: Strengthen disease surveillance.

Activity 3.1. Enhance surveillance in high-risk zones.

- Monitoring visits were made to the surveillance districts in the western and far western regions: Rupendehi, Kapilbastu and Nawalparasi districts were monitored on 10 and 11 April 2011, and Kailali and Kanchanpur from 29 April to 1 May 2011. Follow-up meetings were held in June 2011 with participating staff from each region to gain an overview of the six-month long surveillance programme. Meetings took place in the eastern region on 19 June, western region on 23 June, central region on 28 June and combined mid and far western regions on 30 June.
- The project team met with the Veterinary Epidemiology Centre (VEC) chief to draw up a plan for the next period focusing on those districts where clade 2.3.2 has been detected during the outbreaks of 2010, taking into account duck populations and the results of duck sero-surveys for AI antibodies.

Activity 3.2. Surveillance in buffer zones around migratory bird stop-over points, markets and resident duck populations.

- Resources remain insufficient to carry out this element of the surveillance programme in a comprehensive manner. This aspect has been given more prominence in the updated national surveillance guidelines.

Output 4: Safe LBM development.

Activity 4.1 Expand model market concept.

- The Kathmandu Metropolitan City (KMC) council continued to confront difficulties with the construction at the alternative site. However, some progress is now evident. No further payments will be made by the project unless and until the construction is completed and the unit operational within the end date of this phase of the project. The Public Health Department continues to be positive and continually urges KMC management to act.

Planned activities for the next six-month period

Output 1: Planning and coordination

Activity 1.1. Ensure effective planning and coordination at country level.

- Continue close collaboration with DLS and its relevant directorates. Having completed

the updating of the SOPs, guidelines and legislation, the project management will press for these documents to be formally approved and/or gazetted in order to become effective.

Activity 1.2. Support national and international coordination related to disease control.

- Maintain contacts with the USAID EPT programme and particularly the activities under the IDENTIFY component, and continue the close linkages with the HPED project funded by the EU and implemented by FAO.

Activity 1.3. Update and distribute relevant AI documentation, bulletins and reports including updated compendium of AI documents.

- Complete the updating and translation of the final edition of the compendium of key AI documents to produce and distribute to the target audience.

Activity 1.4. Advise and support the DLS in planning and implementing AI-related activities through conferences, meetings and seminars.

- Encourage and facilitate public-private partnerships including consideration of cost sharing of disease control in order to enhance sustainability.

Output 2: Strengthen surveillance and response in the light of changing disease situation in Nepal.

Activity 2.1. Keep the AI strategy and SOPs in view to ensure appropriateness to the changing disease situation in the country and in the region and lessons learned from previous outbreaks.

- Ensure proper awareness of this issue through working group meetings and relevant workshops, particularly as evidence comes to light from further field investigations. While indications point to H5N1 clade 2.3.2 being established in at least some parts of Nepal, the role of H9N2 virus is less clear. Efforts will be made to clarify this situation through close collaboration with DAH, VEC and CVL on active and passive surveillance programmes.

Activity 2.2. Support risk-based surveillance activities focussing on districts where the disease has occurred.

- Initiate enhanced surveillance through a targeted disease searching programme in seven of the eight districts affected by clade 2.3.2 virus in 2010, operating from four service centres in each district and involving weekly contacts by the service centre technician with four to five contact persons along an agreed route, targeting Village Development Committees (VDCs) where outbreaks have been previously confirmed. Information will be gathered in a structured format, and, where disease is encountered, samples will be submitted to the laboratory service for investigation.

Activity 2.3. Conduct workshops and training exercises to follow up on new surveillance modalities.

- Organize two further rapid response training sessions in order to maintain the outbreak response capacity and assist in the disease detection efforts.
- Conduct two table-top exercises during the November-January 2011 period in regions judged most at risk of resurgence of HPAI.

Activity 2.4. Encourage and guide the development of the emergency disease investigation concept.

- Develop a more structured approach with DAH to respond promptly to suspect outbreaks, particularly those with significant mortality and a positive rapid antigen detection test result.

Main challenges encountered and response provided

- Cross-border trading practices continue to present a major risk for Nepal, as HPAI is entrenched in Bangladesh and parts of India. However, the introduction of the 2.3.2 clade of the virus last year and its apparent persistence in at least some parts of Nepal has called for a revision of the risk analysis and re-categorization of high-risk districts. To this end the project has facilitated workshops and meetings to update SOPs, guidelines and the legislative framework. The ability to manage outbreak situations has been strengthened through a programme of outbreak simulation exercises and training of field technicians in rapid response activities.
- The epidemiology of HPAI viruses in Nepal is not clear. It is evident that the country has moved away from an at-risk situation (where occasional introductions from adjacent territories could be contained and eliminated as in 2009) towards a situation similar to other Gangetic plain countries, where the virus is able to persist undetected for long periods of time and reappear under conditions that favour an enhanced viral load in the environment. The project is pursuing a programme to assist the Government in elucidating the true situation through effective surveillance and diagnostic capabilities.
- Although outbreaks of HPAI have been periodically occurring in Nepal since the first detected cases in January of 2009, the depth of knowledge of department field staff, civil authorities, producers and traders and other stakeholders is poor. To alleviate this deficiency, a compendium of key HPAI documents was produced and distributed by the project. The compendium will need to be updated to reflect the most recent changes to guidelines and SOPs.

Main progress made towards the achievement of project outcomes

Output 1: Monitor the AI situation in the country and update the national strategy and plans.

- The project has collaborated with DAH and taken advantage of FAO's involvement in the World Bank-funded AICP to develop a comprehensive HPAI surveillance programme, including country-wide passive surveillance supported by active surveillance targeting districts categorized as high risk. Combined with support to the veterinary diagnostic laboratories, this has provided a basis for monitoring the AI situation. The results from this programme have guided continued evaluation of national strategy and the mechanisms for its implementation.

Output 2: Improve communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

- Over the period of project implementation, the number of other projects directly involved with HPAI issues steadily decreased, with the AICP, which has been a major funding source for AI-related activities, having terminated on 31 July 2011. Inter-project coordination has been facilitated by FAO's role in both national projects and regional programmes, such as the EU-funded HPED project supporting SAARC member states and the USAID-funded EPT project. All HPAI programmes in Nepal fall under the oversight of the Director-General of the DLS. The project management's close working relationship has ensured fruitful collaboration. Communication with stakeholders has been facilitated through field activities, such as outbreak simulations and technician training courses, as well as the production and distribution of key documents and the national airing of AI video films produced by the project.

Project Monitoring Sheet: **OSRO/RAS/605/USA Baby 03**Project Title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**Reporting period: **October 2010 – March 2011**

Country: Nepal
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/605/USA Baby 03
Budget: USD 965 000 (Phases I-IV) and USD 250 000 (Phase V)
Total budget: USD 1 215 000
Effective Starting Date: 1 October 2006
Planned End Date: 30 September 2011
Context of the Project <p>The project is addressing the short- and medium-term actions of the Government of the Federal Democratic Republic of Nepal required to strengthen its capacity in preventing the introduction of Highly Pathogenic Avian Influenza (HPAI) and minimize its spread in the event of its occurrence. During the first quarter of 2009, the first outbreaks in Nepal were recorded. After a disease-free period of ten months, multiple outbreaks occurred during the period of January to March 2010. In contrast to the previous year, the 2010 outbreaks were attributed to clade 2.3.2 of the H5N1 virus, previously unrecorded in South Asia, suggesting an introduction through infected migrating wildfowl, rather than a cross-border one. In October 2010, the clade 2.3.2 virus reappeared in a previously infected district, indicating its persistence in reservoir species. The Government's resources, including those provided by international donors, have been severely stretched. The project has provided essential capacity building for preparedness and response. However, the scenario of declining international support for HPAI control is alarming, coupled with an increasing danger of the disease becoming endemic in Nepal, with negative consequences for the livelihoods of smallholder farmers and the control efforts of neighbouring countries.</p>
Objectives of the Project <p>The project has assisted the Ministry of Agriculture and Cooperatives (MOAC) in the implementation of the National Contingency Plan for HPAI. The main objective of the project is to contribute to rural development in the country by preventing and controlling the detrimental consequences of HPAI and raising awareness of other emerging infectious diseases in poultry. The expected outcome of the project is to create an effective mechanism for planning and coordination across sectors and key stakeholders involved in HPAI control activities, particularly with the United States Agency for International Development (USAID)-supported projects in Nepal and the South and Southeast Asia region.</p>
Planned activities for October 2010 – March 2011 <p>Output 1: Monitor the avian influenza (AI) situation in the country and update the national strategy and plans.</p> <p><i>Activity 1.1. Provide working groups on Animal Health with appropriate guidance and technical assistance.</i></p> <p><i>Activity 1.2. Conduct workshops and training exercises in each region to explain surveillance modalities and facilitate planning of field work.</i></p>

Activity 1.3. Conduct outbreak response simulation exercises – at least one in each of the regions.

Activity 1.4. Support Emergency Disease Investigation Teams (EDIT) through material and logistical support.

Activity 1.5. Conduct a review of live bird markets (LBMs) and poultry value chain and establish model facilities.

Activity 1.6. Design and construct a new post-mortem facility at the central veterinary laboratory (CVL).

Activity 1.7. Develop an enhanced surveillance programme for high-risk districts.

Output 2: Improve communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

Activity 2.1. Strengthen functional linkages between projects funded by USAID and other key stakeholders.

Activity 2.2. Assist the Government in the improvement of the dissemination of information (i.e. bulletins, reports and updates).

Activities undertaken during the reporting period (October 2010 – March 2011)

Output 1: Monitor the AI situation in the country and update the national strategy and plans.

Activity 1.1. Provide working groups on Animal Health with appropriate guidance and technical assistance.

- The technical working group met regularly at the Directorate of Animal Health (DAH) to discuss and guide the project's implementation, focusing on the issue of reappearance of clade 2.3.2 virus in Tanahu district.
- The laboratory working group held two meetings dedicated to the topic of CVL's diagnostic capability.

Activity 1.2. Conduct workshops and training exercises in each region to explain new surveillance modalities and facilitate planning of field work.

- Rapid response team (RRT) training modules (culling, disposal, decontamination, sampling and surveillance) were conducted in Nepalgunj, Biratnagar and Bhairahawa for field technicians from Doti, Pyuthan, Salyan, Dailekh, Banke, Surkhet, Taplejung, Sankhuwasba, Bhojpur, Teratjhum, Gulmi, Sindhuli and Arghakhachi districts. Among the total of 173 trainees were ten female technicians.

Activity 1.3. Conduct simulation exercises – at least one in each of the regions.

- Jointly with the Department of Livestock Services (DLS), the first of the two planned AI outbreak simulation exercises was carried out in Dhankuta district in the Eastern Region over a five day period in March and involved some 85 participants from technical offices and stakeholder groups from the Eastern Region districts.

Activity 1.4. Support EDIT through material and logistical support.

- The central EDIT investigated suspect outbreaks in Chitwan (confirmed) and Kaski/Tanahu. Material collected by the EDIT from the two adjoining properties in Chitwan was forwarded to an international reference centre (VLA-UK), and both H5N1 and H9 AI viruses were isolated. Furthermore, material submitted from a commercial unit in Tanahu with 80 percent mortality was negative for Newcastle Disease but positive for H5 virus on rapid test and conventional polymerase chain reaction (PCR). However,

the reference lab only isolated the H9 virus.

Activity 1.5. Conduct a review of LBM and establish model facilities.

- The project organized a workshop to examine the outcomes of the poultry value chain study completed by the SEEPOR consultancy and its implications for the risk management of the disease spread.
- Progress with the Kathmandu Municipality on construction of a market stall facility for the safe marketing of live and freshly slaughtered birds was slow. An alternative site had to be selected, and a contract was awarded for the necessary civil works. Several meetings with the concerned officers of the Municipality were necessary, and a final decision will be made by 31 March 2011.

Activity 1.6. Design and construct a new post-mortem facility at the CVL.

- The construction of a new post-mortem facility and incinerator room at the CVL to allow safe and efficient handling of potentially infected poultry carcasses is in its final stage, and the handover to the Department is being planned by 31 March 2011.

Activity 1.7. Develop an enhanced surveillance programme for high-risk districts.

- The enhanced surveillance programme covering 12 high-risk districts has been active since November 2010 and will run during the period of a perceived high risk from HPAI until the end of April 2011.
- In each participating high-risk district, eight surveillance sites were set up, each consisting of four to six contact points. Because of the number of sites, an additional monitoring layer was interposed, and district office-based focal officers and technicians provided immediate supervision.
- National consultants provided orientation and overall supervision to 150 field staff involved in the programme.

Output 2: Improve communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

Activity 2.1. Strengthen functional linkages between projects funded by USAID and other key stakeholders.

- In addition to the routine interactions maintained within the MOAC/DLS/DAH, the project benefited from the following opportunities to gather and share information:
 - 13-14 October 2010: CTA attended the Global Rinderpest Eradication Programme (GREP) meeting held in Rome.
 - 22 November 2010: An inception workshop was organized to update partners and implementing stakeholders on key issues relating to the project implementation.
 - Information sharing with the USAID-funded cross-border project (OSRO/RAS/701/USA) and the EU-funded SAARC regional support unit is maintained.
 - 17 December 2010: CTA participated in a workshop on the progressive control of foot-and-mouth disease (FMD), organized by the Regional Support Unit under the Highly Pathogenic Emerging and Re-Emerging Animal Diseases (HPED) programme.
 - 11 February 2011: A media sensitization workshop offered an opportunity to share information on the project's activities with media representatives.
 - 2-4 March 2011: A regional consultation on laboratory networks facilitated the regional exchange of information with colleagues working on AI control.
 - 10 January 2011: CTA attended a regional workshop on biosecurity and public private partnerships (OSRO 802 and OSRO 805), sharing information on the status of these areas in Nepal with a view to further collaboration.
 - 24-28 January: Interaction with the World Bank implementation support mission to the Avian Influenza Control Project (AICP) and AICP coordination were routinely

maintained.

- 2 February 2011: CTA and national consultant met with a group of commercial poultry producers in Chitwan district to discuss issues of biosecurity in commercial units and possible FAO interventions in this area.
- 22-24 February 2011: CTA attended the fifth annual ECTAD meeting held in Bangkok and shared information and views on AI surveillance programmes.

Activity 2.2. Assist the Government in the improvement of the dissemination of information (i.e. bulletins, reports and updates).

- The training film on simulation exercises was aired on national television on a number of occasions.
- Translation of SOPs into Nepali and of other key documents that are currently in English is forthcoming, and a further edition of the valued AI compendium to include a wider audience is in progress. A workshop was held on 3 February 2011 to collate and share the information gathered under three overseas observation tours of border controls and quarantine service operations.

Planned activities for the next six-month period

Output 1: Support DLS in planning, coordinating and managing strategies to prevent, control and eliminate outbreaks of HPAI.

Activity 1.1. Conduct regular meetings with DLS and MOAC.

- Continue close collaboration with DLS and its relevant directorates. Changing epidemiological status of HPAI in Nepal may have an impact on the currently adopted measures for early detection and rapid response, such that SOPs and the existing legal framework may need to be updated.

Activity 1.2. Maintain and further develop linkages with all AI-related projects operating in Nepal.

- The major funding source for the government interventions in the field of AI control, the World Bank-funded AICP concludes in July of this year. No other AI-specific projects are extant at this time, or envisaged in the mid-term. As the disease is now well entrenched in Nepal, there is a concern over future support to this sector. Some support may become available through programmes dedicated to emerging pandemic threats (EPT), such as the USAID EPT programme, and the HPED project funded by the European Union (EU).

Activity 1.3. Advise and support the DLS in planning and implementing AI-related activities through conferences, meetings and seminars.

- Conduct three workshops in the period June-August to examine the progress made on the prevention of HPAI and other emerging diseases, the gaps remaining and the way ahead as part of the process of project conclusion and handover.

Activity 1.4. Update and distribute relevant AI documentation, bulletins and reports including updated compendium of AI documents.

- Complete the updating and translation of the final edition of the compendium of key AI documents to produce and distribute to the target audience.

Output 2: Strengthen HPAI emergency preparedness and response capacity in Nepal.

Activity 2.1. Review the AI strategy and SOPs to keep up-to-date with the changing disease situation in the country and in the region and lessons learned from previous outbreaks.

- Encourage further debate on this issue through working group meetings and relevant workshops. The re-occurrence of HPAI owing to H5N1 clade 2.3.2 after a gap of seven months suggests that the virus is established in at least some parts of Nepal, most

probably with ducks acting as a reservoir species. Efforts should be made to confirm this situation, and initial results of a duck antibody survey are already lending support to this hypothesis. This has major implications for targeted surveillance and disease risk management.

Activity 2.2. RRT to field staff in high/medium risk districts.

- Organize two further training sessions in order to maintain the outbreak response capacity and assist in the disease detection efforts.

Activity 2.3. Plan, train, conduct and evaluate a further simulation exercise.

- Complete the final AI outbreak simulation exercise during the next semester.

Activity 2.4. Encourage and guide the development of the emergency disease investigation concept.

- Develop a more structured approach with DAH. The Department has been slow in adopting this concept, but now greater emphasis is given to this area.

Output 3: Strengthen disease surveillance.

Activity 3.1. Enhance surveillance in high-risk zones.

- Continue as planned for the remaining month of the high-risk period and evaluate the outcome and performance of the programme. Address the ways in which known weaknesses in the implementation of the programme may be overcome, while at the same time seeking to increase its efficiency by making it more sustainable without losing effectiveness.

Activity 3.2. Surveillance in buffer zones around migratory bird stop-over points, markets and resident duck populations.

- Resources remain insufficient to carry out this element of the surveillance programme in a comprehensive manner. Consideration will be given to targeting key markets and ensuring that the active surveillance programme is working effectively in those districts where the disease has surfaced in the past, prioritizing them where possible.

Output 4: Safe LBM development.

Activity 4.1 Expand model market concept.

- Complete this first initiative together with the training of market stall operators and inspectors. The slow progress of this programme in association with the Kathmandu municipality was not an encouraging approach in the Kathmandu valley.
- Continue to build on preliminary proposals to address the issue of inspection and certification and onward transportation of live birds, particularly backyard raised birds, from the high-risk district of Jhapa in Eastern Nepal. This will be coordinated with the no-cost extension phase of the OSRO INT 805 project.

Main challenges encountered and response provided

- Cross-border trading practices continue to present a major risk for Nepal, as HPAI is entrenched in Bangladesh and parts of neighbouring India. However, the introduction of the 2.3.2 clade of the virus last year and its apparent persistence in at least some parts of Nepal complicates the simplistic approach of having a high-risk belt of districts along the Indian border. The approach to risk management including targeted surveillance has to be revisited in the light of current information. The ability to manage outbreak situations has been strengthened through a programme of outbreak simulation exercises and training of field technicians in rapid response activities.

- The likely role of wild birds in the transmission of the 2010 HPAI epidemic posed an added challenge for the animal health authorities. While it may be impossible to prevent such transmission of HPAI to Nepal in the future, there is a need for the system to improve its capacity for detecting cases at the earliest instance and to take measures which prevent or limit further spread of HPAI.
- A complete understanding of the poultry market chain is essential in refining control measures. At the same time, the control measures adopted must be as efficient and cost effective as possible in order to be sustainable by the Government, and the role and participation of the private sector in developing and funding these controls addressed.
- During the 2010 epidemic, the major failings were the inability to prevent internal spread of the disease coupled with inadequate and tardy material and financial support to the affected districts (excepting Pokhara). These issues have been voiced in a lessons-learned workshop, and it is now critical that measures be taken to ensure that these issues are more effectively addressed in the future.
- Efforts to expand the knowledge base in veterinary epidemiology have so far only scratched the surface and need to be given further impetus.

Main progress made towards the achievement of project outcomes

Output 1: Monitor the AI situation in the country and update the national strategy and plans.

- Select project activities, involving capacity building of district staff in relation to disease identification, sampling, use of rapid tests, reporting, biosecurity and surveillance methodology, as well as the support given to the diagnostic services contributed significantly to the early detection of and effective response to the recent outbreaks. Table-top and field simulation exercises in particular strongly contributed to this progress.

Output 2: Improve communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

- Over the period of project's implementation, the number of other projects directly involved with HPAI issues steadily decreased, as for example, the AICP project, which will terminate in less than six months. The focus now is towards wider programmes, such as the HPED and EPT projects and the regional South Asian Association for Regional Cooperation (SAARC) programme, addressing transboundary animal diseases (TADs) as a whole. In light of this, the project management has avoided an insular approach and sought to place HPAI within the wider TADs environment in line with the One Health initiative.

Project Monitoring Sheet: **OSRO/RAS/701/USA**

Project title: **Strengthening cross-border activities among Bangladesh, India, Nepal and Myanmar to control possible cross-border spread of HPAI**

Reporting period: **October 2010 – March 2011**

Regional: Subregional cross-border activities in Bangladesh, India, Nepal and Myanmar
Project Title: Strengthening cross-border activities among Bangladesh, India, Nepal and Myanmar to control possible cross-border spread of HPAI
Code: OSRO/RAS/701/USA
Budget: USD 1 000 000 (Phase I), USD 1 000 000 (Phase II)
Total budget: USD 2 000 000
Effective starting date: October 2007
Planned end date: 30 September 2011
<p>Context of the project</p> <p>Porous, long and continuous land borders between the project's four countries (Bangladesh, India, Nepal and Myanmar), with minimal control points and quarantine facilities, continue to pose risks for the spread of Highly Pathogenic Avian Influenza (HPAI) in the region as a whole. Hence, it is necessary to have a better understanding of the pattern of the poultry supply chain and trade taking place across borders. There is also a lack of sufficient capacity both in terms of skilled human resources and also facilities to conduct effective management of transboundary movements of poultry and poultry products. Sharing expertise, information and biological samples among laboratories in the region is key for effective planning to prevent or prepare for cross-border outbreaks.</p> <p>It is envisaged that a longer-term national strategy will be drafted in consultation with various stakeholders during the implementation of this project to deal with the longer-term cross-border issues relevant to the avian influenza (AI) threat.</p>
<p>Objectives of the project</p> <p>The main goal of the project is to prevent HPAI spreading across borders because of the movements of poultry and poultry products. Specifically the project aims to: (i) develop a platform for dialogue and information exchange between countries in the region on issues related to potential cross-border spread of HPAI; (ii) strengthen capacities of institutions to deal with the threat of transboundary spread of HPAI; and (iii) increase the understanding of ways to manage cross-border trade to reduce the risk of HPAI outbreaks.</p>
<p>Planned activities for the reporting period</p> <p>Output 1: Project management and coordination mechanisms established and operating</p> <ul style="list-style-type: none"> • Retain key technical personnel until the end of project date (i.e. March 2011). • Further strengthen the modalities for better communication and dialogue to facilitate project coordination. • Continue to prepare bi-monthly information bulletins. • Participate in regional and global meetings. <p>Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease</p> <ul style="list-style-type: none"> • Conduct trainings and workshops on how to rapidly confirm outbreaks for border control personnel in Bangladesh.

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- Finalize the reports of study on livestock marketing systems in high-risk corridors in Bangladesh, India and Nepal.

Output 3: Developed policy and harmonized risk management procedures

- Review and analyse country report on policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management from Bangladesh.
- Conduct a subregional workshop on gaps in legislative frameworks for cross-border trading.

Output 4: Improved capacity for response to cross-border emergencies

- Convene meetings of divisional and district officers in high-risk cross-border corridors in Bangladesh.
- Provide rapid response training to host government personnel of Bangladesh, at local levels, in the selected high-risk movement corridors.
- Conduct a special advocacy initiative in target border districts, as part of emergency response activities in Bangladesh, in order to mobilize and sensitize the following groups: (i) local, district-level and decentralized veterinarians; (ii) private and public news channels, journalists and media-persons; (iii) NGOs; (iv) farmers; (v) traders; and (vi) women's groups.
- Conduct sensitization workshops for print and electronic media in India's West Bengal State for the prevention and control of HPAI to strengthen cross-border emergency preparedness and response mechanisms.
- Conduct a table top preparatory simulation workshop for prevention and control of HPAI, in relation to strengthening Cross-Border Emergency Preparedness and Response Mechanism at a high risk corridor in West Bengal, India.

Activities undertaken during the reporting period

Output 1: Project management and coordination mechanisms established and operating

- The ninth and tenth volumes of Information Bulletins (August-September and October-December 2010) were circulated. The eleventh volume (January-February 2011) is under preparation.
- The Subregional Manager participated in the International Workshop on Challenges of Information Systems and Surveillance for major animal diseases and zoonoses from 23 to 26 November 2010 at FAO headquarters in Rome.
- The Subregional Manager and Emergency Programme Officer participated in a high level regional consultation on the control of priority transboundary animal and other emerging infectious diseases in South Asia held in collaboration with SAARC Secretariat in Bangkok on 13 and 14 January 2011.
- The Subregional Manager and Emergency Programme Officer participated in the Regional ECTAD Meeting held in Bangkok from 22 to 24 February 2011.

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- Two trainings/workshops in rapid confirmation of outbreaks in high-risk cross-border corridors were held in Bangladesh for district veterinarians and paraveterinarians. The trainings/workshops were held on 29 and 30 December 2010 in district Comilla and on 2 and 3 January 2011 in district Cox's Bazaar.

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- Two orientation/sensitization workshops on strengthening cross-border emergency preparedness and response mechanisms for HPAI were held for provincial and district officers in high-risk cross-border corridors of Bangladesh. The workshops were held in Comilla district on 29 and 30 December 2010 and on 2 and 3 January 2011 in Cox's Bazaar district. Approximately 100 persons participated in each workshop. The objectives of the workshops were to:
 - orient/sensitize participants on key issues of risk/outbreak communication and advocacy interventions to prevent and control HPAI outbreaks; and
 - present district-level findings of the poultry value-chain mapping exercise conducted by the project.

To strengthen emergency response preparedness, the workshops were also used as an advocacy platform to sensitize the following border-district groups: (i) local, district-level and decentralized veterinarians; (ii) private and public news channels; (iii) journalists and media-persons; (iv) NGOs; (v) farmers; (vi) traders; (vii) women's groups; and (viii) police and border forces.

- The study reports on livestock marketing systems in high-risk corridors of Bangladesh, India and Nepal are being finalized.

Output 3: Developed policy and harmonized risk management procedures

- The report from the hired consultant from Bangladesh to review and analyse policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management was not received despite repeated reminders. A new consultant was hired to complete the analysis.
- The subregional workshop on gaps in legislative frameworks in the context of cross-border trading will be organized in the next quarter, once the report from Bangladesh consultant is received and analysed.

Output 4: Improved capacity for response to cross-border emergencies

- Two workshops were held in Bangladesh (in Chittagong Division) to provide rapid response training to host government personnel at local levels in high-risk cross-border corridors of Bangladesh. The workshops took place on 29 and 30 December 2010 in Comilla and on 2 and 3 January 2011 in Cox's Bazaar district. Approximately 100 persons participated in each workshop. The objectives of the workshops were to:
 - determine which measures had been taken for the prevention and control of HPAI and provide sensitization on the clinical picture of HPAI;
 - provide technical guidance and training to veterinarians on the investigation of HPAI outbreaks; and
 - strengthen emergency response preparedness.

The workshop was also used as an advocacy platform to sensitize the specific border-district groups as outlined in Output 2 on page 4 of this progress report.

- Four media orientation/sensitization workshops were held between December 2010 and March 2011 in Bangladesh, India and Nepal. The first media orientation/sensitization workshop was held in Kolkata (West Bengal), India, on 6 and 7 December 2010. The second workshop was held on 11 February 2011 in Kathmandu, Nepal, and the third workshop was held on 15 February 2011 in Dhaka, Bangladesh. The last such workshop was held in Agartala, Tripura State of India on 7 March 2011, which coincided with an ongoing HPAI outbreak. Forty to 55 print and electronic media journalists from prominent English national/state dailies, as well as prominent local dailies, radio and television news channels, participated in each of these interactive workshops.
- A table top preparatory simulation workshop for prevention and control of HPAI, in relation to strengthening Cross-Border Emergency Preparedness and Response Mechanism was held at Dakshin Dinajpur district of West Bengal, India on 10 December 2010. The objectives of the preparatory workshop were
 - to examine the effectiveness and identify gaps of:
 - national plan documents to prevent the cross-border transmission of the diseases;
 - legal and administrative approaches for successful prevention of HPAI through cross-border trade;
 - current mechanism knowledge and information flow at cross-border among various agencies for pre-emptive action to prevent incursion of HPAI; and
 - cross-border Standard Operating Procedures (SOPs) under field situation.
 - to recommend a workable solution at policy and execution level to minimize the risk of cross-border transmission of the disease.

The workshop was attended by the representatives from the Animal Resources Development Department, Civil Administration, Department of Health, and other district level departments of state government, West Bengal Police, Border Security Force and Customs.

Planned activities for the next six-month period

Output 1: Project management and coordination mechanisms established and operating

- Retain key technical personnel until the end of project date (i.e. September 2011).
- Further strengthen the modalities for better communication and dialogue to facilitate project coordination.
- Continue to prepare bi-monthly information bulletins.
- Participate in regional and global meetings.

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- Finalize the reports of study on livestock marketing systems in high-risk corridors in Bangladesh, India and Nepal.

Output 3: Developed policy and harmonized risk management procedures

- Review and analyse country report on policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management from Bangladesh.

<ul style="list-style-type: none"> • Conduct a subregional workshop on gaps in legislative frameworks for cross-border trading.
<p>Output 4: Improved capacity for response to cross-border emergencies</p> <ul style="list-style-type: none"> • Conduct a table top preparatory simulation workshop for prevention and control of HPAI, in relation to strengthening Cross-Border Emergency Preparedness and Response Mechanism at a high risk Nepal-India corridor.
<p>Main challenges encountered and response provided</p> <ul style="list-style-type: none"> • None
<p>Progress made towards the achievement of project outcomes (from the start of the project activities)</p> <p>Output 1: Project management and coordination mechanisms established and operating</p> <ul style="list-style-type: none"> • All project staff were recruited, and the coordinating office in Kathmandu, Nepal was established and equipped. Coordinating units in Bangladesh, India and Myanmar were also equipped. A vehicle was procured for the project coordination unit in Kathmandu. • A project workshop, attended by high-level administrative and technical personnel from participating countries, was held on 24 and 25 March 2008. • The project inception workshop was held on 2 and 3 July 2008. A related report was provided to all countries and participants. • A United States Agency for International Development (USAID) partners' meeting, on HPAI in South Asia, was organized on 17 and 18 November 2008 in New Delhi, India to discuss the progress of Fiscal Year (FY) 2007 activities and a work plan for FY 2008 funding. • Technical and policy-level committees were constituted. A meeting of these committees to monitor the project progress was held on 17 April 2009 in Kolkata, India, on 28 and 29 January 2010 in Pokhara, Nepal and on 12 May 2010 in New Delhi, India. A meeting of a technical-level committee to monitor the project's progress was held on 19 July 2009 in Dhaka, Bangladesh. The Governments of the three countries were very appreciative of these meetings and wished to continue these in the future. • A poster prepared on the progress of the project was presented during the USAID Partners' Meeting held from 1 to 3 April 2009 in Bangkok. • Ten volumes of bi-monthly information bulletins were released, from May 2009 to December 2010 and circulated to ECTAD members, donors, countries and other agencies as an information sharing/knowledge management initiative. • Engagement with the South Asia Association for Regional Cooperation (SAARC) was continued through organization of a FAO/World Organisation for Animal Health (OIE) subregional meeting of the Global Framework for the Progressive Control of Transboundary Animal Diseases (for the SAARC Region) on 4 and 5 June 2009 in Kathmandu, Nepal. • The Subregional Manager participated in a meeting in Bangkok, on 16 and 17 July 2009, to develop a strategic framework, entitled "FAO regional strategy for Highly Pathogenic Avian Influenza and other emerging infectious diseases of animals in Asia and the Pacific: 2009 – 2014". • A report on the progress of the project, from April to September 2009, was presented at the USAID partners' meeting held on 24 and 25 September 2009 in Bangkok. • The Subregional Manager participated in the second real-time evaluation of FAO's

work on HPAI in the Asian region, held from 30 November to 1 December 2009 in Bangkok, Thailand. The evaluation team was briefed on the activities and impact of the South Asia cross-border project.

- The Subregional Manager and Subregional Advocacy Coordinator participated in the fourth regional ECTAD meeting, from 23 to 25 February 2010, and the ECTAD Asia information system workshop on 26 February 2010 in Bangkok, Thailand.
- The Subregional Manager participated in the inception workshop on the “Regional risk assessment of HPAI in South and Southeast Asia: a socio-economic perspective” on 28 and 29 April 2010 in Bangkok, Thailand.
- The Subregional Manager participated in the inception workshop of OSRO/IND/802/USA project “Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India” on 10 and 11 May 2010 in New Delhi, India.
- The Subregional Manager and Subregional Advocacy Coordinator participated in the regional communication workshop from 23 to 25 June 2010 in Bangkok, Thailand.
- The Subregional Manager participated in the First meeting of HPED Steering Committee on 1 July 2010 and the 4th Regional Steering Committee meeting of GF-TADs for Asia and Pacific Region on 2 July 2010 in Bangkok, Thailand.
- The Subregional Manager participated in the Regional Avian and Pandemic Influenza USAID Partners’ Meeting on 2 and 3 September, 2010 in Bangkok, Thailand and presented the progress of activities from October 2009 to September 2010.
- The Subregional Manager participated in the International Workshop on Challenges of Information Systems and Surveillance for major animal diseases and zoonoses from 23 to 26 November 2010 at FAO headquarters in Rome, Italy.
- The Subregional Manager and Emergency Programme Officer participated in a high level regional consultation on the control of priority transboundary animal and other emerging infectious diseases in South Asia held in collaboration with SAARC Secretariat in Bangkok, Thailand, on 13 and 14 January 2011.
- The Subregional Manager and Emergency Programme Officer participated in the Regional ECTAD Meeting held in Bangkok, Thailand, from 22 to 24 February 2011.

Output 2: High-risk areas for introduction of HPAI via cross-border routes identified and mapped

- The draft final report of the study on poultry value-chain analysis across Nepal and India’s border and mapping of high-risk areas was received and cleared.
- The draft final report of the study on poultry value-chain analysis across Bangladesh, India and Myanmar’s border and mapping of high-risk areas was received and cleared.
- The draft final report of the study on poultry value-chain analysis across Myanmar, India and Bangladesh’s borders and mapping of high-risk areas was received and cleared.
- The agency contracted to perform the poultry value chain mapping across India-Nepal, India-Bangladesh and India-Myanmar did not perform satisfactorily and did not submit the final report. The FAO office in India and the contractor decided to close the activities on 27 September 2010, as it was found difficult to make any further progress.

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- Laboratory training for participants from Bangladesh, India, Nepal and Myanmar was held from 19 to 24 January 2009 in Bhopal, India.

- A subregional workshop to develop SOPs for emergency response to disease in high-risk cross-border trade areas was held on 21 and 22 May 2009 in Kathmandu, Nepal. These SOPs were further discussed (and accepted by each party) in Bangladesh, India and Nepal through a series of brainstorming workshops from 4 to 6 November 2009 (in Nepal), on 4 December (in India) and on 10 December (in Bangladesh) and finally at the Technical and Policy Level Committees meeting on 28 and 29 January 2010 in Pokhara, Nepal. The finalized SOPs were circulated in the district level meetings held in the high risk corridors in India and Bangladesh.
- At the request of Government of the Republic of India, rapid antigen detection kits were procured and delivered for use in high-risk corridors for the rapid screening of outbreaks. Furthermore, in response to the Government's request, five cycles of laboratory trainings were conducted on the use of rapid antigen kits for 80 laboratory personnel. The kits were successfully used in the recent HPAI outbreaks in Murshidabad district, West Bengal, and were appreciated by the Government.
- Enzyme linked immunosorbent assay kits (ELISA) were procured and delivered to the Government of Federal Democratic Republic of Nepal for surveillance of HPAI in ducks in Nepal's far eastern region, which formed a part of the project study area.
- A study tour to West Bengal, India for government staff from Bangladesh, India, Nepal and Myanmar to strengthen emergency response capacity was conducted from 26 to 29 April 2010. Four participants each from Bangladesh and Myanmar, five from India and six from Nepal participated in the study tour.

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- Stakeholder meetings to present the results of poultry value-chain mapping across Nepal and India's border were held on 10 July 2009 in Kathmandu, Nepal, and for the Bangladesh-India and Bangladesh-Myanmar borders on 21 July 2009 in Dhaka, Bangladesh. The meetings were attended by senior staff representing DLS, including the Chief Veterinary Officer (CVO), private sector representatives, national and international non-governmental organizations (NGOs), Academy for Educational Development (AED) and FAO.
- A subregional workshop, entitled "Understanding and use of poultry value chain analysis in poultry production and marketing in the context of cross border trading", was held from 14 to 18 September 2009 in Kathmandu, Nepal. Delegates from Bangladesh, India and Nepal participated. The workshop was facilitated by FAO staff from headquarters, ECTAD-RAP Bangladesh and Nepal and also by the Royal Veterinary College, London.
- The studies on the livestock marketing system in high-risk corridors of Bangladesh, India and Nepal with a view to establishing monitoring processes of poultry production and market chains (linked with animal disease monitoring data), were concluded and draft reports received.

Output 3: Developed policy and harmonized risk management procedures

- Consultancy reports from consultants in India and Nepal to review and analyse policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management were received and technically cleared by ECTAD-RAP.

Output 4: Improved capacity for response to cross-border emergencies

- A series of orientation and sensitization workshops, on strengthening cross-border emergency preparedness and response mechanism for HPAI, were held for provincial and district officers in high-risk cross-border corridors of Nepal (Jhapa and Morang districts) and India (Araria/Kishanganj, Darjeeling, Cooch Behar, Dakshin Dinajpur, Malda, North 24 Parganas and West Tripura districts) between January and March 2010. Similar workshops were held in Bangladesh between June 2010 and January 2011 in Chapai Nababganj, Dinajpur, Lalmonirhat, Jessore, Comilla and Cox's Bazaar districts. Approximately 90 to 100 persons participated at each workshop. The workshops, which were part of the emergency response, were also used as a platform to sensitize local, district-level and decentralized veterinarians, private and public news channels, journalists, media-persons, NGOs, farmers, traders, border security personnel and women's groups in border districts.
- Three media orientation/sensitization workshops were held in West Bengal, India between July and December 2010. The first workshop was held on 6 July in Siliguri (Darjeeling district), the second workshop on 8 July in Berhampore (Murshidabad district) and the third State level workshop on 6 and 7 December 2010 in Kolkata. Similar workshops were held in Nepal (11 February 2011 in Kathmandu), Bangladesh (15 February 2011 in Dhaka) and Tripura state, India (7 March 2011 in Agartala).
- Two table top preparatory simulation workshops for prevention and control of HPAI, in relation to strengthening Cross-Border Emergency Preparedness and Response Mechanism were held in Dinajpur, Bangladesh, on 19 September 2010 and Dakshin Dinajpur (West Bengal), India on 10 December 2010.

Project Monitoring Sheet: **OSRO/RAS/701/USA**

Project title: **Strengthening cross-border activities among Bangladesh, India, Nepal and Myanmar to control possible cross-border spread of HPAI**

Reporting period: **April – September 2011**

Regional: Subregional cross-border activities in Bangladesh, India, Nepal and Myanmar
Project Title: Strengthening cross-border activities among Bangladesh, India, Nepal and Myanmar to control possible cross-border spread of HPAI
Code: OSRO/RAS/701/USA
Budget: USD 1 000 000 (Phase I), USD 1 000 000 (Phase II)
Total budget: USD 2 000 000
Effective starting date: 31 March 2008
Planned end date: 30 September 2011
<p>Context of the project</p> <p>Porous, long and continuous land borders between the project's four countries (Bangladesh, India, Nepal and Myanmar), with minimal control points and quarantine facilities, continue to pose risks for the spread of the Highly Pathogenic Avian Influenza (HPAI) in the region. Hence, it is necessary to have a better understanding of the pattern of the poultry supply chain and trade taking place across borders. There is also a lack of sufficient capacity, both in terms of skilled human resources and respective facilities, to conduct effective management of transboundary movements of poultry and poultry products. Sharing expertise, information and biological samples among laboratories in the region is key for effective planning to prevent or prepare for cross-border outbreaks. It is envisaged that a longer-term national strategy will be drafted in consultation with various stakeholders during the implementation of this project to deal with the longer-term cross-border issues relevant to the avian influenza (AI) threat.</p>
<p>Objectives of the project</p> <p>The main goal of the project is to prevent HPAI spreading across borders because of the movements of poultry and poultry products. Specifically, the project aims to: (i) develop a platform for dialogue and information exchange between countries in the region on issues related to potential cross-border spread of HPAI; (ii) strengthen capacities of institutions to deal with the threat of transboundary spread of HPAI; and (iii) increase the understanding of ways to manage cross-border trade to reduce the risk of HPAI outbreaks.</p>
<p>Planned activities for the reporting period</p> <p>Output 1: Project management and coordination mechanisms established and operating</p> <ul style="list-style-type: none"> • Retain key technical personnel until the end of project date (i.e. September 2011). • Further strengthen the modalities for better communication and dialogue to facilitate project coordination. • Continue to prepare bi-monthly information bulletins. • Participate in regional and global meetings. <p>Phase II</p> <p>Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks</p> <ul style="list-style-type: none"> • Finalize the reports of study on livestock marketing systems in high-risk corridors in Bangladesh, India and Nepal. <p>Output 3: Developed policy and harmonized risk management procedures</p>

<ul style="list-style-type: none"> Review and analyse country report on policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management from Bangladesh. Conduct a subregional workshop on gaps in legislative frameworks for cross-border trading. <p>Output 4: Improved capacity for response to cross-border emergencies</p> <ul style="list-style-type: none"> Conduct a table top preparatory simulation workshop for prevention and control of HPAI, in relation to strengthening Cross-Border Emergency Preparedness and Response Mechanism at a high-risk Nepal-India corridor.
<p>Activities undertaken during the reporting period</p> <p>Output 1: Project management and coordination mechanisms established and operating</p> <ul style="list-style-type: none"> The eleventh, twelfth and thirteenth volumes of Information Bulletins (January-February; March-April; May-June 2011) were circulated. The Subregional Manager participated in the Emergency Centre for Transboundary Animal Diseases (ECTAD) Team Leaders Planning meeting to discuss process towards institutionalization of the One Health approach from 9 to 11 May 2011 at the Food and Agriculture Organization of the United Nations (FAO) headquarters in Rome. The wrap-up meeting of the project was held on 16 September 2011 in Kathmandu with participation of delegates from Bangladesh, India, Nepal, FAO, the United States Agency for International Development (USAID) in Nepal and USAID/the Regional Development Mission for Asia (RDMA). <p>Phase II</p> <p>Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks</p> <ul style="list-style-type: none"> The study reports on livestock marketing systems in high-risk corridors of Bangladesh, India and Nepal are being finalized. <p>Output 3: Developed policy and harmonized risk management procedures</p> <ul style="list-style-type: none"> The report from the hired consultant from Bangladesh to review and analyse policy issues, legislative frameworks and development of legislative instruments to fill key gaps related to cross-border trade and risk management was received and cleared. The subregional workshop on gaps in legislative frameworks in the context of cross-border trading could not be held owing to delayed receipt of report from Bangladesh. <p>Output 4: Improved capacity for response to cross-border emergencies</p> <ul style="list-style-type: none"> The planned table top preparatory simulation workshop for prevention and control of HPAI, in relation to strengthening Cross-Border Emergency Preparedness and Response Mechanism at a high-risk Nepal-India corridor could not be held owing to non-availability of concurrence from the counterpart animal resources development department, West Bengal at Siliguri, Darjeeling district of India.
<p>Planned activities for the next six-month period</p> <p>Project completed. No further activities are envisaged.</p>
<p>Main challenges encountered and response provided</p> <ul style="list-style-type: none"> None
<p>Progress made towards the achievement of project outcomes (from the start of the project activities)</p> <p>Output 1: Project management and coordination mechanisms established and operating</p> <ul style="list-style-type: none"> All project staff were recruited, and the coordinating office in Kathmandu, Nepal was established and equipped. Coordinating units in Bangladesh, India and Myanmar were

- also equipped. A vehicle was procured for the project coordination unit in Kathmandu.
- A project workshop, attended by high-level administrative and technical personnel from participating countries, was held on 24 and 25 March 2008.
 - The project inception workshop was held on 2 and 3 July 2008. A related report was provided to all countries and participants.
 - The USAID partners' meeting on HPAI in South Asia was organized on 17 and 18 November 2008 in New Delhi, India to discuss the progress of Fiscal Year (FY) 2007 activities and a work plan for FY 2008 funding.
 - Technical and policy-level committees were formed. A meeting of these committees to monitor the project progress was held on 17 April 2009 in Kolkata, India, on 28 and 29 January 2010 in Pokhara, Nepal and on 12 May 2010 in New Delhi, India. A meeting of the technical-level committee to monitor the project's progress was held on 19 July 2009 in Dhaka, Bangladesh. The Governments of the three countries were very appreciative of these meetings and wished to continue these in the future.
 - A poster prepared on the progress of the project was presented during the USAID Partners' Meeting held from 1 to 3 April 2009 in Bangkok.
 - Thirteen volumes of bimonthly information bulletins were released, from May 2009 to June 2011, and circulated to ECTAD members, donors, countries and other agencies as an information sharing/knowledge management initiative.
 - Collaboration with the South Asia Association for Regional Cooperation (SAARC) was continued through organization of a FAO/World Organisation for Animal Health (OIE) subregional meeting of the Global Framework for the Progressive Control of Transboundary Animal Diseases (for the SAARC Region) on 4 and 5 June 2009 in Kathmandu, Nepal.
 - The Subregional Manager participated in a meeting in Bangkok, on 16 and 17 July 2009, to develop a Strategic Framework, entitled "FAO regional strategy for Highly Pathogenic Avian Influenza and other emerging infectious diseases of animals in Asia and the Pacific: 2009 – 2014".
 - The report on the progress of the project, from April to September 2009, was presented at the USAID partners' meeting held on 24 and 25 September 2009 in Bangkok.
 - The Subregional Manager participated in the second real-time evaluation of FAO's work on HPAI in the Asian region, held on 30 November and 1 December 2009 in Bangkok, Thailand. The evaluation team was briefed on the activities and impact of the South Asia cross-border project.
 - The Subregional Manager and Subregional Advocacy Coordinator participated in the fourth regional ECTAD meeting, from 23 to 25 February 2010, and the ECTAD Asia information system workshop on 26 February 2010 in Bangkok, Thailand.
 - The Subregional Manager participated in the inception workshop on the "Regional risk assessment of HPAI in South and Southeast Asia: a socio-economic perspective" in Bangkok, Thailand, on 28 and 29 April 2010.
 - The Subregional Manager participated in the inception workshop of OSRO/IND/802/USA project "Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India" on 10 and 11 May 2010 in New Delhi, India.
 - The Subregional Manager and Subregional Advocacy Coordinator participated in the regional communication workshop from 23 to 25 June 2010 in Bangkok, Thailand.
 - The Subregional Manager participated in the First meeting of the Highly Pathogenic and Emerging and Re-emerging Diseases (HPED) Steering Committee on 1 July 2010 and the 4th Regional Steering Committee meeting of the Global Framework for the

Progressive Control of Transboundary Animal Diseases (GF-TADs) for Asia and the Pacific Region on 2 July 2010 in Bangkok, Thailand.

- The Subregional Manager participated in the Regional Avian and Pandemic Influenza USAID Partners' Meeting on 2 and 3 September 2010 in Bangkok, Thailand, and presented the progress of activities from October 2009 to September 2010.
- The Subregional Manager participated in the International Workshop on Challenges of Information Systems and Surveillance for major animal diseases and zoonoses from 23 to 26 November 2010 at FAO headquarters in Rome, Italy.
- The Subregional Manager and Emergency Programme Officer participated in a high-level regional consultation on the control of priority transboundary animal and other emerging infectious diseases in South Asia held in collaboration with SAARC Secretariat in Bangkok, Thailand, on 13 and 14 January 2011.
- The Subregional Manager and Emergency Programme Officer participated in the Regional ECTAD Meeting held in Bangkok, Thailand, from 22 to 24 February 2011.
- The Subregional Manager participated in the ECTAD Team Leaders Planning meeting to discuss the process towards institutionalization of the One Health approach at FAO headquarters in Rome from 9 to 11 May 2011.
- The wrap-up meeting of the project was held on 16 September 2011 in Kathmandu with participation of delegates from Bangladesh, India, Nepal, FAO, USAID Nepal and USAID/RDMA.

Output 2: High-risk areas for introduction of HPAI via cross-border routes identified and mapped

- The draft final report of the study on poultry value-chain analysis across Nepal and India's border and mapping of high-risk areas was received and cleared.
- The draft final report of the study on poultry value-chain analysis across Bangladesh, India and Myanmar's border and mapping of high-risk areas was received and cleared.
- The draft final report of the study on poultry value-chain analysis across Myanmar, India and Bangladesh's borders and mapping of high-risk areas was received and cleared.
- The agency contracted to perform the poultry value chain mapping across India-Nepal, India-Bangladesh and India-Myanmar did not perform satisfactorily and did not submit the final report. The FAO office in India and the contractor decided to close the activities on 27 September 2010, as it was found difficult to make any further progress.

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- Laboratory training for participants from Bangladesh, India, Nepal and Myanmar was held from 19 to 24 January 2009 in Bhopal, India.
- A subregional workshop to develop standard operating procedures (SOPs) for emergency response to disease in high-risk cross-border trade areas was held on 21 and 22 May 2009 in Kathmandu, Nepal. These SOPs were further discussed (and accepted by each party) in Bangladesh, India and Nepal through a series of brainstorming workshops from 4 to 6 November 2009 (in Nepal), on 4 December (in India) and on 10 December (in Bangladesh) and finally at the Technical and Policy Level Committees meeting on 28 and 29 January 2010 in Pokhara, Nepal. The finalized SOPs were circulated in the district level meetings held in the high-risk corridors in India and Bangladesh.
- At the request of the Government of India, rapid antigen detection kits were procured and delivered for use in high-risk corridors for the rapid screening of outbreaks. Furthermore, in response to the Government's request, five cycles of laboratory

trainings were conducted on the use of rapid antigen kits for 80 laboratory personnel. The kits were successfully used in the recent HPAI outbreaks in Murshidabad district, West Bengal, and were appreciated by the Government.

- Enzyme-linked immunosorbent assay kits (ELISA) were procured and delivered to the Government of Nepal for surveillance of HPAI in ducks in Nepal's far eastern region, which formed a part of the project study area.
- A study tour to West Bengal, India for staff from Bangladesh, India, Nepal and Myanmar to strengthen emergency response capacity was conducted from 26 to 29 April 2010. Four participants each from Bangladesh and Myanmar, five from India and six from Nepal participated in the study tour.

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- Stakeholder meetings to present the results of poultry value-chain mapping across Nepal and India's border were held on 10 July 2009 in Kathmandu, Nepal; and for the Bangladesh-India and Bangladesh-Myanmar borders on 21 July 2009 in Dhaka, Bangladesh. The meetings were attended by senior staff representing DLS, including the Chief Veterinary Officer (CVO), private sector representatives, national and international non-governmental organizations (NGOs), Academy for Educational Development (AED) and FAO.
- A subregional workshop, entitled "Understanding and use of poultry value chain analysis in poultry production and marketing in the context of cross-border trading", was held from 14 to 18 September 2009 in Kathmandu, Nepal. Delegates from Bangladesh, India and Nepal participated. The workshop was facilitated by FAO staff from headquarters, ECTAD Bangladesh and Nepal and also by the Royal Veterinary College, London.
- The studies on the livestock marketing system in high-risk corridors of Bangladesh, India and Nepal with a view to establishing monitoring processes of poultry production and market chains (linked with animal disease monitoring data) were concluded and draft reports received.

Output 3: Developed policy and harmonized risk management procedures

- Consultancy reports from consultants in Bangladesh, India and Nepal to review and analyse policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management were received and technically cleared by ECTAD.

Output 4: Improved capacity for response to cross-border emergencies

- A series of orientation and sensitization workshops, on strengthening cross-border emergency preparedness and response mechanism for HPAI, were held for provincial and district officers in high-risk cross-border corridors of Nepal (Jhapa and Morang districts) and India (Araria/Kishanganj, Darjeeling, Cooch Behar, Dakhshin Dinajpur, Malda, North 24 Parganas and West Tripura districts) between January and March 2010. Similar workshops were held in Bangladesh between June 2010 and January 2011 in Chapai Nababganj, Dinajpur, Lalmonirhat, Jessore, Comilla and Cox's Bazaar districts. Approximately 90 to 100 persons participated in each workshop. The workshops, which were part of the emergency response, were also used as a platform to sensitize local, district-level and decentralized veterinarians, private and public news channels, journalists, media-persons, NGOs, farmers, traders, border security personnel and women's groups in border districts.

- Three media orientation/sensitization workshops were held in West Bengal, India between July and December 2010. The first workshop was held on 6 July in Siliguri (Darjeeling district), the second workshop on 8 July at Berhampore (Murshidabad district), and the third state level workshop on 6 and 7 December 2010 in Kolkata. Similar workshops were held in Nepal (11 February 2011 in Kathmandu), Bangladesh (15 February 2011 in Dhaka) and Tripura state, India (7 March 2011 in Agartala).
- Two table top preparatory simulation workshops for prevention and control of HPAI, in relation to strengthening Cross-Border Emergency Preparedness and Response Mechanism were held at Dinajpur, Bangladesh on 19 September 2010 and Dakshin Dinajpur (west Bengal), India on 10 December 2010.

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 05

Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: October 2010–March 2011

Regional Component: Southeast Asia
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 05
Budget: USD 600 000 (Phase I), USD 1 435 000 (Phase II), USD 1 172 700 (Phase III), USD 937 800 (Phase IV), USD 1 000 000 (Phase V), USD 30 667 (from Mongolia Balance)
Total budget: USD 5 176 167
Effective starting date: 1 August 2006
Planned end date: 30 September 2011
<p>Context of the project</p> <p>The Highly Pathogenic Avian Influenza (HPAI) epidemic, caused by H5N1 viruses, began in late 2003 and in early 2004 in Asia and Southeast Asia and spread to many countries in the region. The effects were particularly severe in Indonesia, Thailand and Viet Nam, which saw widespread outbreaks in poultry and also human cases of H5N1 infection. The Food and Agriculture Organization of the United Nations (FAO), through its Emergency Centre for Transboundary Animal Diseases (ECTAD), established a decentralized unit in Bangkok, Thailand, located in the Regional Office for Asia and the Pacific (RAP), to provide technical backstopping for countries in the Asia and the Pacific region that were experiencing outbreaks of the infection or were at risk of it. ECTAD RAP was supported through a preliminary, regional project (OSRO/RAS/505/USA) funded by the United States Agency for International Development (USAID). This support has continued under FAO's present project.</p>
<p>Objectives of the project</p> <p>The objective of this regional component is to coordinate project activities with the target countries and also to ensure continuity from the previous project (OSRO/RAS/505/USA) to the current one. The project also aims to strengthen regional level cross-sectoral coordination and communication for HPAI control.</p>
<p>Planned activities (for the reporting period)</p> <p>Output 1: Strengthened cross-sectoral coordination at regional level</p> <ul style="list-style-type: none"> • continue to provide technical and operational inputs to country-level projects in collaboration with country teams • continue to provide support to the Association of Southeast Asian Nations (ASEAN) to finalize the roadmap for HPAI Progressive Control and Eradication in Southeast Asia • continue to coordinate and collaborate with other agencies on activities related to HPAI control <p>Output 2: Strengthened regional and national human resources in epidemiology through regional Field Epidemiology Training Program for Veterinarians (FETPV)</p> <ul style="list-style-type: none"> • continue providing technical support to the Thai Department of Livestock Development (DLD), Ministry of Agriculture and Cooperatives (MoAC) in implementing regional Field Epidemiology Training Program for Veterinarians (FETPV)

- support the necessary operational research to be conducted by trainees of FETPV as part of the curriculum requirement and support the trainees to present their work at international conference/meeting/seminar
- support study visit conducted by regional FETPV trainees to international animal health centres or research institutes as part of the curriculum requirement
- continue to provide support to the development of China-FETPV, as well as related training programmes in Cambodia, Lao People's Democratic Republic (PDR) and Nepal

Output 3: Strengthened coordination of epidemiology and laboratory network

- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks
- continue to provide technical inputs for the establishment of a disease tracking system, the Global Animal Disease Information System (EMPRES-i) Asia, in collaboration with the senior technical adviser of FAO's HPAI programme in China and Information Technologies (IT) expert in FAO headquarters

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- continue to provide coordination for country teams conducting risk assessment studies on HPAI transmission through the cross-border poultry trade

Activities undertaken during reporting period

Output 1: Strengthened cross-sectoral coordination at regional level

- FAO continued to maintain international and national regional support staff for the project.
- The Regional Coordinator (RC) continued to coordinate and collaborate with other United Nations (UN) agencies, donors and international humanitarian actors by attending meetings in the region to ensure that support and approaches to HPAI control were harmonized at country and regional levels. Specifically, the RC:
 - attended UN system workshop on Animal and Pandemic Influenza in Asia and the Pacific organized by the United Nations System Influenza Coordination (UNSIC) on 3 and 4 February 2011 in Bangkok, Thailand. The objectives of the workshop were to provide a platform for UN country teams in Asia and the Pacific region to review the UN system response to animal and pandemic influenza since 2005, share lessons learned and experiences gained and identify ways for work in this area to continue in a coordinated and unified way in support of national governments.
- The regional team consisting of the RC, Regional Veterinary Epidemiologist (RVE) and operations team continued to provide technical and operational inputs to country-level projects in collaboration with country teams.
- The RC attended the side meeting of the 32nd ASEAN Ministerial of Agriculture and Forestry (AMAF) meeting. The theme for this meeting was "ASEAN cooperation on animal health and zoonosis: AI and beyond," which was held in Phnom Penh, Cambodia on 24 October 2010 to present the achievements of the HPAI campaign in ASEAN member countries. In addition, the ASEAN roadmap for HPAI prevention, control and eradication was launched during this side event.

- The RC attended “FAO- Animal Production and Health Commission for Asia (APHCA)- UK Department for International Development (DFID) pro-poor HPAI risk reductions: lessons from Southeast Asia and Africa workshop,” which was held in Phuket, Thailand from 25 to 28 October 2010.
- The ECTAD regional team organized an informal technical discussion among FAO technical staff at country levels and the World Organisation for Animal Health (OIE) experts on “HPAI vaccines and vaccination” on 11 and 12 January 2011.
- The ECTAD regional team organized the 5th annual regional ECTAD meeting among FAO technical country staff for information and experience sharing from 22 to 24 February 2011.
- The RC and RVE attended and provided technical inputs to the China and Viet Nam Forum on HPAI Risk Management and Control on 8 and 9 March 2011 in Beijing, China.
- The ECTAD team provided technical inputs to support the activities of USAID Emerging Pandemic Threat (EPT) program, which are conducted by various partners.
- The ECTAD team provided technical and operational inputs to country projects, in collaboration with FAO country teams and national counterparts, for the following activities:
 - recruitment of international consultants;
 - procurement of equipment and supplies; and
 - issuance of contracts to conduct field activities/research.

Output 2: Strengthened regional and national human resources in epidemiology through regional Field Epidemiology Training Program for Veterinarians (FETPV)

- The RVE and RC worked closely with DLD on activities related to FETPV. These included:
 - organizing the one-month course “Veterinary epidemiology in action” from 17 January to 11 February 2011;
 - organizing the second-round visit of the FETPV trainees who were enrolled in the class of 2010 in Thailand for a series of trainings and workshops; and
 - conducting a mission to Khon Kaen, Thailand to provide inputs to the Lao Country Team to organize a one-month course in collaboration with Khon Kaen University.
- The Letter of Agreement (LoA) was finalized to support Thai DLD to implement the regional FETPV during the year 2011.
- The RC and RVE provided technical support to the trainees of the regional FETPV to present the results of their operational research at the “One Health Congress” from 14 to 16 February 2011 in Melbourne, Australia.
- In collaboration with Thai DLD, the ECTAD team arranged a study visit to be conducted by regional FETPV trainees to the Center of Epidemiology and Animal Health, Colorado, USA as part of the curriculum requirements.
- The RVE continued to provide support to the development of China-FETPV and India-FETPV, as well as related training programmes in Cambodia, Lao PDR and Nepal.

Output 3: Strengthened coordination of epidemiology and laboratory network

- The RC continued to provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks.
- ECTAD RAP continued to provide technical inputs to the disease tracking system, EMPRES-i Asia.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- A joint work plan for a pilot project on management of HPAI risks along the market chain at the cross-border level between Thailand and Lao PDR was developed in collaboration with the Academy for Educational Development (AED) and Kenan Institute Asia (KIA). In addition, meetings were conducted to discuss joint activities in detail in November and December 2011.
- Methodology to monitor poultry and other livestock prices as an indicator for animal movement between Thailand and Lao PDR was developed by the Animal Health Economist based at ECTAD RAP.

Planned activities for the next six-month period

Output 1: Strengthened cross-sectoral coordination at regional level

- continue to provide technical and operational inputs to country-level projects in collaboration with country teams
- continue to provide technical inputs, resource persons or training support to the activities related to existing regional HPAI Control framework for ASEAN or existing network systems related to HPAI
- continue to coordinate and collaborate with other agencies on activities related to HPAI control
- continue to provide technical inputs to support the activities of the USAID EPT programme, which are conducted by various partners

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- continue activities to implement the two-year FETPV programme, including the seeking of additional support for the programme through other potential partners
- continue to provide support to the development of China-FETPV, as well as related training programmes in Cambodia, Lao PDR and Nepal
- organize a regional workshop to develop the regional strategy to assist the countries to improve animal disease control systems at the grassroots level focusing on the "Community Animal Health Worker System".

Output 3: Strengthened coordination of epidemiology and laboratory network

- continue to support the implementation of EMPRES-i-Asia to share expertise and information in a real-time manner across the network through meetings, workshops and on-line communication
- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium
- continue to provide support for sample submission from member countries to international reference laboratories

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- continue to support the in-depth studies on the risks of HPAI spread along the poultry production and market chains at the border between Thailand and Lao PDR (Mukdaharn and Savannakhet Provinces)
- support the organization of a bilateral meeting between the Government of Thailand and

<p>Lao PDR to discuss cross-border risk management</p> <ul style="list-style-type: none"> • organize regional coordination meetings on risk management at cross-border level among key potential partners including the representatives from participating governments
<p>Main challenges encountered and response provided</p> <ul style="list-style-type: none"> • There were no major challenges during the reporting period.
<p>Progress made towards the achievement of project outcomes (from the start of activities)</p> <p>Output 1: Strengthened cross-sectoral coordination at regional level</p> <ul style="list-style-type: none"> • Coordination and collaboration between FAO and other international organizations and agencies – as well as with regional political organizations such as ASEAN –continued and was strengthened. Linkages were established between the projects funded by USAID and the projects funded by other donors. <p>Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV</p> <ul style="list-style-type: none"> • FETPV continued smoothly with additional collaborations at national and international levels and approved joint funding for the programme. ASEAN member countries advocated for the importance of integrating veterinary epidemiology activities in the national veterinary services and approval by ASEAN working group on livestock, which is expected in the next six months. <p>Output 3: Strengthened coordination of the epidemiology and laboratory network</p> <ul style="list-style-type: none"> • In order to facilitate collaboration among key international partners, a matrix was drafted with the aim of strengthening epidemiology and laboratory networks for HPAI in Southeast Asia. This matrix was adapted and endorsed as a Strategic Framework for Regional Laboratory Network for Southeast Asia. Approval by the ASEAN working group on livestock is expected in the next six months. <p>Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade</p> <ul style="list-style-type: none"> • A detailed work plan for AED, FAO and KIA for cross-border activities at Mukdahan Province was drafted and agreed upon by the three partners and USAID/Regional Development Mission for Asia (RDMA).

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 06**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to Viet Nam**

Reporting period: **October 2010 to March 2011**

Country: Viet Nam
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to Viet Nam
Code: OSRO/RAS/604/USA Baby 06
Budget: USD 2 million (Phase I), USD 3.1 million (Phase II), USD 3.3 million (Phase III), USD 1.075 million (cost extension) ¹ , USD 2.2 million (Phase IV)
Total budget: USD 11.675 million
Effective starting date: August 2006
Planned end date: September 2011
Context of the project The control and elimination of H5N1 Highly Pathogenic Avian Influenza (HPAI) demands a long-term approach. Viet Nam is moving from the control phase to the consolidation phase, with an ongoing need for capacity building in the veterinary services and livestock production sectors and support for vaccination and other risk reduction measures. This regional project supported by the United States Agency for International Development (USAID) is currently in its fourth phase of implementation.
Objectives of the project The overall objective of the project is to address the urgent short-term actions that need to be undertaken by the country to strengthen its capacity to rapidly detect the introduction of HPAI into the country and minimize its spread in case of its occurrence.
Planned activities for this quarter Component 1: Preparedness and Planning Component Output 1: Strategy development for HPAI control <i>Activity 1.1: Review of HPAI Control Strategy in Viet Nam</i> <ul style="list-style-type: none"> Attend the National Workshop on Developing a One Health Approach for 2011-2015, addressing high impact infectious diseases at the Animal Human Interface before the OPI review. <i>Activity 1.2: Transforming the HPAI Contingency Plan</i> <ul style="list-style-type: none"> Review of the H5N1 drafting animal disease emergency preparedness plan. Output 2: Coordination and communication with donors and other HPAI implementing partners <i>Activity 2.1: Core FAO Viet Nam team supported</i> <ul style="list-style-type: none"> Extend and renew contract of the current personnel, as and when necessary. <i>Activity 2.2: Annual project meetings supported</i> <ul style="list-style-type: none"> Organize a strategic Planning Meeting with all stakeholders in November 2010. <i>Activity 2.3: Team Meetings from Provincial to National level</i> <ul style="list-style-type: none"> Hold one meeting will be held with provincial and national stakeholders. <i>Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector</i> <ul style="list-style-type: none"> Initiate a national workshop with stakeholders to exchange information on surveillance and risk analysis; and Initiate the preparation of a DAH bulletin by November 2010 for the first volume. Component 2: Animal Surveillance Component Output 3: Animal surveillance at the national, provincial, district and community level enhanced <i>Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported</i> <ul style="list-style-type: none"> Continue providing technical inputs by national and international laboratory experts; continue providing support to the LabNet server and tele-hosting maintenance; organize the maintenance of the laboratory equipment (refer to section 4.1); initiate a working plan to develop a roadmap for animal disease diagnostics;

¹ Project Cost Extension Request from October 2009 to September 2010.

- hold a laboratory workshop at the National Centre for Veterinary Diagnosis (NCVD) and the Regional Animal Health Office (RAHO) 6 to build capacity for microbial and pathological investigation of animal disease;
- initiate activities in gene sequencing for more AI virus isolates; and
- initiate small laboratory based research component on HPAI virus survivability and host factors associated with the virus.

Activity 3.2: Strengthening of core capacities for animal health in 5 focus provinces, including surveillance activities supported

- Extend the letter of Agreement (LoA) extension with the DAH to monitor the implementation of the active surveillance (CBS);
- consult with DAH to review the CAHW guidelines;
- continue coordination with USAID implementing partner Avian Pandemic Influenza Initiative (APII); and
- conduct an evaluation of awareness campaign for enhanced reporting from previous year.

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- Continue to support M&E activities as outlined in the 2009 USAID Viet Nam Highly Pathogenic Avian Influenza and Emerging Pandemic Threats Performance Management Plan.

Activity 3.4: Veterinary epidemiology network supported

- Review AVET curriculum;
- initiate fifth and sixth AVET programme;
- exchange information with other epidemiological trainings (Field Epidemiology Training Programme [FETP], Field Epidemiology Training Programme for Veterinarians [FETPV], etc.); and
- continue providing support to TADinfo and support hosting the server.

Activity 3.5: Piloting surveillance for animal influenza in poultry and pig production interface

- Initiate activity with national counterpart.

Activity 3.6: Active surveillance programme in a selected poultry marketing system

- Initiate a plan for analysis of a market catchment area in a particular zone.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- Carry out personal protection equipment (PPE) needs assessment in five pilot provinces;
- Continue procurement of laboratory consumables HPAI diagnosis and surveillance, as required; and
- Continue to maintain equipment, as required.

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk-mapping and risk analysis updated at national level

- Carry out poultry sub-sector profiling and training on spatial analysis.

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- Provide support for carrying out investigation in the event of HPAI outbreaks occurring in the pilot provinces or in the neighbouring provinces (field trips);
- continue support for lab diagnosis; and
- continue training of CAHW for improved reporting.

Activity 5.3: Cross-border analysis using a value chain methodology in three border areas

- Initiate northwest cross-border trade analysis for HPAI.

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- initiate PVM and the H5 VCS among poultry for round two of 2010; and
- initiate vaccine efficacy trial of new vaccine strains against 2.3.2 clade virus.

Activity 5.5: Support public private partnership (PPP) and institutional strengthening in poultry production and health care system

- Initiate the setting up of a regulatory board for monitoring veterinary service delivery and quality of veterinary education; and
- initiate a poultry price monitoring structure in three major cities in Viet Nam; and

<ul style="list-style-type: none"> • support creation of a PPP working group for development and restructuring of the poultry sector. <p>Output 6: Improved bio-security and market hygiene practices in commercial and scavenging poultry raising settings supported</p> <p><i>Activity 6.1: Support biosecurity strengthening in pilot provinces</i></p> <ul style="list-style-type: none"> • Continue with the stakeholder process to develop local risk reduction action plans. This activity will support the completion of those plans; and • Conduct mapping of hatcheries in two provinces. <p><i>Activity 6.2: Develop biosecurity guidelines and training for DAH and DLP</i></p> <ul style="list-style-type: none"> • Continue to support two working groups in biosecurity. The first is planned for October 2010.
<p>Activities undertaken during the reporting period (October 2010 to March 2011)</p> <p>Component 1: Preparedness and Planning Component</p> <p>Output 1: Strategy development for HPAI control</p> <p><i>Activity 1.1: Review of HPAI Control Strategy in Viet Nam</i></p> <ul style="list-style-type: none"> • None . <p><i>Activity 1.2: Transforming the HPAI Contingency Plan</i></p> <ul style="list-style-type: none"> • On-going mission for the drafting of an Animal Disease Emergency Preparedness Plan to improve national preparedness to respond to an incursion of a transboundary disease, the emergence of a new disease or an epidemic of a disease already in the country. Animal Disease Emergency Preparedness Plan technical meeting held with DAH on 25 March 2011. <p>Output 2: Coordination and communication with donors and other HPAI implementing partners</p> <p><i>Activity 2.1: Core FAO Viet Nam team supported</i></p> <ul style="list-style-type: none"> • All key staff recruited and in place for the project implementation period. <p><i>Activity 2.2: Annual project meetings supported</i></p> <ul style="list-style-type: none"> • Annual Planning Workshop took place in November 2010. Participants from USAID, WHI, DAH, DLP, VAHIP, RUDEC, HAU, FAO, AVET, pilot province SDAH, Abt and NCVD attended. 43 Participants, 28 males and 15 females). • Initiated preparation of a FAO/DAH Information Sharing Workshop on "Recent advances in the knowledge of the epidemiology of HPAI in Viet Nam and identification of research priorities" proposed for 28-29 April 2011, in Hanoi. <p><i>Activity 2.3: Team Meetings from Provincial to National level</i></p> <ul style="list-style-type: none"> • FAO delegation undertook missions to the 5 pilot provinces in December 2010 and January 2011 for meetings with provincial Sub-DAH and DARD officials. Project achievements of the last year and the plan for the current year were jointly reviewed, discussed and feed-back obtained. • A Quarterly FAO Abt meeting took place in Hanoi to explain the Risk Reduction in the Market Chain jointly showing the FAO and APII activities in a Provincial Matrix format including the surveillance activities and give the field an opportunity to share information, discuss bottlenecks and propose solutions (21 participants, 11 males, 10 females). <p><i>Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector</i></p> <ul style="list-style-type: none"> • FAO provides a weekly report which is submitted to USAID and USAID partners. • Update the Google Viet Nam PPI calendar regularly. • FAO finalized and submitted detailed work plan and logical framework for all key outputs of this project to USAID and USAID partners. • Two coordination meetings with FAO and Abt took place to discuss and design the Work-Plans for market surveillance and risk mitigation measures in the poultry value chain in the pilot provinces. • FAO Participated in FAO-Abt joint meeting to review the proposed BCC plan and provided additional technical input. • FAO participated to the BCC Working group in December 2010. • Development of a shared supply chain risk reduction working strategy between FAO and Abt Associates. • Technical meetings held with Abt Associates relating to risk assessment, risk reduction within the market chain and linkages between communication activities, technical interventions and supply

chain strengthening (including technical support to DLP on supply chain risk reduction approaches) (approach also presented at regional ECTAD meeting and a bilateral meeting between China and Viet Nam).

- Participated in Abt led technical consultation on implementation of recent slaughter-house legislation and practical issues to be tested through the USA project.
- National Vaccination Strategy Meeting was held on 22 October 2011 (participants included USAID, FAO, Abt, DAH, NCVD, RAHOs, NIVR, MARD, MONRE, VAPM, MPI, MoF, Gov office, PAHI, HUA, VAHIP and National Center for VET drugs and bio-products control No1; 48 participants, 29 males and 19 females). Government of Viet Nam incorporated lessons learnt from active and passive surveillance based on work done under this project, along with key recommendations under the GETs project.
- DAH bulletin underway, but first volume will be delayed until May 2011.
- FAO participated in AI partners' coordination meeting in USAID office on 24 January, 2011 and USAID Partner's Meeting on March 29th.

Component 2: Animal Surveillance Component

Output 3: Animal surveillance at the national, provincial, district and community level enhanced

Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported

- The Manual for Biosafety in Veterinary Laboratories in Viet Nam and the SOP for adoption of Biosafety and Biosecurity in the laboratories have been finalized. These documents were developed through a National Consultancy and with technical inputs from FAO country team. Both these documents have been submitted to the Department of Animal Health in December 2010. FAO is strongly advocating the DAH to adopt appropriate biosafety and biosecurity measures in the laboratories, particularly those, handling highly infectious and pathogenic microbes and also those organisms having zoonotic potential.
- The Labnet software for creating a network among the HPAI reference laboratories for on-line and data-entry and submission of results to the Central Hub has been created. It was developed earlier but had a glitch for which it failed to work. Now it is ready for use in the laboratories, which will be taken up after two sets of one-day training, one in NCVD and the other in RAHO 6 in HCMC.
- Epidemiological Lab network workshop was carried out in December 2010 for capacity building for microbial and pathogenic investigation of animal diseases (participants included USAID, CDC, FAO, WCS, VAHIP, DAH, NCVD, NIVR, RAHO3,4,5,6,7. Total participants 47, 30 males and 17 females).

Activity 3.2: Strengthening of core capacities for animal health in 5 focus provinces, including surveillance activities supported

- Final reports of Active and Passive Surveillance carried out in the year 2009-10 were received, reviewed and finalized.
- Final report on the Cost-effectiveness of Surveillance was reviewed, finalized and formally handed over to the DAH in December 2010 for information which is expected to help develop policy directives for future surveillance activities against HPAI and possibly other Trans-boundary Animal Diseases.
- SOPs and Job Cards for HPAI outbreak investigation and response were completed, translated in Vietnamese and formally handed over to the DAH for information which is expected to be nationally adopted.
- Evaluation mission of awareness campaign for enhanced reporting from previous year completed.
- FAO participated in an Abt meeting for the launching of the CBS model in Ha Nam and Can Tho provinces.
- FAO attend the Abt meeting for the review of CBS activities done from August 2010 to December 2010 and plan for next step.
- LoAs for the strengthening the passive surveillance system and the routine active disease surveillance, initiated in Q1 and Q2 2010 extended until May 2011.
- In consultation with DAH and taking into account the CAHW guidelines, an additional approach has been launched for the active surveillance model with an event-based component taking place whenever there is a new HPAI outbreak reported in a pilot province or in a district neighbouring a

pilot province. During 1 month, CAHWs of 50 communes neighbouring the infected commune carry out field visits to early detect any potential secondary outbreak. LoA has been launched early March and will run until end of May.

- Briefing to provincial SDAH authorities on supply chain risk reduction approach
- Updating of provincial animal health authorities on developments in epidemiology of HPAI (through provincial risk analysis meetings).
- With a new HPAI outbreak reported in Hai Que commune, Hai Lang district, the event-based active disease surveillance model has been launched. Increased surveillance will be carried over during one month in 50 neighbouring communes.

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- FAO provided training to Provincial Coordinators and Focal Points on PMP indicator data collection in February 2011 under subIR-1 and subIR-3.
- FAO completed and submitted the annual PMP report, along with key recommendations to MEASURE in March 2011.

Activity 3.4: Veterinary epidemiology network supported

- Technical reports for AVET courses 1 to 4 were finalized.
- A technical meeting between FAO and NZAID took place to discuss the epidemiological data gathering and analysis and also epidemiological training programmes being carried out by the two agencies in Viet Nam. Training materials of AVET and NZAID were respectively shared.
- A review of the AVET Chapters was undertaken to include more examples and practical exercises and avoid overlaps between chapters. Additionally, the set of questions for the pre & post-course tests was revised.
- A short course on public health epidemiology is now included in the AVET curriculum and is delivered by Dr Nguyen Tran Minh (Topi), the Course Coordinator of the FETP.
- The 5th AVET course was launched on 28th February with 13 trainees involved from DAH, RAHOs and Universities.
- A TAG meeting was held for preparing the 6th AVET course which will be launched on 13 April 2011.

Activity 3.5: Piloting surveillance for animal influenza in poultry and pig production interface

- Deferred

Activity 3.6: Active surveillance programme in a selected poultry marketing system

- A field assessment was carried out of the 10 LBMs in Quang Tri province including information on the markets and based on this and the risk assessment key markets in the network selected.
- A protocol for the approach including sampling, processing and testing of samples has been drafted together with an experience sharing consultation with GETS and Word Bank (VAHIP) projects.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- Procurement and PPE needs assessment was carried out in each of the pilot studies to determine procurement, stocking and maintenance requirements. Results are currently with the Department of Animal Health to review the provincial requests and ensure there is no overlap with contribution from other potential sources.
- Field missions to all laboratories completed to review inventory and ensure USAID visibility with correct labelling.
- 20 new car stickers ordered and received on 5 December (2 per car) to be sent to the 10 provinces (GETS and 604) to replace any damaged/lost car stickers.
- 2 Printer , 2 Computer Dell Optiplex 380DT, 2 Fax machine ,02 Santax UPS offline 500VA, 02 Fax modem have been provided to 2DVSs in Kien Giang province, as a result of new districts set up.

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk-mapping and risk analysis updated at national level

- Outbreaks have been spatially and temporarily mapped and together with molecular epidemiological evidence, understanding of risk factors and HPAI epidemiology have been

significantly strengthened.

- Poultry profiling technical reports completed in 5 pilot provinces.
- Risk analyses have been carried out in Ha Nam and Hung Yen (through UNJP), completing risk analysis exercises in all 5 provinces.
- A regional risk analysis has been planned and technical material prepared for central provinces (to be held Apr 6-8) and material also developed for the Red River Delta.
- Post test evaluation on the Risk Assessment carried out in Kien Giang and Can Tho were completed on 25 and 26 October 2011. The relevancy of training activities with actual works, content of training activities, training methods and guidance, documents and materials, overall logistics were highly appreciated by informants. Many of the informants confirmed that they benefitted from the training workshops and they could apply what they have learnt into their areas of operation. 66 percent of the total participants said that they have been involved in the coordination or organization of risk analysis activities after the training workshops.

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- Mapping temporal and spatial distribution outbreaks of HPAI in poultry in Viet Nam and dissemination to other stakeholders (includes translation of DAH and Ministry of Health (MoH) reports disseminated via email, updating excel list of HPAI outbreaks, reporting any new outbreaks, and analyses of epidemiological data and mapping).
- Evaluation on hotline, calendars, stickers and roadshow in Ha Nam and Can Tho were completed on 28 Dec 2010. It was recommended that the hotline should be used not only to report HPAI suspicious cases but also for other diseases such as PRRS, FMD and for other purpose such as providing advice on animal production and vaccination to farmers, etc.

Activity 5.3: Cross-border analysis using a value chain methodology in three border areas

- Technical support provided to a bilateral meeting between Chinese and Vietnamese authorities at which value-chain approaches and results from studies were presented and important future recommendations made
- Implementing partner identified for future study on *cross border trade and study outline developed emphasising movement and assimilation of spent hens into Vietnamese domestic markets*

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- Technical report of the LoA for the Round I of 2010 of Post-vaccination monitoring and virus circulation surveillance was reviewed, finalized and cleared.
- Round II of 2010 of Post-vaccination monitoring and virus circulation surveillance cancelled by DAH as a result of Circular No. 136/2010/TT-BTC dated 13 September, 2010, which proposed revised rates of various laboratory tests. As the newly proposed cost norms were debated by Government, FAO was requested by DAH to defer post-vaccination monitoring until Round I 2011.
- Detailed description of sub-optimal performance of vaccination in selective districts, provinces and regions requirements complete for planned activities.
- In the current set of trials on the vaccine efficacy against the circulating virus strains, it was observed that with one shot of Re-1 vaccine, chickens were protected 100 percent when challenged with a recently isolated H5N2 virus (of slightly lesser virulence) and 80 percent when challenged with the currently circulating H5N1 HPAI virus clade 2.3.2, predominantly in North Viet Nam. Since the recommended procedure is to inoculate two doses of the vaccine three weeks apart, the next phase of the trial is looking into the efficacy of Re-1 vaccine against the above two virus stains in chickens, vaccinated with two doses of the vaccine as per the manufacturer's instruction.

Activity 5.5: Support public private partnership (PPP) and institutional strengthening in poultry production and health care system

- Scoping study on PPP carried out (under UNJP) in anticipation of project extension approval.

Output 6: Improved bio-security and market hygiene practices in commercial and scavenging poultry raising settings supported

Activity 6.1: Support biosecurity strengthening in pilot provinces

- Training materials and approaches for hatchery hygiene, public and private sector adviser Training of Trainers (ToT) technically reviewed.
- Bio-security risk communication DVD developed for inclusion into training/awareness raising packages.
- Hatchery mapping has been undertaken in Can Tho and Kien Giang provinces and preparation for GPS marking activities are in place. Hatchery data collection and GPS marking has also been organised to initiate in Ha Nam, Hung Yen and Quang Tri.

Activity 6.2: Develop biosecurity guidelines and training for DAH and DLP

- A bio-security working group annual strategic planning meeting was held in October 2010 and an action plan developed through stakeholder consultation. Participants included Phu Tho SDAH, Viet Nam Veterinary Association, VSF-CICDA, PAHI, RUCED, NAFEC, AFAP, Hung Yen DARD, Institute of Animal Husbandry, DLP, Abt, FAO, USAID. Total participants 25, 15 males and 10 females. (Training for provincial technical officers: see public sector training of trainers programme 6.1)

Planned activities for the next six-month period

Component 1: Preparedness and Planning Component

Output 1: Strategy development for HPAI control

Activity 1.1: Review of HPAI Control Strategy in Viet Nam

- The consultancy for this review will be initiated when the DAH road map and the new “green book” are finalized.
- Additional technical inputs and advice will be provided by FAO technical officers. This will emanate from outputs of field work, technical meetings (such as risk assessments, HPAI epidemiology consultation etc).

Activity 1.2: Transforming the HPAI Contingency Plan

- Framework for the Animal Disease Emergencies Preparedness plan will be reviewed, finalized, translated in Vietnamese and formally handed over to DAH.

Output 2: Coordination and communication with donors and other HPAI implementing partners

Activity 2.1: Core FAO Viet Nam team supported

- Continue to ensure that all staff is in place.

Activity 2.2: Annual project meetings supported

- FAO/DAH Information Sharing Workshop on “Recent advances in the knowledge of the epidemiology of HPAI in Viet Nam and identification of research priorities” completed.

Activity 2.3: Team Meetings from Provincial to National level

- Hold quarterly FAO-Abt meeting with field staff in third and fourth quarter of the project.

Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector

- Regular technical and coordination meetings will be held with implementing partner Abt Associates providing support to project implementation and monitoring, support and benefit from technical consultancies of mutual interest and exchange experiences including through additional technical resources (Rome based)
- Ad hoc technical meetings with government counterpart agencies and implementing partners to share results and disease control developments and to conduct expert analysis
- Continue to provide a weekly report which is submitted to USAID and USAID partners.
- Continue to update the Google Viet NamPPI calendar regularly.
- Release first volume of DAH bulletin by May 2011.

Component 2: Animal Surveillance Component

Output 3: Animal surveillance at the national, provincial, district and community level enhanced

Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported

- Carry out two sets of one-day training for Tad-Info, one in NCVD and the other in RAHO 6 in HCMC.

Activity 3.2: Strengthening of core capacities for animal health in 5 focus provinces, including surveillance activities supported

- Support provided through LoAs for passive and active surveillance will end by May 2011.
- A review of the project support for the passive surveillance system is planned in June 2011.
- An evaluation of the active disease surveillance model (Routine and event-based component) will be conducted in August 2011.
- When the SOPs for HPAI Outbreak Investigation and Response are officially adopted, FAO will support on DAH's request the adequate awareness and dissemination of SOPs on HPAI OIR (adoption and implementation) and will implement SOPs training of local authorities / AISC leaders in the 5 pilot province following Government Adoption.
- Support to provinces to develop HPAI disease control plans based on risk assessments and risk analysis exercises and technical support to package USAID programme and regular provincial resources into coherent province-level disease control action plans (also linked to activity 1.1)

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- FAO complete and submit the bi-annual PMP report (01 October 2010 to 31 March 2011), along with key recommendations to MEASURE in April 2011.

Activity 3.4: Veterinary epidemiology network supported

- Three more AVET courses will be carried out targeting trainees from the remaining SDAH that were not involved in previous AVET courses.
- Two Alumni Workshop of AVET Trainees will be organised for strengthening the animal health epidemiologist network in Viet Nam and improve the sharing of information.
- Preparation of risk assessment training materials and case studies to be accessible to AVET trainees and DAH epidemiology core team

Activity 3.5: Piloting surveillance for animal influenza in poultry and pig production interface

- Deferred at the request of USAID.

Activity 3.6: Active surveillance programme in a selected poultry marketing system

- This active live bird market surveillance programme will be carried out in 1 or 2 markets of Quang Tri province.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- To decide on procurement and maintenance needs based on needs assessment.

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk-mapping and risk analysis updated at national level

- Training course for Provincial DARD and sDAH staff on value chain analysis and practical techniques for sub-sector mapping and analysis
- Technical update/refresher training on risk assessment approaches for provincial and national epidemiologists
- Regional risk assessments/ analyses will be carried out covering the central and Red river Delta areas of Viet Nam and involving provincial sDAH and DARD offices in those areas beyond the pilot provinces
- A meeting will present the findings of the risk analysis studies and capacity building approaches carried out by the project.

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- Continue mapping temporal and spatial distribution outbreaks of HPAI in poultry in Viet Nam and dissemination to other stakeholders as outlined above.

Activity 5.3: Cross-border analysis using a value chain methodology in three border areas

- A risk analysis study will be carried out focusing on the north-western cross-border trade corridor between Viet Nam and China and also analysing the integration of Chinese poultry into the market chains of northern Viet Nam.
- Study to propose options for managed safe cross-border poultry trade conducted and finding presented in a policy meeting

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- Round I 2011 of PVM and VCS will be prepared in consultation with DAH with potentially a

revised protocol for the sampling based on the new vaccination programme for 2011-2012.

- A consultancy will be conducted for investigating the sub-optimal performance of vaccination in selective districts, provinces and regions.
- Experimental infection of ducks with H5N1 and H5N2 will be initiated in April 2011 to determine pathogenicity of these viruses.
- Vaccine efficacy test (Re-1, Re-5 vs. H5N1 2-3-2, H5N2 2-3-2) will continue.

Activity 5.5: Support public private partnership (PPP) and institutional strengthening in poultry production and health care system

- Design appropriate PPP action plans in target areas (PPPs will be implemented in areas where existing market chain risk reduction activities are being carried out)
- Conduct an analysis of the poultry sub-sector, identifying medium and long term trends and drivers affecting the sector with an emphasis on related veterinary public health issues.
- Area-based action plans to be implemented.

Output 6: Improved bio-security and market hygiene practices in commercial and scavenging poultry raising settings supported

Activity 6.1: Support biosecurity strengthening in pilot provinces

- Implement bio-security capacity strengthening programmes in 5 provinces (focusing on the private sector advisers) (Abt Associates to focus on the government advisory services)

Activity 6.2: Develop biosecurity guidelines and training for DAH and DLP

- Review and adapt National Guidelines developed for Industrial poultry producers under the VAHIP into a version more appropriately targeting the small holder sector.
- Training for government officers on the standards and guidelines developed (delivered at the province level).
- Carry-out evaluation of bio-security initiatives to develop good bio-security practices and ensure consolidation of lessons learned
- Hatchery data collection will be completed in Ha Nam, Hung Yen and Quang Tri. GPS marking will be completed in all five pilot provinces, including hatchery mapping.

Main challenges encountered and response provided

Government approval for the extension of this project was received on 14 February 2011, which was 4.5 months after planned start date of 01 October 2010. FAO was able to continue implementation of on-going activities related to the previous work plan but not able to initiate the new activities proposed in the project proposal covering the period 01 October 2010 to 30 September 2011.

Main progress made towards the achievement of project outcomes (from the start of the project)

Output 1: Strategy development for HPAI control in 2006-2010 supported

- Consideration of a regional approach to HPAI control rather than a provincial one has been promoted and is attracting interest as featured in the Green Book Review and several International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) documents.
- Provincial poultry sub-sector profiling has been effective in describing provincial poultry populations (including the Poultry Atlas) and DLP is considering adopting such an approach more widely.
- Risk assessment and risk-based targeting of control measures are increasingly being included in technical and policy development (however still largely restricted to the control of HPAI).

Output 2: Coordination and communication with donors and other HPAI implementing partners

- Programme management and planning and coordination of activities with USAID and other partners have been maintained. FAO has made 11 major recommendations for the Green Book Review, were well received by the Government of Viet Nam.
- FAO and Abt have a common strategy to risk reduction across the supply chain with a shared activity matrix consolidating the agencies activities into a single overall approach.

Output 3: Animal surveillance at the national, district and community level enhanced

- The project is carrying out animal surveillance activities which include support in relation to the upgrading of TAD-info and the Laboratory Information System (LabNet), development of Geographic Information Systems (GIS) at RAHO. So far, 210 officers from SDAH, 14 RAHO staff and five DAH Epidemiology staff have increased their capacity to use this software through training. Seven units of Global Positioning System (GPS) and seven licenses of mapping software

(ArcView/ArcGIS 9.2) have been provided to seven RAHOs (I-VII). A total of 55 SDAH/DAH staff have been trained on its use.

- The project has also developed a database system software for laboratory diagnostic management within the DAH's LabNet through the services of a local firm in Viet Nam. Laboratory biosafety and quality assurance are being supported and pursued.
- The SOPs for H5N1 real-time PCR have been developed and adopted. Genetic analysis of haemagglutination (HA) gene of the new virus isolates of 2009-10 showed that besides clade 1 and clade 2.3.4, there is increasing evidence of involvement of clade 2.3.2.
- A revised and updated SOP for HPAI outbreak investigation and control has been developed comprising 19 sections and 14 job cards for various officials involved in HPAI outbreak management. The English and Vietnamese versions of the SOP have been handed over to DAH for transmission to MARD for adoption as a national strategy.
- The campaign to encourage poultry farmers to report any unusual occurrences in poultry flocks, arising suspicion of an infectious disease, through TV spots and loudspeakers during the risk period (e.g. the TẾT festival), has created an increased awareness on the necessity to report diseases on time.
- The AVET initiative, to build up basic epidemiological investigation capacity in the country through Viet Nam-specific, tailor-made course curricula of nine weeks duration resulted in training of 52 veterinarians in four cohorts in 2010 and of 13 veterinarians so far in 2011.
- Active surveillance for HPAI and other poultry diseases has been launched on a pilot scale in project provinces, which will complement the community-based surveillance of Abt Associates.
- In addition, a new component has been launched in March 2011 in the event of an outbreak to early detect any potential secondary outbreaks in the neighbouring area of the index case.
- A cost effectiveness study on surveillance for HPAI has been completed. Preliminary findings suggest that there is a qualitative value in surveillance, but the cost of surveillance per outbreak reported is going up with a decrease in the number of outbreaks of HPAI in Viet Nam.
- More than 300 copies of the Wild Bird Manual have been translated into Vietnamese and distributed to 63 provinces.
- Live bird market active surveillance approaches are for the first time being adopted under the USA project approach in Viet Nam in keeping with emerging best international practices

Output 4: Priority procurement for animal surveillance and laboratory supported

- Procurement of vehicles, Information Technologies (IT) equipment, equipment sprayers and most lab consumables is complete to support AS3 and AR2, and all are in use.

Output 5: Effective and timely animal response efforts promoted

- A cross-border study in the north of Viet Nam concluded that as a result of a high financial return for poultry, smuggling across the border has not decreased but has become more elaborate, which will pose a constant risk of disease transmission. The market chain is increasingly being recognized as critical to the control of HPAI, particularly in northern Viet Nam and FAO's strategic targeting of LBMs has been validated.
- Post-vaccination monitoring and virus circulating surveillance for influenza A/H5N1, supported by this project, shows that vaccinated poultry have a protection rate of 72.10 percent at bird level. The protection rates of Muscovy ducks, Turkey, other ducks, chickens and geese were 80 percent, 80 percent, 78.90 percent, 68.05 percent and 50 percent, respectively. Prevalences of Type A and H5N1 avian influenza viruses in ducks were 0.94 percent and 0.67 percent respectively while in chickens, respective prevalences were 0.54 percent and 0 percent. There was no evidence of AI virus persistence found with the samples taken from Muscovy ducks. The AI positive samples were from Khanh Hoa and Quang Ngai provinces (Center).

Output carried over from Year II: Vaccine production

- A training course on good management practices (GMP) to key stakeholders, National Veterinary Company (NAVETCO), Viet Nam's Veterinary Vaccine Company (VETVACO) and DAH was conducted, which covered introductory-level Good Manufacturing Practice (according to the 2009 Pharmaceutical Inspection Convention / Pharmaceutical Inspection Co-operation Scheme [PIC/S] Code of GMP) and quality systems applicable to the manufacture of AI H5N1 vaccines.
- The operational appraisal of cold chain integrity is complete, and 39 provinces were provided with walk-

in cold rooms. A software for inventory maintenance of vaccine banks in provinces has been developed.

Output 6: Improved biosecurity practices in commercial and scavenging poultry raising settings supported

- Poultry sector profiling provides important tools for risk-analysis and strategic disease control planning. A guide to provincial poultry sector profiling has been developed. Poultry sector profiling has been completed for four of the five project provinces. The guidelines are currently being tested externally by an implementing partner in three non-USAID pilot provinces.
- A Biosecurity Working Group has been established which provides a forum to network information and lessons learned and build technical understanding among a peer group of agencies working to strengthen biosecurity.
- A framework for a database on biosecurity materials has been developed and its consolidation is in progress. By now, over 100 documents have been compiled in a searchable format. This is now ready for dissemination. Biosecurity activities of all agencies engaged in related work have also been mapped.
- The working group reviewed work on hatchery biosecurity, and training on the principles of biosecurity and on biosecurity auditing was provided to 16 members of the biosecurity working group. Conventional approaches to biosecurity strengthening have been reviewed and evidence gathered to support adoption of a supplementary approach focusing on private sector driven activities and adopting social marketing techniques from the human health sector.
- FAO and Abt Associates have liaised on hatchery technical training and registration schemes.
- A regional risk analysis exercise was conducted, which provided information on the character of poultry movement and production in the lower Mekong Region, identifying poultry movements and risk pathways for inter-provincial transmission of infection.

Output 7: Communication capacity supported at DAH and technical inputs to communications activities of other USAID implementing partners are provided

- FAO is supporting the calendar and sticker production and distribution for pre-TÊT festival 2010, sending out the message to call the hotline or the SDAH landline to report ill and dead poultry under the Enhanced Reporting component.
- Under the Gathering Evidence for a Transitional Strategy (GETS) project, the Academy for Educational Development (AED) produced a commercial in which the second part encouraged poultry owners to report ill and dead poultry to SDAH via a hotline or SDAH phone numbers. This has been effectively used in this project for awareness-raising purposes.
- Support to DAH communications has been maintained.
- Technical support to Abt Associates in implementing the field activities has been maintained.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 06**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Viet Nam**

Reporting period: **April 2011–September 2011**

Country: Viet Nam
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Viet Nam
Code: OSRO/RAS/604/USA Baby 06
Budget: USD 2 million (Phase I), USD 3.1 million (Phase II), USD 3.3 million (Phase III), USD 1.075 million (cost extension) ¹ , USD 2.2 million (Phase IV)
Total budget: USD 11.675 million
Effective starting date: August 2006
Planned end date: September 2012
Context of the project The control and elimination of H5N1 Highly Pathogenic Avian Influenza (HPAI) demands a long-term approach. Viet Nam is moving from the control phase to the consolidation phase, with an ongoing need for capacity building in the veterinary services and livestock production sectors and support for vaccination and other risk reduction measures. This regional project supported by the United States Agency for International Development (USAID) is currently in its fourth phase of implementation.
Objectives of the project The overall objective of the project is to address the urgent short-term actions that need to be undertaken by the country to strengthen its capacity to rapidly detect the introduction of HPAI into the country and minimize its spread in case of its occurrence.
Planned activities for this reporting period
Component 1: Preparedness and Planning Component
Output 1: Strategy development for HPAI control
<i>Activity 1.1: Review of HPAI Control Strategy in Viet Nam</i>
<ul style="list-style-type: none"> Initiate the consultancy for this review when the Department of Animal Health (DAH) road map and the new Green Book are finalized. Provide additional technical inputs and advice emanating from outputs of field work, technical meetings (such as risk assessments, HPAI epidemiology consultation, etc.).
<i>Activity 1.2: Transforming the HPAI Contingency Plan</i>
<ul style="list-style-type: none"> Review and finalize the Framework for the Animal Disease Emergencies Preparedness plan, translate it into Vietnamese and formally hand over to DAH.
Output 2: Coordination and communication with donors and other HPAI implementing partners
<i>Activity 2.1: Core FAO Viet Nam team supported</i>
<ul style="list-style-type: none"> Continue to ensure that all staff is in place.
<i>Activity 2.2: Annual project meetings supported</i>
<ul style="list-style-type: none"> Complete FAO/DAH Information Sharing Workshop on “Recent advances in the knowledge of the epidemiology of HPAI in Viet Nam and identification of research priorities”.
<i>Activity 2.3: Team meetings from provincial to national level</i>
<ul style="list-style-type: none"> Hold quarterly FAO-Abt Associates meeting with field staff in third and fourth quarter of the project.
<i>Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector</i>
<ul style="list-style-type: none"> Hold regular technical and coordination meetings with the implementing partner Abt Associates to provide support to project implementation and monitoring, assist and benefit from technical consultancies of mutual interest, and exchange experiences through additional technical resources (Rome-based). Hold ad hoc technical meetings with government counterpart agencies and implementing partners

¹ Project Cost Extension Request from October 2009 to September 2010.

to share results and disease control developments and to conduct expert analysis.

- Continue to provide a weekly report which is submitted to USAID and USAID partners.
- Release the first volume of the DAH bulletin by May 2011.

Component 2: Animal Surveillance Component

Output 3: Animal surveillance at the national, provincial, district and community level enhanced

Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported

- Carry out two sets of one-day training for the Transboundary Animal Disease Information System (TADInfo), one in the National Centre for Veterinary Diagnosis (NCVD) and the Regional Animal Health Office (RAHO) 6 in Ho Chi Minh City.

Activity 3.2: Strengthening of core capacities for animal health in five focus provinces, including surveillance activities supported

- Support provided through Letters of Agreement (LoAs) for passive and active surveillance to end by May 2011.
- Plan a review of the project support for the passive surveillance system in June 2011.
- Conduct an evaluation of the active disease surveillance model (routine and event-based component) in August 2011.
- Once the standard operating procedures (SOPs) for HPAI Outbreak Investigation and Response are officially adopted, support DAH's request for adequate awareness and dissemination of SOPs on HPAI (adoption and implementation) and implement SOPs training of local authorities/ the Auditing and Informatics Services Company Limited (AISC) leaders in the five pilot provinces following the Government's adoption.
- Support the provinces to develop HPAI disease control plans based on risk assessments and risk analysis exercises and technical support to package USAID programme and regular provincial resources into coherent province-level disease control action plans (also linked to activity 1.1)

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- Complete and submit the biannual Performance and Monitoring Plan (PMP) report (1 October 2010–31 March 2011), along with key recommendations to MEASURE in April 2011.

Activity 3.4: Veterinary epidemiology network supported

- Carry out three more Applied Veterinary Epidemiological Training (AVET) courses for the trainees from the remaining Sub-Department of Animal Health (SDAH) that were not involved in previous AVET courses.
- Organize two alumni workshops of AVET trainees for strengthening the animal health epidemiologist network in Viet Nam and improve the sharing of information.
- Prepare risk assessment training materials and case studies to be accessible to AVET trainees and DAH epidemiology core team.

Activity 3.5: Piloting surveillance for animal influenza in poultry and pig production interface

- Deferred at the request of USAID.

Activity 3.6: Active surveillance programme in a selected poultry marketing system

- Carry out the active live bird market (LBM) surveillance programme in one or two markets of Quang Tri province.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk-mapping and risk analysis updated at national level

- Organize a training course for the Provincial Department of Agriculture and Rural Development (DARD) and SDAH staff on value chain analysis and practical techniques for subsector mapping and analysis.
- Carry out technical update/refresher training on risk assessment approaches for provincial and

national epidemiologists.

- Carry out regional risk assessments/analyses covering the central and Red river Delta areas of Viet Nam and involving provincial SDAH and DARD offices in those areas beyond the pilot provinces.
- Present the findings of the risk analysis studies and capacity building approaches in a meeting carried out by the project.

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- Continue mapping temporal and spatial distribution outbreaks of HPAI in poultry in Viet Nam and disseminate to other stakeholders as outlined above.

Activity 5.3: Cross-border analysis using a value chain methodology in three border areas

- Carry out a risk analysis study focusing on the north-western cross-border trade corridor between Viet Nam and China and also analysing the integration of Chinese poultry into the market chains of northern Viet Nam.
- Conduct a study to propose options for managed safe cross-border poultry trade and present the findings in a policy meeting.

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- Prepare round 1 2011 of the Post-Vaccination Monitoring (PVM) programme and virus circulation surveillance (VSC) in consultation with DAH with a revised protocol for the sampling based on the new vaccination programme for 2011-2012.
- Conduct a consultancy for investigating the suboptimal performance of vaccination in selective districts, provinces and regions.
- Initiate experimental infection of ducks with H5N1 and H5N2 in April 2011 to determine pathogenicity of these viruses.
- Continue vaccine efficacy test Re-1, Re-5 vs. H5N1 2-3-2, H5N2 2-3-2.

Activity 5.5: Support public private partnership (PPP) and institutional strengthening in poultry production and health care system

- Design appropriate PPP action plans in target areas (PPPs will be implemented in areas where existing market chain risk reduction activities are being carried out).
- Conduct an analysis of the poultry subsector, identifying medium- and long-term trends and drivers affecting the sector with an emphasis on related veterinary public health issues.
- Implement area-based action plans.

Output 6: Improved biosecurity and market hygiene practices in commercial and scavenging poultry raising settings supported

Activity 6.1: Support biosecurity strengthening in pilot provinces

- Implement biosecurity capacity strengthening programmes in five provinces focusing on the private sector advisers Abt Associates and the government advisory services.

Activity 6.2: Develop biosecurity guidelines and training for DAH and the Department of Livestock Production (DLP)

- Review and adopt National Guidelines developed for industrial poultry producers under the Viet Nam Avian and Human Influenza Control and Preparedness Project (VAHIP) into a version aimed at the smallholder sector.
- Develop training for government officers on the standards and guidelines (delivered at the province level).
- Carry-out evaluation of biosecurity initiatives to develop good biosecurity practices and ensure consolidation of lessons learned
- Complete hatchery data collection in Ha Nam, Hung Yen and Quang Tri. The global positioning system (GPS) marking will be completed in all five pilot provinces, including hatchery mapping.

Activities undertaken during the reporting period

Component 1: Preparedness and Planning Component

Output 1: Strategy development for HPAI control

Activity 1.1: Review of HPAI Control Strategy in Viet Nam

- Technical support was provided to the development of the new Green Book, entitled, "The Viet

Nam Integrated National Operational Program On Avian Influenza, Pandemic Preparedness And Emerging Infectious Diseases (AIPED), 2011-2015", by the Government of Viet Nam. Besides written materials, further support was provided through personal consultations, participations in workshops and meetings and interactions with other stakeholders including donors.

Activity 1.2: Transforming the HPAI Contingency Plan

- A National Animal Disease Emergency Preparedness Plan was prepared through wide stakeholder consultations. The Plan which also includes a possible structure for the Incident Command System (ICS) was forwarded to the Government of Viet Nam.

Output 2: Coordination and communication with donors and other HPAI implementing partners

Activity 2.1: Core FAO Viet Nam team supported

- Continued to ensure that all staff is in place.

Activity 2.2: Annual project meetings supported

- FAO/DAH Information Sharing Workshop on "Recent advances in the knowledge of the epidemiology of HPAI in Viet Nam and identification of research priorities" was completed. Information Sharing Meeting on 1 and 2 June 2011 with 51 participants (14 female and 37 male) from DAH, the *Centre de Cooperation Internationale en Recherche Agronomique* (CIRAD), the Centres for Disease Control and Prevention (CDC), the Field Epidemiology Training Programme for Veterinarians (FETPV) fellows, NCVD, the Oxford University Clinical Research Unit (OUCRU), the National Institute of Health and Epidemics (NIHE), Abt Associates, VAHIP, Hanoi University of Agriculture (HUA), AVET, FAO, the New Zealand Agency for International Development (NZAID), the National Institute of Veterinary Research (NIVR), USAID, RAHO I-VII, the World Health Organization (WHO).

Activity 2.3: Team Meetings from Provincial to National level

- FAO-Abt Associates meeting was held on a quarterly basis for the field staff in Quang Tri on 12 August 2011, consisting of 23 participants (10 female and 13 male). The participants were from USAID, FAO, Abt Associates, Quang Tri SDAH and DAH.

Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector

- Regular technical and coordination meetings were held with the implementing partner Abt Associates providing support to project implementation and monitoring, as well as engaging in technical consultancies of mutual interest and exchanging experiences through additional technical resources (Rome-based).
- Ad hoc technical meetings were held with government counterpart agencies and implementing partners to share results and disease control developments and to conduct expert analysis.
- The Google Viet Nam Producer Price Indices (PPI) calendar was updated regularly.
- The first volume of DAH bulletin was released in July 2011 (250 copies).
- Participated in the USAID planning meeting with the goal to develop USAID/Viet Nam's 2011-12 Strategic Frameworks for Avian Pandemic Influenza (API) programming in Nha Trang from 25 to 27 July 2011. This included several preparatory meetings with all partners (DAH, DLP, Avian Pandemic Influenza Initiative [APII], WHO, etc.).

Component 2: Animal Surveillance Component

Output 3: Animal surveillance at the national, provincial, district and community level enhanced

Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported

- Representative virus isolates from outbreaks of HPAI in the north, central and south Viet Nam were sequenced and phylogeny prepared. The phylogenetic information reveals that clade 1 is entrenched in south Viet Nam; in the north, clade 2.3.4 was replaced by the newly emerging clade 2.3.2. Also a genetically different cluster of H5N1 virus was observed within clade 2.3.2 isolates from a small number of outbreaks in north Viet Nam.
- LoA was signed with DAH to organize the training on ISO 17025 on 18 August 2011. The training course was delivered from 23 to 27 August 2011 in Hanoi with 36 participants (10 female

and 26 male). The participants were from DAH, NCVD, RAHOs I-VII, the National Center for Veterinary Hygiene Inspection No.1, the Department of Science and Technology within the Ministry of Agriculture and Rural Development (MARD), and the National Center for Veterinary Medicine Control No.1.

Activity 3.2: Strengthening of core capacities for animal health in five focus provinces, including surveillance activities supported

- Support was provided through LoAs for passive and active surveillance (end by May 2011).
- A review of the project support for the passive surveillance system was completed in June 2011 and supported by a national and an international consultant. Missions on passive surveillance were undertaken in the following provinces: Quang Tri on 28 June 2011, Ha Nam on 24 June 2011 and Can Tho from 4 to 6 July 2011.
- A review of the active surveillance components implemented was carried out by engaging an international and a national consultant. The review included field visits by the consultants to Kien Giang (on 5 and 6 September 2011), Quang Tri (on 8 and 9 September 2011) and Hung Yen (on 12 and 13 September 2011) for an evaluation of the field activities related to the active surveillance for HPAI and other poultry diseases.
- Signed LoA on the Implementation of AI Market Surveillance National Programme in 2011 with DAH.

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- FAO completed and submitted the biannual PMP report (1 October 2010 to 31 March 2011) along with key recommendations to MEASURE in April 2011.
- M&E indicators were reviewed with MEASURE and other implementing partners of USAID during the planning meeting in Nha Trang, Viet Nam, from 25 to 27 July 2011.

Activity 3.4: Veterinary epidemiology network supported

- The 5th AVET was completed on April 2011 with 13 participants (4 female and 9 male). The participants were from RAHO I-V, DAH, NIVR, NCVD, the Central Viet Nam Veterinary Institute, Thai Nguyen University, Hue University, Can Tho University, HUA.
- Completed the 6th AVET with 12 participants (3 female and 9 male). The participants were selected from SDAHs in 12 provinces (Dac Lac, Kon Tum, Ninh Thuan, Lao Cai, Yen Bai, Son La, Hoa Binh, Bac Giang, Hai Phong, Dong Nai, Binh Dinh and Bac Kan). Pre-test and post-test activities were carried out.
- Completed the 7th AVET with 12 participants (3 female and 9 male). The participants were selected from SDAHs in 12 provinces (Bac Lieu, Long An, Dong Thap, Tuyen Quang, Da Nang, Vinh Long, Tien Giang, Soc Trang, An Giang, Ben Tre, Dac Nong and Binh Thuan). Pre-test and post-test activities were carried out.
- Completed the 8th AVET with 12 participants (3 female and 9 male). The participants were selected from SDAH in Lai Chau, Ha Giang, Lam Dong, Tay Ninh, Binh Phuoc, Phu Yen, DAH, NCVD, RAHO6, RAHO7, HUA, Pasteur Institute. The pre-test and post test were carried out.
- The alumni workshop of AVET trainees was organized on 19 and 20 September 2011 for strengthening the animal health epidemiologist network in Viet Nam and improving the sharing of information. Participants were trainees from AVET1-AVET 8, FAO, DAH, USAID, FETP-WHO, PREDICT, Pasteur Institute, NCVD, HUA with 102 (36 female and 66 male).
- Preparation of risk assessment training materials and case studies to be accessible to AVET trainees and DAH epidemiology core team is ongoing.

Activity 3.5: Piloting surveillance for animal influenza in poultry and pig production interface

- Deferred at the request of USAID.

Activity 3.6: Active surveillance programme in a selected poultry marketing system

- Baseline survey of LBM was carried out in Quang Tri province.
- An external consultant review of the *active surveillance* pilot of this project, was carried out in September 2011 along with the Community Based Surveillance (CBS) model of surveillance implemented by Abt Associates under the APII programme.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

Component 3: Animal Response Component**Output 5: Effective and timely animal response efforts promoted***Activity 5.1: HPAI risk-mapping and risk analysis updated at national level*

- Training course was carried out for provincial DARD and SDAH staff on value chain analysis and practical techniques for subsector mapping and analysis.
- Risk analysis on HPAI H5N1 for Central Zone was held in Quang Tri from 6 to 8 April 2011 with 24 participants (8 female and 16 male). The participants were from SDAHs (Nghe An, Ha Tinh, Thua Thien Hue, Da Nang Quang Nam SDAH, Quang Tri and Quang Binh), DARD (Ha Tinh and Quang Binh), the Quang Nam Centre for Extension Service, RAHO III, RAHO IV, RAHO VII, DAH and DLP.
- Risk Analysis for AI in the northern zone of Viet Nam was held in Hanoi from 4 to 6 July 2011 with 55 participants (18 female and 37 male). The participants were from DARDs and SDAHs from Hai Phong, Ha Nam, Lang Son, Quang Ninh, Ninh Binh, Phu Tho, Lao Cai, Vinh Phuc, Bac Giang, Thai Binh, Bac Ninh, Yen Bai, Hung Yen, Nam Dinh, Thanh Hoa, Hoa Binh, Hai Duong, Thai Nguyen and Hanoi; FAO, DLP, HUA, VAHIP, JAPFA, DAH, GreenVet, RAHO I, RAHO II, the National Agricultural Extension Centre (NAEC), ASVELIS.
- Hatchery data collection and mapping in five pilot provinces was completed (Kien Giang: 44 hatcheries, Ha Nam: 201, Hung Yen: 258, Quang Tri: 37 and Can Tho: 45).

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- Continue mapping temporal and spatial distribution outbreaks of HPAI in poultry in Viet Nam and dissemination to other stakeholders as outlined above.

*Activity 5.3: Cross-border analysis using a value chain methodology in three border areas**Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level*

- Signing LoA with DAH on HPAI vaccine efficacy and pathogenicity test on recent HPAI H5 virus in the north Viet Nam.
- Vaccine efficacy trials revealed that the vaccines currently being used in Viet Nam are still effective against HPAI viruses belonging to clade 1, clade 2.3.4 and majority of the viruses belonging to clade 2.3.2. However, viruses isolated from outbreaks in five provinces were found to be of a variant type, and the vaccines in use were ineffective against this variant type.

Activity 5.5: Support public private partnership (PPP) and institutional strengthening in poultry production and health care system

- A price monitoring system is required to understand better the economic drivers, to ensure that market and performance information is widely available, and to reduce the risk of market failure. This system has been launched through collaboration with the Centre for Agriculture Policy of the Ministry of Agriculture in a pilot scale in three major cities of Viet Nam. The Web site for dissemination of the information has been launched by the Centre and the information on the study will be shown in a television programme on the National Channel on 6 and 7 October 2011.

Output 6: Improved biosecurity and market hygiene practices in commercial and scavenging poultry raising settings supported*Activity 6.1: Support biosecurity strengthening in pilot provinces*

- Completed Biosecurity training in Quang Tri on 2 and 3 August 2011 with 24 participants (21 male and 3 female). The participants were from SDAH, DVSSs, hatchery owners, drug store owners and poultry producers in seven target districts.
- Completed Biosecurity training in Kien Giang on 26 and 27 July 2011 with 24 participants (23 male and 1 female).

Activity 6.2: Develop biosecurity guidelines and training for DAH and DLP

- Joint DLP-FAO workshop to develop Biosecurity guidelines for small-scale poultry producers held in Hanoi on 15 and 16 August with 37 participants (22 male and 15 female) from DLP, DAH, Abt Associates, the Livestock Competitiveness and Food Safety Project (LIFSAP), ASVELIS, AVSF Viet Nam, Viet Nam Poultry Association (VPA), the Feed Association, HUA, the Phu Thai Group, Thai Nguyen University, VAHIP, the Veterinary Association, Ha Nam SDAH, Ha Nam poultry producer, Phu Tho SDLP, FAO, Hung Yen SDAH, Dai Xuyen Duck Breeding and Research Centre.

- Biosecurity working group was held on 22 April 2011 with 13 participants (7 male and 6 female). The participants were from FAO, PAHI, Abt, NIAH, USAID, VSF-CICDA, DLP and VAHIP.
- Biosecurity working group was held on 12 July 2011 with total 18 participants (14 male and 4 female). They were from DLP, Phu Tho SDAH, FAO, Abt, AVSF, VIPA, ASVELIS, HUA, NAEC, Hung Yen DARD, PAHI.
- 15th Biosecurity Working Group meeting was held in HCM city on 30 September 2011.
- Good practice guidelines for waste management in the duck sector are being developed with focus groups in Can Tho Province.

Activities proposed for the next reporting period (October 2011 to March 2012)

Component 1: Preparedness and Planning Component

Output 1: Strategy development for HPAI control

Activity 1.1: Regional HPAI Control Strategy

- Develop and test the concept for a regional zoning approach to HPAI control. The initial focus will be on two regions: the lower Mekong (RAHO 7) and central Viet Nam (RAHO 3). This will be achieved through the regional value-chain mapping, risk planning and HPAI surveillance planning, spatial disease mapping and developing regional capacity for outbreak investigation and response.
- Hold training workshops to strengthen regional commitment and enhance coordination. Draft work plan for regional disease control will be discussed at the existing RAHO quarterly meetings, attended by senior provincial SDAH staff and representatives of DAH.
- Discuss draft regional control plans at the regional workshop involving all regional stakeholders.

Activity 1.2: Scenario planning to analyse the effects of cessation of vaccination

- Plan a range of probable, possible and worst-case scenarios with appropriate control options including the possibility of the reintroduction of vaccination.
- Develop stakeholder workshops on different case scenarios (from possible to worst-case) both at the national and regional level.
- Devise a matrix of control options by scenario, including the use of a range of vaccine types indicating best options, including an algorithm for the prompt and sensitive monitoring of the disease situation providing alerts of emerging threats.

Output 2: Coordination and communication with donors and other HPAI implementing partners

- Continue to have a regular exchange of information and integration of activities to the extent possible with USAID partners.

Activity 2.1: Core FAO Viet Nam team supported

- Continue to ensure that all required staff is in place.

Activity 2.2: Annual project meetings supported

- Organize a strategic meeting in October to discuss lessons learned during the 2010-2011 implementation periods and the new plan for the 2011-2012 implementation periods. This meeting will include national and provincial level government staff, project staff, USAID and USAID partners, as well as key stakeholders. For areas of coordinated activities, FAO will present jointly with the Government and Abt Associates.
- Hold an annual technical midterm project review and planning meeting with the DAH, DLP and other stakeholders in April 2012.

Activity 2.3: Team meetings from regional/provincial to national level

- Organize two quarterly meetings with field staff to share experiences and lessons learned with USAID partners related to project implementation and strategy guidelines in different operational regions.

Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector

- Prepare one annual workshop (to be held in May 2012) to review the overall surveillance and epidemiological findings and provide recommendations for future surveillance and epidemiology.
- Hold consultative discussions and training on various technical working groups such as

biosecurity and risk assessment.

- Support DAH in developing a bulletin to consolidate and communicate all animal health related activities, projects and programmes implemented through DAH. The bulletin will be posted on the DAH Web site and printed copies distributed to RAHO and SDAH offices for wider dissemination.

Component 2: Animal Surveillance Component

Output 3: Animal surveillance at the national, regional/zonal, provincial, district and community level enhanced

Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported

- Conduct biannual workshops, starting in March 2012, with the laboratory staff of the laboratory network to review SOPs related to laboratory and quality control matters as well as to any systemic problems identified.
- Continue to support server tele-hosting, storage and domain support.
- Continue to strengthen laboratory biosafety and quality assurance as an ongoing process including national proficiency testing at all diagnostic laboratories.
- Provide laboratory support to promote not only rapid diagnosis of HPAI but also differential diagnosis of other poultry diseases in any unusual death in poultry.
- Support laboratory capacity building in basic and advance microbiology by providing short and appropriate training and supply of consumables to benefit other components of the Emerging Pandemic Threats (EPT) programme.
- Provide small budgetary support in DAH identified laboratories for short-term need-based research projects on HPAI transmission and control strategies.
- Continue to support DAH in preparation of a strategic roadmap for the strengthening of diagnostic services of DAH laboratories for important animal diseases of both zoonotic and non-zoonotic nature.
- Encourage the laboratory network to gradually shift from testing to diagnosis by supporting the establishment of directional SOPs, trainings and workshops for laboratory personnel and assessment of user needs.
- Support DAH in capacity development to carry out full genomic and antigenic characterization, of viruses, where appropriate, thereby enhancing the sequence database for a better understanding of the HPAI epidemiology in the country/region.
- Carry out a review of the 'Labnet' software's utility and explore linkages with other WHO softwares.

Activity 3.2: Strengthening of core capacities for animal health and disease control planning in focus provinces and selected regional planning structure

- Initiate a gradual shift from province based piloting to regional planning with particular attention to value chain mapping, risk analysis, outbreak investigation and response and regional surveillance planning (see Activity 1.1). The regions agreed are the RAHO 3 and RAHO 7.
- Initiate piloting activities on hatchery improvement, promoting good poultry production practices and capacity building on outbreak investigation and response in the provinces.

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- Focus on gathering sub-IR1 (Increased effectiveness of HPAI and EPT prevention and control in the animal health sector) and sub-IR3 (Strengthened policies and systems for improved implementation and management of services and programmes) indicators as listed in the USAID Viet Nam HPAI and EPT Performance Management Plan document.
- Ensure that biannual reporting requirements are met.
- Enhance data collection skills through training of regional and provincial staff.

Activity 3.4: Veterinary epidemiology network supported

- Continue to support TADinfo by hosting the server.
- Provide support to integrate suitable softwares (e.g. Decision Support System, developed by the

Massey University under the NZAID programme, etc.), or any other TADinfo compatible programme

- Carry out a needs assessment to determine further training requirements on the use of online disease data management.
- Provide organizational and technical support, in collaboration with DAH, to the AVET programme and carry out two more batches with 12 candidates per batch during the six-month period in coordination with HUA.
- Continue to support AVET alumni and the AVET Web site.
- Provide technical support to contribute to coordination building efforts between veterinary and human public health sectors at the field level by developing a special training programme under the RESPOND component of EPT to strengthen One Health epidemiological teams with focus on AVET training at selected provincial, district and commune levels.

Activity 3.6: Animal surveillance programme

- Continue to support passive surveillance in the pilot provinces and in the regional control plan with the following additional activities: (i) work with DAH to develop and present a policy paper on the need for adequate and timely compensation to MARD and Central Government; (ii) determine options and pilot a reward system, as permissible within the laws of the land, in the form of certificates of appreciation, publicity in the Animal Health Bulletin or similar incentives for encouraging reporting of unusual poultry deaths and suspect HPAI cases by Chief Animal Health Workers (CAHWs) and District Veterinary Officers (DVOs); (iii) provide differential diagnosis for poultry disease outbreaks at RAHOs including training staff in poultry health and zoonoses with differential diagnosis; and (iv) train CAHWs and DVOs on field investigation and data collection of a poultry health event.
- Support a broad market-based active surveillance for HPAI in identified risk provinces as determined by the Government. In view of the cessation of vaccination and change in the scenario of clade distribution, a wide area active surveillance for AI viruses is extremely important to obtain an early indication of adverse impacts of withdrawing routine HPAI vaccination campaign. At least two rounds of sampling will be required to understand the temporal pattern of distribution of AI virus besides spatial distribution. The first round will take place within this proposed six-month period.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- Procure laboratory consumables for HPAI diagnosis and surveillance including training courses and continue to maintain equipment as required.

Component 3: Animal Response Component [AIMEBA: AR2, 3]

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk mapping and risk analysis updated at national level

Activity 5.1.1: Poultry subsector profiling

- Expand provincial profiling and value chain analysis work to cover production and marketing systems in the regional control zones (Regions 3 and 7).
- Undertake further studies on the cross-border trade to determine the quantity, timing and destination of product movement in collaboration with other FAO country teams in the region.
- Work closely with government counterparts, building their capacity through a 'learning-by-doing' approach to ensure that they have the necessary skills to undertake further regional assessments.

Activity 5.1.2: Applied risk analysis capacity building

- Continue to build capacity for risk analysis approaches within the state veterinary service through the extension of the mentored training programme at DAH and RAHO level.
- Develop skills in assessing contact structures and network analysis with changing emphasis from risk assessment to the development of risk planning and implementation of risk mitigation measures to reduce the greatest threats.

Activity 5.1.3: Updating risk assessment and mapping

- Provide additional support to develop mapping capacity within DAH, DLP and RAHOs based on

the existing risk assessments.

Activity 5.2: Outbreak investigation capacity strengthened under regional control strategy and in focus provinces

- Continue to support capacity building in outbreak response, sample collection and their dispatch to the designated laboratory.
- Improve regional capacity between intraregional provinces to advise on changing disease situation and notification of any control activities. Monitored, analysed and reported on data collection from suspected HPAI outbreaks, their investigation, diagnosis and response.
- Provide training of appropriate personnel on the implementation of the SOP for outbreak investigation and response pending the approval of the SOP, which was finalized in the current year and is under review by the Government.
- Develop suitable training material and organize training for DAH and SDAH staff on effective use of ICS for emergency responses. This material will build on activities already underway in Viet Nam, such as VAHIP and also international expertise from the Centre for Crisis Management – Animal Health (CMC-AH) in FAO, Rome. Include simulation desktop and field exercises in the training.

Activity 5.3: Cross border analysis using a value chain methodology and strengthening cross-border dialogue

- Investigate the value chains of high-risk commodities (spent hens and day-old birds) and carry out cross-sectional surveys to assess the prevalence of infection. Develop options for reducing the threat posed by high-risk trade.
- Continue cross-border dialogue building on the Viet Nam-China cross-border vaccination meeting in Beijing in March 2011. Priorities are to: (i) present technical and risk assessment findings from each country; and (ii) to develop and agree on a risk reduction plan. Support technical meetings/workshops between the representatives of the Governments of China and Viet Nam and facilitate bilateral meetings between the representatives of Viet Nam and Cambodia.

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- Continue to support vaccine trials, as the national government needs to be certain of effective protect against circulating virus strains.
- Support studies to carry out pathogenicity testing in poultry with selected HPAI virus isolates from recent outbreaks to assess the dynamics of infection (severity of infection, age variability, species variability etc). This will provide early evidence for changes in virus infectivity.

Activity 5.5: Support public private partnership and institutional strengthening in poultry production and health care system

Activity 5.5.1: Strengthening veterinary service delivery

- DAH will be encouraged to set up minimum standards for veterinary service delivery, including the establishment of a Veterinary Statutory Body (VSB). The VSB will define standards for the education and training of Vietnamese veterinarians and professional ethics and integrity. FAO will support DAH to establish guidelines and recommendations for a VSB including its structure, function, mechanism, roles and responsibilities, and key stakeholders.

Activity 5.5.2: Setting up a private-public sector working group for promoting poultry production

- FAO will explore options as to how the private sector and Government can work well together. Options will include setting up industry forums nationally, regionally and or provincially and bringing the stakeholders together through meetings/workshops.

Activity 5.5.3: Poultry product price monitoring

- Ongoing poultry product price monitoring with the Centre for Agriculture Policy of MARD will continue to carry out the pilot. The information gathered will be distributed through the Information Centre of MARD and also through simple SMS gateways providing direct access to market price information.

Output 6: Improved biosecurity and market hygiene practices in commercial and scavenging poultry raising settings supported

Activity 6.1: Support biosecurity strengthening in pilot provinces

Activity 6.1.1: Pilot hatchery strengthening programme

- Hatchery certification will now be trialled in the pilot provinces and incrementally throughout the regional control zones using these minimum standards. This will involve inspection through an auditing process. This is linked to the previous work by FAO to develop national minimum operating standards for hatcheries and a code for good hatchery management: mapping of hatcheries has been completed in the five pilot provinces.
- Prepare national hatchery training materials, provide training to hatcheries and implement a programme of hatchery inspection and auditing/certification.

Activity 6.1.2: Reduce the risk of transmission along the value chain

- A strategic plan to reduce the risk posed by aggregation points (particularly live bird markets and slaughterhouses) will be developed in consultation with provincial and regional authorities.
- Guidelines and training materials on improving hygiene and biosecurity have been drafted with partners and these will be reviewed and finalised.
- A programme of training and extension will be implemented by FAO and its partners in the regional control zones.

Activity 6.1.3: Improving technical advice for poultry producers

- A provincial pilot will be implemented delivering technical training and providing factsheets and other materials to private veterinarians and CAHWs, agricultural and veterinary stores and feed companies and their representatives.

Activity 6.2: Develop good poultry production guidelines and training for DAH, DLP and Regions/Zones

Activity 6.2.1: Develop biosecurity good practices and minimum standards for market chain participants (including traders, transporters, slaughterers and other intermediaries)

- Continue to develop Good Practice Poultry Production (GPPP) with USAID partners including: guidelines for various agents in the supply chain; prepare guidelines and codes of practice for the effective and responsible use of disinfectants.
- Review the guidelines and submit them to DLP for approval.
- Develop appropriate training course and extension materials for the pilot provinces and regional control zones, especially the core technical staff at DARDs and other target groups.

Activity 6.2.2: Biosecurity Working Group

- Continue to focus on strengthening contributions to policy development and developing technical guidelines, as well as addressing the issues of motivation for change by broadening its mandate to cover best poultry production practices.
- Develop and promote materials on best production practices to be distributed by DARDs and made available on the MARD Web site for the purpose of strengthening outreach and dissemination of technical information.

Main challenges encountered and response provided

No major challenges were encountered during this reporting period.

Main progress made towards the achievement of project outcomes (from the start of the project)

Output 1: Strategy development for HPAI control in 2006-2010 supported

- Consideration of a regional approach to HPAI control rather than a provincial one has been promoted and is attracting interest as featured in the Green Book Review and several International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) documents.
- Provincial poultry subsector profiling has been effective in describing provincial poultry populations (including the Poultry Atlas) and DLP is considering adopting such an approach more widely.
- Risk assessment and risk-based targeting of control measures are increasingly being included in technical and policy development (however still largely restricted to the control of HPAI).

Output 2: Coordination and communication with donors and other HPAI implementing partners

- Programme management and planning and coordination of activities with USAID and other partners have been maintained. FAO has made 11 major recommendations for the Green Book review, which were well received by the Government of Viet Nam.
- FAO and Abt Associates have a common strategy to risk reduction across the supply chain with a shared activity matrix consolidating the agencies activities into a single overall approach.

Output 3: Animal surveillance at the national, district and community level enhanced

- The project is carrying out animal surveillance activities which include support in relation to the upgrading of TAD info and the Laboratory Information System (LabNet), development of Geographic Information Systems (GIS) at RAHO. So far, 210 officers from SDAH, 14 RAHO staff and five DAH Epidemiology staff have increased their capacity to use this software through training. Seven units of GPS and seven licenses of mapping software (ArcView/ArcGIS 9.2) have been provided to seven RAHOs (I-VII). A total of 55 SDAH/DAH staff have been trained on its use.
- The project has also developed database system software for laboratory diagnostic management within the DAH's LabNet through the services of a local firm in Viet Nam. Laboratory biosafety and quality assurance are being supported and pursued.
- The SOPs for H5N1 real-time PCR have been developed and adopted. Genetic analysis of the viruses isolated from HPAI outbreaks in poultry in Viet Nam over several years indicates that clade 1 is entrenched in south Viet Nam with sporadic forays i to central Viet Nam. Clade 2.3.4 used to be the predominate clade for many years in north and central Viet Nam until the winter of 2009-10. Recently however only clade 2.3.2 viruses have totally replaced the dominance of clade 2.3.4.
- A revised and updated SOP for HPAI outbreak investigation and control has been developed comprising 19 sections and 14 job cards for various officials involved in HPAI outbreak management. The English and Vietnamese versions of the SOP have been handed over to DAH for transmission to MARD for adoption as a national strategy.
- The campaign to encourage poultry farmers to report any unusual occurrences in poultry flocks, arising suspicion of an infectious disease, through TV spots and loudspeakers during the risk period (e.g. the TET festival), has created an increased awareness on the necessity to report diseases on time.
- The AVET initiative, to improve basic epidemiological investigation capacity through Viet Nam-specific, nine-week long tailor-made course curricula, resulted in the training of 103 veterinarians in eight cohorts in 2010 and 2011. At least one veterinarian of each of the 63 provinces of Viet Nam now have specialized basic skills in veterinary field epidemiology.
- Active surveillance for HPAI and other poultry diseases launched to complement the community-based surveillance of Abt Associates yielded valuable insight on the efficacy of the surveillance.
- In the event of an outbreak, a new component has been launched in March 2011 to early detect any potential secondary outbreaks in the neighbouring area of the index case.
- A cost effectiveness study on surveillance for HPAI has been completed. Preliminary findings suggest that there is a qualitative value in surveillance, but the cost of surveillance per outbreak reported is going up with a decrease in the number of outbreaks of HPAI in Viet Nam.
- More than 300 copies of the Wild Bird Manual have been translated into Vietnamese and distributed to 63 provinces.
- LBM active surveillance approaches are for the first time being adopted under the USA project approach in Viet Nam in keeping with emerging best international practices.

Output 4: Priority procurement for animal surveillance and laboratory supported

- Procurement of vehicles, Information Technologies (IT) equipment, equipment sprayers and most lab consumables is complete to support AS3 and AR2, and all are in use.

Output 5: Effective and timely animal response efforts promoted

- A cross-border study in the north of Viet Nam concluded that as a result of a high financial return for poultry, smuggling across the border has not decreased but has become more elaborate, which will pose a constant risk of disease transmission. The market chain is increasingly being recognized as critical to the control of HPAI, particularly in northern Viet Nam and FAO's strategic targeting of LBMs has been validated.
- Post-vaccination monitoring and virus circulating surveillance for influenza A/H5N1, supported by this project, shows that vaccinated poultry have a protection rate of 72.10 percent at bird level. The protection rates of Muscovy ducks, Turkey, other ducks, chickens and geese were 80 percent, 80 percent, 78.90 percent, 68.05 percent and 50 percent, respectively. Prevalences of Type A and H5N1 AI viruses in ducks were 0.94 percent and 0.67 percent respectively, while in chickens, respective

prevalences were 0.54 percent and 0 percent. There was no evidence of AI virus persistence found with the samples taken from Muscovy ducks. The AI positive samples were from Khanh Hoa and Quang Ngai provinces (Centre).

Output carried over from Year II: Vaccine production

- A training course on good management practices (GMP) to key stakeholders, National Veterinary Company (NAVETCO), Viet Nam's Veterinary Vaccine Company (VETVACO) and DAH was conducted, which covered introductory-level Good Manufacturing Practice (according to the 2009 Pharmaceutical Inspection Convention / Pharmaceutical Inspection Co-operation Scheme [PIC/S] Code of GMP) and quality systems applicable to the manufacture of AI H5N1 vaccines.
- The operational appraisal of cold chain integrity is complete, and 39 provinces were provided with walk-in cold rooms. Software for inventory maintenance of vaccine banks in provinces has been developed.

Output 6: Improved biosecurity practices in commercial and scavenging poultry raising settings supported

- Poultry sector profiling provides important tools for risk-analysis and strategic disease control planning. A guide to provincial poultry sector profiling has been developed. Poultry sector profiling has been completed for four of the five project provinces. The guidelines are currently being tested externally by an implementing partner in three non-USAID pilot provinces.
- A Biosecurity Working Group has been established which provides a forum to network information and lessons learned and build technical understanding among a peer group of agencies working to strengthen biosecurity.
- A framework for a database on biosecurity materials has been developed and its consolidation is in progress. By now, over 100 documents have been compiled in a searchable format. This is now ready for dissemination. Biosecurity activities of all agencies engaged in related work have also been mapped.
- The working group reviewed work on hatchery biosecurity, and training on the principles of biosecurity and on biosecurity auditing was provided to 16 members of the biosecurity working group. Conventional approaches to biosecurity strengthening have been reviewed and evidence gathered to support adoption of a supplementary approach focusing on private sector driven activities and adopting social marketing techniques from the human health sector.
- FAO and Abt Associates have liaised on hatchery technical training and registration schemes.
- A regional risk analysis exercise was conducted, which provided information on the character of poultry movement and production in the lower Mekong Region, identifying poultry movements and risk pathways for inter-provincial transmission of infection.

Output 7: Communication capacity supported at DAH and technical inputs to communications activities of other USAID implementing partners are provided

- FAO is supporting the calendar and sticker production and distribution for pre-TÊT festival 2010, sending out the message to call the hotline or the SDAH landline to report ill and dead poultry under the Enhanced Reporting component.
 - Under the Gathering Evidence for a Transitional Strategy (GETS) project, the Academy for Educational Development (AED) produced a commercial in which the second part encouraged poultry owners to report ill and dead poultry to SDAH via a hotline or SDAH phone numbers. This has been effectively used in this project for awareness-raising purposes.
- Support to DAH communications and technical support to Abt Associates in implementing the field activities has been maintained.

Project Monitoring Sheet: **OSRO/BGD/902/USA**

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance

Reporting period: April 2011 – September 2011

Country: Bangladesh
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance
Code: OSRO/BGD/902/USA + OSRO/RAS/605/USA Baby 01
Budget OSRO/BGD/902/USA: USD 3 082 800 (Phase I) USD 2 250 000
Total budget: USD 5 332 800
Budget OSRO/RAS/605/USA Baby 01: USD 515 000 (Phase I), USD 1 365 000 (Phase II), USD 1 225 000 (Phase III)
Total Budget: USD 3 105 000
Effective starting date: July 2006
Planned end date: December 2011
<p>Context of the project</p> <p>Bangladesh is one of the five high-risk countries that are still considered endemic for Highly Pathogenic Avian Influenza (HPAI) H5N1: Since March 2007, Bangladesh has experienced a total of 524 outbreaks (467 commercial and 57 backyards). Some 52 out of 64 districts and 175 out of 492 Upazilas (subdistricts) have so far been affected. This resulted in the culling of over 2.4 million birds and destruction of over 3.1 million eggs. Following the peak of HPAI H5N1 incidence in 2008, the number of annual outbreaks remains at around 30 in 2009 and 2010. However, since January 2011, the number of outbreaks started to rise. The situation is compounded by the occurrence of crow die-offs and detection of a non-fatal second and a third human infection with H5N1 virus and a fourth one with H9N2 virus.</p>
<p>Objectives of the project</p> <p>The primary objective of the project is to contribute to strengthen the emergency preparedness to prevent and control HPAI in Bangladesh. The immediate objective is to improve the HPAI surveillance capacity of the Government of Bangladesh to respond more effectively to HPAI outbreaks and thereby reduce economic losses and a global human pandemic threat. Specifically, the project aimed to achieve the following:</p> <ul style="list-style-type: none"> • increased capacity of the Department of Livestock Services (DLS) to manage the surveillance programme. • identification and elimination of the sources of HPAI infection. • early reporting of poultry diseases and early HPAI detection. • increasing public awareness. • improved biosecurity and hygiene in poultry farms and markets.
<p>Planned activities:</p> <p>Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention</p> <ul style="list-style-type: none"> • Provide technical support to the Government and facilitate its contacts with donors. • Establish effective coordination to ensure complementarities between the World Bank (WB) and the United States Agency for International Development(USAID)-funded activities. • Use geospatial farm mapping data to allow efficient outbreak responses. • Collaborate with public health and wild life sectors to develop a more holistic approach in line with the One Health initiative. <p>Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre</p> <ul style="list-style-type: none"> • Support DLS to conduct HPAI outbreak investigations.

- Support DLS to design and conduct case control study to ascertain the risk factors.
- Improve post-outbreak investigation by collecting samples from free-ranging ducks in backyards in the vicinity of affected farms and inoculate samples into embryonated eggs to attempt virus isolation.
- Develop a system to support the Government in any disease response and control efforts.
- Strengthen search for reservoirs of H5N1 HPAI as well as Low Pathogenic Avian Influenza (LPAI) among free-ranging, scavenging ducks in backyards in the proximity of affected farms.
- Support removal of hidden reservoirs and rapid disposal of dead wild birds to reduce the risk of re-occurrence of H5N1 HPAI outbreaks.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the target areas

- Conduct biosecurity campaigns across the country targeting the large-, medium- and small-scale poultry farmers.
- Provide continuous assistance to Public-Private-Partnership (PPP) and train farm managers to improve biosecurity of commercial farms.

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza and Human Pandemic Influenza Preparedness Plan

- Support the Government in the execution of the National Avian Influenza and Human Pandemic Influenza Preparedness Plan.

Output 5: Active surveillance of HPAI

- Assist in the implementation of the active surveillance programme through 88 additional veterinary surgeons (AVSs) recruited under the project.
- Build awareness among school children in selected areas to encourage reporting of sickness and death in poultry.

Activities undertaken during the reporting period

Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention.

- Technical support was provided to the Government through regular meetings between the Chief Technical Advisor (CTA) and the Chief Veterinary Officer (CVO).
- National Technical Committee meetings on Avian Influenza (AI) Strategy and other issues were held on 13 April 2011 at the Ministry of Fisheries and Livestock (MoFL) in the presence of the Honourable Minister, on 8 June 2011 at DLS and on 11 September 2011 at MoFL.
- A workshop to assist the Government to develop the National Strategy Plan to progressively control Foot-and-Mouth Disease (FMD) was held at the Bangladesh Rural Advancement Committee Centre for Development Management (BCDM) in Gazipur on 17 and 18 June 2011.
- The Emergency Centre for Transboundary Animal Diseases (ECTAD) Unit of the Food and Agriculture Organization of the United Nations (FAO) participated in and technically contributed to the “Workshop on AI and its future perspective” held at the Bangladesh Agricultural Research Council (BARC) on 3 May 2011.
- DLS was supported to attend and contribute to the “Regional Expert Group Meeting for Implementation of the Programme on Surveillance of Wild Birds and Domestic Animals along Migratory Flyways” held in Tokyo on 21 and 22 June 2011.
- A web-based Livestock Disease Information System (LDIS) was developed and Upazila level officers were trained in prompt reporting from field to DLS headquarters.
- The Geographic Information System (GIS)-assisted mapping system for commercial farms and major live bird markets (LBMs) is operational.
- ECTAD participated in the consultative meeting organized by the United States Department for Agriculture (USDA) on “Beyond Control: Prevention of Avian Influenza in Bangladesh” on 31

March 2011.

- ECTAD assisted in assessing the biosafety of the national laboratories (the Bangladesh Livestock Research Institute [BLRI] and the Central Disease Investigation Laboratory of DLS [CDIL]).
- HPAI Laboratory Working Group meetings were held regularly.
- FAO/USAID/the European Union organized the meeting on “Putting One Health to Work” to promote the One Health approach held in Bangkok on 9 and 10 August 2011.
- A national consultant participated in the First One Health Congress on the impact of pathogens on the human-animal interface, limitations and needs in developing countries (ICOPHA) held in Addis Ababa, Ethiopia, from 15 to 17 September 2011.

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- FAO supported the Government in conducting outbreak investigation on AI.
- Prepared a separate HPAI affected Duck Outbreak Response Guideline for the approval by the National HPAI Technical Committee.
- Collected Samples during high mortality among ducks in Netrokona were shipped to the World Organisation for Animal Health (OIE)/FAO International Reference Laboratory for differential diagnosis and molecular characterization in an attempt to identify hidden reservoirs of HPAI.
- A new disease reporting system “Livestock Disease Information System (LDIS)” was developed to facilitate reporting related to response and control efforts.
- Outbreak response data was analysed to identify key parameters and risk factors for HPAI infection.
- Spatial analysis was conducted using outbreak data and the farms/LBM database to identify hot spots, high-risk districts and key risk factors.
- The geographic information system (GIS)-assisted location system for commercial farms and major LBMs became operational. It is being improved for more effective outbreak response management.
- Additional standard operating procedures (SOPs) were updated/developed for HPAI active surveillance, Cleaning and Disinfection (C&D) in LBMs, and biosecurity in small commercial farms and backyard poultry.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the targeted areas.

- 584 farm managers were trained on “Farm biosecurity and decontamination for poultry farm managers in HPAI affected areas (Arihazar, Narayanganj; Sadar, Narayanganj; Chittagong; Cox’s Bazar; Bandarban; Rangamati; Khagrachari; Sirajganj; Gazipur Sadar; Sreepur Gazipur; and Kapasia Gazipur)” between 22 March and 30 June 2011.
- Workshops on “Awareness Building in Improved Biosecurity and hygiene at LBMs including decontamination operations” were held between 16 July and 22 August 2011 in five project areas (Rangpur, Kushtia, Manikganj, Gopalganj and Chuadanga) for 70 participants including Upazila livestock officers, veterinary surgeons, municipality market inspectors and market committee chairmen.
- A total of 133 DLS/non-governmental organization (NGO) officials were trained as trainers (ToT) on backyard poultry rearing and biosecurity for 8 000 beneficiaries of cyclone affected areas between 3 August and 14 August 2011 in Barisal, Bagerhat and Faridpur.
- Training of 8 000 beneficiaries of cyclone affected areas in 15 Upazilas on biosecurity improvement is in progress through ToT module between 20 August and 24 September 2011.
- National biosecurity guidelines for commercial poultry farms in Bangladesh were developed and handed over to DLS.
- Draft biosecurity SOPs for commercial poultry farms in Bangladesh were developed.
- Decontamination commodities were provided to the last five project areas (Rangpur, Kushtia, Manikganj, Gopalganj and Chuadanga).

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza and Human Pandemic Influenza Preparedness Plan

- FAO supported the implementation of the National Avian Influenza and Human Pandemic Influenza Preparedness Plan. The plan consisted of six main pillars, i.e. planning and coordination, surveillance, prevention and control, communication and operational research. FAO supported the Government for planning and coordination by routinely holding meetings or attending committee meetings as well as through any coordination mechanism. For surveillance, FAO supported the GoB by assisting implementation of the activities such as outbreak investigation, active surveillance, passive surveillance, SOP development, training, lab capacity development, Live Bird Market improvement, and AIPRP project. For operational research, FAO conducted chicken and duck sample collection for determining traits of the viruses as well as for searching hidden sources of infection.
- FAO assisted in development of the National Avian Influenza and Human Pandemic Influenza Preparedness Plan 2011-2016, which is ready for approval from the Government side.

Output 5: Active surveillance on HPAI

- An in-depth review of avian influenza worker (AIW) surveillance was carried out as well as concurrent SMS Gateway reporting for the District of Gaibandha, and further enhancements to surveillance protocols and reporting were recommended.
- Protocol for backyard surveillance and investigation of the causes of seasonal patterns of HPAI were drafted to be implemented between October 2011 and July 2012.
- The Avian Influenza Preparedness and Response Project (AIPRP) was assisted in training on active surveillance using SMS Gateway for AIWs (previously called community animal health workers [CAHWs]).
- The SMS Gateway system was maintained, receiving approximately 1 000 SMS messages per day from 1 035 AIWs and 88 AVSs in 306 Upazilas.
- Design of an integrated database for effective data entry and analysis is underway.
- A web-based LDIS software to collect disease information from Upazila level through Internet was developed.
- Ten Upazila Livestock Officers (ULOs), ten veterinary surgeons and ten compounders were trained on 2 July 2011 by selecting ten Upazilas from different Districts for the field test of LDIS.
- Maps produced by GIS for commercial poultry farms and LBMs were supplied to 64 District Livestock Officers (DLOs), seven Deputy Director offices, the FAO Representative, the Emergency and Rehabilitation Coordination Unit (ERCU), the Director-General (DG) and DLS offices to identify the exact geospatial location of all commercial poultry farms and poultry markets in Bangladesh.

Planned activities for the next six-month period

Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention

- Provide technical support to the Government of Bangladesh, facilitate contacts between the Government and donors and coordinate projects and regional activities.
- Enrich geospatial farm mapping data and improve the system allowing outbreak responses to be carried out more efficiently.
- Collaborate and coordinate with public health and wild life sectors to develop a more holistic approach in line with the One Health initiative.

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- Collect and analyse outbreak investigation data using the newly commissioned investigations database.
- Support the Government in conducting outbreak investigation on AI.
- Improve post-outbreak investigation by collecting samples from free-ranging ducks in backyards

in the vicinity of affected farms and inoculate samples into embryonated eggs to attempt virus isolation.

- Continue search for reservoirs of H5N1 HPAI as well as LPAI among free-ranging, scavenging ducks in backyards as well as nomadic ducks.
- Reduce the risk of re-occurrence of H5N1 HPAI outbreaks by eliminating hidden reservoirs as well as by rapid disposal of dead wild birds.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the target areas

- Finalize biosecurity SOPs for commercial poultry farms in Bangladesh.
- Train 700 farm managers on “farm biosecurity and decontamination in HPAI affected areas”.
- Facilitate dialogue on compartmentalization and develop SOPs for the implementation of disease free compartments.
- Complete the training of 8 000 beneficiaries of cyclone affected areas on biosecurity improvement in progress through ToT module.

Output 4: Provision of assistance to the Government of Bangladesh in implementing the National Avian Influenza and Human Pandemic Influenza Preparedness Plan

- Support the Government in the implementation of National Avian Influenza and Human Pandemic Influenza Preparedness Plan.

Output 5: Active Surveillance on HPAI

- Ascertain smooth transfer of the active surveillance system from FAO to AIPRP.
- Intensify backyard outbreak investigations, including surveys of ducks, other potential hosts and the environment.
- Supply GIS to 64 DLO offices, seven Deputy Director offices, FAOR, ERCU, DG and DLS offices to identify the exact geospatial location of all commercial poultry farms and poultry markets in Bangladesh.
- Assist in active surveillance by analysing data collected through 88 AVSs and 15 Veterinary officers (VO) and 1 006 AIWs supported by AIPRP.

Main challenges encountered and response provided

- Irregular decontamination practices at LBMs were carried out by trained market cleaners owing to irregular payment to the market cleaners. Market Committee representatives were advised to pay the cleaners regularly through collection of money from the poultry traders.
- DLS Senior Management were advised to instruct field-level officers to monitor decontamination practices at LBMs .
- As backyard poultry was given less attention than commercial farms, awareness is being raised among backyard farmers.
- Most of the backyard poultry are free-ranging and are allowed to scavenge in the environment. Risk of intermingling with wild migratory birds, as well as free-ranging ducks, should be acknowledged by backyard farmers. Thirty five AVSs were hired in six districts including Netrokona in duck-raising areas to intensify duck surveillance and raise awareness on the risk of HPAI H5N1 infection associated with free-ranging ducks in backyards and/or open environments.
- Owing to a shortage of human and material resources at the field level, quick and appropriate response to disease events was lacking at times. Motivation is needed among DLS staff to capture every disease event at the earliest stage. A web-based reporting system, LDIS, was launched. This is meant for reducing time required for reporting disease information from the field as well as improving compliance of veterinary officers.
- Compliance with animal disease regulation is minimal, and farms registration is not practiced.
- Movement control of nomadic and free-ranging ducks is difficult. Care takers of nomadic ducks

and free-ranging ducks are to be advised by AVSS/AIW's (formerly called CAHW) to prevent their ducks from mingling with wild migratory birds in high-risk areas which serve as refuge for migratory birds. For this purpose, 35 Additional Veterinary surgeons (mentioned above) were hired for the duck-raising areas.

Main progress made towards the achievement of project outcomes

- The ECTAD Unit provided significant technical and logistic support to DLS.
- Biosecurity and HPAI awareness are reinforced and strengthened through active surveillance, training and dissemination of information.
- An active surveillance system was established, and the capacity of DLS was improved to conduct door-to-door/farm-to-farm surveillance. The system is now being transferred to DLS under its AIPRP with all AIWS (CAHWS) now recruited by the Government instead of FAO.
- All DLS surveillance staff received training and refresher training by FAO consultants on basic communication skills, specifically on those related to HPAI and SMS gateway.
- Laboratory supplies, including polymerase chain reaction (PCR) kits, RNA extraction kits, primers and other consumables, were provided to BLRI laboratory.
- SOPs for laboratory tests for AI diagnosis were drafted and submitted to the Government.
- SOPs for outbreak response, disease investigation, culling and C&D were drafted and are being reviewed.
- Biosecurity SOPs for commercial farms were drafted, and the process for field test is underway.
- National biosecurity guidelines for commercial poultry farms in Bangladesh were developed and submitted to DLS.
- Technical officers of eight leading farms and selected government veterinarians received training on biosecurity and routine disinfection for poultry raising establishments.
- Two hundred government veterinarians received training on post-outbreak decontamination.
- FAO contributed to the development of the Second Communication Strategy for Avian and Pandemic Influenza.
- Strong partnership was established between DLS and FAO allowing for smooth transmission of information and collective action.
- For the improvement of LBMs, a solid collaboration was established with AIPRP, DLS.
- National biosecurity guidelines for commercial poultry farms in Bangladesh were developed and submitted to DLS.

Project Monitoring Sheet: OSRO/INT/604/USA B1

Project title: Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment

Reporting period: April – September 2011

Regional:	Global
Project title:	Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment
Code:	OSRO/INT/604/USA B1
Budget:	USD 5 000 000 ¹
Planned end date:	30 April 2014
Effective starting date:	1 January 2007
Context of the project	<p>The Crisis Management Centre – Animal Health (CMC-AH) of the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) is mandated to respond to new outbreaks and critical epidemiologic situations involving Highly Pathogenic Avian Influenza (HPAI) and other transboundary animal diseases (TADs) upon official government request. Within the framework of the Emergency Centre for Transboundary Animal Disease Operations (ECTAD), the CMC-AH provides assistance where local governmental capacity may be insufficient to respond effectively and where the spread of the virus may pose a broader regional or global risk.</p> <p>In support of this mandate and within the context of the mandates of OIE to improve animal health worldwide and the World Health Organization (WHO) to lead global human health initiatives, the United States Agency for International Development (USAID) has provided to date a total of USD 5 million to FAO in support of the CMC-AH for sustained emergency preparedness, rapid assessment and response in the field and at headquarters to suspected or confirmed outbreaks of HPAI and other zoonoses in collaboration with OIE and WHO.</p> <p>Under this project the CMC-AH continues to carry out its mandate while working to combine efforts, avoid overlaps and build synergies between FAO, OIE and WHO, as the organizations work to facilitate the containment of HPAI and other zoonotic diseases at its source in animals, prevent its spread across international borders and mitigate the risk of a human pandemic.</p>
Objectives²	<p>The purpose of the Grant is to provide funding to FAO to support activities to prevent and control HPAI worldwide and reduce the risk of a human pandemic. In this general context and in the specific context of Amendments 1 and 2, the objective of the project is to support CMC-AH operations and missions for: (i) enhanced core team capacity; (ii) improved FAO/OIE/WHO linkages at regional and country level; (iii) increased immediate capacity building; and (iv) strengthened risk communication support (provided to affected/at-risk countries) and overall communication activities (targeting donor, partner and other audiences).</p>

¹ The budget allocation amounts to USD 2 000 000 (Phase I), USD 2 000 000 (II) USD 2 000 000 (III). The total budget takes into account the reallocation of USD 1 million of CMC-AH funds to the surveillance and response component of the USAID grant as agreed with the Donor.

² These objectives represent a synthesis of the main Grant Objectives contained in the Grant Agreement and Amendments 1 and 2 (i.e. the project document). They have been presented in summarized form in compliance with the Progress Monitoring Sheet format. Detailed reporting on objectives and activities will be included in the Final Narrative Report upon project completion.

Planned activities of the project

- planning, deploying and following up on CMC-AH rapid response missions;
- developing tools in support of CMC-AH operations and response capacity;
- defining cooperation mechanisms between WHO and the CMC-AH;
- exchanging information and regularizing communications;
- developing standard operating procedures (SOPs) for FAO, WHO and OIE; and
- coordinating missions at headquarters and field levels.

Activities implemented during the reporting period (April – September 2011)

- **Missions for HPAI³**

No missions were deployed for HPAI during the reporting period.

- **Missions for zoonoses or unknown disease crises**

Uganda, 5–10 June 2011

To date, Uganda has recorded three outbreaks of Ebola (Sudan species). While the first two involved multiple human cases, the 2011 occurrence resulted in the death of a single human. This, and recent experimental evidence of Ebola viruses spreading between pigs, raised the issue of how well the veterinary services and international agencies had been prepared for the disease had it involved agriculture. The mission investigated the situation and made significant links with various government and other groups (including USAID's RESPOND and PREDICT programmes, the African Field Epidemiology Network [AFENET] and the Centers for Disease Control and Prevention [CDC]). While no evidence of involvement of agriculture was found in this instance, the mission laid the groundwork for potential rollout of specific, regional training in FAO's Good Emergency Management Practice (GEMP), an initiative which will be shared with other international partners.

- **Other missions**

Viet Nam, 11–17 July 2011 and 11–17 September 2011

Shrimp represent a significant element of Vietnamese food security and livelihoods. The export value of shrimp in 2010 was USD 2.1 billion, and production essentially doubles each year. When this resource was threatened through large-scale mortality from an unknown cause, the CMC-AH were requested to utilize their methodologies and protocols to deploy a rapid response team to the field through alternate funding sources to support the Government of the Socialist Republic of Viet Nam with its response. CMC-AH assistance helped the Government to: (i) better understand the outbreak situation; (ii) outline targeted, short- and medium-term action plans to reduce further spread; and (iii) identify potential donors to assist in immediate, ongoing support actions and longer-term requirements to improve farming systems in the context of a rapidly growing industry.

While direct support for the CMC-AH response came from other donors, the added value of USAID support through this project was fundamental to ensuring that the structure, tools and methodologies were present and able to provide the knowhow for improved response to this emergency.

- **Revision, update and publication of FAO's GEMP**

The initial version of the revised GEMP was completed and published in September 2011 as FAO AGA manual n.11., entitled "GEMP: The Essentials", the new manual emphasizes preparedness supported by prevention, detection, response and recovery. To strengthen GEMP's use and application, the CMC-AH integrated its previously produced technical

³ During the reporting period and with alternate funds, the CMC-AH deployed an initial mission to Viet Nam for shrimp disease (11-17 July 2011) and a follow-up mission (11-17 September 2011) to support continued national response efforts.

guide to HPAI response into overall GEMP efforts. The new handbook, entitled “GEMP: Standard Operating Procedures (SOPs) for HPAI Response” was completed in September 2011 and is planned for printing in late 2011 early 2012.

- **Event Tracking and Management System (ETMS)**

From May through July 2011 the CMC-AH completed the final phase of data entry of current and previous mission data. Working with FAO subject matter experts and current and previous mission team members, the CMC-AH team researched, amassed and analysed historical data from since the Centre’s inception. Once amalgamated, this data was entered into ETMS for use. Now easily accessible through the system, this data serves the CMC-AH both when: (i) referencing past missions; and (ii) planning future actions based on previous experience.

- **Revision of internal SOPs for CMC-AH operations**

In order to further streamline CMC-AH activities and work flow, the Centre developed a working group on SOPs to review their current status and suggest improvements. Work is ongoing, but is expected to be completed by early October 2011 to be presented to the fifth meeting of the Steering Committee.

- **Strengthening coordination and building awareness of CMC-AH and its services**

- **Steering Committee 5:** The CMC-AH engaged in extensive preparatory work for the fifth meeting of the Steering Committee, which was scheduled for 13 October 2011.

- **Fifth Anniversary:** To mark the fifth anniversary of the Centre’s establishment in October 2011, the CMC-AH organized a celebratory event in coordination with FAO’s World Food Day/Week. The Centre produced a brief video, leaflets, banners, flash drives and other products. All materials were designed to be appropriate for raising CMC-AH visibility in both corporate and field/mission contexts. Details on some of the products:

- **CMC-AH video:** Entitled “CMC-AH: Rapid response, today and tomorrow”, the brief, two minute video was created to raise interest in the Centre’s work and achievements. Planned dissemination channels included:

- Screening at the CMC-AH Fifth Anniversary in October 2011;
 - display on FAO’s YouTube Channel: <http://youtu.be/2VJYUkUzYo>;
 - promotion via FAO’s social media outputs (i.e. Facebook and Twitter); and
 - links via the CMC-AH Web site and the AGA Web site.

- **USB flash drives:** Envisioned as both promotional materials and useful field tools, USB flash drives were designed and branded for CMC-AH use and distribution. The drives are planned for dissemination to key stakeholders and resource partners at the Fifth Anniversary Celebration and distribution to field partners by CMC-AH teams on mission. Each flash drive contains:

- the latest CMC-AH informational materials;
 - GEMP: The Essentials; and
 - GEMP: SOPs for HPAI Response

- **OIE and WHO coordination:** In light of the above-mentioned events, the Centre planned to take advantage of OIE and WHO presence in FAO headquarters to hold discussions on enhanced CMC-AH coordination and collaborative working methodologies.

- **FAORs:** Outreach to FAO Representatives (FAORs) remained a core activity, with the CMC-AH continuing to brief all newly appointed country and regional FAORs continuing as standard practice.

- **GEMP promotion:** The Centre continued to capitalize on opportunities to present CMC-AH services and GEMP principles to appropriate audiences. Occasions included: (i) visits of ministerial delegations; (ii) FAO regional coordination meetings;

(iii) interdivisional FAO workshops on risk reduction; and (iv) groups of veterinary students from multiple countries.
Planned activities for October 2011 to March 2012 <ul style="list-style-type: none"> • continued monitoring of high-risk countries and situations; • mission planning and deployment upon request for or acceptance of assistance; • continued CMC-AH awareness building activities, including Steering Committee preparation and Fifth Anniversary planning; • continued discussions with OIE and WHO on working methodologies; and • continued promotion of GEMP publications and concepts.
Main challenges encountered and response provided None
Main progress made towards project objective, listed by activity⁺ (from project start) <ul style="list-style-type: none"> • Mission planning, deployment and follow-up HPAI missions: 24 Total missions: 54 Total countries: 35 • Development of tools supporting CMC-AH response capacity <ul style="list-style-type: none"> ○ Reagent contingency stock implemented for HPAI ○ HPAI stocks stored under cold chain at the United Nations Humanitarian Response Depot in Brindisi, Italy ○ HPAI reagent stock successfully utilized to support government response efforts ○ Technical SOPs revised as part of overall GEMP efforts • Refining cooperation mechanisms between WHO and CMC-AH <ul style="list-style-type: none"> ○ Standard lines of interagency communication defined ○ Information focal points established ○ Coordinated missions (human and animal health) deployed and followed up • Exchanging information and regularizing communications <ul style="list-style-type: none"> ○ WHO's Emergency Management System analysed for applicability to CMC-AH ○ ETMS development and data entry complete; final system online and in use ○ Regular information exchange through regular meetings and staff visits ○ FAO/OIE/WHO coordination methodologies confirmed through standardized information sharing methods and focal points • SOP development for FAO, WHO and OIE <ul style="list-style-type: none"> ○ Initial, internal SOPs defined: 21 ○ Consolidated, internal SOPs: 4 ○ Further streamlined SOPs: 3 • Strengthening mission coordination and field-level cooperation <ul style="list-style-type: none"> ○ After action review processes implemented to capture lessons learned ○ Headquarter- and field-level contacts established and disseminated ○ Coordination mechanisms strengthened through mission experience ○ Field-level SOPs completed for enhanced national response to HPAI; printing planned for late 2011 early 2012

⁺ Owing to the nature of the CMC-AH concept and the project's main aim to support FAO's capacity for rapid response, the majority of activities are to be considered as ongoing initiatives.

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 05

Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: April – September 2011

Regional Component: Southeast Asia Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) Code: OSRO/RAS/604/USA Baby 05
Budget: USD 600 000 (Phase I), USD 1 435 000 (Phase II), USD 1 172 700 (Phase III), USD 937 800 (Phase IV), USD 1 000 000 (Phase V), USD 30 667 (from Mongolia Balance) Total budget: USD 5 176 167
Effective starting date: 1 August 2006
Planned end date: 30 September 2012
Context of the project The Highly Pathogenic Avian Influenza (HPAI) epidemic, caused by H5N1 viruses, began in late 2003 and in early 2004 in Asia and Southeast Asia and spread to many countries in the region. The effects were particularly severe in Indonesia, Thailand and Viet Nam, which saw widespread outbreaks in poultry and also human cases of H5N1 infection. The Food and Agriculture Organization of the United Nations (FAO), through its Emergency Centre for Transboundary Animal Diseases (ECTAD), established a decentralized unit in Bangkok, Thailand, located in the Regional Office for Asia and the Pacific (RAP), to provide technical backstopping for countries in the Asia and the Pacific region that were experiencing outbreaks of the infection or were at risk of it. ECTAD RAP was supported through a preliminary, regional project (OSRO/RAS/505/USA) funded by the United States Agency for International Development (USAID). This support has continued under FAO's present project.
Objectives of the project The objective of this regional component is to coordinate project activities with the target countries and also to ensure continuity from the previous project (OSRO/RAS/505/USA) to the current one. The project also aims to strengthen regional level cross-sectoral coordination and communication for HPAI control.
Planned activities (for the reporting period) Output 1: Strengthened cross-sectoral coordination at regional level <ul style="list-style-type: none"> • continue to provide technical and operational inputs to country-level projects in collaboration with country teams • continue to provide technical inputs, resource persons or training support to the activities related to existing regional HPAI Control framework for the Association of Southeast Asian Nations (ASEAN) or existing network systems related to HPAI • continue to coordinate and collaborate with other agencies on activities related to HPAI control • continue to provide technical inputs to support the activities of the USAID Emerging Pandemic Threats (EPT) programme, which are conducted by various partners Output 2: Strengthened regional and national human resources in epidemiology through regional Field Epidemiology Training Programme for Veterinarians (FETPV) <ul style="list-style-type: none"> • continue activities to implement the two-year FETPV programme, including the

seeking of additional support for the programme through other potential partners

- continue to provide support to the development of China-FETPV, as well as related training programmes in Cambodia, Lao PDR and Nepal
- organize a regional workshop to develop the regional strategy to assist the countries to improve animal disease control systems at the grassroots level focusing on the Community Animal Health Worker System

Output 3: Strengthened coordination of epidemiology and laboratory network

- continue to support the implementation of the Global Animal Disease Information System (EMPRES-i) Asia to share expertise and information in a real-time manner across the network through meetings, workshops and online communication
- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium
- continue to provide support for sample submission from member countries to international reference laboratories

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- continue to support the in-depth studies on the risks of HPAI spread along the poultry production and market chains at the border between Thailand and Lao PDR (Mukdaharn and Savannakhet Provinces)
- support the organization of a bilateral meeting between the Government of Thailand and Lao PDR to discuss cross-border risk management
- organize regional coordination meetings on risk management at cross-border level among key potential partners including the representatives from participating governments

Activities undertaken during reporting period

Output 1: Strengthened cross-sectoral coordination at regional level

- The ECTAD team continued to maintain international and national regional support staff for the project.
- The ECTAD team continued to coordinate and collaborate with other United Nations (UN) agencies, donors and international organizations. Specifically, the Regional Coordinator (RC):
 - participated in FAO- the World Organisation for Animal Health (OIE)- the World Health Organization (WHO) tripartite events to strengthen collaboration and coordination among the three organizations. The tripartite events included teleconferences and meetings.
 - prepared to organize the “Second Regional Workshop on Collaboration Between Human and Animal Health Sectors on Zoonoses Prevention and Control”
- The regional team consisting of the Regional Manager, RC, Regional Veterinary Epidemiologist (RVE) and operations team continued to provide technical and operational inputs to country-level projects in collaboration with country teams.
- The ECTAD team provided technical inputs to support the activities of ASEAN including the organization of the Fourth Regional Coordination Mechanism Meeting which was organized under the financial support of the European Union (EU) Highly Pathogenic and Emerging and Re-emerging Diseases (HPED) project in Bangkok, Thailand in July 2011.

- The ECTAD team provided technical inputs to support the activities of USAID Emerging Pandemic Threat (EPT) program including attending the following events:
 - EPT Work Plan Review Meeting organized in Lao PDR in April 2011;
 - two-country planning sessions for the fiscal year 2012 for Thailand and Lao PDR organized by the Regional Development Mission for Asia (RDMA) in Bangkok, Thailand in June 2011; and
 - Regional EPT meeting organized by USAID in Bangkok from 12 to 14 July 2011.
- The ECTAD team provided technical and operational inputs to country projects, in collaboration with FAO country teams and national counterparts, for the following activities:
 - recruitment of international consultants;
 - procurement of equipment and supplies;
 - issuance of contracts to conduct field activities/research;
 - provision of clearance to technical reports prepared by staff of ECTAD country teams;
 - preparation of proposals for the new funding cycle in the year 2012; and
 - backstopping missions to Cambodia regarding the HPAI outbreaks reported in animals and human and preparing for a joint FAO-OIE-WHO mission to Cambodia to carry out an assessment of HPAI surveillance programme.

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- The RVE and RC continued to work closely with the Thai Department of Livestock Development (DLD) on activities related to FETPV. These included:
 - organizing the fourth-round visit of the FETPV trainees who were enrolled in the class of 2009 in Thailand for the final series of trainings and workshops. Three trainees from Indonesia, Myanmar and Thailand completed their assignments and were awarded with certificates in June 2011. Unfortunately, the trainee from China could not be awarded with the certificate, as one of his assignments on participating in the international fellowship programme was not completed;
 - organizing the first-round visit of the FETPV trainees who were enrolled in the class of 2011 in Thailand for a series of trainings and workshops in Bangkok;
 - serving as regional programme mentors to the trainees from China and Myanmar;
 - conducting missions to China, Indonesia, Myanmar and Viet Nam to advocate for the Regional FETPV programme to the Chief Veterinary Officers of the above-mentioned countries in order to gain relevant support for the trainees from these countries to complete their field assignments which were conducted at the country level;
 - preparing to organize a “TEPHINET Pre-Conference Roundtable Discussion on Sharing Experiences in Joint Epidemiology Capacity Building for Veterinarians” which will be organized on 8 November 2011 in Bali, Indonesia; and
 - seeking additional support for the programme including the collaboration with the Center of Veterinary Public Health, College of Veterinary Medicine, University of Minnesota.
- The RVE conducted a mission to Khon Kaen, Thailand to provide inputs to the Lao Country Team to organize a one-month course in collaboration with Khon Kaen University in May 2011.
- The RC and RVE provided their technical inputs to organize and facilitate the Second Consultative Meeting of Epidemiology Consortium and the Informal Discussion to Develop a Regional Strategy for Veterinary Capacity Building for Southeast Asian

Countries in August 2011 in Bangkok, Thailand.

- The RVE provided technical support to the trainees of the regional FETPV during a study visit to the Center of Epidemiology and Animal Health, Colorado, USA as part of the curriculum requirements.
- The RVE continued to provide support to the development of China FETPV and India FETPV, as well as related training programmes in Cambodia and Lao PDR.
- The fourth Letter of Agreement (LoA) is being finalized to support Thai DLD to implement the regional FETPV during the year 2012.

Output 3: Strengthened coordination of epidemiology and laboratory networks

- The RC continued to provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks.
- The RC provided technical inputs as one of the keynote speakers at the International Conference of Animal Health Surveillance (ICAHS) giving a presentation on “Animal Health Surveillance in Asia: Issues, Gaps and Needs”. The main supporter of this Conference was the French Ministry of Food and Agriculture including the Agricultural Research for Development Centre (CIRAD), which comprises the Research Network for Animal Health Surveillance in Southeast Asia.
- The ECTAD team continued to provide technical inputs to the disease tracking system, EMPRES-i Asia.
- The RC attended and provided a facilitation role to “the 4th OIE Regional Meeting on Strengthening Animal Health Information Networking in Asia” which was organized by OIE experts in September 2011 in Chiang Mai.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- The ECTAD team continues to support the “Price monitoring on livestock products at cross-border level between Mukdahan Province, Thailand and Savannakhet Province, Lao PDR”. The activities conducted during the reporting period included:
 - informing responsible public veterinary offices in Thailand and Lao PDR during April 2011;
 - identifying key informants in the two study provinces during April and May 2011;
 - training key informants in May 2011;
 - collecting prices of livestock on the weekly basis since June 2011, and such collection of prices will continue until the end of the year 2011;
 - organizing a feedback workshop with key informants at Mukdahan Province in September 2011.

Planned activities for the next six-month period

Output 1: Strengthened cross-sectoral coordination at regional level

- continue to provide technical and operational inputs to country-level projects in collaboration with country teams
- continue to provide technical inputs, resource persons or training support to the activities related to existing regional HPAI Control Framework for ASEAN or existing network systems or regional coordination mechanism related to HPAI and animal disease control
- continue to coordinate and collaborate with other agencies on activities related to HPAI control

- continue to provide technical inputs to support the activities of the USAID EPT programme, which are conducted by various partners

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- continue activities to implement the Regional FETPV programme, including the seeking of additional support for the programme through other potential partners
- continue to provide support to the development of China FETPV and India FETPV as well as related training programmes in Cambodia and Lao PDR.
- organize a regional workshop to develop the regional strategy to assist the countries to improve animal disease control systems at the grassroots level focusing on the “Community Animal Health Worker System”.

Output 3: Strengthened coordination of epidemiology and laboratory network

- continue to support the implementation of EMPRES-i Asia to share expertise and information in a real-time manner across the network through meetings, workshops and on-line communication
- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium
- continue to provide support for sample submission from member countries to international reference laboratories

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- continue to support the in-depth studies on the risks of HPAI spread along the poultry production and market chains at the border between Thailand and Lao PDR (Mukdaharn and Savannakhet Provinces) including price monitoring of livestock products
- support the organization of a bilateral meeting between the Government of Thailand and Lao PDR to discuss cross-border risk management
- organize regional coordination meetings on risk management at cross-border level among key potential partners including the representatives from participating governments

Main challenges encountered and response provided

- The bilateral meeting between the Government of Thailand and Lao PDR to discuss cross-border risk management was planned, but had to be cancelled when the Thai DLD was called upon to urgently deal with a case involving several thousand dogs being smuggled out of Thailand. The meeting will be rescheduled, but this was not possible before the end of the current reporting period.

Progress made towards the achievement of project outcomes (from the start of activities)

Output 1: Strengthened cross-sectoral coordination at regional level

- Coordination and collaboration between FAO and other international organizations and agencies particularly with the regional political organizations, such as ASEAN, OIE and WHO was strengthened and continued. Linkages were established between the projects funded by USAID and the projects funded by other donors.

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- FETPV continued smoothly with additional collaborations at national and international levels and approved joint funding for the programme. ASEAN member countries recognized the importance of integrating veterinary epidemiology activities in the national veterinary services and noted the fact that the Thai Department of Livestock Development has been hosting the Regional FETPV since 2009.
- Three trainees from Indonesia, Myanmar and Thailand who were enrolled to the Regional FETPV program in 2009 completed their assignments and received certificates. All of them returned to their home countries and continued working as veterinary epidemiologists at the Animal Health Services of their countries.

Output 3: Strengthened coordination of the epidemiology and laboratory network

- In order to facilitate collaboration among key international partners for regional epidemiology network in Southeast Asia, a matrix of joint activities for the members of Epidemiology Consortium was developed using HPAI control activities and Regional FETPV in Southeast Asia as a model.
- The Strategic Framework for Regional Laboratory Networks for Southeast Asia was recognized by the ASEAN working group on livestock. The international partners for the regional laboratory network in Southeast Asia were recognized by the member countries as the Technical Advisory Group.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- A system for “Price Monitoring for Livestock Products” was developed and tested at a study site at the border between Thailand and Lao PDR (Mukdahan - Savannakhet Provinces).



IDENTIFY | FAO

BIANNUAL REPORT

(SIX-MONTHLY PROGRESS REPORT)

REPORTING PERIOD: 1 APRIL 2012 - 30 SEPTEMBER 2012

PLANNED ACTIVITIES: 1 OCTOBER 2012 - 31 MARCH 2013

TO BE SUBMITTED TO:

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID)

UNDER COOPERATIVE AGREEMENT

SUBMITTED BY

IDENTIFY PROJECT PARTNER: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

Regional component: Global/Inter-regional
Three hot spot areas (with countries) : <ul style="list-style-type: none"> • Congo Basin: Uganda, Democratic Republic of the Congo, Cameroon, Republic of Congo, Tanzania, Gabon, Equatorial Guinea, Rwanda, Central African Republic, South Sudan • Southeast Asia: Cambodia, China, Indonesia*, Lao People's Democratic Republic, Malaysia, Myanmar,* Philippines, Thailand, Viet Nam • South Asia: Bangladesh, India, Nepal (future activities pending)
Project title: Support for strengthening animal health laboratory capacities in hot spot regions to combat zoonotic diseases that pose a significant public health threat - IDENTIFY
Code: OSRO/INT/902/USA
Total budget: USD 15 419 371 (of which USD 11 919 371 were allocated for implementation of activities by FAO, and USD 3 500 000 were allocated for implementation of activities by OIE through funds transferred by FAO to OIE as per the Letter of Agreement). The activities of OIE will be reported on separately.
Effective starting date: 1 October 2009
Planned end date: 30 September 2012 (31 December 2012 for the FAO project)
Context of the project <p>This project is part of a complex programme – Emerging Pandemic Threats (EPT) – designed by the United States Agency for International Development (USAID) and aimed to identify and implement mechanisms to detect disease emergencies, especially from wildlife. The One Health concept is an important component of the whole programme. The IDENTIFY project is implemented jointly by the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE) and the World Health Organization (WHO).</p>
Objectives of the project <ul style="list-style-type: none"> • Enhance laboratories' ability to detect – to the appropriate level of characterization for the laboratories' capability – IDENTIFY targeted diseases¹ • Enhance/support laboratories' timely reporting of IDENTIFY targeted diseases to national authorities, in support of their official notification to the appropriate regional and international organizations • Laboratories have adopted or improved Quality Assurance practices, inclusive of biosafety and biosecurity measures, and a comprehensive Quality Management System • Laboratories are participating in relevant regional and international laboratory networks according to their respective abilities, disease priorities and responsibilities
Short summary of main activities planned for the reporting period (1 April - 30 September 2012) <p>Main activity headings are as follows – for further details, please refer to the FAO IDENTIFY Year 3 work plan:</p> <p>Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced</p> <p>1.A Follow-up of laboratory mapping exercise activities</p> <p>1.B Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines and standards</p>

*Indonesia and Myanmar are included in regional activities under separate funding.

¹ "IDENTIFY targeted disease" indicates those diseases selected at the regional level for support under IDENTIFY. Some IDENTIFY laboratories have no mandate/interest to detect all IDENTIFY targeted diseases, and data will not be reported for diseases in those cases.

- 1.C Develop and conduct trainings or workshops to build laboratory capacity and to promote national laboratory policies and guidelines
- 1.D Promote and support laboratory quality management
- 1.E Provide laboratory equipment and supplies in a coordinated manner

Output 2. Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened

- 2.A Communication tool development and resource building
- 2.B Development of joint meetings and conferences to support networking and promote national laboratory policies
- 2.C Review and update of the tripartite Laboratory Networking Strategy (LNS) and future planning
- 2.D Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories
- 2.E Support and promote laboratory networks
- 2.F Support and promote laboratory partnerships

ACRONYMS AND ABBREVIATIONS

AAHL	Australian Animal Health Laboratory
AI	Avian Influenza
APHIS	Animal and Plant Health Inspection Service
ASEAN	Association of Southeast Asian Nations
AU-PANVAC	African Union-Panfrican Veterinary Vaccine Centre
CIRAD	Agricultural Research for Development
CVL	Central Veterinary Laboratory
CVO	Chief Veterinary Officer
DAH	Department of Animal Health, Viet Nam
EARLN	Eastern Africa Veterinary and Epidemiology Laboratory Network
ECTAD	Emergency Centre for Transboundary Animal Diseases
EMPRES	FAO Emergency Prevention System
EMPRES-I	FAO Global Animal Disease Information System
EPT	Emerging Pandemic Threats
FAO	Food and Agriculture Organization of the United Nations
FMD	Foot-and-mouth disease
FRET	Fluorescence resonance energy transfer
FVI	<i>France Vétérinaire Internationale</i>
HUA	Hanoi University of Agriculture
IAEA	International Atomic Energy Agency
IZSVe	<i>Istituto Zooprofilattico Sperimentale delle Venezie</i>
LANAVET	<i>Laboratoire National Vétérinaire, Cameroon</i>
LIMS	Laboratory Information Management System
LMT	Laboratory mapping tool
LoA	Letter of Agreement
M&E	Monitoring and Evaluation
NAHC	National Animal Health Centre, Lao PDR
NaVRI	National Veterinary Research Institute, Cambodia
NIAH	National Institute of Animal Health, Thailand
OFFLU	Joint OIE/FAO Network of Expertise for Animal Influenza
OIE	World Organisation for Animal Health
PCR	Polymerase chain reaction
PPR	<i>Peste des petits ruminants</i>
PRRS	Porcine reproductive and respiratory syndrome
RAHO 6	Regional Animal Health Office Number 6, Viet Nam
RESEPI	Regional Network of National Epidemiological Surveillance Systems for Transboundary Animal Diseases
RESOLAB	West and Central Africa Veterinary Laboratory Network for Avian Influenza and Other Transboundary Diseases
RSL	Regional Support Laboratory
RVF	Rift Valley fever
SWD	Sabah Wildlife Department
TAD	Transboundary animal disease
USAID	United States Agency for International Development
US CDC	United States Centers for Disease Control
USDA	United States Department of Agriculture
VRI	Veterinary Research Institute, Malaysia
WHO	World Health Organization

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1 ACTIVITIES UNDERTAKEN DURING THE REPORTING PERIOD (1 APRIL - 30 SEPTEMBER 2012) AND PLANNED ACTIVITIES FOR THE NEXT REPORTING PERIOD (1 OCTOBER 2012 - 31 MARCH 2013)

1.1 ACTIVITIES GLOBAL COMPONENT (FAO HEADQUARTERS AND FAO/IAEA)

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced

1.A.G Follow-up of laboratory mapping exercise activities

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- FAO laboratory mapping tool (LMT) exercise. *linked to regional activity 1.A.C:*
 - All data obtained with the LMT was compiled and analysed at headquarters for monitoring and evaluation ([M&E], *linked to 2.C.G*) purposes.
 - Overall report on the status of IDENTIFY laboratories supported by the Food and Agriculture Organization of the United Nations (FAO) finalized. *1.A.4.G*
 - Production of individual laboratory cards on the status of IDENTIFY laboratories in the Congo basin shared with the countries to provide feedback on the Year 3 LMT exercise and to receive feedback for the Year 4 planning process.
 - Regional profile of laboratories examined for status of regional support laboratories based on the outcomes of laboratory mapping. *1.A.5.G*
 - Article describing the LMT published in the FAO Emergency Prevention System (EMPRES) bulletin No 40-2012 <http://www.fao.org/docrep/015/i2811e/i2811e.pdf> (page 23). Final tool distributed to contributors for possible comments.
- Annual report format developed for designated FAO Reference Centres and first annual reports received and reviewed. Information on FAO Reference Centres made publicly available on the FAO Animal Production and Health Web site: http://www.fao.org/Ag/AGAInfo/partners/en/ref_centres.htm and its Global Animal Disease Information System (EMPRES-i) laboratory directory: <http://empres-i.fao.org/eipws3g/index.html?animalProdNetwork=yes>. *1.A.3.G*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Develop specific modules of the LMT to ease independent application of specific modules, for example, quality assurance, biosafety, specific disease testing, and to measure the project's impact on laboratory functionality. Compile and review all new data obtained with the LMT (through results of self and external assessments in both regions), and analyse the progress made.

1.B.G Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines and standards

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Support provided to four participants from South/Southeast Asia and the Congo Basin to attend the 13th Conference of the International Society for Veterinary Epidemiology and Economics (ISVEE XIII), from 20 to 24 August 2012 in Maastricht, the Netherlands. The conference focused on "Building bridges - crossing borders."

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Support will be provided to four participants from South/Southeast Asia and the Congo Basin to attend the European Commission for the control of Foot-and-Mouth disease (EuFMD) Open Session from 29 to 31 October 2012 and the World Organisation for Animal Health (OIE)/FAO Reference Centres Network meeting on 1 and 2 November 2012, in Jerez de la Frontera, Spain.

1.C.G Develop and conduct trainings or workshops to build laboratory capacity and to promote national laboratory policies and guidelines

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Contract (Letter of Agreement[LoA]) started with *France Vétérinaire International* (FVI) to provide trainings in Africa in various fields of expertise (mostly trainings in French). See also 1.C.2.C, 1.C.5.C, 1.C.4.C and 1.C.7.C
- Contract (LoA) started with Istituto Zooprofilattico Sperimentale delle Venezie (IZSVE), Padova. OUTCOMES: (i) provide on-site technical assistance for rabies diagnosis (the Democratic Republic of the Congo [DRC], Cameroon and Rwanda) for testing services; and (ii) contribute to the work on provision of access of sub-Saharan African laboratories to sequencing services. *linked to regional activity 1.C.C*
- Organizational support provided for the three sessions of the regional training-of-trainers (TOT) pathology workshop "Basics of field and laboratory diagnosis" in both regions. *linked to 1.C.S and 1.C.C*
- Training for staff selected from the *Laboratoire National Vétérinaire* (LANAVET) (Cameroon) on the diagnosis and molecular epidemiology of the African Swine Fever (ASF) at the joint FAO/International Atomic Energy Agency (IAEA) division (since August 2012 and for seven months).
- Preparation of a joint FAO/IAEA division consultation on "Good laboratory practices for conducting multiple disease diagnosis" (1.C.5.G) - initially planned in September 2012. Terms of reference and prospectus finalized, location and date confirmed, experts contacted.
- Validation and transfer of new techniques for multiple disease diagnosis polymerase chain reaction (PCR) using the fluorescence resonance energy transfer (FRET) system) 1.C.6.G
 - Several convention and real time PCR methods developed at the joint FAO/IAEA division for capripoxvirus detection and differentiation. OUTCOME: Methods presented to the participants of the regional training course on Major transboundary and zoonotic animal diseases: early detection, surveillance and epidemiology (1.C.4.G), held at LANAVET, Garoua (Cameroon) from 23 July to 3 August 2012.
 - Agreement was reached on the principle of the collaboration between the joint FAO/IAEA division and Pathofinder (Dutch company) to develop a multiple pathogens detection assay for the major pathogens causing respiratory diseases and symptoms in ruminants. A proposal on the role and the requirements of each partner is now under discussion. This initiative is partially sponsored by IDENTIFY.
 - A label-free method for the detection and genotyping of capripoxvirus was developed at the joint FAO/IAEA division, and is now ready for field validation.
 - The joint FAO/IAEA division currently working on the analytical validation of a pan-pox detection to simultaneously differentiate capripox, parapox and orthopox (camelpox and cowpox).

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Conduct the consultation on Good laboratory practices for conducting multiple disease diagnosis, from 16 to 18 October 2012, Vienna, Austria.
- Complete the training on ASF molecular epidemiology for staff from LANA-VET (Cameroon) focusing on the molecular characterization of ASF from central African countries and the determination of the genotype responsible for the recent outbreaks by February 2013.
- Validate and transfer new techniques for multiple disease diagnosis (PCR using the FRET system) to Uganda and Ethiopia.
- Final validation of the pan-pox detection to simultaneously differentiate capripox, parapox and orthopox by March 2013.

1.D.G Promote and support laboratory quality management

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Support to external quality assurance (QA) for targeted diseases. 1.D.3.G for proficiency testing in Africa for Rift Valley fever (RVF), peste des petits ruminants (PPR) and avian influenza (AI)/Newcastle Disease (ND). *linked to regional activity 1.D.Congo*
- Support provided to the on-site audit/backstopping missions conducted under the LoA with FVI for: (i) assessing QA system implementation in DRC, the Central African Republic, the Republic of the Congo, Rwanda, Tanzania and Uganda; and (ii) assessing biosecurity and biosafety in Cameroon and DRC. *linked to regional activity 1.D.2.C*
- Discussions with the Institute G.Caporale, Teramo, Italy to support the implementation of laboratory information systems (LIMS) in targeted laboratories in the Congo Basin. An assessment mission conducted from 17 to 20 July 2012 to the Central Veterinary Laboratory (CVL). *linked with regional activity 1.D.Congo*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Support to external QA for targeted diseases (for RVF, PPR and AI/ND) for proficiency testing in Africa. *linked to regional activity 1.D.Congo*
- Provide support to the activities performed by FVI in Africa, four assessment missions to be conducted by FVI experts on QA (LACEVET/Bangui/the Central African Republic; the *Laboratoire Vétérinaire de Kinshasa* [LVK]/Kinshasa, DRC; and CVL/Temeke, Tanzania) and biosecurity/biosafety (in LVK/Kinshasa/DRC). *linked to regional activity 1.D.C*
- Develop and review the QA and biosafety roadmaps towards the objective 3 of IDENTIFY.
- Initiate the process for future work on laboratory policy (consultancy needs, outline, roadmap defined).
- Provide standardized veterinary diagnostic reagents and international standards in a coordinated manner to selected countries. *1.D.5.G*
- Support a one-month training for production of standardized RVF veterinary diagnostic reagents and international standard for two scientists from Kenya and Botswana. Upon request of the National Institute for Communicable Diseases (NICD), South Africa, this training was initially planned for the period between July and October 2012, but it was postponed to early 2013.
- Build the PPR serum bank based on the sera produced as part of the FAO/IAEA technical contract.
- Develop a concept note with the African Union - Pan African Veterinary Vaccine Centre (AU-PANVAC) to define the scope and activities for implementation related to the regional supply of

reagents, equipment maintenance and existing diagnostic laboratories network for the validation of reagents and assays already produced at AU-PANVAC.

- Prepare an LoA with the Institute G.Caporale, Teramo, Italy to support the establishment of LIMS in the two targeted laboratories in the Congo Basin (Tanzania and Botswana).

1.E.G Provide laboratory equipment and supplies in a coordinated manner

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Tenders were launched for the procurement of equipment and consumables:
 - Foot-and-mouth disease (FMD) kits for 13 African countries and two Asian countries;
 - Numerous laboratory materials, supplies and goods for 13 African laboratories, divided into seven lots. Some items have already been shipped to the beneficiary countries (such as the microscopes and FMD kits); delivery of all items expected before the end of 2012; and
 - Purchase of dry ice machine for Uganda (to be shipped in October 2012 to the Uganda Virus Research Institute in Entebbe). *linked to regional activity 1.E. C and 1.E.5.*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Follow up on the safe delivery of items to all laboratories; and assist in organizing on-site missions to support the installation of procured equipment and identify the list of any items still missing that would be procured in Year 4 of the project.

Output 2. Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened

2.A.G Communication tool development and resource building

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Generic format of LabCards developed; AI LabCard finalized and posted on the Joint OIE/FAO Network of Expertise for Animal Influenza (OFFLU) Web site:
<http://www.offlu.net/fileadmin/home/en/guidance/pdf/LabCardAI.PDF> 2.A.3.G
- Brochures on FAO regional laboratory networking and the EMPRES Laboratory Unit revisited and currently in the finalization stage.
- EMPRES-i genetic module, 2.A.5.G:
 - Presented at the AI Symposium and OFFLU technical meeting (London, April 2012) for comments and future use by the scientific community.
 - Training period of a master's student from Viet Nam completed (March-September 2012, graduated). Title: *"Linking genetic and epidemiological data from Viet Nam for improved control and risk assessment of animal influenza"*.
 - Second phase of collaboration with the Swiss Institute of Bioinformatics closed (LoA, November 2011-June 2012). The module is functional: total amount of proposed links (as of September 2012) is in the range of 120 000. Most adjustments required prior to public release of the tool already made; assistance provided to the master's student, first real user of the tool and identified problems fixed. 2.A.5.G
- Initiative on the provision of access to sequencing services for African laboratories, 2.A.G:
 - Contract (LoA) signed with the French Agricultural Research for Development (CIRAD) and the Centre d'Etude et de Recherches Vétérinaires et Agrochimiques ([CERVA], Belgium) to

provide trainings on the use of sequencing and to contribute to development of validated PCR protocols (including ring trials between the three partners).

- Available protocols for PCR diagnosis and sequencing for the priority pathogens targeted in the Congo Basin were compared across the three FAO Reference Centres with the aim to harmonize protocols for multiple disease testing. Beneficiary laboratories were invited to participate in this initiative, and baseline information on PCR testing and sequencing was requested (e.g. number of pathogens sequenced each year).
- Sequencing training for epidemiologists and quality managers of the main vaccine manufacturing units in Africa prepared (facilitating team, preparation of the agenda and of a questionnaire, review of questionnaire results, preparation of scenarios) and held from 25 to 28 September 2012, Nairobi, Kenya. Countries that participated: Uganda, Nigeria, DRC, Cameroon, Ethiopia, Kenya, Tanzania, Botswana and Senegal.
- Preparation of the workshop on “Sequencing and molecular biology of animal pathogens” for laboratory staff, planned from 5 to 16 November 2012, Vienna, Austria. Prospectus drafted and disseminated to countries, discussions (i.e. teleconferences and email exchanges) on the course content with the various trainers, selection of candidates through the Emergency Centre for Transboundary Animal Diseases (ECTAD) Bamako and Nairobi. Focus on PPR, contagious bovine pleuropneumonia, contagious caprine pleuropneumonia, AI, ND, FMD and capripox.
- E-learning modules on bioinformatics (phylogeny and sequence analysis) reviewed by the joint FAO/IAEA division and FAO headquarters and finalized by the partner (Swiss Institute of Bioinformatics); to be released to the public shortly (http://viralzone.expasy.org/e_learning/index.html). To be validated during the “Training on sequencing and molecular epidemiology of animal pathogens” (5-16 November 2012). Discussions initiated for development of new modules (genetic databases, multiple alignments) 2.A.6.G

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- EMPRES-i genetic module:
 - Release of the module to the public (November 2012);
 - Link sequence-outbreak data for all H5N1 endemic countries (in addition to Viet Nam data already processed); three-month consultancy of the master's student (October-December 2012);
 - Finalize articles for the next EMPRES bulletin and scientific papers; and
 - Prepare new LoA with the Swiss Institute of Bioinformatics for maintenance and further integration of phylogenetic tools in the genetic module.
- Finalize formatting of all chapters of the LabCards and disseminate them to laboratories.
- Continue the work on the provision of access to sequencing services to African laboratories:
 - Coordinate the work by the three partners (CERVA, IZSVE and CIRAD) to develop and test harmonized protocols for PCR diagnosis and sequencing; and to develop decision trees and sequencing strategy;
 - Launch a tender and select sequencing provider for provision of sequencing services;
 - Develop a moderator system for sequencing services;
 - Carry out the workshop on “Sequencing and molecular biology of animal pathogens” for laboratory staff, from 5 to 16 November 2012, Vienna, Austria.
- Coordinate the preparation of the disease cards and case definition book plus recommended test repertoire for IDENTIFY listed priority diseases, *linked to regional activity 2.A.C.*
- Develop with IZSVE (FAO Reference Centre for rabies) a “Rabies tool kit” to provide the methodology for the organization in a systematic approach to national trainings for rabies diagnosis and One Health seminars on rabies, *linked to regional activity 2.A.C.*

2.B.G Development of joint meetings and conferences to support networking and promote national laboratory policies

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Preparation and co-funding of the Eastern Africa Veterinary and Epidemiology Laboratory Network (EARLN) supported, and participation of the IDENTIFY |FAO management team (on 27 and 28 July 2012, Mombasa, Kenya). *linked to regional 2.B.C*
- Participation of one epidemiologist from FAO headquarters in the Regional Network of National Epidemiosurveillance Systems for Transboundary Animal Diseases (RESEPI), held in Accra, Ghana, from 10 to 13 September 2012, to discuss opportunities of collaboration between laboratory and epidemiology related to ASF. *linked to regional 2.B.C*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Support to the preparation of the West and Central Africa Veterinary Laboratory Network for AI and other transboundary diseases (RESOLAB) meeting (scheduled from 3 to 7 December 2012, Dakar, Senegal). *linked to regional 2.B.C*

2.C.G Review and update of the tripartite LNS and future planning

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Routine project management at headquarters and regional levels continued through conference calls/videoconferences as needed, daily email communication and tripartite face-to-face meetings between FAO, OIE and the World Health Organization (WHO) as well as the use of the IDENTIFY SharePoint.
- Continued rotating system of responsibility sharing on a monthly basis between the three partners to more effectively and rapidly handle communication with programme partners, day-to-day operations and logistic arrangements. This system also applies to document creation, revision and meeting hosting.
- Routine M&E system in place and constantly improved at FAO headquarters (dynamic process)
- IDENTIFY Year 4 project planning discussed and/or prepared during the following meetings, with participation of the IDENTIFY |FAO management team:
 - The United States Agency for International Development (USAID) and Tripartite Meeting, on 20 and 21 June 2012, Rome, Italy;
 - Congo basin and South/Southeast Asia Regional Emerging Pandemic Threat (EPT) Planning meetings, July 2012; and
 - IDENTIFY|FAO Year 4 Planning meeting (with the FAO/IAEA coordinator and the FAO regional coordinators from Bamako, Nairobi and Gaborone) in Addis Ababa on 12 and 13 July 2012.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Continue routine project management at headquarters and regional levels (including new LoA with OIE).
- Continue implementation of routine M&E; FAO headquarters M&E officer links with M&E focal points in both regions.
- Conduct project planning meeting between IDENTIFY|FAO regional coordinators from Bamako, Nairobi and Gaborone and the IDENTIFY headquarters team (date and venue TBD).

2.D.G Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Four-way linking for assessing health risks at the human-animal interface. 2.D.2.G:
- Possibility of four-way linking activities in two new pilot countries (Bangladesh and Indonesia) being explored with FAO and WHO country offices and the national authorities.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Conduct four-way linking activities in two pilot countries:
 - Bangladesh: review mission and workshop planned between November 2012 and April 2013; and
 - Indonesia: review mission scheduled from 3 to 14 December 2012 and workshop in March 2013.

2.E.G Support and promote laboratory networks

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- OFFLU technical meeting conducted back-to-back with the 8th International Symposium on AI, (4 and 5 April 2012, London, UK) (co-funding).
- OFFLU contribution to the WHO Vaccine Composition meeting (17-20 September 2012, Beijing, China) by FAO collecting and compiling epidemiological analysis, genetic and antigenic data from the OFFLU contributors (animal health laboratories). In September 2012, OFFLU contributed 42 percent of the AI viruses genetic data presented at the consultation. The genetic and antigenic data on Indonesian viruses provided by the Australian Animal Health Laboratory (AAHL) contributed to the decision to select a new vaccine seed for the 2.1.3.2 clade. Harmonization of testing procedures for the provision of the antigenic data was recently established, thus enabling comparison of results between the WHO and OFFLU laboratory networks, as well as among the OFFLU laboratories. Similarly, harmonized tools for the genetic analysis were in place since the last consultation, such as the H5N1 sequence alignment backbone to be used for the phylogenetic analysis.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Prepare an OFFLU conference on influenza vaccination (planned in June 2013)
- Circulate for review the OFFLU/FAO influenza vaccination handbook
- WHO Vaccine Composition meeting:
 - Prepare OFFLU's contribution (mid February 2013, Geneva); and
 - Continue harmonization work with WHO on antigenic data with standard reagents produced by WHO Collaborating Centres and distributed to selected OFFLU laboratories.

2.F.G Support and promote laboratory partnerships

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Ten new FAO Reference Centres officially designated: for FMD (UK), Veterinary epidemiology (Italy, UK and USA), vectors and vector borne diseases (Kenya and South Africa), Veterinary Public Health (Germany), Tuberculosis/Paratuberculosis (USA) and animal/AI and ND (USA).

Progress was made towards the designation of FAO Reference Centres in China, India, Kenya, South Africa and Thailand (government endorsement pending). The designation of further 29 FAO Reference Centres and the evaluation of new applications is in progress.

- Support provided to the meeting aimed at defining the roles and responsibilities of regional support laboratories in sub-Saharan Africa (Addis Ababa, from 11 to 13 July 2012), including the linking with FAO and OIE Reference Centres. *2.F.2.G*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Continue the efforts on the status of regional support laboratories in sub-Saharan Africa by assisting in the preparation of the dossier for submission to the Regional Economic Communities (RECs) and supporting the preparation of the : (i) meeting with RECs to present the Regional Support Laboratory (RSL) initiative; and (ii) conclusive meeting with all partners. *link with regional activity 2.F.C*

2 ACTIVITIES UNDERTAKEN DURING THE REPORTING PERIOD (1 APRIL - 30 SEPTEMBER 2012) AND PLANNED ACTIVITIES FOR THE NEXT SIX-MONTH PERIOD (1 OCTOBER 2012 - 31 MARCH 2013)

2.1 ACTIVITIES SOUTH/SOUTHEAST ASIA COMPONENT

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced

1.A.SSEA. Follow-up of laboratory mapping exercise activities

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Laboratory assessment, using the Laboratory Mapping Tool, and Biosafety Risk assessment conducted in ten laboratories in Bangladesh (the Central Disease Investigation Laboratory and the Bangladesh Livestock Research Institute) from 29 July to 1 August; Cambodia (the National Veterinary Research Institute [NaVRI]) from 14 to 17 June; Lao People's Democratic Republic (PDR) (the National Animal Health Centre [NAHC]) from 9 to 12 September; Malaysia on 7 and 8 August (the Veterinary Research Institute [VRI]) and from 10 to 13 July (the Department of Wildlife and National Parks, commonly known as PERHILITAN, and the Sabah Wildlife Department [SWD]); Nepal (CVL) on 26 and 27 July; Philippines (the Philippine Animal Health Center [PAHC]) from 23 to 25 August; Thailand (the National Institute of Animal Health [NIAH]) from 21 to 23 June; and Viet Nam (Hanoi University of Agriculture [HUA]) from 28 to 31 May.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Compile/update relevant laboratory capacity data for the network and associated laboratories through the laboratory mapping exercise

1.B.SSEA. Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines and standards

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Support provided for three participants to attend the 8th AI International Symposium, from 1 to 4 April 2012, London, UK; IDENTIFY provided support for three participants: one from NIAH, Thailand, and two from the Department of Animal Health (DAH), Viet Nam to attend the conference <http://www.offlu.net/index.php?id=222>. Support was also provided to attend the OFFLU technical meeting conducted back-to-back with the symposium (on 4 and 5 April 2012, London, UK).
- The Asia-Pacific Biosafety Association's 7th Annual Biosafety Conference, Bali, Indonesia, 24 - 27 April 2012: IDENTIFY provided support for 2 participants from from VRI, Malaysia to attend the two-day preconference workshop on 24-25 April and a two-day conference on 26-27 April 2012. This regional conference aimed to generate a formal exchange on various developments in biosafety, ranging from the strategic coalition and road map for the Asia-Pacific region to biosafety capability and capacity building in the region.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- The Asia-Pacific Biosafety Association Training, from 29 October to 2 November 2012, Singapore: IDENTIFY to provide support for two biosafety officers from HUA, Viet Nam to participate in the biosafety management training. The training course is to provide the participants with knowledge on general principles and good biosafety practices, the essentials and basic skills in laboratory risk assessment, and the knowledge and ability to design effective biosafety management and maintenance programme.

1.C.SSEA. Develop and conduct FAO/OIE/WHO trainings or workshops to build laboratory capacity and to promote national laboratory policies and guidelines

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Regional TOT workshop conducted on "Basics of field and laboratory diagnosis", Chiang Mai, Thailand, from 21 to 25 May 2012; 1.C.4.SSEA. The training was attended by 22 participants from Cambodia, China, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand and Viet Nam with priority given to the experienced veterinary officers who are responsible for diagnostic pathology or field diagnosis. The implementing partners were the University of Georgia and Chiang Mai University. OUTCOMES: (i) increased number of resource trainers to deliver the Basics of field and laboratory diagnosis workshop to national veterinarians (The trained participants would become regional resource trainers to provide technical support and training targeted at strengthening the laboratory to field linkage for animal health service authorities); and (ii) enhanced communication between the field and the laboratory veterinarians.
- Regional Laboratory Network training on Diagnosis of Rabies and ND at NIAH, Bangkok, Thailand, from 6 to 17 August 2012; 1.C.6. SSEA. Sixteen participants from the national animal health laboratories from Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Thailand and Viet Nam attended the training course. The participants were responsible for diagnosis of rabies and ND at their National Veterinary Laboratories (NVLs). The regional trainings will be followed by the proficiency testing activity to ensure the quality diagnostic service of the priority diseases at the participating laboratories. The implementing partners were AAHL, NIAH, the Department of Livestock Development, Thailand. OUTCOMES: (i) experienced participants with knowledge and training on diagnoses of rabies and ND; and (ii) increased diagnostic capability for rabies and ND at the participating laboratories.
- Regional Laboratory Network Training on Diagnostics of Swine Disease (classical swine fever [CSF], PRRS, ASF) at the Regional Animal Health Office Number 6 (RAHO 6), Ho Chi Minh city, Viet Nam, from 27 to 31 August 2012; 1.C.6.SSEA. Nineteen veterinarians from Cambodia, China, Indonesia, Lao PDR, the Philippines, Malaysia, Myanmar, Thailand and Viet Nam attended the training course. These participants were responsible for diagnosis of swine diseases at their national veterinary laboratories. The regional trainings will be followed by the proficiency testing activity to ensure the quality of the diagnostic services of priority diseases at the participating laboratories. The implementing partners were: AAHL; RAHO 6; and DAH, Viet Nam. OUTCOMES: (i) experienced participants with knowledge and training on diagnoses of CSF, PRRS and ASF; and (ii) increased diagnostic capability for the priority swine diseases at the participating laboratories.
- Regional Laboratory Network Training conducted on QA and Standardization of Diagnostic Reagents at AAHL, Geelong, Australia, from 24 September to 5 October 2012; 1.C.2. SSEA. Seventeen participants from the national animal health laboratories from Indonesia, Malaysia, Pakistan, the Philippines, Thailand and Viet Nam attended this training. The implementing partner was AAHL. OUTCOMES: (i) participants trained in production of QA/Reference controls used in tests (Internal Quality Control [IQC]) and samples used in proficiency testing programmes to allow laboratories to produce their own test controls (IQC) and proficiency testing panels to be

used in-country for regional/province laboratories; (ii) participants with knowledge and training in the analysis and reporting of proficiency testing results and statistical analysis of the proficiency testing reports; and (iii) participants with a general overview of the requirements of ISO17025 and biosafety for the laboratory and refresher training building on previous activities; and (iv) improved good laboratory practices and quality services among the member laboratories in the region.

- One-day workshop on biosafety and sample management for PREDICT laboratory network in Viet Nam, 1 June 2012, HUA, Hanoi, Viet Nam. Twenty-seven participants from PREDICT partner laboratories across Viet Nam attended the workshop. The implementing partners were the World Conservatory Society (WCS)/PREDICT and HUA. OUTCOMES: (i) participants with knowledge and training on biosafety and PREDICT sample management; and (ii) improved good laboratory practices and biosafety management at the PREDICT laboratory network in Viet Nam.
- National training on biosafety and good laboratory practices, on 30 and 31 August 2012, HUA-CVL, Hanoi, Viet Nam. The training course was attended by 18 staff and students of HUA-CVL. The implementing partner was HUA-CVL. OUTCOME: (i) participants with knowledge and training on biosafety management and good laboratory practices; and (ii) improved good laboratory practices and biosafety management at HUA-CVL.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- REGIONAL workshop, Laboratory and Field Epidemiology Linkage TOT: Strengthen Laboratory and Field Epidemiology Linkages. The scoping mission was conducted in July 2012. The course curriculum development is in process. Schedule is to be confirmed. Implementing partner: AAHL.
- REGIONAL training on the IATA hazardous materials shipping. Schedule is to be confirmed.
- Develop the REGIONAL TOT workshop and relevant training materials for Laboratory Biosafety officers.
- Facilitate and/or develop the REGIONAL training on the application of veterinary bioinformatics.
- Provide consultancy on risk assessment, standard operating procedures development and training on biosafety management to network laboratories; implementing partners: international/national consultants and PREDICT.
- Provide consultancy and assistance on the development of the meeting and training programmes to build laboratory capacity and to promote national laboratory policies and guidelines at the network and associated laboratories; implementing partners: international/national consultants, national veterinary laboratories.

1.D.SSEA. Promote and support laboratory quality management

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Provided consultancy and technical assistance to activities related to the laboratory relocation and implementation of the Biosafety Level 3 (BSL3) facility, the laboratory quality and biosafety management at NAHC, Lao PDR (March-August 2012).
- Provided biosafety experts to visit participating laboratories, assess biosafety infrastructure, equipment and practices, and provide recommendations including remedial activities, in cases of non-compliance, based on international standard biosafety guidelines. The biosafety risk assessments were carried out at IDENTIFY-supported laboratories including Bangladesh (the Central Disease Investigation Laboratory and the Bangladesh Livestock Research Institute) from 29 July to 1 August; Cambodia (NaVRI) from 14 to 17 June; Lao PDR (NAHC) from 9 to 12 September; Malaysia on 7 and 8 August (VRI) and from 10 to 13 July (PERHILITAN and SWD); Nepal (CVL) on 26 and 27 July; the Philippines (PAHC) from 23 to 25 August; Thailand (NIAH) from 21 to 23 June; and Viet Nam (HUA) from 28 to 31 May; 1.D.1.SSEA.

- Provided laboratory engineers to calibrate, certify, and where necessary and possible, provide correction measures to biosafety cabinets located in IDENTIFY-supported laboratories. The biosafety cabinet testing and certification have been conducted at the participating laboratories in Cambodia, Lao PDR, Malaysia, the Philippines, Thailand, Viet Nam, Bangladesh and Nepal during August-September 2012; *1.D.1.SSEA*.
- Provided consultation and facilitated the procurement/access of LIMS to the NIAH and its national network laboratories, Thailand; *1.D.4.SSEA*.
- Provided laboratory visit and technical consultation to assist development and implementation of laboratory quality management to the PREDICT laboratories in Malaysia (VRI, PERHILITAN and SWD) from 10 to 13 July 2012.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Continue to provide consultancy and technical assistance to activities related to improvement and implementation of the laboratory quality and biosafety management at NAHC, Lao PDR (October 2012-September 2013), and the network laboratories.
- Provide biosafety experts to perform biosafety risk assessment and laboratory engineers to conduct the biosafety cabinet testing and calibration to the network laboratories. *1.D.1.SSEA*
- Plan and provide backstopping missions and on-site trainings at the participating laboratories based on the recommendations obtained from the previous biosafety assessment activities.
- Continue to provide consultation and facilitate the procurement/access of LIMS to the network laboratories. *1.D.4.SSEA*.
- Continue to facilitate proficiency testing programme for diagnosis of selected regional priority diseases and provide backstopping missions to the participating laboratories to ensure implementation of appropriate diagnostic protocols under a QA system; implementing partner: AAHL. *1.D.6.SSEA*
- Carry out laboratory visits and technical consultation to assist development and implementation of laboratory quality management to the network laboratories. *1.D.2.SSEA*.

1.E.SSEA. Provide laboratory equipment and supplies in a coordinated manner

Activities undertaken during the current reporting period (1 April 2012 - 30 September 2012)

- Provided standardized veterinary diagnostic reagents including proficiency testing panels, supplies and equipment as requested by the network laboratories, or recommended in support of the proficiency testing programme for diagnosis of influenza, ND, CSF, PRRS, ASF and rabies.
- Provided the laboratory equipment, including two biosafety cabinets, PCR hood, fume hood to NAHC, Lao PDR. Two biosafety cabinets were delivered and installed at the new NAHC facility in August 2012. Fume hood was delivered to NAHC at the end of September 2012.
- Provided laboratory equipment, including biosafety cabinet, refrigerated centrifuge, microcentrifuge, ultracentrifuge and other laboratory supplies related to biosafety to NIAH, Thailand.
- Provided laboratory equipment, including refrigerated centrifuge, microcentrifuge and other laboratory supplies related to biosafety to NaVRI, Cambodia, based on the findings and recommendations from biosafety risk assessment.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Provide necessary supplies and equipment, based on the findings and recommendations of the biosafety assessment and cabinet testing activities to ensure the proper biosafety containment and practices in the network laboratories.

- Provide standardized veterinary diagnostic reagents including proficiency testing panels, supplies and equipment as requested by the network laboratories or recommended in support of the proficiency testing programme.

Output 2 Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened

2.A.SSEA. Communication tool development and resource building

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Provided manuals on "Field manual for collection of specimen to enhance diagnosis of animal diseases" to network laboratories; 2.A.1.SSEA.
- Provided technical inputs and supported the implementation of EMPRES-i Asia platform to share expertise and information across the network in a real-time manner.
- Provided administration and information update to the AI Network Asia email list.
- Established the transboundary animal diseases (TADs) Network Asia List. As of September 2012, this email list will replace the AI Network Asia to accommodate the expansion of disease focus to other important TADs and emerging infectious diseases in the region.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Continue to support the implementation of EMPRES-i and TADs Network Asia and sharing of expertise and disease information across the network.
- Provide the guidelines and documents related to diagnosis, management and control of TADs as requested.
- Distribution of Basics of Field Pathology Training manual for trainers.
- Develop training materials related to the Laboratory Field Epidemiology Linkage Training and Laboratory Biosafety Management.

2.B.SSEA. Development of joint meetings and conferences to support networking and promote national laboratory policies

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- The FAO/OIE Regional Laboratory Technical Advisory Group meeting on 30 and 31 July 2012, Bangkok, Thailand; 2.B.1.SSEA. The main objectives of the meeting is to update the partners on the ongoing activities related to laboratory policies, laboratory capacity building activities and laboratory networking in Southeast Asia. The meeting was attended by 25 representatives from key technical partners, the regional leading laboratories, international reference laboratories, major donors and implementing partners.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Regional Laboratory Directors Forum meeting, on 10 and 11 October 2012, Nha Trang, Viet Nam; 2.B.1.SSEA. The meeting will be jointly organized by DAH, Viet Nam, FAO and OIE. The objectives of the meeting include the updating of information on the laboratory policy and management issues to the member laboratory directors and the review of the activities undertaken under the Regional Laboratory Network and the Regional Leading/Reference Laboratories. It is expected that approximately 20 participants comprised of the laboratory directors from Southeast Asia

and China, international experts and representatives from international agencies will participate in this meeting.

- Regional laboratory network meeting to be held back-to-back with the FAO/OIE/WHO Meeting on Laboratory Strengthening for Emerging Infectious Diseases Diagnosis in Asia Pacific. Schedule is to be confirmed.

2.C.SSEA. Review and update of the tripartite LNS and future planning

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- The IDENTIFY|FAO Southeast Asia coordinator participated in the EPT country work plan review for Lao PDR (5 April and 12 June), Viet Nam (30-31 May), Cambodia (5-6 June), Thailand (11 June).
- The IDENTIFY|FAO Southeast Asia coordinator participated in the EPT Technical and Programmatic Discussions on IDENTIFY on 21 June 2012, FAO headquarters, Rome, Italy.
- The IDENTIFY|FAO Southeast Asia coordinator participated in the Regional EPT Planning Meeting, July 25-26, 2012, Bangkok, Thailand.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- The IDENTIFY|FAO Southeast Asia coordinator to participate and provide input to the country and regional EPT planning meetings.

2.D.SSEA. Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Facilitated the development of Terms of Reference for roles and responsibilities of the regional leading laboratory for CSF (DAH, Viet Nam), FMD (Regional Reference Laboratory, Thailand), and Highly Pathogenic Avian Influenza (VRI, Malaysia).
- Coordinated with the Association of Southeast Asian Nations (ASEAN) Regional Support Unit based at FAO in preparing the draft Regional Framework for Animal Health Laboratory Capacity Building and Networking in Southeast Asia which was endorsed by ASEAN in August 2012.
- Reviewed and coordinated the work plan related to laboratory capacity building among the key implementing partners in alignment with the Regional Framework for Animal Health Laboratory Capacity Building and Networking in Southeast Asia during the FAO/OIE Regional Laboratory Technical Advisory Group meeting (30-31 July 2012).

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Continue to facilitate the development of coordinated work plan among the key partners, aligned with the Regional Framework for Animal Health Laboratory Capacity Building and Networking in Southeast Asia.

2.E.SSEA. Support and promote laboratory networks

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- The IDENTIFY|FAO Southeast Asia coordinator participated the Technical and Policy Discussion on Improving the Prevention and Control of H5N1 Highly Pathogenic Avian Influenza in Highly-Affected and Neighbouring Countries, 23-25 April 2012, Ho Chi Minh City, Viet Nam.
- The IDENTIFY|FAO Southeast Asia coordinator participated and provided technical input at the Annual Review Workshop of the Cambodia Zoonotic Diseases Action Plan, 5-6 June 2012, Siem Reap, Cambodia.
- The IDENTIFY|FAO Southeast Asia coordinator provided technical input at the Field Epidemiology Training Programme for Veterinarians (FETPV), 6-8 August 2012, Bangkok, Thailand.
- The IDENTIFY|FAO Southeast Asia coordinator participated and provided technical input at the NaVRI, Strategic Planning Workshop, 10-14 September 2012, Kep, Cambodia.
- The IDENTIFY|FAO Southeast Asia coordinator participated in the Regional Avian and Pandemic Influenza USAID Partners' Meeting, 27-28 September 2012, Bangkok, Thailand.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Continue to provide inputs and support communication and interaction among the regional network laboratories, and support national laboratory networking activities.

2.F.SSEA. Support and promote laboratory partnerships

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Continued to support and promote the roles and activities of the Regional Leading Laboratories 2.F.1.SSEA. Regional Leading laboratories co-organized regional trainings on diagnoses of rabies and ND (NIAH, Thailand), and swine diseases (DAH, Viet Nam).

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Provide support to the Regional Leading/Reference Laboratory activities related to laboratory capacity building and networking at the national and regional levels.

3 ACTIVITIES UNDERTAKEN DURING THE REPORTING PERIOD (1 APRIL – 30 SEPTEMBER 2012) AND PLANNED ACTIVITIES FOR THE NEXT SIX-MONTH PERIOD (1 OCTOBER 2012 – 31 MARCH 2013)

3.1 ACTIVITIES CONGO BASIN COMPONENT

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced

1.A.Congo. Follow-up of laboratory mapping exercise activities

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Results of the FAO LMT exercise compiled in a report and outcomes presented during the laboratory directors and Chief Veterinary Officers (CVOs) meetings (Libreville and Entebbe meetings, April 2012). Translation of the report into French was carried out. *Linked to global activity 1.A.C*
- Individual Laboratory Cards on the overall and individual status of IDENTIFY laboratories, based on the outcomes of the LMT assessments, were shared with the countries as feedback, and the outcomes were used for the Year 4 planning process.
- Additional LMT data collected during trainings and audit missions conducted in some laboratories (LANAVET/Cameroon, LVK/DRC, the National Animal Disease Diagnostics and Epidemiology Centre [NADDEC]/Uganda, NVL/Rwanda, the Brazzaville Veterinary Laboratory [LDVB]/Republic of the Congo).

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Compile new LMT data from laboratory self assessment (Year 4). Use of specific LMT modules, such as QA module, biosafety module, disease-targeted modules and a module to measure the project's impact on laboratory functionality. *linked to 1.A.G and 1.A.C*
- Compile comments and suggestions provided by the laboratories on the use of the LMT.
- Extend laboratory self assessments to RSLs. *linked to activity 2.F.C*

1.B.Congo. Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines and standards

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Two ECTAD personnel attended and gave presentations during East Africa's regional biosurveillance workshop from 12 to 15 June 2012 in Kampala, Uganda.
- Four laboratory technicians from Cameroun, Central African Republic, DRC and the Republic of Congo were sponsored to participate in the laboratory training on FMD diagnosis, organized with support from the FAO-based EuFMD, the European Commission and the Government of Ghana in Accra, Ghana from 17 to 21 September 2012 with other non-sponsored IDENTIFY countries (Ghana, Nigeria, Senegal and Togo). OUTCOMES: Opportunity given for the first time to trainees to type the circulating FMD virus in their countries.
http://www.fao.org/Ag/AGAInfo/home/en/news_archive/2012_FMD_west_africa_training.html
- One quality/biosafety manager per country from Botswana, Cameroon and Uganda were sponsored to attend the 3rd Annual African Biological Safety Association (AfBSA) conference, from 24 to 27 June 2012 in Johannesburg, South Africa. Participants submitted abstracts and

presented veterinary perspectives in the meeting. The Uganda National Biosafety Association was created by Ugandan participants during the conference. *1.D.6.C*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- First Participatory Epidemiology Network for Animal and Public health (PENAPH) Technical Workshop, from 11 to 13 December 2012 in Chiang Mai, Thailand: IDENTIFY to provide support for two participants from NADDEC/Uganda to attend the workshop.

1.C.Congo. Develop and conduct trainings or workshops to build laboratory capacity and to promote national laboratory policies and guidelines

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Regional support provided to regional training course on Major Transboundary and Zoonotic Animal Diseases in the Region: Early Detection, Surveillance and Epidemiology, Garoua, Cameroon, from 18 to 29 June 2012, organized together with the joint division FAO/IAEA. Sixteen participants including 12 from IDENTIFY countries attended this course. The course was jointly funded by the IDENTIFY project and the African Renaissance Fund. *1.C.3.C (see also 1.C.4.G)*
- Regional TOT pathology workshops on the Basics of Field and Laboratory Diagnosis. *1.C.4.C*
 - Session 1 hosted by the University of Nairobi from 23 to 27 April 2012. The countries that were represented - trainees per country: Rwanda – 4, South Sudan – 4, Tanzania – 4, Uganda – 3. The training was conducted by experts from the host university, the Inter-States Veterinary School of Dakar (Senegal) and the University of Georgia, Athens, Georgia, USA. *Training report available upon request*
 - Session 2 hosted by LVK/DRC from 24 to 28 September 2012 for francophone countries (two trainees per country from Cameroon, the Central African Republic, Equatorial Guinea, the Republic of the Congo, DRC and Gabon). The training was conducted by experts from FVI and the Inter-States Veterinary School of Dakar (Senegal) *linked to global activity 2.A.2.G and 1.C.G*

OUTCOME: Each participant received a kit containing basic equipment needed to perform field necropsies, and each country represented prepared a plan to further conduct similar training at country level.

- Bench training by experts from IZSve on rabies Diagnosis at LVK, Kinshasa, DRC, from 21 to 25 May and LANAVET, Garoua, Cameroon, from 4 to 8 June 2012. OUTCOMES: Skills on Rabies diagnosis techniques, including PCR and IFAT, improved for 12 technicians of both LANAVET and LVK. *linked to 1.C.G (reports available upon request)*
- Hands-on training by one PPR laboratory expert at LVK (from 14 June to 2 July 2012) to assist the laboratory in PPR diagnosis and preparation for a massive vaccination campaign against PPR. OUTCOMES: (i) evaluation of technical and operational capacities to perform a high testing throughput in a short period of time; (ii) identification of operational and technical requirements for receipt, handling, storage, processing of samples, preparation and shipment of samples and isolates to international PPR reference laboratories; (iii) determination of supplies needed; and (iv) training on C-enzyme linked immunosorbent assay (ELISA) and PCR techniques. Report provided to FAO staff working on a technical cooperation programme on PPR vaccination. *(Report available upon request)*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- National training on Basics of Field and Laboratory Diagnosis to be conducted by each beneficiary laboratory (except Equatorial Guinea) for field staff in their respective countries, based on LoA terms – before the end of December 2012.
- Bench training on rabies diagnosis at NVL, Kigali, Rwanda in November 2012.
- Assessment mission at the *Laboratoire vétérinaire de Goma* (DRC) to identify basic needs for laboratory work in serology, parasitology and bacteriology. (dates TBD)
- Assessment mission in Equatorial Guinea to identify a possible strategy for laboratory development based on the determined needs for testing in virology, parasitology and bacteriology.
- Conduct trainings listed above. *Concept notes provided in the previous six monthly report, available upon request*

1.D.Congo. Promote and support laboratory quality management

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Regional workshop on Management of Laboratory Equipment and Basic Metrology from 25 to 29 June 2012 in Banjul, the Gambia. The workshop was co-funded with the United States Department of Agriculture (USDA)/Animal and Plant Health Inspection Service (APHIS). Two participants from each of the following countries participated in the workshop: the Gambia, Ghana, Liberia, Nigeria, Sierra Leone (supported by APHIS funding), Rwanda, the South Sudan, Tanzania and Uganda. OUTCOMES: (i) planning of maintenance operations through the development of a flowchart on equipment management, arithmetic operations used in metrology and hands-on exercises of calibration of scales; and (ii) roadmap to implement lessons learned collectively developed. 1.C.5.C
- Four on-site audit/backstopping missions conducted by FVI experts including: Three missions on QA system and development of quality documentation undertaken at (i) the NADDEC/Entebbe from 11 to 15 June 2012, Uganda; (ii) NVL/Kigali, Rwanda, from 16 to 19 July 2012; (iii) LDVB/Brazzaville, Congo, from 16 to 19 July 2012 respectively.
- One mission on Biosecurity/biosafety practices at LANAVET/Garoua, Cameroon, from 24 to 27 September 2012.
- External QA for targeted diseases. 1.D.3.G; proficiency testing panels:
 - Proficiency testing for AI/ND (under LoA with IZSVE, Padova) underway for all IDENTIFY beneficiary laboratories (except Equatorial Guinea) and regional laboratories.
 - For RFV: serology kits delivered to the FAO/IAEA joint Division; proficiency panels prepared and testing kits provided to all selected laboratories (Cameroon, the Central African Republic, the Republic of the Congo, DRC, Ethiopia, Gabon, Kenya, Rwanda, Tanzania and Uganda). A technical contract was granted to the Special Pathogen Unit of NICD (South Africa) to cover the cost for panel shipment to the targeted laboratories.
 - For PPR: proficiency panels were shipped by the FAO/IAEA Joint Division to the participating laboratories, the deadline to receive the results was 30 September 2012.
- Assessment mission by one expert from the Institute G. Caporale, Teramo, Italy to further implement LIMS in Tanzania, from 17 to 20 July 2012. *linked with global activity 1.D.G*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Four assessment missions to be conducted by FVI experts on:
 - QA (LACEVET/Bangui/CRA, from 15 to 18 October 2012; LVK/Kinshasa, DRC, from 8 to 11 October 2012; and CVL/Temeke, Tanzania, dates TBD); and
 - Biosecurity/biosafety (LVK/Kinshasa/DRC, from 8 to 11 October 2012). 1.D.5.C

- Regional training on biosecurity/biosafety scheduled at Kinshasa/DRC from 1 to 5 October 2012 for Cameroon, the Central African Republic, Congo, DRC, Equatorial Guinea and Gabon.
- Support to national biosecurity/biosafety improvement before the end of December 2012 (minor renovations in the laboratories for each beneficiary laboratory to be implemented through national LoAs).
- Regional training on QA in diagnostic laboratories: Process Control - Quality Control (sample management and quality control for quantitative and qualitative tests), Libreville/Gabon, from 8 to 12 October 2012. Participating countries are Cameroon, the Central African Republic, Congo, DRC, Equatorial Guinea and Gabon.
- Finalization of the Concept Note to address issues on waste management and reagents storage in NADDEC/Uganda and to determine collaboration arrangements with DELIVER, dates TBD.
- Develop LoA with Istituto G. Caporale, Teramo for the implementation of LIMS in Tanzania and Botswana (dates TBD). *linked to global activity 1.D.G*
- Provide to the nine beneficiary countries with validated standardized veterinary diagnostic reagents (antigens and antisera) targeting priority TAD laboratory diagnosis. *1.D.8.C, linked to Global activity 1.D*
- Develop a concept note on regional supply of reagents and equipment maintenance with AU-PANVAC, and implement related activities. *linked with global activity 1.D.G*
- Review of proficiency testing results (AI/ND, RFV, PPR) and presentation of results in Regional Network meetings.

1.E.Congo. Provide laboratory equipment and supplies in a coordinated manner

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Equipment, reagents and consumables procured and currently being delivered to beneficiary laboratories according to needs identified and agreed upon, based on the results of the mapping exercise and the list provided by them. *1.E.1.C, linked to Global activity 1.E.G*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Follow up on the delivery to all laboratories of items from Year 3 procurement; organize on-site missions to support the installation of procured equipment; assist laboratories in organizing the work with the new set of equipment/reagents and contact the supplier if any problems arise with the supplied items; and identify the list of items for procurement under Year 4.

Output 2 Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened

2.A.Congo. Communication tool development and resource building

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Second phase of the study on the development of collaborations and/or partnerships between public veterinary laboratories and the animal industry initiated in the three pilot countries (Cameroon, DRC and Rwanda) - follow-up to the first study conducted by FAO in Year 2. OUTCOMES: The study identified alternative services that will potentially generate additional and sustainable financial resources for concerned laboratories - 2.A.3.C - Final report under preparation.

- Access to sequencing services to African laboratories (*linked to Global activity 2.A.G*): Held the training for epidemiologists and quality managers of main vaccine manufacturing units in Africa (Nairobi, from 25 to 28 September 2012). Uganda, Nigeria, DRC, Cameroon, Ethiopia, Kenya, Tanzania, Botswana and Senegal attended.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Production, printing and dissemination of public awareness and advocacy materials (brochures, leaflets, posters) to improve information sharing and the visibility of the IDENTIFY project at country level (through national LoAs). 2.A.1.C —before the end of December 2012.
- Initiate the preparation of the disease cards and case definition book plus recommended test repertoire for IDENTIFY listed priority diseases, and link with the headquarters (date TBD).
- Provide assistance to the development of a Rabies tool kit to provide the methodology for the organization in a systematic approach of national trainings for rabies diagnosis and One Health seminars on rabies (date TBD). *linked to Global activity 2.A.G*

2.B.Congo. Development of joint meetings and conferences to support networking and promote national laboratory policies

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Joint EARLN and EAREN annual regional networking meeting on 27 and 28 July 2012 in Mombasa, Kenya, co-funded with Vet Governance project, with participation from national network focal points, representatives of RESOLAB and the Laboratory Network of the Southern African Development Community, FAO, OIE, the African Union-Interafrican Bureau for Animal Resources (AU-IBAR), AU-PANVAC and the Intergovernmental Authority on Development. OUTCOMES: (i) updates on each network, specific session on ASF regional strategy; (ii) decision to establish a Regional Animal Health Network that includes a laboratory subnetwork and is under the regional CVOs network which reports to the regional RECs. The purpose of the change is to harmonize the work and ensure the sustainability of all existing networks in the region.
- Six epidemiologists from Cameroon, the Central African Republic, the Republic of the Congo, DRC, Equatorial Guinea and Gabon were sponsored by the IDENTIFY project to attend RESEPI, held in Accra, Ghana, from 10 to 13 September 2012, with the participation of 21 countries in total. OUTCOME: Major recommendation to establish separate bodies of Directors of Animal Health and Animal Production Development in both West Africa (ECOWAS) and Central Africa (ECCAS). It is expected that all existing networks (epidemiology, laboratory, socioeconomic, communication and all disease-based working groups) shall report to these new entities. *linked to global 2.B.G*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Organization of open day events by each beneficiary laboratory to communicate on their activities - through national LoAs, before the end of December 2012.
- Hold RESOLAB annual coordination meeting from 3 to 7 December 2012, in Dakar, Senegal, cofunding with USDA and IAEA.

2.C.Congo. Review and update of the tripartite LNS and future planning

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- IDENTIFY|FAO Year 4 planning meeting with the FAO project management team, the FAO/IAEA coordinator and the FAO regional coordinators from Bamako, Nairobi and Gaborone (via teleconference) in Addis Ababa on 12 and 13 July 2012.
- IDENTIFY|FAO African liaison officer and subregional focal points participated in the Africa EPT partners meeting in Kampala, Uganda, from 18 to 20 July 2012.
- Tripartite consultations on Year 4 activities between IDENTIFY implementing organizations were held during the EPT partners meeting in Kampala in 18 July 2012.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Planning meeting between IDENTIFY|FAO regional coordinators from Bamako, Nairobi and Gaborone and the IDENTIFY headquarters team (date and venue TBD).
- Tripartite regional coordination meetings, date and venue TBD.

2.D.Congo. Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Year 3 work plan implementation meeting of IDENTIFY|FAO project with the Congo Basin NVLs' Directors and CVOs, from 3 to 5 April 2012, in Libreville, Gabon, and from 11 to 13 April 2012 in Entebbe, Uganda. OIE, WHO and AU-IBAR participated. OUTCOMES: (i) IDENTIFY target countries informed on all planned activities and able to comment and make suggestions on the implementation; and (ii) activities to be conducted by each laboratory under an LoA discussed and agreed upon.
- National seminars held in Kinshasa, DRC, on 31 May and 1 June 2012, and Yaoundé, Cameroon, on 13 and 14 June 2012 to address intersectoral issues and opportunities to improve collaboration on diagnosis, surveillance, control, prevention, education and research on rabies. Participants in both seminars were from the laboratory sector (animal and human laboratories), research institutes, veterinary and medicine faculties, field veterinary services, officials from central public health and veterinary services and non-governmental organizations. OUTCOMES: (i) The seminars focused on existing experiences on controlling rabies outbreaks, difficulties to access diagnosis centres and post-exposure prophylaxis, and lack of knowledge on rabies situation; and (ii) Needed actions were identified to strengthen intersectoral collaboration and establish fixed timelines.

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Intersectoral discussions on One Health at national levels will be supported through national LoAs – before the end of December 2012.
- National seminar on rabies and intersectoral discussions on rabies to be held in Kigali, Rwanda, dates TBD.

2.E.Congo. Support and promote laboratory networks

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- EARLN/EAREN joint meeting. *see 2. B.C*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- RESOLAB meeting. *see 2.B.C*

- Maintain the collaboration with the joint AU-IBAR/OIE/FAO Reinforcing Veterinary Governance project in supporting the regional networks (laboratory, epidemio-surveillance, etc.).

2.F.Congo. Support and promote laboratory partnerships

Activities undertaken during the current reporting period (1 April - 30 September 2012)

- Definition of the roles and responsibilities of regional support laboratories in sub-Saharan Africa: Meeting on RSLs from 9 to 11 July 2012 in Addis Ababa paved the way towards the institutionalization of regional laboratories. Participants consisted of the five RSLs and their respective CVOs or representatives – ARC-OVI (South Africa), BNVL (Botswana), LNERV (Senegal), NVRI (Nigeria) and NAHDIC (Ethiopia) – representatives of AU-IBAR, AU-PANVAC, OIE, IAEA, CIRAD, IZSVE, CVRL, and representatives of the three Regional Laboratory Networks (EARLN, the Laboratory Network of the Southern African Development Community and RESOLAB). OUTCOMES: (i) agreement on the status, roles and responsibilities of these RSLs within their respective region and their position regarding the OIE/FAO Reference Centres; and (ii) steps for RECs' endorsement defined. *linked to global activity 2.F.2.G*

Planned activities for the next reporting period (1 October 2012 - 31 March 2013)

- Define the roles and responsibilities of regional support laboratories in sub-Saharan Africa:
 - preparation of the dossier for submission to the RECs;
 - preparatory meeting with RECs to present the RSL initiative and prepare the conclusive meeting. This preparatory meeting is tentatively planned for late November/early December 2012; and
 - conclusive meeting with the beneficiary laboratories, RSLs, RECs, AU-IBAR, OIE and other technical partners such as OIE/FAO Reference Centres (Gaborone, January/February 2012).

4 MAIN CHALLENGES ENCOUNTERED AND RESPONSE PROVIDED

- The low priority given to animal health in country policies and development strategies often leads to difficulties in mobilizing technical, financial and human resources at national level, thus compromising the sustainability of activities implemented under the project. Therefore, there is a need to intensify advocacy at country level and increase sustainable financial resources.
- One of the findings from the recent laboratory assessment activities in Southeast Asia indicated that there are needs for improvement of the biosafety practices at the laboratory levels. This is mainly owing to the lack of awareness on biosafety practices among the laboratory staff. To reinforce the awareness and subsequent sustainable laboratory biosafety practice and management, an on-site biosafety training programme and a biosafety (TOT) training course for the laboratory biosafety manager will be conducted during the next year, through the Southeast Asia Regional Biosafety Programme. In addition, laboratory biosafety was placed as one of the priority topics to be discussed at the Laboratory Directors' Forum meeting to advocate for more support from the higher-level authorities.
- As most of the technical inputs have primarily focused on the key national veterinary laboratories across the Southeast Asia region, there are still needs to expand the capacity building activities to other laboratories at the subnational level and to improve the linkage of the laboratories and the field staff to ensure the sustainable quality of laboratory services. It is believed that such objectives can be achieved through supporting of the training/workshops at the national level, and assistance from the Regional Leading/Reference Laboratories, key national laboratories and other implementing partners. Several activities for enhancement of the laboratory quality service among the national laboratory networks were planned during the next year to fulfil the above needs.
- The low level of resources allocated to veterinary laboratories by the authorities in the Congo Basin is still a major challenge that the project is trying to address through the private-public partnership consultations conducted in Cameroon, DRC and Rwanda. Outcomes of the ongoing work include: (i) targeted identification of products and services (e.g. poultry/pig/dairy sectors, post-vaccination control, food safety analysis, etc.) that the laboratory could offer to the private sector and estimation of consequent additional resources; (ii) preparation of appropriate communication and promoting tools/activities (brochures of revised list of laboratory analyses and related costs, open days, participation to fairs, etc.) to initiate/improve client relationship and design complementary activities with other country veterinary laboratories (samples submission, training); and (iv) review of legal status (opening of bank accounts, strengthening/training of commercial staff, etc.). By supporting the extension/improvement of laboratory diagnosis services to the private sector and addressing internal functioning issues of laboratories, the private-public partnership consultations are expected to suggest solutions for sustainability of some activities of the project and, at the same time, provide contributory references to formulate a laboratory policy.
- Most beneficiary laboratories both in the Congo Basin and Southeast Asia still face the issue of low quality and quantity samples received from the field. To avoid the negative impact of this situation on their diagnosis capacities, the three regional TOT workshops explicitly addressed good practices on necropsies, good sampling, storage and shipment of samples. By mixing participants from laboratory and epidemiology staff from each participating countries, the training also helped in clarifying appropriate channels of communication between the two sectors and planning of trainings to extend good practices at country level.
- The proper development of laboratory strategy and sustainability of the skills and activities supported by IDENTIFY is hindered by weak laboratory policy and management (e.g. shortage of laboratory reagents that prevent from participation in proficiency tests, no bank accounts or possibility to generate income, etc.). Therefore, these complex issues will be addressed during Year 4 of the project.

5 MAIN PROGRESS MADE TOWARDS THE ACHIEVEMENT OF PROJECT OUTCOMES (FROM THE START OF THE PROJECT ACTIVITIES)

- The support provided by IDENTIFY to-date has contributed to a greater understanding of the regional animal health priorities, assessment of laboratory capacities and identification of regional and national gaps and resources.
- The direct support afforded to laboratories is substantial, and has allowed for an expansion of the activities to include: QA, biosafety, and maintenance and calibration of equipment, thus contributing to laboratories' capacity to conduct work in accordance with internationally accredited standards (e.g. ISO 17025). Many national laboratories never had the opportunity to consider these major issues. The support provided is neither isolated nor sequential; the project builds upon previous and current investments in laboratory networking and allows for a programmatic approach, proper approval of planned activities by countries and a regional approach to TADs.
- At present, the 2012 Southeast Asia Regional Biosafety Programme has covered the activities related to biosafety assessment and management in 23 national laboratories in ten countries. The 2012 Southeast Asia proficiency testing programme has expanded to diagnoses of five priority diseases, including influenza, ND, rabies, CSF, PRRS and ASF. The list of the priority diseases to be included in the proficiency testing programme was agreed upon and regularly reviewed by the Southeast Asia laboratory directors under the assistance of the Southeast Asia Regional Laboratory Network framework.
- Sharing the Year 3 work plan with CVOs and laboratory directors of the beneficiary countries in the Congo Basin during the two stakeholder meetings (Libreville and Kampala) has facilitated the ownership of the project with beneficiary laboratories and contributed to the preparation of implementing and assessment tools such as LoAs with M&E activities. This consultation process has facilitated the work plan preparation as well as the implementation of Year 3 activities in the Congo Basin. The same process will take place in Year 4.
- As many priority diseases are TADs, a regional approach (where agreed) allows for rapid disease detection/identification. Response measures can be coordinated regionally for more effective control. The networks in the West/Central, Eastern Africa and Southeast Asia regions have set a good example, with both the formal and informal exchange of information, collective effort and responsibility to build laboratories in the regions. Other partners, such as USDA/APHIS, EuFMD Commission and CIRAD have demonstrated an increased interest in and support for these laboratory networks. The growing confidence lends credence to the regional approach, and FAO has a comparative advantage in the coordination of such support and inputs. This project has provided support to regional laboratory networks, allowing networking and progress in the strategy of these networks, especially related to the status and mandate of regional service laboratories. For Southeast Asia, the Regional Framework for Animal Health Laboratory Capacity Building and Networking in Southeast Asia which has been drafted through the consultation with the Southeast Asia Laboratory Directors, was presented at the 20th ASEAN Sectoral Working Group on Livestock (ASWGL) meeting in Myanmar in May 2012. The framework was subsequently endorsed by ASEAN in August 2012. This progress represents the major progress in engagement of the key stakeholders to support the sustainable quality laboratory services across the region.
- The meeting held in July 2012 (Addis Ababa, Ethiopia) which resulted in defining the role and responsibilities of RSLs in the Congo Basin is a major step towards their institutionalization within their respective RECs and regional frameworks. RSLs have agreed to carry regional responsibilities, such as provision of services for disease confirmation, production of standardized reagents, harmonized protocols and capacity building. Outcomes of this meeting demonstrate the active contribution of the IDENTIFY project to improving sustainability and networking as to ensure quality laboratory diagnosis services.

- The FAO M&E framework has been finalized based upon the experience gained from the first data call (April 2012) and the tripartite discussions held with the Donor towards the IDENTIFY deliverables. This M&E framework is being routinely implemented by FAO|IDENTIFY team together with the implementing partners (laboratories and technical partners through LoAs).
- While laboratory capacities and national needs are heterogeneous within each region, the laboratory mapping tool developed by FAO is contributing to a regional perspective on laboratory capacities and gaps. This tool can serve for laboratories themselves, as well as decision-makers and technical partners, to identify the regional and individual support required. It is also an invaluable tool for FAO to tailor its capacity building support in line with the project's objectives, measuring the progress made and the impact of the project. This tool is also applicable in other contexts, or under other FAO projects in the future. It will continue to evolve, through the development of specific modules and according to the feedback received. In the Congo Basin region, the LMT has also been used by non IDENTIFY beneficiary laboratories since 2012. This will contribute to the dissemination of tools and best practices developed by the IDENTIFY project beyond the beneficiary laboratories.
- This project has enabled or will shortly enable the launching of innovative initiatives, such as the genetic module in the EMPRES-i database, the four-way linking framework, the laboratory mapping tool, the development of private-public partnerships between laboratories and the animal production sector and the provision of access of laboratories to sequencing services. The genetic module represents an ideal example of a multidisciplinary success, linking virology, epidemiology and bioinformatics, and is receiving increased interest from the scientific community and from policy makers.
- Building on the investments made with support under AI, this project sustains previously established mechanisms: collaborations and communication pathways between organizations, global OFFLU and regional networks, and benefits from the momentum gained through public goods concepts, such as the recognition of the importance of early detection and intervention and impacts of pathogens with pandemic potential. These investments are crucial to the continued development of technical laboratory capacities, especially molecular techniques, to respond to other transboundary and priority diseases.

IV Quarter 2010

Project Monitoring Sheet: IDENTIFY**Project Title:** IDENTIFY**Reporting institutions:** FAO/OIE/WHO**Reporting period:** July-September 2010

Regional component: Global
Countries: 4 "hot spots": - Congo Basin: Uganda, Democratic Republic of Congo, Cameroon, Republic of Congo, Tanzania, Gabon, Equatorial Guinea, Rwanda, Central African Republic - Southeast Asia: Cambodia, China, Indonesia, Lao Peoples Democratic Republic, Malaysia, Myanmar, Philippines, Thailand, Vietnam - South Asia: Bangladesh, India, Nepal -Amazon Basin: Brazil, Bolivia, Peru, Colombia, Ecuador, Venezuela, Mexico
Project title: IDENTIFY
Budget: USD 21 000 000
Effective starting date: December 2009
Planned end date: 30 September 2011
Context of the project This project is part of a complex program--Emerging Pandemic Threats (EPT)--designed by USAID and aimed to find and implement mechanisms to detect disease emergences, especially from wild life. The One Health concept is an important component of the whole program. The IDENTIFY project is implemented jointly by the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), and the World Health Organization (WHO).
Objectives of the project The IDENTIFY project is intended to strengthen diagnostic capacities through the development of laboratory networks spanning animal and human sectors with the ultimate aim of enabling countries to meet international obligations for disease reporting. Accurate and timely detection of known pathogens should facilitate the rapid recognition of newly emerging pathogens. International reference laboratories capable of fully characterizing the emerging pathogens are an integral part of these networks. The project focuses on several parts of the world defined by the USAID as "hot spots" for emerging diseases where they are more likely to happen: Congo Basin, Southeast Asia, Amazon Basin and Gangetic Plains. The project will collaborate with the other arms of the EPT program: PREDICT, RESPOND, PREVENT, and USAID's DELIVER project. Collaborations are defined through the Lines of Work (LoW) defined by USAID: Pathogen Detection, Outbreak response, Risk determination, and Risk reduction. Each LoW has a defined workplan with activities and sub-activities to which every project team has agreed upon their level of participation (support, participate or lead).
Planned activities A tripartite work plan and a tripartite project steering committee have been established at the headquarters level. The approach to the project has been fully developed and agreed to among the three partners. The majority of activities will be conducted either jointly or in close coordination. <i>For the description of outputs, activities and sub-activities, refer to Work plan Year Two.</i>

Activities undertaken during the reporting period (July-September 2010):

Output 1. Coordination (Global and Regional)

Activity 1.1: *Ongoing tripartite project management responsible for continued coordination, definition of modus operandi, monitoring, governance, planning and procurement*

GLOBAL and activities across more than one region

- Regular teleconferences, in addition to daily email communication, between the three organizations were held to ensure good coordination among the project management teams at the headquarters levels (5 August & 22 Sept).
- Several face-to-face meetings between the three headquarters Focal Points were held during the quarter to discuss project activities and develop the year 2 work plan (9 July, Washington, D.C.; 23 July, Rome; 9-10 August, Rome; 22 Sept, Washington D.C.).
- Regular teleconferences with IDENTIFY AOTR at USAID were held (19 August & 22 Sept), the July teleconference being replaced by a face-to-face meeting on 9 July, on the occasion of the EPT Quarterly Partners meeting.
- The team also participated in a meeting with USAID in Rome on 22 July to discuss the concept of "EPT +", as well as IDENTIFY issues.
- The HQ team participated in the quarterly EPT meetings in Washington 8-9 July 2010 and 22-24 September 2010.
- The IDENTIFY project team submitted the 3rd quarterly report for the first year of the project on 30 July 2010.
- In the framework of the Letter of Agreement (LoA) and the pass-through funding mechanism between FAO and OIE, the OIE submitted its first expense and activities report to FAO on 15 July 2010. In addition, the OIE completed administrative requirements with FAO in order to extend the LoA in support of Year 2 activities. FAO prepared the amendment to the original LoA in liaison with the contact person at OIE-HQ. However, the final version of the LoA has not yet been presented to the Director General of the OIE for signature.
- Several teleconferences were held between FAO-HQ and FAO Amazon basin team and FAO Congo region for the preparation of each regional year 2 work plans, budgets and implementation of regional activities.
- Agreement of year 2 work plan between FAO HQ and the IAEA/FAO division for activities to be undertaken by the IAEA/FAO joint division in year 2.

CONGO

- Weekly teleconferences are held between OIE HQ and OIE Congo Basin
- The Congo Basin regional tripartite focal points held weekly teleconferences since mid-August in preparation for the stakeholders meeting (see activity 1.7).

SOUTH & SE ASIA

- WHO HQ met WHO SEARO/WPRO in Manila, Philippines, 2/07/2010, to discuss the implementation of IDENTIFY in the South East Asia region.
- OIE has frequent communication with SE Asia Focal Point.
- FAO HQ met the FAO Asia Focal Point in Rome (10 September), to discuss the implementation of the Year 2 work plan in South and South East Asia, results of the

FAO laboratory mapping in Asia and the first steps in the preparation for the Stakeholder meeting in Asia.

AMAZON

- The FAO ECTAD Unit in Panama was designated as the implementation team of the IDENTIFY project (in close collaboration with the FAO sub-regional office in Chile).
-

Activity 1.2 :Recruitment of project staff (headquarters and regionally) to support IDENTIFY activities

GLOBAL and activities across more than one region

- FAO HQ and regional staff already appointed in all regions, except in the Amazon Basin where 2 staff have been identified (ECTAD Panama) and will be fully hired under IDENTIFY starting from January 2011.
- 20 working days of an International Consultant working on designation of FAO Reference Centres according to the new FAO policy, on the new AGAH strategy for management of these Reference Centres and on possible synergies between the FAO and OIE systems of Reference Laboratories/Collaborating Centres.

CONGO

- Recruitments for the WHO Regional Office for Africa (AFRO) are in progress. In July and August, 2 IDENTIFY focal persons (in DRC and Uganda) have been recruited. Sensitization of 5 WHO country offices (DRC, Congo, Equatorial Guinea, Cameroon and Uganda) on the IDENTIFY/EPT project objectives.
- Dr Neo Mapitse was selected for the OIE Focal Point position, and began work 1 Aug 2010 (Gaborone, Botswana); Loise Ndungu was recruited to support IDENTIFY laboratory capacity building activities in the Nairobi, Kenya office and began work on 1 Sept 2010.
- National Consultant for FAO in July 2010 for desktop review of all existing data on laboratory capacity and networks from existing laboratory assessments available (see activity 1.6).
- International Consultant (20 working days, assigned in FAO HQ, expert in private/public labs) on a study on development of private source funding opportunities for West/Central African national veterinary laboratories and of partnerships between these laboratories and the animal industry (see activity 1.8).

SOUTH & SE ASIA

- Recruitments for the WHO South East Asia Regional Office (SEARO) and WHO Western Pacific Regional Office (WPRO) are in progress
 - Recruitment projected for OIE Focal Point post (to manage activities in South and Southeast Asia regions, to be based in Bangkok, Thailand); position description to be published early next period; in the interim, existing OIE staff have assumed responsibilities to ensure that the project moves forward in Southeast Asia; potential candidates will be identified and interviewed for Focal Point post early next period
 - Two international Consultants for the FAO laboratory mapping activity, respectively for twelve and four weeks (see activity 1.6).
-

Activity 1.3 :Develop annual IDENTIFY work plan**GLOBAL and activities across more than one region**

- The Year 1 Work Plan has been approved in its entirety as of 22 Sept 2010. Headquarters and regional project teams from all three organisations worked diligently to reach internal and tripartite deadlines for the development and timely submission of the joint IDENTIFY Year 2 Work Plan. Regional work plans were elaborated and the activities were placed into the new, requested work plan format. The IDENTIFY Year 2 Work Plan was submitted on time (16 August 2010) to USAID. Initial feedback has been received.

Activity 1.4 :To ensure circulation of information, coordination and harmonization of initiatives, implement standard methods of sharing critical project documents for access by project members**GLOBAL and activities across more than one region**

- The internal IDENTIFY SharePoint site (independent from EPT basecamp website) hosted by WHO was activated by the end of June 2010. User accounts were created and were attributed.
- Several documents have been uploaded to the site. The SharePoint also includes a discussion forum and will serve as resident location for common project documents.
- Access to the Basecamp website has been difficult for some focal points and while we attempted to restore access and report to the problem to the site host, the problem persists, and some focal points were without access at the end of the reporting period.
- Communication tools were drafted by FAO HQ, SE Asia and Congo region teams for discussion with other partners and tripartite validation (IDENTIFY slide masks and IDENTIFY flyer/briefer).

Activity 1.5 :Development and adaptation of the global laboratory networking strategy under which the global and regional network of networks are created and maintained**GLOBAL and activities across more than one region**

- The global laboratory networking strategy submitted to USAID at the end of June has been approved. It has been distributed to regional counterparts for adaptation at the regional level and will serve as a basis for tripartite collaboration in each region.
- FAO (HQ, Congo region and Asia teams) initiated the review of available documents on approaches and initiatives already taken to the prioritization of diseases already developed by various organizations (national, regional or international, including pre-existing FAO work on the matter).

CONGO

- The global laboratory networking strategy will be a key component of the stakeholders meeting for the Congo Basin.
- Within the framework of this strategy, lists of animal and human diseases including zoonoses to be targeted were developed to be discussed and finalized at the Congo Basin regional stakeholders meeting (see activity 1.7).

SE ASIA

- The South East Asia regional laboratory network strategy, intended to serve as a framework for the tripartite approach in the region, was drafted by FAO SE Asia, discussed with OIE SE Asia and circulated for comments to all tripartite partners.

Output 2. Technical Capacity Building - General

Activity 1.6 : *Joint FAO/OIE/WHO mapping exercise of laboratory capacity and existing laboratory networks and platforms across animal, food and human health sectors in hot spot areas in order to identify gaps in laboratory capability and further detail future activities (refer to "Laboratory Networking Strategy" submitted to USAID 30 June 2010)*

GLOBAL and activities across more than one region

- Mapping of laboratory capacity in FAO/OIE/WHO networks in Congo Basin and SE Asia continues to progress and different phases of the activity will continue throughout the next reporting period.
- The 3 headquarters have defined a possible approach and list of criteria for the collection of data and review of the information in the two hotspots. Existing documents (assessment reports, reviews, presentations, meeting reports, etc.) accessible by each organization on laboratories in beneficiary countries have been gathered within each institution. Each organization is in the process of compiling data (e.g. analysis of OIE Reference Laboratory and Collaborating Centres annual reports, analysis of National Laboratories Annual Reports and FAO laboratory assessments/mission reports, analysis of data collected during IHR country capacity assessments for the Congo Basin region, etc).
- An international FAO Consultant developed a list of questions (leading to a template for 510 data entries) for the laboratory assessment and a tool based on the compilation of the 510 data entries. This mapping tool is based on 19 laboratory indicators that capture existing data. The mapping tool was presented internally in FAO for discussions and comments and was then shared with FAO Africa and Amazon regions. This FAO tool is complementary to the OIE Tool for the Evaluation of Performance of Veterinary Services (PVS) and to the WHO public health laboratory assessment tool.

CONGO

- FAO/OIE met to discuss, among other issues (see activity 1.7), the advancement of the animal health laboratory mapping exercise for the Congo region the week of 27-30 Sept 2010, in Bamako, Mali.

SE ASIA

- Existing documents (assessment reports, reviews, presentations, meeting reports, etc.) accessible by FAO on laboratories in Southeast Asia have been compiled as well as new data collected in 8 laboratories of the Asia region (Cambodia, Lao People's Democratic Republic, Philippines, Thailand and Vietnam as well as the China Animal Health and Epidemiology Center). The FAO mapping tool has been applied for those 8 visited laboratories to quantitatively and qualitatively assess the status and capacity of veterinary laboratories.

Activity 1.7 : *Plan and conduct key stakeholder meetings (awareness workshops) at regional level via ministries to support the development of cross-sectoral approach(es) concerning laboratories, including the possible creation/strengthening of national inter-sectoral/inter-ministerial coordination committees to organize, ensure, and monitor veterinary and human laboratory collaborations at the country level*

CONGO

- Planning for the stakeholder's meeting in the Congo Basin region (2-4 November 2010, Entebbe, Uganda) is proceeding at the regional and HQ levels. Plans on host country, venue, desired participant profiles and timelines of the meeting have been defined and invitations sent. WHO AFRO is coordinating the logistic arrangements for the meeting, while all partners (HQ and regional) have participated on the elaboration of the agenda, technical documents, and terms of reference. Lists of invitees were shared between the organizations.

SE ASIA

- As noted in the previous IDENTIFY report, participants representing all three organizations at the HQ and regional level (or at the country level for WHO) agreed to plan the regional stakeholders meeting for Southeast Asia 29 Nov-2 Dec 2010. In later communications with the WHO Regions these dates were not suitable and a date in late January has been suggested. Focal points from the WHO South East Asia and Western Pacific Regional Offices have been identified to improve the communication flow between the three organizations regionally.
- FAO and OIE held several planning meetings throughout the period for the stakeholders meeting, FAO is taking the logistics lead.

Output 3. Technical Capacity Building - Development of guidance, policy and training

Activity 1.8 : *Joint WHO/OIE/FAO participation in and/or organization of international meetings and conferences on laboratory capacity building*

GLOBAL and activities across more than one region

- Information on already planned trainings during year 1 of the project was shared between FAO/IAEA/OIE/WHO. Opportunities for joint trainings were discussed and training for public health professionals and veterinary scientists together will be explored.
- IDENTIFY funds were used by WHO to support the participation of delegates from African countries in a Global Foodborne Diseases Network (GFN) meeting in Copenhagen in August 2010 that considered training needs for laboratory staff and outbreak investigators.
- The OIE supported several experts and the IDENTIFY OIE Focal Point to attend the IAEA Consultation Meeting (Vienna, Austria, 6-8 Sept 2010) on the development a roadmap for the implementation of modern OIE principles and methods of diagnostic test validation. The IDENTIFY FAO Deputy Manager was also in attendance. The general objective of this consultant meeting was to discuss technical issues for the implementation of the OIE Principles and Methods of Diagnostic Test Validation and to develop for a module-type course manual based on the OIE concept, to develop an

implementation plan for regional training courses and workshops including possible funding mechanisms, and to identify regional laboratories and individuals who could serve as trainers. The potential to integrate this work under IDENTIFY was discussed by FAO and OIE IDENTIFY representatives during the meeting. The meeting report and experts' conclusions are currently under validation by FAO/IAEA/OIE and will be shared with partners once finalized.

- The IDENTIFY FAO Asia Regional Focal Point attended the Biosafety Advisory Group Meeting, conducted by WHO, in Montreux, Switzerland, 7-9 September 2010.
- The IAEA/FAO joint division conducted training on Molecular Diagnosis, Genotyping and Phylogenetic Analyses of Animal Influenza viruses (20 September - 4 October 2010). The Asia, Africa and Amazon FAO Regional offices selected and funded 2 participants per region (8 in total) to participate in this training.

CONGO

- Selection by FAO of two national laboratory experts from Botswana and Zambia to participate and bring laboratory perspectives to the training on 'Investigation, Livestock Disease and Public Health, Wildlife Health and the Human-Animal-Environmental Interface,' South Africa, 22-26 November 2010, organized by the FAO wildlife unit.

SE ASIA

- A letter of Agreement (LoA) with the Asia-Pacific Biosafety Association was drafted by FAO and is pending signature. Activities include a five-day biosafety management training curriculum with corresponding training materials.

Activity 1.9 : *Promote national laboratory policy in each country in each hot spot region through the development of joint international guidelines and/or standards for laboratories (e.g., biosafety/biosecurity, shipment of infectious material, laboratory testing, and related follow-up activities derived from previous laboratory assessments or workshops conducted by IDENTIFY partners)*

GLOBAL and activities across more than one region

- An OIE expert consultation technical project meeting in Paris planned at the end of September 2010 has been postponed until January 2011. The meeting's theme will be the challenges in detection and diagnosis of emerging diseases faced by countries, particularly in the "hot spot" regions. Its major goals are to inform OIE guidance and to determine the feasibility of developing routine procedures and algorithms for detection and diagnosis of unknown pathogens potentially serving as a human pandemic threat, in the context of background occurrence of routine diseases, for national Veterinary Services with differing levels of capability and resources.

CONGO

- The FAO Coordinator attended WHO teleconferences in preparation to the seven-day training to be conducted by the Global Food-borne Infections Network (GFN) on laboratory methods for detecting food-borne pathogens in Africa. The training will be held in Kenya 1-6 November 2010 and résumés have been collected to select four African candidates to attend.
- A "Laboratory Biosafety and Biosecurity" training was conducted by FAO Africa (July 2010, Dakar, Senegal) for the less advanced laboratories (group 1) of the West

and Central African Laboratory Network (RESOLAB).

- A study was initiated by FAO on the development of private source funding opportunities for West/Central African national veterinary laboratories and of partnerships between these laboratories and the animal industry. Part 1 of the study: collection of laboratory/animal production-related data, preparation and diffusion of a questionnaire (July-August 2010) to 23 West/Central African laboratories, grouping countries according to lab capacities/animal production context; one field mission to DRC in September 2010 to check hypothesis in one pilot country (out of 3). Part 2 of the study in the next reporting period.
- In response to the recent African Swine Fever (ASF) outbreaks in newly affected areas in Cameroon (only the Northern part was originally endemic) FAO has offered support for sample collection and shipment to an international reference laboratory (Spain) to the Cameroon veterinary authorities. The objective is to compare ASF strains from various parts of the country in order to better understand the spread of the disease, as well as to test national capacities to ensure proper coordination and logistics in samples collection and international shipment. Lessons will be drawn from this experience on strengths and weaknesses. Discussions are ongoing.
- FAO has initiated meetings with representatives of the African Biosafety Association for potential collaborations.

Output 4. Technical Capacity Building - Laboratory Quality Systems

Activity 1.10 : *Joint FAO/IAEA/OIE/WHO Global Survey on Laboratory Quality Standards and External Quality Assessment (proficiency testing) Schemes*

GLOBAL and activities across more than one region

- Gaps were identified in the data from the Global Survey and to address this, a short version of the questionnaire was used to gather additional information and the three agencies takes the opportunity of seeking information while attending international meetings or conducting Quality Assurance workshops (e.g. FAO Quality Assurance workshops conducted in Africa). Follow-up conference calls between FAO, OIE and WHO were held 6 Jul 2010 and 20 Sept 2010 to discuss next steps, dissemination of results, and how to use this information for capacity building. The FAO regional team assisted in resubmitting and collecting about 15 new questionnaires of the Global Survey on Laboratory Quality Systems (NQS) to the IDENTIFY beneficiary participating countries in order to address gaps in the data of the global survey.

Output 5. Technical Capacity Building - Building laboratory infrastructure

Activity 1.11 : *Provision of laboratory equipment and supplies in a coordinated fashion with IDENTIFY and other national, regional, and global partners with a focus on regional laboratories and regional laboratory networks*

CONGO

- Procurement has been initiated by FAO for calibration of measurement instruments (thermometers, ELISA plate calibration, range of mass, pH solutions, etc) to the nine national IDENTIFY beneficiary veterinary laboratories of Basin Congo.

Output 6. Technical Capacity Building - Laboratory Networking

Activity 1.12 : *Assess the role and activities of existing FAO/OIE/WHO networks in improving the laboratory capacity and networking in hot spot regions. Coordinate regional networking to test for normative diseases and detect emerging or unknown pathogens in wildlife, domestic animals and humans*

GLOBAL and activities across more than one region

- The WHO/FAO concept note on the 4 way linking influenza outbreaks and virus information was approved by the two organizations. Two pilot countries (out of three) have been selected (Vietnam in the SE Asia hot spot, and Egypt outside of IDENTIFY mandate). The HQ offices contacted their respective country offices to get approval from national public health and veterinary authorities and to start preparing the work to be conducted. The first assessment mission is planned in November/December 2010.
- A feasibility study for the development of a genetic virus module for the EMPRES-i database by integrating viral characteristics resulting from viral sequence analysis, such as virus clade designation and antiviral resistance, using data and tools available from the OpenFluDB database has been funded under a Letter of Agreement in August 2010 between FAO and the Swiss Institute of Bioinformatics (SIB). SIB has already established connections with the EMPRES-i web service to link the outbreak event number in EMPRES-i to 14 H5N1 isolates. These connections go in both directions.

CONGO

- FAO has been facilitating the selection of two regional laboratories for Eastern Africa (under another project) which is still pending (last meeting in August, Zanzibar). IDENTIFY will support the end of this process.

AMAZON

- The OIE requested and received approval from USAID to introduce IDENTIFY concepts at the Network of National Veterinary Services Laboratories in the Americas First International Meeting (3-5 November 2010) in advance of official regional USAID kick off.

Activity 1.13 : *FAO/OIE/WHO laboratory twinning initiatives and partnerships*

CONGO

- FAO together with "France Veterinaire International" (FVI) has been exploring interest on twinning projects between African laboratories and French provincial laboratories. Discussions are ongoing.

Planned activities for the next six-month period (1st October 2010-31 March 2010)

Output 1. Coordination (Global and Regional)

Activity 1.1 : *Ongoing tripartite project management responsible for continued coordination, definition of modus operandi, monitoring, governance, planning and procurement*

GLOBAL and activities across more than one region

- Routine project management at HQ level will be managed through weekly conference calls and frequent email communication between FAO, OIE and WHO.
- At the regional level, the Congo Basin and the Southeast Asia regional tripartite focal points will hold regular teleconferences and meetings concerning joint projects in the region.
- HQ and regional project meetings are projected annually, with the next meeting date TBD.
- Participation in monthly IDENTIFY project management team and AOTR teleconferences is planned, and the project team will attend the next EPT Quarterly Partners meeting, planned tentatively for January 2011.
- A representative of the HQ project team (WHO Focal Point will attend) was asked to participate in the One Health meeting planned by the Government of Vietnam on 20 October 2010. The representative will also attend an EPT Partners meeting prior to this meeting on 19 October.
- The IDENTIFY project team was also invited to the STOP AI Lessons Learned meeting 1-2 Dec 2010 Washington DC; the FAO Deputy Manager of IDENTIFY will attend on behalf of IDENTIFY.
- As was agreed by FAO, OIE, WHO, and USAID on 22 September 2010, the next IDENTIFY project report will be due on 30 April 2011, covering the six-month period of 1 October 2010-31 March 2011.

Activity 1.2 : *Recruitment of project staff (headquarters and regionally) to support IDENTIFY activities*

GLOBAL and activities across more than one region

- At HQ level, a WHO staff member will be recruited to assist the IDENTIFY responsible officer in the Lyon Office.
- In support of OIE and joint activities presented in the Year 2 work plan at the global and regional levels, the OIE will initiate conversations with experts.
- International Consultant to provide support to FAO Regional Offices for ongoing laboratory mapping activity to train laboratory experts in the use of the laboratory assessment tool and assist with data analysis. The International Consultant will also assist with the modification of the tool to track capacity building progress.
- International FAO Consultant to review available diagnostic assays for targeted diseases in collaboration with other experts to explore potential applications for large scale multiple disease screening.
- International FAO Consultant to develop training materials under the OIE FAO Network of Expertise for Animal Influenzas (OFFLU) Technical Activity on Capacity Building.

- International Consultant to support FAO Reference Centres and the coordination of IDENTIFY at FAO-HQ between November 2010 and March 2011.
- Technical Consultant for the development of the FAO virus genetic module within EMPRES-i database (half-time) and development of laboratory information system.

CONGO

- International FAO Consultant to finalize the study on development of private source funding opportunities for West/Central African national veterinary laboratories and of partnerships between these laboratories and the animal industry, and presentation for discussion at the annual RESOLAB meeting (6-10 Dec 2010, Mali).
- WHO AFRO is expecting to recruit staff specifically for IDENTIFY and to nominate focal points from existing staff in the various Country Offices and Inter-country Support Teams in the Region.
- Grace Omwega has been recruited by OIE to support IDENTIFY laboratory capacity building activities in the Nairobi, Kenya office and will begin work early next quarter.

SOUTH & SE ASIA

- Position description for OIE Focal Point post (to manage activities in South and Southeast Asia regions, to be based in Bangkok, Thailand) to be published early next period; potential candidates will be identified, interviewed, and selected, to begin work in first quarter of 2011.
- Recruitment of FAO laboratory expert to conduct site visit and identification of immediate needs in South Asia.
- SEARO will also recruit a staff member to conduct IDENTIFY activities in that WHO Region. This will cover the countries in geographic region of SE Asia and also the Gangetic plain for WHO.
- Recruitment of staff in WPRO and some country offices is proceeding.

AMAZON

- International FAO laboratory Consultant to conduct laboratory assessment and mapping.

Activity 1.3 :Develop annual IDENTIFY work plan

GLOBAL and activities across more than one region

- The IDENTIFY Year 2 Work Plan was submitted on 16 August 2010 to USAID. The project team will provide a revised budget at the regional level to the AOTR in the next quarter.

Activity 1.4 :To ensure circulation of information, coordination and harmonization of initiatives, implement standard methods of sharing critical project documents for access by project members

GLOBAL and activities across more than one region

- The project team will conduct an IDENTIFY SharePoint site training in mid-November to initiate the users, expand its use, and to introduce its range of functionalities. IDENTIFY partners will begin to post key IDENTIFY documents on the SharePoint site to ensure better communication and coordination. A first trial

phase will be conducted at the HQ level to detect bugs and develop a user's guide before roll-out in the regions, tentatively foreseen for early 2011. IDENTIFY partners will post key IDENTIFY documents on the EPT basecamp website to ensure better communication with the other EPT programs.

- Finalization of the development of IDENTIFY communication tools by FAO-HQ in close collaboration with partners and with regional project teams.

AMAZON

- FAO Regional team will develop communication tool(s) for different audiences, stakeholders and partners in the region, including the translation into Spanish and Portuguese.

Activity 1.5 : *Development and adaptation of the global laboratory networking strategy under which the global and regional network of networks are created and maintained*

CONGO

- Preparation of the Annual Regional Laboratory FAO-RESOLAB Network meeting 6-10 December, Bamako, Mali. Special sessions on rabies, FMD, results of Avian influenza/Newcastle proficiency test, funding sources, disease prioritization and outcomes of the IDENTIFY stakeholder meeting to be included.
- The global Laboratory Networking Strategy document will serve as the basis for tripartite collaboration in each region and will be a key component of the stakeholders meeting for the Congo Basin.
- Within the framework of this strategy, lists of animal and human diseases including zoonoses to be targeted by the IDENTIFY project will be discussed and finalized at the Congo Basin regional stakeholders meeting (see activity 1.6).

SOUTH & SE ASIA

- A Regional Strategy document will be presented at each region's stakeholders meeting. Within the framework of this strategy, lists of animal and human diseases including zoonoses to be targeted by the IDENTIFY project will also be discussed and finalized at the regional stakeholders meeting (see activity 1.6).
- Planning (for expert meeting) and preliminary development of the OIE PVS Pathway laboratory technical mission tool, to be piloted in the SE Asia region, focusing on laboratory management and strategic planning at the country level.

AMAZON

- Formulation of regional laboratory network strategy adapted from the global network strategy (January to March 2011).

Output 2. Technical Capacity Building - General

Activity 1.6 : *Joint FAO/OIE/WHO mapping exercise of laboratory capacity and existing laboratory networks and platforms across animal, food and human health sectors in hot spot areas in order to identify gaps in laboratory capability and further detail future activities (refer to "Laboratory Networking Strategy" submitted to USAID 30 June 2010)*

GLOBAL and activities across more than one region

- Mapping of laboratory capacity in FAO/OIE/WHO networks in Congo Basin and SE Asia is in progress and different phases of the activity will continue throughout the next reporting period.
- Integration of FAO and OIE animal health laboratory mapping data will occur during the next reporting period.
- International Consultant to provide support to FAO Regional Offices in Bangkok, Bamako and Panama for ongoing laboratory mapping activity to train laboratory experts in the use of the laboratory assessment tool and assist with data analysis. The International Consultant will also assist with the modification of the tool to track capacity building progress.

CONGO

- Current laboratory capacity and discussion of proposed lists of diseases to be targeted by the IDENTIFY project will be on the agenda at the upcoming stakeholders meeting (Entebbe, Uganda, 2-4 Nov 2010) and will complement existing data collection conducted by each organization. After the stakeholders meeting, the HQ and regional project teams will debrief and discuss the use of laboratory capacity data collected at the meeting and next steps for the mapping activity.
- Joint questionnaire for laboratory mapping to be presented during the Congo region Stakeholders meeting 2-4 November 2010 in Uganda
- The Integrated Disease Surveillance and Response (IDSR) guidelines list will serve as the basis for discussion on the human diseases to be targeted by the IDENTIFY project during the Stakeholders meeting in Entebbe, 2-4 November 2010.
- A proposal for disease prioritization for the IDENTIFY project based on regional animal disease lists for Central/Eastern/Western Africa has been drafted by FAO and discussed with OIE. Preparation of and feedback on group work session facilitation will be discussed prior to the Stakeholders meeting in Entebbe, 2-4 November 2010.
- Assessment of the quality assurance system in the National Veterinary laboratory of Cameroon to be conducted by FAO.

SOUTH & SE ASIA

- Proposal for mechanism of animal disease prioritization was reviewed and discussed between FAO and OIE. Further discussion will ensue to determine the way forward for disease prioritization for the Stakeholders meeting scheduled for late January 2011.
- Draft concept note for the SE Asia stakeholders meeting developed and discussed in October 2010 by FAO and OIE.
- Finalization and modification of the FAO laboratory mapping tool.
- Presentation of the initial FAO laboratory mapping results during the SE Asia Stakeholders meeting proposed for January 2011.
- FAO site visits assessment and identification of immediate needs of the national animal health laboratories (MoA) in Bangladesh and Nepal.
- Assessment of the biosafety infrastructure and biosafety cabinets in eight national animal health laboratories (MoA) in Cambodia, Lao People's Democratic Republic, Myanmar, Philippines, Thailand, Bangladesh and Nepal under the LoA between FAO and Asia-Pacific Biosafety Association.

AMAZON

- Desktop review in February and March 2011, to compile existing data and analysis of

National Laboratories Annual Reports and FAO laboratory assessments/mission reports.

Activity 1.7 : *Plan and conduct key stakeholder meetings (awareness workshops) at regional level via ministries to support the development of cross-sectoral approach(es) concerning laboratories, including the possible creation/strengthening of national inter-sectoral/inter-ministerial coordination committees to organize, ensure, and monitor veterinary and human laboratory collaborations at the country level*

CONGO

- The invitations to the Stakeholder's meeting in Africa scheduled for Entebbe, Uganda from 2-4 November have been sent and the planning among the three organizations at the regional and headquarters level for the meeting is continuing.

SE ASIA

- The Regional Stakeholder's meeting in South East Asia is now tentatively planned for late January 2011 with FAO taking the lead in logistics. FAO/OIE/WHO Regional Focal Points have been identified and all partners (HQ and regional) will participate on the elaboration of the agenda, technical documents, and terms of reference.
-

Output 3. Technical Capacity Building - Development of guidance, policy and training

Activity 1.8 : *Joint FAO/OIE/WHO participation in and/or organization of international meetings and conferences on laboratory capacity building*

GLOBAL and activities across more than one region

- The compilation of training opportunities for Year 1 and looking forward to Year 2 will continue. Training for public health and veterinary professionals together will be included when feasible.

CONGO

- OIE Support of participation of representatives to the bi-annual Congress of the Southern and Eastern Africa Rabies Group (SEARG) in Maputo, Mozambique, 25-27 January 2011
- OIE Support of participation of representatives to the OIE Global Conference on Wildlife Animal Health and Biodiversity - Preparing for the Future, Paris, France, 23-25 February 2011.
- Planning for trainings of laboratory personnel on quality assurance, laboratory information management systems, forwarding of biological samples and other topics in OIE Reference Laboratories to occur throughout 2011 in coordination with FAO and WHO, TBD.

SE ASIA

- FAO support of participants to the One Health Conference to be held in Melbourne, Australia in February 2011, and of the International Federation of Biosafety Association to be held in Bangkok, Thailand in February 2011.
- Planning for trainings of laboratory managers on OIE standards, strategic plan

development, laboratory management and other topics in OIE Reference and Twinning Laboratories to occur throughout 2011 in coordination with FAO and WHO, TBD.

Activity 1.9 : *Promote national laboratory policy in each country in each hot spot region through the development of joint international guidelines and/or standards for laboratories (e.g., biosafety/biosecurity, shipment of infectious material, laboratory testing, and related follow-up activities derived from previous laboratory assessments or workshops conducted by IDENTIFY partners)*

GLOBAL and activities across more than one region

- An OIE expert consultation technical project meeting in Paris is planned in January 2011. The meeting's theme will be the challenges in detection and diagnosis of emerging diseases faced by countries, particularly in the "hot spot" regions. Its major goals are to inform OIE guidance and to determine the feasibility of developing routine procedures and algorithms for detection and diagnosis of unknown pathogens potentially serving as a human pandemic threat, in the context of background occurrence of routine diseases, for national Veterinary Services with differing levels of capability and resources. FAO and WHO will be invited to the meeting as IDENTIFY Focal Points and/or participating experts.
- E-learning Training Module to be developed in coordination with OFFLU technical activity on capacity building (8 working days of an International Consultant from FAO).

CONGO

- Preparation of an FAO training on Quality Assurance, 15-20 November 2010, Douala, Cameroon, for six countries under IDENTIFY.
- Attendance of two national laboratory experts from Botswana and Zambia will be supported by FAO for training on "Investigation, Livestock Disease and Public Health, Wildlife Health and the Human-Animal-Environmental Interface," South Africa, 22-26 November 2010, organized by the FAO wildlife unit.
- Part 2 of the FAO study on development of private source funding opportunities for West/Central African national veterinary laboratories and of partnerships between these laboratories and the animal industry (2 field missions, review of data, reporting). Presentation and discussion of the outcomes at the RESOLAB meeting (6-10 Dec 2010).
-

SE ASIA

- Preparation for a WHO Global Foodborne infections Network (GFN) training course is under consideration for SE Asia.
- A 5-day biosafety management training will be conducted under the LoA between FAO and the Asia-Pacific Biosafety Association.

Output 4. Technical Capacity Building - Laboratory Quality Systems

Activity 1.10 : *Joint FAO/IAEA/OIE/WHO Global Survey on Laboratory Quality Standards*

and External Quality Assessment (proficiency testing) Schemes

GLOBAL and activities across more than one region

- The Global Survey of laboratory quality standards and external quality assessment schemes is organized in two parts. Once completed, data from the first part on National Quality Systems (NQS) could be used as a baseline for IDENTIFY to then measure progress made in the near future. Data from the second part on External Quality Assessment Schemes (proficiency testing) were decided to be published as an EQAS database on the websites of the four organizations (WHO, OIE, FAO and IAEA for the benefit of laboratories and Member States). This publication is planned to be released in the next months and will be the result of a joint activity and a common will to promote EQAS importance. More follow-up conference calls concerning EQAS and laboratory quality systems are expected in the next reporting period. FAO regional offices in each hot spot will take new opportunities of seeking additional information to address gaps in the data of the global survey while attending/holding international meetings and Quality Assurance workshops. The Global Survey results could help target support to national EQA programs in the Congo Basin region and participation in international EQAS including the existing WHO/NICD Microbiology EQA Programme in Africa organized by the National Institute for Communicable Diseases of Johannesburg, South Africa.

Output 5. Technical Capacity Building - Building laboratory infrastructure

Activity 1.11 : *Provision of laboratory equipment and supplies in a coordinated fashion with IDENTIFY and other national, regional, and global partners with a focus on regional laboratories and regional laboratory networks*

GLOBAL and activities across more than one region

- Procurement of laboratory equipment by FAO to address immediate needs already defined by countries for the National Veterinary Laboratories of Congo Basin and Southeast Asia countries will continue.

CONGO

- Calibration kits for measurement instruments procured by FAO will be delivered to nine National Veterinary Laboratories.
- Joint FAO/IAEA division: mission to Uganda for development of a Laboratory Information Management Software (LIMS) system. Provision of hardware/software.

SOUTH & SE ASIA

- Previously defined biosafety equipment and supplies procured by FAO will be delivered to the national animal health laboratories (MoA) in Cambodia, Lao People's Democratic Republic, Philippines, Thailand, Vietnam, Bangladesh and Nepal.
- Each biosafety cabinet assessed under the LoA between FAO and the Asia-Pacific Biosafety Association laboratories will be calibrated to meet internationally recognized standards (NSF49 or EN 12649). Certification and recommendations for maintenance of biosafety cabinets and in-house calibration will also be provided.

Output 6. Technical Capacity Building - Laboratory Networking

Activity 1.12 : *Assess the role and activities of existing FAO/OIE/WHO networks in improving the laboratory capacity and networking in hot spot regions. Coordinate regional networking to test for normative diseases and detect emerging or unknown pathogens in wildlife, domestic animals and humans*

GLOBAL and activities across more than one region

- Information concerning the role and activities of existing networks will still be collected in the framework of the Laboratory Network Strategy and Laboratory Mapping activity.
- For the first time, regional representatives will be able to attend the third annual OFFLU meeting (16-17th Nov 2010, Rome). This should enable the development of stronger linkages between OFFLU and regional networks.
- Two assessment missions are scheduled between November 2010 – January 2011 to support the WHO/FAO concept note on the 4-way linking of influenza outbreaks and virus information and preparation of national workshops has begun. Discussions between FAO HQ, WHO HQ, FAO and WHO national offices to be conducted soon.
- Under the LoA between FAO and the Swiss Institute of Bioinformatics (SIB) the following activities are planned: (1) the development of SOPs (Standard Operating Procedures) for quality virus sequence submissions; (2) exploration of the linkage of EMPRES-i outbreak data with sequences stored in the OpenFlu database; (3) evaluation of the feasibility of integrating data on virus characteristics using the data and tools available from the OpenFluDB; (4) generation of initial map layers to complement existing EMPRES i maps of animal disease distribution; and (5) recommendation of standardised procedure and techniques for analysis of data across OpenFluDB and EMPRES-i.

CONGO

- Eastern FAO Africa Region Laboratory Network (EARLN) Secretariat meeting to be held in Nairobi in February 2011.
- FAO RESOLAB Annual meeting 6-10 December 2010, Bamako, Mali

AMAZON

- Discussions between OIE and the Network of National Veterinary Services Laboratories in the Americas on how their goals align with the objectives of IDENTIFY and possible collaborations are in the process of being identified. The OIE Focal Point will attend the Network's First International Meeting (3-5 November 2010). While not an official IDENTIFY meeting, this represents an opportunity to briefly introduce the concepts of IDENTIFY to meeting participants. FAO will present their approach to regional lab networking and the WHO Regional Office for the Americas (PAHO) will also participate. The HQ USAID representative for Latin America will also be invited.

Activity 1.13 : *FAO/OIE/WHO laboratory twinning initiatives and partnerships*

GLOBAL and activities across more than one region

- The need for OIE Laboratory Twinning Projects to support the advancement of the laboratory networks and diagnostic capacity will be assessed based on an analysis of

the predominant endemic OIE listed diseases and the list of disease to be targeted by the IDENTIFY project outlined during each regional stakeholders meeting.

CONGO

- Following the OIE assessment listed above and the outcome of the stakeholders meeting, OIE expects to initiate discussions with potential candidate twinning laboratories in 2011.
- Planning for OIE Meeting with potential twinning candidate laboratory directors to discuss their role in meeting the diagnostic needs of the laboratory network in the Congo region
- Expert missions to initiate FAO twinning initiatives between three Congo Basin laboratories and French provincial laboratories is foreseen.

SE ASIA

- Following the OIE assessment listed above and the outcome of the stakeholders meeting, OIE expects to initiate discussions with potential candidate twinning laboratories in 2011.

Main challenges encountered and response provided

Existing joint FAO/OIE/WHO initiatives provide opportunities to benefit intersectoral collaboration. However, the reality is that while intersectoral collaboration and initiatives are increasing, it is not yet second nature between the international organizations, particularly at the regional level. As a result, constant effort is required to maintain the tripartite spirit at the global, regional, and national levels. It is often recommended that intersectoral collaboration efforts be nurtured in “peace time”—the absence of epidemiological events of international interest—however, the incentive to maintain collaboration is not as strong as during outbreaks or other emergency situations. As a project team, we are trying new strategies and management techniques to address this overarching challenge and to encourage more effective intersectoral collaboration together within the framework of the IDENTIFY project.

Regional offices of FAO, OIE and WHO are not always located in the same countries or cities in each hot spot region, which complicates interactions between the organizations. The IDENTIFY team is looking for ways to capitalize on common attendance at regional meetings and conferences in order to conduct project meetings at these times. In addition, as the HQ and regional project teams have moved forward with the planning of the stakeholders meeting in the Congo Basin, we have realized that communication and coordination on meeting planning between regional partners, between HQ partners, and between HQ and regional partners is an important challenge.

One struggle for OIE is the challenge of dual reporting streams. We must report to FAO at a particular frequency and to USAID through IDENTIFY at another frequency. This administrative load impinges upon time that OIE could be dedicating toward the technical activities of the IDENTIFY project.

For WHO, activities at the country level require coordination with the various Regional Offices. In the case of the SE Asia, this means dealing with 2 Regional Offices. This can lead to a prolonged decision-making process but provides HQ opportunity to build better relations with the Regional Offices. This process remains ongoing.

Unlike other EPT partners and staff, FAO, OIE and WHO counterparts have many other responsibilities outside of the EPT Program and specifically the IDENTIFY project. The FAO, OIE and WHO focal points at all levels have a massive amount of running activities which require intensive planning and coordination. USAID, along with EPT Partners, multiple requests to meet and short deadlines for documents submissions, missions, meetings, etc., this creates some conflicts with the important work that our three organizations need to carry out.

Main progress made towards the achievement of project outcomes *(since the start of the project activities)*

We continue to build a strong and collaborative tripartite IDENTIFY project team at the HQ level. Substantial planning has taken place both at the HQ and regional levels to accomplish project goals and it is clear that the momentum of the IDENTIFY project is building. We have accomplished significant goals in the reporting period: submitted the Year 2 work plan, began concrete planning for the Congo Basin regional stakeholder's meetings, held project HQ team planning meetings, elaborated concrete strategies for the 5-year project, implemented new management mechanisms, and carried out work on the laboratory capacity mapping activity and the lists of IDENTIFY animal and human diseases including zoonoses. The FAO/OIE/WHO joint HQ project team invested a lot of resources in coordination with

the Congo Basin regional team because we know that the preparations for the meeting will be the groundwork for the other regional stakeholder's meetings. This increased involvement will help us to streamline the planning process in the other regions. The joint regional activities have set an important precedent for regional intersectoral collaboration with and among our organizations; tripartite regional activities have activated regional engagement and have encouraged increased communication.

For WHO, building a team at headquarters level and getting commitment from the various Regional Offices to be part of the project have been significant milestones.

For OIE, bringing the Regional Focal Point for the Congo Basin on board and building a close HQ and regional relationship has helped OIE to better prepare for the stakeholder's meeting and contribute meaningfully to the collaboration with regional counterparts.

For FAO, capitalizing on previous efforts and initiatives invested during Avian influenza projects is crucial. This includes regional laboratory networking dynamics that are in place in most hot spot regions. This Identify project is instrumental in maintaining these regional initiatives and linking them with international networking initiatives.

Project Monitoring Sheet: **OSRO/IND/802/USA**

Project Title: **Immediate technical Assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India**

Reporting period: **October 2010 – March 2011**

Country: India
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India
Code: OSRO/IND/802/USA
Budget: USD 1 220 000 (Phase I)
Total budget: USD 3 000 000 ¹
Effective starting date: 28 June 2010
Planned end date: 30 June 2013 (current NTE of Phase I – 30 September 2011)
<p>Context of the project</p> <p>This project will focus on the eastern Indian states of Assam and West Bengal in the short-term with a longer term capacity building of animal health personnel, especially in the field of surveillance, epidemiological analysis and in-depth disease investigation. The project focuses on understanding the dynamic patterns of the poultry production systems, value/supply chains and trade in poultry and poultry products within India.</p> <p>The project is expected to provide information on infection and transmission dynamics of the virus in the local environment where the virus persists and to consolidate the capacity to establish and conduct risk-based surveillance programmes. The aim of building capacity to strengthen surveillance and epidemiological analysis will lead to an improved tracking of the virus movement, greater virus isolations and better molecular information on the virus evolution. Such information is critical for rational and targeted control of the disease. With the strategic inputs in the project, the country would be better placed to take a leadership role in supporting regional efforts to control HPAI.</p>
<p>Objectives of the project</p> <p>The project aims to build capacity to improve surveillance and epidemiological analysis in both domestic and wild birds. The overall objective of the programme is to contribute to the elimination of the threat posed by HPAI by controlling the disease in poultry, to ensure that India no longer presents a risk for the development of human pandemic influenza from the H5N1 virus.</p>
<p>Planned activities</p> <p>Output 1: Establishment of an HPAI (Epidemiology) Unit in India</p> <p>Activity 1.1 Establishment of an HPAI (Epidemiology) Unit.</p> <p>Activity 1.2 Coordination of the country programme.</p> <p>Activity 1.3 Management and operations support.</p> <p>Activity 1.4 Capacity building in project/programme management.</p> <p>Output 2: Improved epidemiological capacity within the Department of Animal Husbandry, Dairying and Fisheries (DADF), Ministry of Agriculture (MoA) of India</p> <p>Activity 2.1 Conduct Field Epidemiology Training Programme for Veterinarians (FETPV).</p> <p>Activity 2.2 Conduct outbreak investigation courses for Field/District Veterinary Officers.</p> <p>Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray</p>

¹ This project has a three year duration. Total budget of USD 3 000 000 is subdivided as follows: USD 1 220 000 for year I, USD 948 134 for year II and USD 831 866 for year III. Funds have been committed for year I only; activities planned for years II and III will be implemented based on project performance and fund availability.

surveillance, Indonesia for participatory disease surveillance and response (PDSR) and Viet Nam for grassroots level surveillance).

Activity 2.4 Conduct trainings for grassroots level disease detection and reporting (e.g. community based animal health workers).

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.1 Develop a grassroots level surveillance programme.

Activity 3.2 Undertake structured virus isolation and characterization.

Activity 3.3 Establish a disease information system dedicated to HPAI.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

Activity 4.1 Study the poultry value chains to include wet markets.

Activity 4.2 Map the farming sectors and socio-economic background along the market and value chains.

Activity 4.3 Conduct data analysis for mapping disease outbreaks and distribution of virus clades.

Activity 4.4 Define infection and transmission dynamics in the context of the various poultry farming systems and socio-economic background.

Activity 4.5 Identify critical points for intervention to control HPAI.

Activities undertaken during the reporting period

Output 1: Establishment of an HPAI (Epidemiology) Unit in India

Activity 1.1: Establishment of an HPAI (Epidemiology) Unit.

Recruitment of national and international staff

- The Chief Technical Advisor (CTA)/Team Leader/International Epidemiology Expert was recruited in October 2010.
- A temporary International Operations Officer worked for the project from October until the end of December 2010. A permanent International Operations Officer was identified, and the recruitment is pending governmental clearance; the anticipated starting date is April 2011.
- The International Geographic Information System (GIS) Expert is expected to commence duties on 3 April 2011.
- A National Operations Officer (finance/administration assistant) was recruited on 1 January 2011.
- Initially, MoA nominated a candidate for the position of national Project Coordinator, but after a new Joint Secretary was appointed at DADF, this nomination was withdrawn. DADF has now requested to fill the post with a mutually agreed candidate.
- Two national staff candidates (HPAI Epidemiology and HPAI Surveillance) received an offer for this position, but they were unable to obtain the necessary release from their current Government positions and had to decline the offer. The project is considering other candidates for these positions.

Renovation of the building at the Animal Quarantine Certification and Service Station, Kapashera

- All the preparatory work required for renovation of the premises assigned to the project by the Government of India is completed. The necessary budget revision was cleared by the United States Agency for International Development (USAID) in November 2010. All technical specifications were cleared by FAO Rome in March 2011. The renovation work was retendered mid-March 2011. It is anticipated that a contract with preferred bidder will be

signed in April 2011. The renovation should be completed by August 2011.

- The HPAI (Epidemiology) Unit will commence working from the Animal Quarantine and Certification Services (AQCS) station in April in a temporary office space. Procedures to purchase equipment for the office commenced in late February 2011.

Activity 1.2 Coordination of the country programme.

- To ensure full cooperation and collaboration with the Government of India, regular contact was maintained with all the officials of DADF. The new Joint Secretary of DADF was updated on the progress of the project regularly. The Joint Secretary was also invited by FAO to represent India at a regional ECTAD meeting in Bangkok in January 2011. Meetings were held with USAID India to inform about the status of the project, the animal disease situation and the Government Veterinary Service capacities.

Activity 1.3 Management and operations support.

- Frequent meetings were held and technical meetings and workshops attended to provide support to the Government of India.

Activity 1.4 Capacity building in project/programme management.

- The Joint Secretary was supported with managerial and technical matters in India and during an overseas meeting.

Output 2: Improved epidemiological capacity within DADF, MoA of India

Activity 2.1 Conduct FETPV.

- The senior regional epidemiologist in charge of the regional FETPV programme visited India twice in the reporting period. Meetings were held with ten stakeholders and organizations to explore future partnerships.

Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray surveillance, Indonesia for PDSR and Viet Nam for grassroots level surveillance).

- The Government of India was officially contacted to nominate eight policy makers and technical staff to visit Viet Nam and Thailand in May 2011. The Governments of Thailand and Viet Nam were contacted and agreed to the visit. In both Thailand and Viet Nam, a national coordinator was appointed.

Activity 2.4 Conduct trainings for grassroots level disease detection and reporting (e.g. community based animal health workers).

- In March 2011, the CTA/TL and national operations manager visited Agartala and Tripura and studied the outbreak response of the HPAI outbreaks in the area. The findings will aid in identifying gaps in the current disease surveillance, which will be addressed in future trainings.

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

- The Government of India was officially contacted to nominate two technical staff to undergo an advanced 3-month epidemiology training in New Zealand from June until August 2011.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.1 Develop a grassroots level surveillance programme.

- FAO studied the three currently existing surveillance programmes in India and recommendations for improvement are forthcoming. Assistance was provided in the process

of preparing for a Government official to travel to Thailand to learn about the Thai X-ray surveillance programme.

Activity 3.2 Undertake structured virus isolation and characterization.

- FAO had requested from the Government of India to undertake structured virus isolation and characterization at the High Security Animal Disease Laboratory, Bhopal of the isolates from the Agartala HPAI H5N1 outbreaks.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

Activity 4.3 Conduct data analysis for mapping disease outbreaks and distribution of virus clades.

- Current and past HPAI outbreaks were mapped. Virus clade identification and phylogenetic tree analysis is pending.

Activity 4.4 Define infection and transmission dynamics in the context of the various poultry farming systems and socio-economic background.

- This research was initiated and will continue.

Activity 4.5 Identify critical points for intervention to control HPAI.

- Report was submitted for technical clearance.

Planned activities for the next six-month period

Output 1: Establishment of an HPAI (Epidemiology) Unit in India

Activity 1.1 Establishment of an HPAI (Epidemiology) Unit.

- Complete the recruitment of international/national staff and the renovation of the building at AQCS station, Kapashera. Move the Epidemiology Unit from its current building to AQCS station and launch its official opening.

Output 2: Improved epidemiological capacity within DADF, MoA of India

Activity 2.1 Conduct FETPV.

- A third visit by the regional senior epidemiologist is planned for May 2011, to recruit trainers and lectures. The first one month training course will be held in August for 30 participants.

Activity 2.2 Conduct outbreak investigation courses for Field/District Veterinary Officers.

- Develop the curriculum and training materials.

Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray surveillance, Indonesia for PDSR and Viet Nam for grassroots level surveillance).

- Conduct a study tour to Thailand and Viet Nam with eight government officials.

Activity 2.4 Conduct trainings for grassroots level disease detection and reporting (e.g. community based animal health workers).

- Develop the curriculum.

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

- Provide training to two technical staff from MoA in advanced epidemiology at Massey University, New Zealand, from June until August 2011.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.1 Develop a grassroots level surveillance programme.

Activity 3.2 Undertake structured virus isolation and characterization.

- Undertake structured virus isolation and characterization for the HPAI outbreaks from Agartala.

Activity 3.3 Establish a disease information system dedicated to HPAI.

- Organize an expert visit to the Project Directorate on Animal Disease Monitoring and Surveillance in Bangalore to assess the current disease information system and recommend enhancements. Assess the need for a disease information system dedicated to HPAI, based on the existing systems and the frequency of HPAI outbreaks.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

Activity 4.3 Conduct data analysis for mapping disease outbreaks and distribution of virus clades.

- Depending on the HPAI situation, conduct this activity at the national or regional level at the Epidemiology Unit.

Activity 4.4 Define infection and transmission dynamics in the context of the various poultry farming systems and socio-economic background.

- Depending on the HPAI situation, undertake this activity at the national or regional level at the Epidemiology Unit.

Activity 4.5 Identify critical points for intervention to control HPAI.

- Depending on the HPAI situation in the reporting period, perform analysis using data gathered prior to this reporting period and the current data.

Main challenges encountered and response provided

- Delay in the clearances for recruitment of international staff from the Government of India was resolved after productive meetings with the Regional Manager and renewed correspondence with the FAO Representative. Government clearance for the international Operations Officer is expected in April 2011.
- Delays in the renovation process of the AQCS station Kapashera owing to the pending FAO technical clearance were resolved.
- Delays in national staff hiring, owing to selected candidates not been released from their Government positions. Other candidates are being considered for the positions.
- Activity 4.1 (Study the poultry value chains to include wet markets) and Activity 4.2 (Map the farming sectors and socio-economic background along the market and value chains) could not be carried out in the reporting period, as the money allocated for this project will be used for the renovation of the AQCS Kapashera offices. These studies are expected to be conducted during the next funding cycle.

Main progress made towards the achievement of project outcomes (from the start of the project activities)

- Signing of the project document of the USAID project OSRO/IND/802/USA.
- Government support in the establishment of an HPAI Epidemiology Unit received.
- Recruitment of international staff.
- Research in HPAI started.

Project Monitoring Sheet: **OSRO/IND/802/USA**

Project Title: “Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza to India”

Reporting period: April 2013 – September 2013

Country: India
Project title: Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza to India
Code: OSRO/IND/802/USA
Total budget: USD 2 220 000
Effective starting date: 28 June 2010
Planned end date: 30 September 2013
<p>Context of the project</p> <p>This project implemented by the Food and Agriculture Organization of the United Nations (FAO) focuses on establishing an epidemiology unit under the India department of animal husbandry, dairying and fisheries (DADF), capacity building of animal health personnel, especially in relation to surveillance, epidemiology and in-depth outbreak investigations. Porous and long land borders between neighbouring countries with minimal control points and quarantine facilities as well as diffused and low biosecurity poultry production and marketing chains continue to pose a risk for the spread of Highly Pathogenic Avian Influenza (HPAI) in India. It is necessary to develop an understanding of the dynamic structure of poultry production systems, supply chains and marketing of poultry and poultry products within India and internationally which drive the epidemiology of the disease. There is also lack of capacity of skilled human resources and facilities needed to develop sensitive surveillance systems as well as conducting effective epidemiological studies for the improved management of HPAI. Although there is an existing Preparedness, Control and Containment Plan for Avian Influenza, it is expected that, with the support of this project, the Government of India will be able to draft a long-term national strategy in consultation with various stakeholders to build necessary epidemiological capacity in order to deal with the longer term issues to control and prevent HPAI.</p>
<p>Objectives of the project</p> <p>The main aim of the project is to detect, reduce and control HPAI in poultry in order to improve livelihoods and promote food security of large vulnerable population, thereby reducing poverty, contributing to rural economic development and improving the gross domestic product (GDP) in India. The overall objective of the programme is to reduce and then to eliminate the threat posed by HPAI H5N1 in the country. The country will then cease to be at risk for the development of human pandemic influenza from the H5N1 influenza virus. The specific objective of the project, <i>inter alia</i>, is to support DADF in building the required capacity to improve surveillance and epidemiological analysis and reporting within the central and state veterinary services and at local levels using a community based approach by improving understanding of the epidemiology of HPAI, and so, identifying priorities to reduce the risk of poultry outbreaks and consequent human cases. The main outputs are as follows:</p> <p>Output 1: Establishment of a HPAI (Epidemiology) Unit in India</p> <p>Output 2: Improved epidemiological capacity within the DADF, MoA of India</p> <p>Output 3: Establishment of a risk based surveillance programme</p> <p>Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease</p>

Planned activities for the reporting period (April 2013 to September 2013)
Output 1: Establishment of a Department of Animal Husbandry Dairying and Fisheries (DADF) Veterinary Epidemiology Unit in India

- establishment of a DADF Veterinary Epidemiology Unit at the Animal Quarantine and Certification Station (AQCS) at Kapashera, New Delhi;
- coordination of country programme;
- management and operations support; and
- capacity building in project/programme management.

Output 2: Improved epidemiological capacity within the DADF, Ministry of Agriculture (MoA) of India

- conduct Field Veterinary Epidemiology Training Programme (FETPV);
- conduct outbreak investigation courses for Field/District Veterinary Officers; and
- conduct trainings for grassroots level disease detection and reporting (e.g. community-based animal health workers [CAHWs]):

Output 3: Establishment of a risk-based surveillance programme

- develop a grassroots level surveillance programme;
- conduct disease outbreak investigation in the event of an HPAI outbreak in collaboration with DADF;
- undertake structured virus isolation and characterization; and
- establish a disease information system dedicated to HPAI.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

- value chain and risk assessment and mapping;
- phylogenetic and phylodynamic analysis of HPAI H5N1 isolates; and
- structured virus isolation and characterization followed by monitoring virus evolution in different species to assess spatial and temporal spread of the virus in the country and region.

Activities undertaken during the reporting period (April 2013 – September 2013)
Output 1: Establishment of a DADF Veterinary Epidemiology Unit in India

The DADF Epidemiology Unit, already established at the Animal Quarantine and Certification station at Kapashera, New Delhi, was maintained both structurally and functionally.

Current staff: The third year of the Project started with only the national staff being comprised of a Team Leader/National Project Coordinator, two national epidemiology consultants and one Operations Officer.

All the project activities were implemented with the input and support of the DADF and the Commissioners/Directors of the State Animal Husbandry Departments. The DADF was regularly consulted and updated on the progress of the project through the submission of reports and by conducting meetings.

The project promoted consistency of India's national strategy for HPAI control with regional and global frameworks. This was carried out through consultative interaction among national partners (MoA), regional partners the South Asian Association for Regional Cooperation (SAARC) and the FAO sub-regional and regional support units, and globally with the FAO headquarters in Rome and the World Organisation for Animal Health (OIE).

Two staff from FAO's Emergency Centre for Transboundary Animal Diseases (ECTAD) in India attended a training workshop on the "Practical application of designing risk based surveillance in livestock value chains" conducted at Chandigarh from 15 to 20 April 2013. The workshop was attended by participants from the SAARC Member States: India, Nepal and Bhutan as well as representatives from FAO's Regional Support Unit (RSU) in Nepal.

The DADF Epidemiology Unit and FAO ECTAD India team attended a workshop from 24 to 25 June 2013 organized by the United States Agency for International Development (USAID), in collaboration with the Government of Thailand, on 'Technical and Policy Discussions on the Prevention and Control of Avian Influenza A(H7N9) in Asia'. The workshop provided a platform for sharing experiences and lessons learned from both the H5N1 HPAI in the region as well as those learned from the interventions implemented by the Government of China related to A(H7N9). The Team Leader/National Project Coordinator also attended the USAID-FAO HPAI Programming Meeting on 26 June 2013; participated in the technical, operational and programme discussions; and delivered a presentation on Avian Influenza and Emerging Pandemic Threats, dealing with past and current HPAI situation and risk mapping of HPAI in India. He also highlighted the progress made by the project in India, especially in the terminal year.

The FAO Representation in India and the Team Leader met the new DADF Secretary on 30 August 2013 and apprised him of the progress/achievements and way forward for continuation of the project beyond 30 September 2013.

The Team Leader Attended the inception workshop for FAO Technical Cooperation Projects "Emergency Assistance For Surveillance of Influenza A(H7N9) Viruses in Poultry and Animal Population in South East and South Asia", held in Bangkok from 18 to 19 September 2013.

Output 2: Improved epidemiological capacity within DADF, MoA of India

Conduct Field Veterinary Epidemiology Training Programme (FETPV): The project continued to mentor previous FETPV students through a list server (EpiNet) and direct support. There has been strong support from the states and specialist institutes for further access to FETPV courses previously conducted in Tamil Nadu and Orissa States during 2012. Owing to funding constraints, one additional FETPV course for the northern states could not be conducted. The capacity of selected field veterinarians from high-risks states in epidemiological analysis of disease outbreaks was enhanced using the Regional FETPV curriculum based in Thailand, which was adapted to a three-week module for India. However, the FETPV training for veterinarians from India is being sustained through the SAARC RSU, at Kathmandu in November 2012 and most recently in September 2013.

Outbreak investigation courses for Field/District Veterinary Officers:

Two four-day Training of Trainer (TOT) workshops on outbreak investigations in HPAI vulnerable areas (30 veterinarians) was conducted in March 2013 on:

- HPAI surveillance;
- outbreak investigation and SOPs;
- epidemiological viewpoints of disease control and prevention;
- risk assessment, management and communication; and
- risk-based surveillance.

In order to sustain the effort to build the capacity of field veterinarians, this issue was followed up with the State Directors for further training to the field veterinarians in the states.

Advocacy Workshop: the workshop for senior policy makers was conducted on 20 September 2013 to promote sustainable improvement of disease surveillance systems that will inform policy changes with State Animal Husbandry Departments and in DADF. The need for making epidemiology a core discipline for animal and veterinary public health was also emphasised. Further group discussions were held on the policy and infrastructural changes required at state and central levels and technical capacity upgrading needed to strengthen the existing surveillance systems. The Animal Husbandry Commissioner, Government of India and Commissioners/Directors from 24 States and Union Territories of the country participated and appreciated the work done by the project to improve the epidemiological capacity of the country and proposed that the project should continue with wider scope to include other transboundary animal diseases.

Output 3: Establishment of a risk-based surveillance programme

Develop a grassroots level surveillance programme: a surveillance approach directed at the grassroots level to improve disease detection and reporting of HPAI. Training materials developed in collaboration with the Society for Management of Information, Learning and Extension (SMILE), Bhubaneswar, including a training manual, flipchart and a video, were used for imparting training to grassroots level workers. Five ToT workshops for grassroots level disease detection and reporting (community-based animal health workers [CAHWs]) were conducted for 134 District Officers as per schedule given below:

State(s) (No. of District Officers)	Date	Location
Orissa (30)	11 March 2013	Bhubaneswar
West Bengal (18), Tripura (4) and Sikkim (4)	2 April 2013	Kolkata
Manipur (13), Nagaland (7) and Mizoram (8)	4 April 2013	Imphal
Assam (20) and Meghalaya (6)	6 April 2013	Guwahati
Arunachal Pradesh (16) and Assam (8)	8 April 2013	Itanagar

More than 5 000 paravets/CAHWs were trained in these districts on disease detection and reporting from July to September 2013. The trainings provided current information on HPAI (and other significant disease issues) with an emphasis on disease detection and immediate reporting from the grassroots level by the CAHWs.

The project team prepared standard operating procedures (SOPs):

1. **Outbreak investigation and response** which covers all actions to be taken from the point of receipt of a report of suspected HPAI and includes:
 - reporting of a suspected outbreak to the village officer / para-vet / veterinarian;
 - arranging and conducting an initial visit to farm/poultry owner;
 - clinical examination of sick birds;
 - completion of the Outbreak Investigation form; and
 - appropriate biosafety measures to be taken.
2. **Strengthening passive surveillance** (detection, investigation, reporting and analysis) through the appropriate use of active and risk-based surveillance for states to develop their surveillance plans. The early detection of outbreaks of HPAI (so called 'passive surveillance') is critical to reducing the risk of ongoing virus transmission and of continuing outbreaks. This activity is complementary to the current passive surveillance conducted by States where data is compiled and analyzed at regional centers e.g. PD ADMAS.

3. **Production of a biosecurity brochure** consisting of a set of management practices, which when followed, collectively reduces the potential for the transmission/spread of disease-causing organisms – including the avian influenza virus onto and between sites, animals and humans. The principles of biosecurity (isolation, movement control, cleaning and disinfection and waste management) were emphasized.

Guidelines for planning HPAI surveillance using a risk based approach were developed and submitted to the Government. These guidelines are in the form of a checklist that will enable the planning of active and risk-based surveillance at the district level.

EpiNet, a fortnightly list-server newsletter dedicated to HPAI epidemiology and other important emerging diseases, is being circulated across the country to sustain engagement with FETPV trainees and to create awareness regarding the critical role of surveillance and epidemiology at all levels of government. Information on HPAI outbreaks across the world is being updated regularly.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of HPAI

Continuation of research on structured virus isolation, characterization, and phylogenetic studies:

Collaboration amongst the DADF Epidemiology Unit, High Security Animal Disease Laboratory (HSADL) and Duke-National University of Singapore (Duke-NUS) was coordinated to further investigate the epidemiology of HPAI in India using molecular epidemiology techniques. Virus isolation and molecular characterization with probable source(s) of virus introduction, including virus evolution continued. The joint molecular epidemiology study was also carried out between FAO-India, HSADL and Duke-NUS to include HPAI sequence data and spatial and temporal data of HPAI outbreaks from Bangladesh, Bhutan, Myanmar and Nepal, for analysis and improved understanding of HPAI virus evolution in the sub-region. Improved data sharing was evident as a result of this collaboration.

Additionally, a research study entitled *Spatio-temporal epidemiology of Highly Pathogenic Avian Influenza (subtype H5N1) in poultry in eastern India* was completed by one of the project epidemiologists and is currently undergoing final review for publication in the international journal, Preventive Veterinary Medicine. This work stands out as an important output of the project, representing a significant contribution to improving risk based surveillance based upon a greater understanding of the epidemiology of H5N1 in West Bengal, Assam and Sikkim States between 2008 and 2012.

The project conducted the Terminal Workshop on 24 September 2013 at Hotel Ashok, New Delhi. Key stakeholders attended the workshop. The main project outputs were summarized in the presentations followed by a panel discussion. The panellists included Peter Kenmore, R. S. Rana, Subhash Morzaria, Mohinder Oberoi and A. B. Negi. The issues raised in the Advocacy workshop by the policy makers of the Government of India and the State Directors/Commissioners of Animal Husbandry were discussed and the key components which need to be strengthened under the epidemiology programme were summarized under:

- strengthening capacity building in epidemiology and surveillance;
- involvement of various stakeholders, including those from industry, public health, poultry (including backyard) sector and others;
- framing of guidelines and legislation to help in its implementation; and

- the need for consistent and complementary national and regional vision for controlling HPAI and other transboundary animal diseases.

The end of project report has been prepared and submitted to the Regional Manager of FAO's Regional Office for Asia and the Pacific for approval.



Project Highlights INDONESIA

“Monitoring A1 virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy”

Project code: OSRO/INS/703/USA

Donor: USA

Contribution: USD 1 630 500

Implementation: 01/10/07 – 30/12/10

Target areas: nationwide

Contact: Daniele Donati

Title: Chief, Emergency Operations Service

Email: daniele.donati@fao.org



Objective:

To conduct virus characterization and mapping of Indonesian antigenic variants with intensified Highly Pathogenic Avian Influenza (HPAI) field isolate collection and analysis, and to provide recommendations for an appropriate vaccination strategy to prevent and control HPAI in Indonesia.

Key partners:

Ministry of Agriculture, local government livestock services and national and international research groups.

Beneficiaries reached:

National veterinary authorities and animal health and livestock services at provincial, district and municipal level; poultry producers and traders; the general public; and the international community.

Activities implemented:

- Biological and genetic characterization of 244 H5N1 isolates (266 total viruses) from 317 samples in Indonesia, representing approximately 90 districts predominantly from backyard chickens.
- Challenge testing of antigenic variants and vaccine strains selection.
- Technical recommendations for the vaccination strategy and capacity building.
- Local procurement of supplies and equipment to facilitate the collection of field isolates and support the Disease Investigation Centres in performing antigenic characterization of viruses and analysing resulting data.

Impact:

- Improved knowledge of circulating H5N1 viruses to directly inform vaccine policy.
- Development of a safe, efficacious vaccine for use in Indonesia.
- Increased capacity of Indonesian laboratories to perform antigenic characterization of viruses and analyse results.
- Technical recommendations made to provide a foundation upon which a comprehensive national vaccination strategy can be developed.



Emergency Operations and Rehabilitation Division

INDONESIA



“Monitoring AI virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy”

OSRO/INS/703/USA

**Final Report
October 2007 – December 2010**

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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ABBREVIATIONS AND ACRONYMS

AAHL	Australian Animal Health Laboratory
AGAH	Animal Health Service (FAO)
AGAL	Livestock Policy Service (FAO)
AI	Avian influenza
Bbalitvet	Balai Besar Penelitian Veteriner (Veterinary Research Institute)
BPM SOH	National Veterinary Drug Assay Laboratory for Indonesia
CMU	National HPAI Campaign Management Unit
DGLAHS	Directorate General of Livestock and Animal Health Services (formerly known as Directorate General of Livestock Services [DGLS])
DIC	Disease Investigation Centre
EMPRES	Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (FAO)
FAO	Food and Agriculture Organization of the United Nations
HA	Hemagglutination
HI	Hemagglutination inhibition
HPAI	Highly Pathogenic Avian Influenza
MoA	Ministry of Agriculture
MTA	Material Transfer Agreement
OFFLU	OIE/FAO Network of Expertise on Animal Influenza
OIE	World Organisation for Animal Health
Pusvetma	MoA Veterinary Biologicals Laboratory
RG	Reverse genetics
SEPRL	USDA Southeast Poultry Research Laboratory
USAID	United States Agency for International Development
USDA	United States Department of Agriculture

EXECUTIVE SUMMARY

Since 2004, Highly Pathogenic Avian Influenza (HPAI) outbreaks have been documented in 32 of Indonesia's 33 provinces. Based on available surveillance data, HPAI appeared to be endemic on the island of Java, Bali, and parts of Sumatra and Sulawesi, of which the most heavily affected provinces were: Lampung (Sumatra Island) and Yogyakarta, Central Java and West Java (Java Island). In mid-2004, mass Government sponsored vaccination was implemented for sector 4 and small-scale sector 3 producers. However, the vaccination efforts were unable to achieve effective coverage for poultry in Indonesia, as a result of technical issues related to the vaccines themselves, such as poor antigenic content, cold chain and application issues, lack of structured approach to post-vaccination monitoring and continued use of ineffective vaccines (heterologous H5N2 and H5N9 vaccines).

As a response, the internationally collaborative Vaccine Efficacy Project was designed to identify and characterize HPAI virus variants in Indonesian poultry and provide recommendations for an effective and sustainable vaccination strategy. Its aim was to determine major antigenic differences among some Indonesian strains leading to vaccine failure. Therefore, the Food and Agriculture Organization of the United Nations (FAO), under the umbrella of the World Organisation for Animal Health (OIE)-FAO Network of Expertise on Animal Influenza (OFFLU), implemented a project for "Monitoring avian influenza (AI) virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy" (OSRO/INS/703/USA), supported by leading scientists from a range of scientific fields including virology, epidemiology, bioinformatics, vaccinology, laboratory diagnostics and poultry production.

In collaboration with national and international partners, the OFFLU project conducted biological and genetic characterization and analysis of 244 H5N1 HPAI viruses, isolated from 317 samples, which were collected across 98 districts from 2007–2009, predominantly from village-based poultry in Indonesia. The genetic analysis indicated that all Indonesian viruses from animal sources characterized under the project were found within the virus grouping "clade 2.1". Further analysis suggested that Indonesia experienced a single introduction of H5N1 HPAI, which was followed by the subsequent in-country evolution of the virus. To further understand the evolution of the H5N1 HPAI virus in Indonesia and the subsequent impact of vaccines applied to poultry, antigenic cartography was applied as a new tool for assessment of antigenic differences between vaccine strains and circulating viruses and technology transfer. Overall, the outcome of biologic, genetic and antigenic analyses of the viruses in Indonesia contributed to safe and efficacious poultry vaccines with updated strains using reverse genetics technology. This work also improved the epidemiological understanding of viruses circulating in village-based poultry across a large geographical area and highlighted the need to include representative sampling from all poultry production sectors.

In a sustainable approach to technology transfer and laboratory capacity building, the animal health laboratory network was established for the detection, isolation and characterization of influenza viruses across the Disease Investigation Centres, representing the first coordinated effort of its kind for monitoring of influenza in animals at a national level. Capacity building technology transfer efforts were conducted within this network in support of the rapid and accurate diagnosis of H5N1 HPAI in Government veterinary laboratories and of a sustainable mechanism to monitor viruses and vaccine efficacy in the field.

Ongoing needs were identified during the final technical meeting (on 28 and 29 October 2010) and included continued support to the: (1) **sustainable laboratory system** established for influenza virus monitoring (IVM), consisting of three major pillars: i) identify potential virus variants; ii) identify potential candidates for updated challenge and vaccine strains (antigenic relevance); and iii) monitor efficacy of vaccines in use, with progressive engagement of national, industry and university laboratories; and (2) **development of a viable mechanism** for registration and licensing of vaccines (inactivated conventional or reverse genetics and novel vectored or reassortant vaccines) that demonstrate efficacy against relevant Indonesian strains that are identified through the IVM. Activities in support of these needs were included under the FAO national programme (OSRO/INS/604/USA) for January–September 2011.

1. INTRODUCTION

1.1. Project background

Highly Pathogenic Avian Influenza (HPAI) is caused by the Influenza A H5N1 virus and poses a significant threat to the world's human and avian populations. In chickens, infections cause rapid systemic disease and high mortality. At the time of this report (15 December 2011), 573 human cases have been confirmed worldwide, 59 percent of which resulted in fatalities. In Indonesia, which has been of growing concern in relation to human cases, of 182 officially reported human cases 150 have been fatal. Every human infection creates the possibility for genetic reassortment between H5N1 and a human influenza virus. This reassortment could generate a new strain of influenza virus that possesses the ability to transmit from human-to-human and cause a human influenza pandemic of unknown proportions. Thus, immediate action to control the virus and decrease the risk of human infection is imperative.

Indonesia is a global hot spot for the HPAI epizootic in poultry and for human H5N1 infections. Owing to high levels of H5N1 virus circulating in poultry, and frequent contact between poultry and humans, Indonesia remains a likely origin of a human influenza pandemic. Underlying this pandemic risk is the ongoing health risk posed by infected poultry. Since HPAI was first recognized in 2003, it has become enzootic in poultry throughout much of Indonesia. Outbreaks continue to be reported on every island where veterinary services are actively monitoring the disease, with high incidences on Java, Sumatra, Bali and Sulawesi. Indonesia's 242 million citizens live in an area one-fifth the geographic size of the United States. The annual population of 1.4 billion poultry consists of approximately 970 million broilers, 100 million layers, 300 million backyard chickens and 35 million ducks (Directorate General of Livestock Services, 2006) that are frequently raised in close proximity to humans and traded through live bird markets. Poultry raising at the household level (for food and income) is common. Moreover, Indonesians traditionally use live birds for home consumption, ceremonial requirements and entertainment, creating numerous opportunities for exposure to the virus.

Indonesia introduced a policy of vaccination against avian influenza (AI) in early 2004 as one of the measures aimed at controlling the burgeoning HPAI epidemic. All vaccines used had to be registered with the Government of Indonesia. At the time the project was initiated, 15 vaccines were registered, including H5N1, H5N2 and H5N9 from Chinese, European, Indonesian and Mexican production laboratories.

At the beginning of the project, the Government policy was to provide and deliver vaccine for village-based poultry (e.g. sector 4) and to permit commercial companies to vaccinate their flocks with a registered vaccine of their choice. A number of problems were encountered, including the inability to adequately monitor vaccine use and variable vaccine efficacy. Additional issues encountered for small-scale producers in sectors 3 and 4 included: insufficient vaccine stocks and logistical capacity to provide adequate coverage, an inadequate cold chain, poor biosecurity and biosafety, and weak programme management.

The preliminary results of a collaborative vaccine efficacy project between the Government of Indonesia, the Food and Agriculture Organization of the United Nations (FAO) and the United States Department of Agriculture (USDA) Southeast Poultry Research Laboratory (SEPRL) (Georgia, USA) indicated that at least one antigenic variant virus (A/chicken/West Java/PWT-WIJ/2006) had emerged in Indonesia against which immunity induced by current vaccine strains, using a standardized intranasal challenge test, was not protective. Analysis of the challenge study results concluded that A/chicken/West Java/PWT-WIJ/2006 was antigenically

distant to the vaccine strains that were currently in use in Indonesia, such that the vaccines did not confer effective protection against the West Javan variant strain; however, the prevalence and distribution of the strain was not fully understood.

Indonesia's control strategy for HPAI has nine components, one of which is the vaccination of domestic poultry. To gain insight into the viruses circulating in village-based poultry production systems, the World Organisation for Animal Health (OIE)/FAO Network of Expertise on Animal Influenza (OFFLU) project proposed to conduct biological and genetic characterization and analysis of H5N1 HPAI from representative poultry sectors and geographic locations in Indonesia. To further understand the evolution of the H5N1 AI virus in Indonesia and the subsequent impact of vaccines applied to poultry, the OFFLU project proposed to apply antigenic cartography to AI viruses. These activities served to help identify candidate viruses for challenge strains and updated vaccine strains. In parallel, laboratory capacity building activities were undertaken to improve the capacity in national laboratories to perform advanced virus characterization and challenge testing where adequate facilities are available. Finally, Project partners together with other stakeholders contributed to technical recommendations for a vaccination strategy including vaccine(s) selection.

1.2. Financial contribution of the Donor

The project was implemented from October 2007 to December 2010. The Government of the United States of America through the United States Agency for International Development (USAID) contributed USD 830 500 for Phase I (October 2007–September 2008) and USD 800 000 for Phase II (October 2008–December 2010) to implement the project OSRO/INS/703/USA, "Monitoring AI virus variants in Indonesia poultry and defining an effective and sustainable vaccination strategy." Under the first phase, an additional USD 200 000 was allocated from the Australian Agency for International Development-funded OSRO/INS/701/AUL project as complementary funding, in support of project activities.

1.3. Project objectives

The project aimed to conduct virus characterization and mapping of Indonesian antigenic variants with intensified HPAI field isolate collection and analyses. With information provided by biological characterization of virus isolates and challenge testing, the project collaborated with national and international research groups, including the SEPRL, the Australian Animal Health Laboratory (AAHL), Erasmus University and national Disease Investigation Centres (DICs) to develop recommendations on how to monitor for antigenic changes in circulating strains, ensure relevance of strains used for challenge testing poultry AI vaccines, and to select potentially efficacious candidate vaccine viruses, including provision of low pathogenicity reverse genetics virus strains for use as vaccines. The project was expected to respond to the immediate need for updated vaccine strains and to provide recommendations for an appropriate vaccination strategy to prevent and control HPAI in Indonesia.

Specifically, the objectives were as follows, to:

- screen for antigenic/genetic variants, especially among a targeted subset of already collected isolates;
- obtain a representative sample of circulating HPAI viruses across all sectors in Indonesia;
- determine the ability of registered vaccines to provide protection against each selected isolate, and, if necessary, select new vaccine seed strain(s);

- improve the capacity in Indonesian laboratories to perform advanced virus characterization and challenge testing where adequate facilities are available; and
- partner with other stakeholders to contribute technical recommendations to a vaccination strategy including vaccine(s) selection and prepare a revised costing of the proposed strategy.

1.4 Planned beneficiaries

The project planned to benefit the following persons and institutions:

- national veterinary DICs: from direct capacity building activities, reagent and equipment procurement, and increased information sharing and communication through implementation of network activities;
- poultry owners, producers and traders: from a reduced incidence of HPAI through improved vaccination programmes;
- national veterinary and veterinary public health services: from the training provided to local government livestock agencies in management, technical understanding and responsibilities regarding epizootic disease control;
- district, municipal and provincial local government animal health and livestock services in Indonesia: from increased capacity and expertise in HPAI surveillance and response;
- Indonesian population: from a reduced risk of AI; and
- international community: from a reduced risk of the spread of HPAI and of the human influenza pandemic.

2. PROJECT IMPLEMENTATION

2.1 Implementation arrangements

FAO implemented this project in close collaboration with the Ministry of Agriculture (MoA) and local government livestock services. The project activities were carried out by the Animal Health Service (AGAH), the Emergency Operations Service (TCES) and the Emergency Centre for Transboundary Animal Diseases (ECTAD) of FAO. There was additional collaboration with OFFLU laboratories, Livestock Policy Service of FAO (AGAL) and respective universities.

The MoA was the counterpart Government institution and provided coordination through existing channels. Technical backstopping of the project was provided through ECTAD, based within the Emergency Prevention System (EMPRES) for Transboundary Animal and Plant Pests and Diseases programme of AGAH in FAO headquarters and Bangkok. In addition, AGAL also provided backstopping on the analysis of socio-economic variables related to the implementation of a vaccination programme.

2.2 Main project activities

2.2.1 HPAI field isolate collection for biological and genetic characterization

- Characterization of 244 H5N1 isolates (266 total viruses) from 317 samples in Indonesia, representing approximately 90 districts predominantly from backyard chickens.
- Selection and production of reference antisera and antigens for Indonesia.
- Antigenic cartography data from 100 isolates, in addition to biologic and molecular data, was used to select five candidate vaccine strains and six potential challenge strains for

further investigation. Viruses were received at SEPRL for vaccine construct and challenge studies in June 2009.

- DIC Wates was nominated as focal point for antigenic cartography. A work plan was developed, and capacity building activities for antigenic cartography were initiated in July 2009.
- Six of the seven DICs conducted prescreening of 276 H5 positive virus isolates from 2008 to 2010 during April and May 2010 and submitted results to DIC Wates, where analysis was initiated for selection of variants to be forwarded for further characterization.
- Three laboratories were nominated to support genetic characterization of antigenic variants, launch the capacity building activities for sequencing and bench-side workshops.
- The Director-General of Livestock and Animal Health Services in Indonesia agreed in principle to the release of virus sequences into the public domain in June 2010.
- Presentations were made at the (i) seventh International Symposium for AI in April 2009 in Athens, Georgia, USA; and (ii) regional meeting on “Molecular epidemiology of origin and evolution of H5N1 HPAI virus in Asia,” (USDA/FAO) in Bangkok, Thailand, in September 2009; and by the (iii) national scientist in collaboration with OFFLU at the National Scientific Conference in Bogor, July 2010, on “Initial study of antigenic diversities of AI virus H5N1 in Indonesia using reference antisera produced for antigenic cartography”.

2.2.2 Challenge testing of antigenic variants and vaccine strains selection

- Signing of collaborative Material Transfer Agreement (MTA) between the Directorate General of Livestock Services (DGLS), AAHL, SEPRL and industry, and receipt of selected vaccine candidate and challenge strains at SEPRL in June 2009 to continue vaccine development and challenge testing.
- Selection of five vaccine strains and six challenge strains based upon data generated from antigenic and molecular characterization of isolates.
- Return of fully characterized isolates to Indonesia to contribute to updated vaccine production and challenge models. DGLS informed vaccine manufacturers of the availability of the candidate vaccine and challenge viruses and invited them to retrieve the viruses from the MoA Veterinary Biologicals Laboratory (Pusvetma) and the National Veterinary Drug Assay Laboratory for Indonesia (BPM SOH).
- Challenge tests conducted using available reverse genetics constructs at SEPRL using updated challenge viruses selected from the OFFLU project data. Six reverse genetics (RG) virus seed strains were generated at SEPRL. Results indicated that of the six, four RG virus seed strains generated protective titres, significantly reduced virus shedding and provided equivalent protection against challenge viruses selected from the November 2009 Technical Meeting as compared to conventional inactivated vaccines generated using two of the same seed strains.

2.2.3 Capacity building

Please refer to the Section 2.4: Training for capacity building activities conducted under the project.

2.2.4 Technical recommendations for the vaccination strategy

- FAO interim recommendations were submitted to the DGLS in April 2008. These recommendations were updated in June 2009 based upon data analysed from the OFFLU project.
- Development of a mechanism to monitor AI antigenic variants, involving all DICs and collaborating laboratories using a virus pre-screening assay and antigenic cartography.
- Consultation with a legal firm specializing in intellectual property completed.
- Development and assessment of newly engineered low pathogenicity reverse genetics vaccine strain(s) for Indonesia selected through data gathered from this project.
- OFFLU technical review meetings with open forum held in June and November 2008, and in November 2009. The meetings provided an overview of the OFFLU Indonesia project activities and included presentations from national vaccine manufacturers, universities and industry stake holders in order to update the status of HPAI in Indonesia as well as laboratory activities and parallel projects engaged in the control HPAI.
- The final OFFLU project technical review meeting was held in Jakarta on 28 and 29 October 2010, and a set of recommendations was produced.
- A report was prepared by a socio-economist on “Vaccination and surveillance costs for operational research project in Indonesia” under this project.
- Interviews of 155 broiler chicken farmers (average flock size 2 700) and 56 layer chicken farmers (average flock size 2 200) were conducted for the the Indonesian Center for Agriculture Socio-Economic Policy Studies field survey “Assessment of farm level financial incentives and willingness to pay for HPAI vaccination in Indonesia” in 13 districts/municipalities in western Java.

2.2.5 Procurement

Supplies and equipment were procured locally to facilitate the collection of field isolates and support DICs in performing antigenic characterization of viruses and analysing resulting data.

2.3 **Actual beneficiaries**

The following have benefited from the project activities to-date:

- The national veterinary DICs, the Balai Besar Penelitian Veteriner Veterinary Research Institute (Bbalitvet), Pusvetma, and the National Veterinary Drug Assay Laboratory benefited directly from on-site assessment visits and workshops, which have strengthened the technical capacity at the laboratory level and launched a laboratory network for monitoring AI viruses including genetic and antigenic characterization, such as antigenic cartography, as a tool to monitor antigenic variants in Indonesia with increased information sharing and communication through implementation of network activities.
- District, municipal and provincial local government animal health and livestock services in Indonesia benefited from increased capacity and expertise in HPAI surveillance and response.
- Stronger ties with the university personnel have resulted in including representatives in the OFFLU technical review meetings and training workshops.
- The poultry industry benefited from increased communication with the MoA and its cooperation and inclusion in project activities.

- Poultry owners, producers and traders benefited directly from a reduced incidence of HPAI resulting from improved vaccination programmes.
- The Indonesian population benefited from a reduced risk of AI.
- The international community benefited from a reduced risk of the spread of HPAI and of a human influenza pandemic.

2.4 Training

The following training and capacity-building activities were carried out under the project:

- OFFLU workshops were conducted on introductory molecular and antigenic analysis for 82 Indonesian scientists representing all DICs, four veterinary faculties, industry and the MoA (November 2008, March and September 2009).
- Eight Indonesian scientists from the DICs and commercial poultry industry were hosted at AAHL for training on molecular and antigenic characterization of viruses (June 2008, October 2009).
- Six Indonesian scientists participated in bench-side training for sequencing at AAHL in November 2010.
- The FAO/OFFLU scientist has completed five months of capacity building activities in close coordination with AAHL. Support visits, workshops and technical assessments were conducted at DIC Wates, DIC Denpasar and DIC Bukittinggi. Capacity building activities for antigenic cartography were undertaken in close coordination with AAHL.
- A national FAO/OFFLU technical officer was recruited to assist with the coordination of OFFLU activities in close collaboration with representatives from the Directorate of Animal Health (DAH)/ National HPAI Campaign Management Unit (CMU), the seven DICs, particularly DIC Wates, and other relevant public sector structures and private sector stakeholders to support the transfer of activities to Indonesia.
- Completion of the User Acceptance Testing Workshop and subsequent activities to launch InfoLabPlus.

2.5 Difficulties encountered during implementation

- Project implementation was slower than anticipated. The project initially faced difficulties with the shipment of samples out of Indonesia. Through the efforts of the ECTAD team based in Indonesia, however, isolates were shipped to AAHL. Revision of the existing MTA was again requested during the spring of 2009 and agreement achieved by September 2009.
- Two project partners included in Phase I (the Veterinary Laboratories Agency and the Central Institute for Animal Disease Control) retired from the project owing to a lack of Indonesian biological material for scientific study. As a consequence, the transmission studies and some viral characterization originally proposed were not performed.
- While recommendations were generated through the outcomes of the technical review meetings for Indonesia (refer to 2.2.4), the impact of these recommendations remains difficult to quantify. One example is that the official governmental recommendation for use of H5N2 vaccines in Indonesia was not revoked until April of 2009, despite repeated recommendations through this project and others against their use. This has resulted in much confusion at the field level and may indeed have encouraged the marketing of mislabeled vaccines, as the vaccine industry recognized that the H5N2 vaccines were ineffective, but the Government stance was pro-H5N2.

- Collected isolates should be representative of major circulating viruses. Isolates characterized to-date are representative of 2007, and too few are from the commercial poultry industry and from western Java.
- The project encountered extreme difficulties in returning the fully characterized vaccine and challenge virus strains to Indonesia. A combination of issues from the Australian Government regulations, in addition to slow reactivity to urgent issues, hindered the process significantly.
- While the DGLS have agreed in principle to pursue collaboration with the private vaccine companies, there is still much confusion about the status of challenge testing of current influenza vaccines as well as vaccine registration.

3. PROJECT IMPACT

The OFFLU project in Indonesia significantly improved the knowledge of circulating H5N1 viruses to directly inform vaccine policy. The project also developed a novel, more efficacious vaccine, and increased the capacity of Indonesian scientists and laboratories to lead the vaccine development process.

- **Improved knowledge of circulating H5N1 viruses to directly inform vaccine policy**

The characterization and analysis of 244 virus isolates from 317 samples at AAHL (an international reference laboratory for AI) provided insight into the viruses predominately circulating in village-based poultry. This knowledge contributed to the understanding of the epidemiology of circulating viruses in Indonesia and highlighted the need to have representative sampling from all poultry production sectors. Additionally, these analyses provided further evidence that the use of H5N2 vaccines should not be recommended in Indonesia owing to the antigenic distance between the vaccine virus and the predominant subclade 2.1.3 viruses circulating in the country.

- **Development of a safe, efficacious vaccine for use in Indonesia**

The outcome from the biological, genetic and antigenic analysis of these viruses served as the basis for the selection of five updated candidate vaccine strains and six candidate vaccine challenge testing viruses for Indonesia. At the national level, these and other data were considered, and the selection was narrowed to four candidate vaccines viruses and two challenge testing viruses (to represent the two broad antigenic groups in subclade 2.1.3). As an indication of improved sharing and transparency, the selected strains were provided to SEPRL under a collaborative MTA between the Indonesian Government, a poultry production company, AAHL and SEPRL, so that the candidate vaccine strains could be challenge tested against at least four antigenically distinct challenge viruses.

When the strains are provided to vaccine manufacturers, it is expected that they will provide more efficacious vaccines for distribution and use in Indonesia. It is expected that the antigenicity of new generation vaccines will be higher than vaccines previously produced in Indonesia and that this will also contribute to more efficacious vaccines. In addition, certified low pathogenicity reverse genetics derived vaccine strains based upon the same four candidate vaccine viruses were generated, and will also be provided to Indonesia for consideration as alternatives to generating inactivated vaccines from highly pathogenic strains.

At an international level, these analyses identified a new third-order subclade circulating in Indonesia, and this information was submitted for consideration. Improved transparency was achieved through presentations given at both the 7th International Symposium on AI (April

2009) and at the Regional Meeting on Molecular Epidemiology of Origin and Evolution of H5N1 HPAI Virus in Asia (USDA/FAO, Bangkok, Thailand, September 2009). The Government agreed to place the sequence data generated from this project in the public domain (deposited to GenBank).

- **Increased capacity of Indonesian laboratories to perform antigenic characterization of viruses and analyse results**

To further understand the evolution of the H5N1 HPAI virus in Indonesia and the subsequent impact of vaccines applied to poultry, the OFFLU project pioneered the application of a method known as antigenic cartography to AI viruses. This technique was developed to characterize human influenza viruses and used to facilitate human vaccine strain selection for seasonal influenza viruses since 2002. Overall, the outcome of biologic, genetic and antigenic analyses of these viruses in Indonesia contributed to the identification of updated candidate vaccine strains for poultry.

In a sustainable approach to technology transfer and laboratory capacity building, an animal health laboratory network was established for the detection, isolation and characterization of influenza viruses across the veterinary DICs, representing the first coordinated effort of its kind for monitoring of influenza in animals at a national level. Focal point laboratories were nominated to coordinate and conduct advanced antigenic characterization and sequencing. Capacity building technology transfer efforts were conducted within this network, in close coordination with AAHL, through a series of consultations, working groups and workshops from the international reference laboratories to the network in support of the rapid and accurate diagnosis of H5N1 HPAI in government veterinary laboratories, and to establish a sustainable mechanism to monitor viruses and vaccine efficacy in the field. Other impacts at the national laboratory level were achieved through workshops and individual laboratory assessments and training. These include: improved harmonization of molecular and serological methods and virus-naming strategies, improved inclusion of epidemiological data upon sample intake, and broader acceptance and improved capacity of the updated InfoLab-Plus platform.

- **Technical recommendations made to provide a foundation upon which a comprehensive national vaccination strategy can be developed**

This project contributed technical recommendations, including monitoring of field strains for antigenic variants through the FAO recommendations on vaccination (March 2008 and May 2009), six technical review meetings, and technical expert teleconferences to address specific questions, as well as to provide a cost evaluation for vaccination of village-based poultry. While the impact of these recommendations is not yet realized, these inputs are expected to provide a foundation upon which a comprehensive national vaccination strategy could be developed.

4. RECOMMENDATIONS AND FINDINGS (additional recommendations in Annexes 1-3)

For Sustainability – A National Programme to monitor antigenic variants should include:

- Structured prospective surveillance of AI viruses representative of all poultry industry sectors and geographic locations to deliver a comprehensive understanding of the national situation and allow recommendations relevant for both commercial and village poultry sectors.
- Continued development of technical competence for monitoring and genetic and phenotypic characterization of antigenic variants across the laboratory network, with:

- Laboratories using harmonized laboratory procedures and a data information platform to underpin a virus monitoring programme;
- systems of quality assurance;
- ongoing mechanisms for communication across the laboratory network and the Directorate General of Livestock and Animal Health Services in support of the laboratory network activities; and
- strategic approach to continually utilize and maintain molecular analysis equipment through routine application to pathogens in addition to HPAI.
- Appointment of a science manager with laboratory background to oversee, coordinate and ensure that results inform decisions at the central level:
 - This post should be a position of adequate authority within DAH.
- A structured system to generate quality-assured reagents required for antigenic characterization:
 - Prepare budget to improve facilities at Pusvetma including upgrading the poultry housing for production of antisera to BSL-2 level to avoid contamination; and
 - conduct a review of the facility renovation for HPAI, as well as the current poultry antigen/vaccine production capability for multiple antigens.
- A nationally coordinated mechanism to manage public-private partnerships to achieve a unified national analysis of data on emerging influenza viruses.

For Vaccines and Vaccination

- H5N1 vaccine seed strains should be antigenically and genetically similar to the current circulating viruses (non-homologous strains should be discouraged).
- Owing to the divergent genetic evolution of AI in Indonesian commercial production systems (sectors 1-2) as compared to village-based poultry (sectors 3-4), more than one epidemiologically relevant and antigenically distinct seed strains may be necessary to cover all production sectors.
- Proper administration of high-quality, potent vaccines per manufacturers' instructions is critical in inducing protective immunity in poultry populations: choice of antigen is not the only factor for successful vaccination.
- Consider using antigenic relevance to build flexibility into governmental regulations and allow updated seeds to continue to be introduced (e.g. can recommend "X" virus or its "antigenic equivalent"):
 - Currently clade 2.1.3 predominates and within that subclade there are two major antigenic lineages: "common" and WJ variant.
 - Map currently available Indonesian poultry vaccine strains onto the antigenic cartography data map for Indonesia to include vaccines in active use, as only the A/chicken/Legok/03 and A/turkey/England/73 antigens are available on the map.
- In vivo challenge testing for efficacy evaluation of vaccines should use antigenically relevant challenge viruses. Vaccine licenses should be issued in relation to a specific challenge virus, and because a single vaccine seed cannot protect from antigenically diverse challenge viruses, single challenge virus testing may be appropriate to fit specific sectors or geographic regions. Antigenically relevant challenge viruses selected using a two-tiered approach to test vaccines is suggested to expedite crucial information needed for Indonesia, as well as for purposes of registration of newly available vaccines:
 - Pass challenge against common lineage subclade 2.1.3 (e.g. A/chicken/West Java Sbg/29/2007); and
 - Pass challenge against West Javan variant subclade 2.1.3 (e.g. A/chicken/West Java/SMI-PAT/2006).

- Additionally, consider different levels for vaccine registration to allow for faster updates to vaccine strains based upon epidemiologically relevant virus data – for example, the US system has three levels:
 - autogenous registration (inactivated vaccines only): purity and safety data needed;
 - conditional registration: safety and purity and some efficacy data needed; and
 - full registration: safety and purity and efficacy and potency in full dossier format. All live recombinant vaccines require full registration.
- Register vaccines using technologies that can demonstrate high potential for providing protection against HPAI, for example:
 - live recombinant vaccines as an adjunct to inactivated vaccines for use in broiler sectors; and
 - vaccine seed strains produced using low pathogenic reverse genetics, which can achieve higher growth titres in eggs. Their use improves employee and environmental safety because manufacturing can be managed under BSL-2 conditions.
- Inactivated vaccines produced from low pathogenic reverse genetics seed strains should not be considered as genetically modified organisms for the purposes of registration. This is common international practice.
- Consider the use of bivalent vaccines to achieve a broader immune response where the antigenic content for each seed virus is equivalent to the monovalent dose; relevant research data for poultry is not yet available to support the use of >2 antigens in a vaccine.
- A minimum vaccination protocol is a 2-dose regime to provide adequate protection throughout the production cycle.
- Antigens used in hemagglutination inhibition (HI) serological evaluation should be urgently updated to relevant virus strains to include the specific vaccine virus strain, and one or more antigens representative of H5N1 HPAI current field and/or challenge viruses.

Recommendation to endorse the use of A/chicken/Indonesia/Wates-1/2005 clade 2.1.3 at the DICs and other national laboratories as follows:

- To aid in the comprehensive analysis of the serosurveillance efforts being conducted at the DICs, use of an updated “common” circulating field isolate, A/chicken/Indonesia/Wates-1/2005 clade 2.1.3, as the antigen for conducting HI assays to assess vaccine protection.
- Use of a characterized and standardized hyperimmune H5 antiserum generated from this updated “common” circulating field isolate (Wates-1) is further recommended for typing of hemagglutination (HA)-positive agents, to be used in conjunction with the previously recommended prescreening efforts for monitoring antigenic variation introduced by the OFFLU project.

And:

- Production of the standardized H5 antigen and hyperimmune serum for Wates-1 is recommended to commence at an MoA nominated laboratory under a quality assurance system with guidance from AAHL; and reagents to subsequently be assessed at the relevant regulatory body for veterinary biologics in line with previous recommendations from the OFFLU project (refer to 4a. above).

Poultry serum samples for H5N1 serosurveillance are received on a routine basis in the DICs in Indonesia. In general, it is difficult at the DIC level to apply the HI assay to specifically assess **vaccine response** (1) owing to the use of several antigenically distinct AI vaccines in Indonesia, and the lack of information on which vaccine has been applied in most cases. Therefore, it is

often not possible to select an appropriate homologous antigen to adequately assess vaccine response.

Instead, an assessment of **vaccine protection** (2) is performed using the antigen(s) available in each laboratory. However, there are currently at least two antigenically distinct antigens being produced and used in the DICs leading to difficulties in interpretation and comparison of serosurveillance data from different DICs.

Additionally, there is a need to generate standardized H5 hyperimmune antiserum that is broadly reactive against a well characterized, updated “common” circulating field isolate from Indonesia to be used for **identification/typing** (3) of HA-positive agents.

Data from the OFFLU project for “Monitoring AI virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy” (Government of Indonesia-FAO-OFFLU-USAID) supports the use of **A/chicken/Indonesia/Wates-1/2005** clade 2.1.3 (Wates-1) for the production of hyperimmune antiserum and a homologous standardized antigen to represent an updated “common” circulating field isolate (refer to figures below). Quality reagents produced from Wates-1 should be readily available to all laboratories and can serve as a quality assurance control, as standardized references against which other reagents can be compared and validated, and to allow intra- and inter-laboratory comparisons of HI data. **The use of other antigens as needed to adequately conduct the assays as above is encouraged under quality assurance guidelines.**

For International Engagement

- The control of animal influenza requires a global approach as coordinated by OFFLU.
- The role of international reference laboratories in the Indonesian programme should be defined and the mechanism of engagement agreed, with AAHL and OFFLU engaged in a prolonged programme of support to designated national reference facilities in Indonesia to develop a high level of capability in the laboratory studies that underpin full virus characterization.
- Indonesia-international partnerships should include technical communication and timely sharing of data and biological materials, such as viral sequence data, which contribute not only to ongoing efforts in Indonesia but to the global efforts to control HPAI.
- Continued provision of reagents specifically for antigenic cartography and associated prescreening from international partners is recommended until demonstrated technical competence and resources can be fully established in-country.
- Surveillance for and characterization of HPAI in Indonesia can make other contributions to OFFLU initiatives for the management of influenza infections at the human animal interface. Continued active participation by Indonesia in OFFLU is valuable in the international context.

**ANNEX 1. FAO interim recommendations on poultry vaccination against HPAI¹ in Indonesia,
March 2008**

**FAO interim recommendations on poultry vaccination against HPAI¹ in Indonesia
– on behalf of OFFLU²-March 2008**

Introduction

Vaccination can be a useful tool in the control of enzootic HPAI providing that efficacious vaccine is available, the strategies for vaccination are clearly defined, appropriate and implementable, sustainable and accompanied by other control measures, and that post-vaccination monitoring is undertaken.

Indonesia introduced a policy of vaccination against H5N1 in early 2004 as one of the measures aimed at controlling the burgeoning HPAI epidemic. The Government vaccination campaign has had insufficient apparent impact on disease incidence. The large commercial sector has used vaccine widely and although information is limited it appears to have prevented infection and reduced commercial losses. Barriers to effective application of vaccination against AI virus in Indonesia include difficulty to cover village backyard small producers and insufficiently defined vaccination strategies. In addition to that, the problem of new circulating strains and uncertain vaccine efficacy in ducks make the situation even more complex.

This paper sets out interim recommendations regarding the national strategy for AI vaccination in Indonesia. As information becomes available from the OFFLU project (OSRO/INS/703/USA-AUL), especially with identification of circulating H5N1 viruses, these recommendations will be reviewed and updated as necessary.

Continuation of the vaccination policy

The results of a collaborative Vaccine Efficacy Project between GOI, FAO Indonesia technical staff and two OFFLU laboratories (AAHL³ and USDA-ARS⁴/SEPRL⁵) were presented in June 2007 in Jakarta. The objectives of the study were to evaluate the protection conferred by currently available vaccines against three Indonesian H5N1 field viruses. The results showed that though the antibody response was good, indicating that the vaccines were of high quality, the currently available vaccines were not fully protective in the challenge studies when using these 2006 viruses. Vaccine protection was poorest for the virus strain, A/chicken/West Java/PTW-WIJ/06 (9/2006), partly protective for a second strain, A/chicken/Papua/TAS/06 (7/2006), and good for the third strain, A/chicken/WJ/SMI-HAMD/06 (5/2006). The variation in protection suggests significant variation in antigenicity of the tested field strains.

The distribution and prevalence of new virus strains in Indonesia is currently unknown. An improved knowledge of circulating H5N1 field viruses as well as the efficacy of currently used vaccines are expected through the OFFLU project⁶ (implemented by FAO on behalf on OFFLU beginning in October 2007) aimed at 'Monitoring AI virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy'. Therefore, it is not yet possible to predict whether currently available vaccines will provide adequate protective immunity in

¹ Highly Pathogenic Avian Influenza

² OIE/FAO Influenza network of expertise

³ Australian Animal Health Laboratory, Geelong, Australia

⁴ United States Department of Agriculture, Agricultural Research Service

⁵ South East Poultry Research Laboratory, Georgia, USA

⁶ OSRO/INS/703/USA-AusAID

chickens and in other species across the country; nor is information available to indicate whether specific virus strains are circulating in particular locations or poultry sectors – a situation that might lead to specific vaccines being used by locality or sector. Nevertheless these results show that vaccines are still effective against some circulating H5N1 viruses. Considering that the main purpose of vaccination is to decrease the level of circulating virus and therefore the risk of virus transmission, **FAO recommends that the Indonesian MoA maintains a policy of vaccination but efforts are required to increase vaccination coverage of the poultry population. The precise vaccine selection will be reviewed following characterisation of representative field H5N1 isolates.**

Targeted vaccination

Given the enormous logistical effort required to undertake any country wide mass vaccination campaign and the limitations of the current programme in Indonesia, **it is recommended that government sponsored vaccination should be extended to known heavily contaminated districts or provinces and to any targeted high risk populations.** As experience in logistics and delivery are gained, extension of the vaccination campaigns should be considered using a risk based approach that will identify high risk production and marketing practices, in particular the current live poultry marketing system. Where vaccination is implemented, a programme to improve biosecurity of production units is also critical. Moreover duck vaccination should be specifically considered as this species is recognized as a major reservoir of the virus. Known infected areas with a high incidence of HPAI in poultry and with human cases should be selectively targeted.

Additionally, the use of vaccine by commercial producers must be regulated and monitored. A programme to promote effective use of vaccine by commercial industry should be implemented and should also include other risk mitigation measures such as improving biosecurity and general husbandry practices. It is important that the logistics of a vaccination campaign are considered and the constraints clearly understood before embarking on any vaccination campaign. The logistics required must be identified by clearly defining vaccination protocols (frequency, target populations, monitoring seroconversion), identifying cold chain requirements and by introducing an audit trail for monitoring vaccine supply and use. Data should be recorded not only for monitoring the vaccination use but also to be able to assess any impact of vaccination on disease control. Finally, HPAI viruses must continue to be collected to monitor any virus circulation in all vaccinated populations, including from large poultry industries.

Monitoring of vaccine quality

Good vaccine quality is a prerequisite for good vaccination efficacy and programme effectiveness. At this stage, the vaccine quality (or potency) is independent from vaccine matching with field strains. Some assessments of vaccine quality have previously been conducted and have shown that Indonesia is producing and importing good quality vaccines⁷. However, there might be some variability between vaccine batches. The quality and quantity of antigen as well as the type of adjuvant play an important role in vaccine quality.

In vitro quality control of inactivated AI vaccines is not standardized and established in the international pharmacopocia. However vaccine immune response can be assessed *in vivo* using SPF⁸ birds in experimental conditions and measuring the level of post-vaccination-induced antibodies. These tests do not require any challenge trials. Then to assess vaccine quality the antigen used in the HI test to detect vaccine-induced antibodies should be the same as the

⁷ Ivo Claassen *et al.* (2006)

⁸ Specific Pathogen Free

antigen used to produce the vaccine. The vaccine manufacturer should be required to provide the laboratory performing the HI⁹ test with the antigen used for vaccine production. Producers should be encouraged to raise their antigen content to achieve a 1:120 average HI titer in single immunized specific pathogen free layer chickens.

FAO recommends that the quality of all vaccines currently used in Indonesia be continually monitored. These controls could be conducted by the Veterinary Drug Assay Laboratory on a regular basis and by a clearly established programme. Results should be made publicly available and poor performing vaccines should be deregistered.

Vaccine selection

Vaccine strains

Preliminary results of the OFFLU project seem to confirm the results obtained in the trials conducted by USDA-ARS/SEPRL: vaccine strains that closely match antigenically to HPAI H5N1 viruses are more protective than classical LPAI¹⁰ vaccine strains. NA subtype is not relevant to the field protection. Therefore, **FAO recommends that H5N1 vaccines (Legok/03) or any H5 Reverse Genetic vaccine prepared from HPAI Eurasian H5N1 strains be used and preferred over any H5N2 vaccines until fully protective low pathogenic vaccine strains are generated –most likely by reverse genetic- for Indonesia.**

A selection of vaccines protective against currently circulating H5N1 field viruses is to be carried out as part of the OFFLU project. Vaccines will be selected on the basis of the outcomes of the antigenic mapping of Indonesian field isolates and confirmation with challenge tests. Distribution of viruses geographically, by enterprise type, by species and by flock vaccination status will also be considered when selecting vaccine seed strain(s).

FAO recommends that consideration be given to the following scenarios when selecting vaccines to be used:

- If the results indicate that the best protection is provided by vaccines currently not registered in Indonesia, then the Ministry of Agriculture should immediately start a process of emergency registration.
- If Indonesia does not have the ability to produce the required vaccines in sufficient quantities, then vaccines should be imported from other countries (at least until local quality production can meet demand).
- If final results confirm that H5 subtype vaccine strains that are antigenically and genetically closer to circulating HPAI viruses of the H5 subtype, are more protective than classical LPAI H5 strains, then only these H5 vaccine strains should be used (whatever the NA subtype).
- It might be shown necessary to use bivalent vaccines based on already available vaccine strains and/or incorporate additional vaccine strains.
- If results indicate that a new vaccine strain or strains must be developed specifically for Indonesia, then new vaccine seed strain(s) will need to be identified as a matter of urgency.
- If reverse genetic techniques are to be used, the 'construct' should be developed by the Government of Indonesia in partnership with international institutes and then provided to vaccine manufacturers who supply Indonesia. If national production

⁹ Hemagglutination Inhibition

¹⁰ Low Pathogenic Avian Influenza

capacities are deemed insufficient for Indonesia, the MoA should identify another potential manufacturer (or several) outside the country. The development of a new vaccine will take at least 6 months. Interim use of already available vaccines should be considered in the light of data obtained through the OFFLU project. If representative isolates in sufficient number can be characterized through the OFFLU project, new recommendations will be made by June 2008 on vaccine strain(s) to use in Indonesia until new vaccines are identified for Indonesia.

Review existing registered products

Twenty vaccines are currently registered in Indonesia. Vaccine seed strains include a local highly pathogenic strain A/ckicken/Legok/2003 (H5N1), A/ckichen/Mexico/94 (H5N2), A/Turkey/Wisconsin/69 (H5N9) and A/Turkey/England/73 (H5N2). This wide range of vaccine types and manufacturers makes vaccination monitoring and assessment more difficult. **FAO recommends that the range and type of vaccines available for use in Indonesia be reviewed and that only proven efficacious vaccines retain registration; poorly performing vaccines should be deregistered.**

New technology vaccines

▪ **Reverse genetic vaccines**

Owing to its high pathogenicity Asian H5N1 virus cannot usually be grown to high titre in eggs (the traditional method of vaccine virus production for human and AI vaccines). Furthermore, for AI vaccine production, OIE recommends that for any subtype, only well characterised influenza A virus of proven low pathogenicity, preferably obtained from an international or national repository, should be used to establish a master seed for inactivated vaccines. For these reasons, alternatives to homologous virus vaccines have been developed. The most promising approach is the use of reverse genetics to create a novel influenza virus having the current H5 HA antigen derived from contemporary viruses in a genetic background derived from a virus that has a high replication capacity in eggs, but that has also low pathogenicity in both avian and mammalian species^{11,12}. The seed strain contained in the vaccine is essentially a synthetic virus engineered in the laboratory. This combination allows the generation of a virus with low pathogenicity and high replicative efficiency ensuring high production yield of antigen and specific antigenicity. Once the vaccine seed strain is generated, these vaccines are produced as conventional inactivated vaccines and have the same properties as these vaccines. Current reverse genetic H5 vaccines are H5N1 strains (manufactured in China) or with another NA subtype (H5N3 manufactured by Fort Dodge). Vaccine strains based on another NA subtype enable anti-NA DIVA¹³ testing.

According to preliminary experimental results obtained by SEPRL¹⁴ with H5 reverse genetics vaccines and positive experiences in the field in China¹⁵ and Vietnam¹⁶, H5 reverse genetic vaccines should offer better protection than heterologous strains since they more closely match

¹¹ D. Middleton et al. Efficacy of inactivated vaccines against H5N1 avian influenza infection in ducks. *Virology* (2007) 359:66–71

¹² The EFSA Journal (2007) 489, Scientific Opinion on “Vaccination against avian influenza of H5 and H7 subtypes in domestic poultry and captive birds”

¹³ Differentiation of Infected from Vaccinated Animals

¹⁴ Efficacy Project between GOI, FAO Indonesia technical personnel and two OFFLU laboratories (AAHL, Geelong, Australia and USDA-ARS/SEPRL, Georgia, USA)

¹⁵ Tian G, Zhang S, Li Y, Bu Z, Liu P, Zhou J, Li C, Shi J, Yu K, Chen H. Protective efficacy in chickens, geese and ducks of an H5N1-inactivated vaccine developed by reverse genetics. *Virology*. (2005) 341:153

¹⁶ Unpublished information

the antigenicity of HPAI H5N1 field strains. These results still need to be confirmed with Indonesian strains through the ongoing OFFLU project.

- **Recombinant live vector vaccines**

A number of recombinant live vector-engineered vaccines expressing the HA antigen in the backbone of viruses or bacteria have been shown to induce protection in poultry⁸. A fowlpox virus vaccine expressing the HA of the H5 subtype is commercially available and has been used in AI control programmes in several countries; as yet information on the efficacy of this vaccine under Indonesian field conditions is not sufficiently known and this requires urgent assessment. Vaccination at the hatchery of day-old-chicks is logistically simple to carry out and facilitates higher vaccination coverage of the bird population and protection of short-lived birds. FAO supports the urgent undertaking of field trials to assess the efficacy of TROVAC®.

FAO recommends that the Ministry of Agriculture expedites as quickly as possible the assessment and registration of new technology vaccines, both reverse genetic and recombinant vaccines.

Establish a national technical group on vaccination

Given the need for ongoing monitoring and adaptation of the vaccination strategy to the disease situation, **FAO recommends that a national technical group on vaccination be established.** This group should be part of the responsibility of the CMU and should include representatives from all relevant parties including government, universities and research institutes, commercial industry and the vaccine manufacturers. Technical expertise should include virology, epidemiology, immunology, finance and logistics, and project planning. This group should clearly define the process and identify the roles of each Indonesian partner/institute for vaccine efficacy monitoring and vaccine strain selection in the future. It should also define the vaccination strategy to be applied in the country.

Close links should be maintained with international agencies including FAO and OIE as well as with other OFFLU members (laboratories) and with the wider international scientific community. It is essential that transparency prevail in this global public good effort where people's lives and livelihoods are at stake. The sharing of information, in particular on virus variants with the OFFLU laboratories will support disease control in Indonesia and other countries. It will also enable OFFLU laboratories to develop effective systems for monitoring antigenic changes worldwide. The support of the regional and international Reference Laboratories to the national capacity of Indonesia in order to monitor for antigenic changes and to conduct independent studies on available vaccines will have to be strengthened.

Increasing Indonesia scientific capacities

The national diagnostic and research facilities will be strengthened by working collaboratively with the OFFLU project and international scientists. A workplan will be developed that clearly specifies the roles of the national institutes, the facilities and equipment required and their personnel needs. This workplan will be used to guide international support to increase the capacity of Indonesia to undertake monitoring of H5N1 and required vaccines. It is expected that international scientists will be seconded to assist Indonesia in this process and that Indonesian scientists will be sponsored to attend international training courses and seminars. In particular, capacity building in sequencing, antigenic mapping, bioinformatics, challenge testing and reverse genetics engineering are critical for the future of Indonesian animal and human health.

ANNEX 2. FAO Update to recommendations on poultry vaccination against HPAI¹⁷ in Indonesia, May 2009

**Update to recommendations on poultry vaccination against HPAI¹⁸ in Indonesia
– FAO on behalf of OFFLU¹⁹ –
May 2009**

Introduction

Control of enzootic HPAI requires a coordinated approach using tools such as vaccination, farm biosecurity, movement control, sanitation along the market chain, rapid outbreak control, depopulation. When accompanied by other control measures, well-timed vaccination campaigns can be considered as a temporary means to induce flock immunity prior to periods of expected high challenge; thus to reduce virus circulation in the environment and poultry, and exposure risks to humans. While vaccination is a useful tool when used in combination with coordinated control strategies, it is crucial to consider the efficacy of available vaccines and to have clearly defined strategies for vaccination including post-vaccination monitoring. Day-old-chick vaccination is considered as an optimal option for large scale vaccination but it is not yet achievable due to the lack of safe and efficacious vaccines for AI in this age group.

Indonesia introduced a policy of vaccination against H5N1 in early 2004 as one of the measures aimed at controlling the burgeoning HPAI epidemic. As H5N1 has become entrenched in Indonesia, vaccination remains an important tool in control of HPAI. However, vaccine application is logistically challenging in many poultry sectors, especially in backyard poultry and ducks. In addition, there is currently no fully protective poultry vaccine against all HPAI viruses circulating in Indonesia. Research to develop safe and efficacious poultry vaccines is ongoing including investigation and challenge testing of newly developed commercial vaccines.

These recommendations arise from the collective data analyzed for the OFFLU project (OSRO/INS/703/USA), including the OFFLU technical meetings in June and November 2008, teleconference discussions between national and international experts for OFFLU, and data from the FAO component of Operational Research in Indonesia (OSRO/INS/604/USA).

Background

The results of a collaborative Vaccine Efficacy Project between GOI, FAO Indonesia technical staff and two OFFLU laboratories (AAHL²⁰ and USDA-ARS²¹/SEPRL²²) evaluating the protection conferred by currently available vaccines against three Indonesian H5N1 field viruses isolated in 2006 showed that although the antibody response was good, indicating that the vaccines were of high quality, the currently available vaccines were not fully protective in the challenge studies when using these 2006 viruses. Vaccine protection was poorest for the virus strain, A/chicken/West Java/PWT-WJ/2006 (PWT/06), partly protective for a second strain, A/chicken/Papua/TA5/2006 and good for the third strain, A/chicken/WJ/SMI-HAMD/2006. The variation in protection suggests significant variation in antigenicity of the tested field strains.

¹⁷ Highly Pathogenic Avian Influenza

¹⁸ Highly Pathogenic Avian Influenza

¹⁹ OIE/FAO network of expertise on avian influenza, www.offlu.net

²⁰ Australian Animal Health Laboratory, Geelong, Australia

²¹ United States Department of Agriculture, Agricultural Research Service

²² South East Poultry Research Laboratory, Georgia, USA

Additional studies carried out in 2008 in SEPRL indicate the PWT/06 strain, when used as a vaccine gave acceptable protection against challenge by all 3 test strains.

Through the OFFLU project "Monitoring AI virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy," a total of 190 samples were submitted to the AAHL of which 162 viruses were isolated and 153 HA sequences generated. All isolates belonged to Indonesian HA clade 2.1. The majority of isolates clustered in HA subclade 2.1.3. One cluster of 6 isolates, predominantly from Bali was located in subclade 2.1.1 which contains older viruses (similar to Legok/2003). While PWT/06-like viruses have not been detected among the isolates studied thus far under the OFFLU project, anecdotal evidence from different national sources suggests that PWT/06 variants continue to circulate in the highly intensive sectors. It is important to note that the majority of viruses studied for the OFFLU project were obtained from village-based scavenging poultry (sector 4), in 2006-2008, and that the western Java region and intensive poultry sectors remain significantly underrepresented (9/162 isolates).

The majority of HPAI H5N1 isolates analyzed between 2006 and 2008, largely from village-based poultry, are antigenically similar; however, outliers demonstrating significant antigenic variation have been identified, predominantly from larger scale poultry production units. Based upon the data analyzed to date (virus characterization and challenge tests), vaccines currently being used in Indonesia are not fully protective against these variant viruses. New vaccines based upon updated virus strains will be required to adequately protect birds and combat this disease now and in the future.

Vaccines

Vaccine strain selection

While antigenic and biologic data from OFFLU partner laboratories suggests that none of the currently available vaccines provide full protection against all circulating viruses in Indonesia, the A/chicken/Legok/2003 (Legok/03) vaccine strain, found in clade 2.1.1 which is representative of earlier viruses from Indonesia (2004-05), is phylogenetically more closely related to (and therefore a better match for) the currently circulating viruses (clade 2.1.3) than other available vaccines. For example, the Chinese H5N1 reverse genetic strains (Re-1 from clade 0 and Re-4 from clade 7) are both antigenically and phylogenetically distant from Indonesian viruses and provide limited protection based upon current challenge test results. The antigenic differences between strains in Indonesia are sufficient to envisage the need for region or sector-specific vaccine strains in the future.

The use of vaccines prepared from HPAI Eurasian H5N1 strains continues to be preferred over LPAI H5N2-based vaccines. Therefore, until updated vaccines are available, the OFFLU recommendation is that the inactivated vaccines based upon the (Legok/03) virus remain the best choice for Indonesia for immediate procurement. However, it should be highlighted that the use of high-quality potent vaccines is even more important when there is a poor match between vaccine and field strains.

Research and development of more efficacious vaccines, including testing of available international vaccines, is required in the short-term. While the use of Reverse Genetics vaccine strains is still recommended over the conventional vaccine (HPAI versus LPAI strains), conventional vaccines using selected vaccine candidate strains should be considered in the short term and can be facilitated by cooperation with vaccine manufacturers to provide feedback and data on master seeds demonstrating adequate properties for commercial production.

Additionally, safe and efficacious commercial vaccines appropriate for application in day-old-chicks should be evaluated in Indonesia.

Sixty-nine AI viruses representing the phylogenetic variation in isolates were analyzed by antigenic cartography. The November 2008 Review meeting for the OFFLU project in Jakarta provided an expert forum to discuss the antigenic cartography results and selection of possible candidates for use as seed strains for future vaccines in Indonesia. Two candidate vaccine viruses in addition to PWT/06 were suggested for further studies (per FAO official letter to the Director General of Livestock Services, 12 January 2009). Recent biologic and antigenic data have shown that one other strain should also be considered (Table 1).

These selected candidate strains are considered to be broadly representative of the majority of circulating viruses analysed so far and are predicted to confer protection against existing circulating H5N1 viruses. However, confirmation of the antigenic results must be conducted through challenge testing with appropriate challenge strains.

Because AI viruses in Indonesia will continue to undergo antigenic drift, OFFLU also strongly recommends that 2009 viruses be included in the biologic and antigenic analysis to confirm candidate vaccine strain(s) selection. The commercial sector is the predominant consumer for vaccines, therefore full characterization of viruses from the commercial sector is needed to ensure that the updated vaccine antigens are effective against antigenic variants identified in this sector.

Challenge testing

Challenge tests are required for two different purposes in Indonesia, 1) to validate antigenic cartography analyses of viral strains in support of selection of candidate vaccine antigens, and 2) to meet the requirements of GOI regulations for the registration of AI vaccines. Since facilities in Indonesia and other OFFLU laboratories are limited it is important to conduct challenge tests only when necessary. In general, investigations in support of product registration (e.g. item 2) are considered a "private good" and should be conducted at the expense of the vaccine company. An exception may be where GOI wants to take responsibility for the work to facilitate the availability of a vaccine product in support of its national AI strategy and government funded programmes.

The official challenge strain(s) to be used for registration purposes should be representative of the majority of circulating strains and have suitable growth characteristics for laboratory work. The GOI regulatory authorities should select the strain(s) based upon the available field data and data from antigenic cartography. Official challenge strain(s) must be made available to vaccine manufacturers so that appropriate assessments of their products can be conducted to prepare data for registration if desired. Updates to the official challenge strain(s) should be based upon ongoing antigenic analysis of field strains to ensure vaccines being registered are appropriately matched to the field challenge. Challenge tests to validate antigenic cartography and characterize candidate vaccine strains under the OFFLU project will be conducted using six challenge strains, selected to represent the antigenic diversity of circulating H5N1 viruses in Indonesia (Table 1). Field vaccine trials in Indonesia are strongly recommended using the selected vaccines to validate results of challenge tests under field conditions and with native birds.

Vaccine registration

- It is recommended that GOI examine the EU system of registration of vaccines, under which vaccine usage is controlled to ensure that only products efficacious under current circumstances are allowed to be used. Updates to the official challenge strain implies that previously registered vaccine seed strains be re-assessed using the current challenge strain(s)
- Vaccine manufacturers should be encouraged to raise their antigen content to achieve a minimal 1:120 average HI titre in single immunized specific pathogen free layer chickens when tested against the homologous antigen
- Provisions for temporary versus permanent licensure of AI vaccines should be considered in Indonesia as updates to AI vaccines will likely be an ongoing need
- Continue to monitor the potency and efficacy of all vaccines currently registered in Indonesia following a clearly established protocol

Vaccination strategy

Based on data and experience to date, targeting year-around preventative vaccination in breeder and layer production units, as well as ensuring vaccine coverage of high-risk poultry in semi-intensive and intensive production units during periods of increased risk (e.g. rainy season, festivals) would benefit the GOI vaccination strategy. Government-subsidized mass vaccination of scavenging village poultry and other poultry kept for personal use is currently not recommended on a large-scale, both based upon previous experience and for practical reasons. Lessons learned from the recent operational research may help in determining ways to deliver vaccine to selected, high risk small-scale poultry at low cost, and targeted vaccination of scavenging poultry should be envisaged based on human/animal risk analysis. Communities should continue to be encouraged to vaccinate their poultry against HPAI and Newcastle disease. Additionally, vaccination of free-grazing ducks and ensuring that poultry entering the live bird market chain are adequately vaccinated would help interrupt virus amplification and circulation will be difficult to carry-out at the present time. Provision of resources for cold chain and training of vaccination teams must be provided as part of the vaccination strategy and support in this area may be available from the international donor community. Poultry producers themselves could be trained to effectively deliver the vaccinations, thus relieving local government of this onerous responsibility. The vaccination protocol will vary among the production systems considered. The protocol in small-scale layer farms would require multiple vaccinations during both growth and production phases. FAO will continue to work closely with the MoA on understanding the epidemiology of the disease and vaccination programme planning so that the vaccination strategy can evolve accordingly.

Conclusion

Vaccination remains a tool for reducing the overall viral load in an endemic country such as Indonesia in the short to medium term. Antigenic and biologic data from OFFLU partner laboratories suggest that currently there is no fully protective vaccine against all circulating viruses in Indonesia and that more than one vaccine strain might be needed to have efficacious vaccines across all sectors (and locations) in Indonesia. Field vaccine trials in Indonesia are strongly recommended using the selected vaccines to validate results of laboratory challenge tests under field conditions and with native poultry birds. OFFLU also strongly recommends that 2009 viruses be included in the biologic and antigenic analysis to confirm candidate vaccine strain(s) selection.

In the medium to long term, control of HPAI H5N1 in Indonesia requires a coordinated approach and will require some restructuring of the poultry industry. Improving biosecurity measures for production of short lived broilers is needed to help decrease virus entering live poultry markets. Small-scale, poorly bio-secured commercial farms are likely to be responsible for spread of disease throughout the country and for contamination of live bird markets. However, it can be difficult to adequately vaccinate these small flocks. Despite the difficulty of working in Sector 3 layer farms, vaccination remains an important component of the overall HPAI control and prevention strategy. The importance of private/public partnerships should be highlighted for better control of the disease, in particular a better sharing of outbreak and virus information. Options to improve the genetic resistance of fast growing broiler chickens to H5N1 viruses should be explored as an alternative to vaccination,

References

List of technical recommendations on vaccines and vaccination

- FAO interim recommendations on poultry vaccination against HPAI in Indonesia, on behalf of OFFLU, March 2008
- OFFLU's current findings for Vaccine Seed Strains in Indonesia 12 January 2009
- FAO Indonesia: Operational Research Programme

Table 1. List of selected H5N1 candidate vaccine and challenge strains to be further tested for final selection

Purpose	Code	Dated	District	Isolates Code
challenge	06- 3656-15	2006		A/chicken/West Java/TASIKSOB/2006
challenge	06-03656-03	2006	Sukabumi	A/chicken/West Java/SMI-ENDRI2/2006
challenge	06-03656-04	2006	Sukabumi	A/chicken/West Java/SMI-PAT/2006
challenge	07-02286-05	2007	Konawe Selatan	A/chicken/Konawae Selatan/BBVM-204(O)/2007
challenge	08-001473-26	2007	Subang	A/chicken/West Java Sbg/29/2007
challenge	08-001473-28	2008	Subang	A/chicken/West Java Tja/31/2008
vaccine candidate	08-001473-38	2007	Pekalongan	A/chicken/Pekalongan/BBVW-208/2007
vaccine candidate	08-001473-40	2007	Garut	A/chicken/Garut/BBVW-223/2007
vaccine candidate	08-001473-27	2007	Sukabumi	A/chicken/West Java(Ngr)/30/2007
vaccine candidate	06-03656-19	2006	Puwarkarta	A/chicken/West Java/PWT-WU/2006

ANNEX 3. OFFLU AI vaccine guidance

Continued evaluation and updating of vaccine seed strains to protect against emergent variant field virus strains

Historically, H5 LPAI inactivated vaccine seed strains and recombinant fowl poxviruses with H5 gene inserts have shown broad cross protection in chickens against challenge by diverse H5 HPAI viruses from Eurasia and North American (4-6,8). However, AI vaccines have had limited use in the field until 1995 when the H5N2 HPAI outbreak occurred in Mexico and vaccine use was implemented as part of the control programme (9). The HPAI strains were eradicated by June 1995, but as H5N2 LPAI viruses have continued to circulate, vaccination was maintained in the region as one of the control tools for these H5N2 LPAI strains. Within a few years, multiple lineages of antigenically variant H5N2 LPAI field viruses emerged that escaped from immunity induced by the original 1994 vaccine seed strain used in the conventional inactivated vaccine (3). Similarly, emergent H5N1 HPAI field viruses have arisen in China, Indonesia and Egypt since 2005 that escaped from immunity induced by classical H5 inactivated vaccine seed strains used in commercial vaccines (1,7). It is not entirely clear whether the emergence of these antigenic variants is related solely to use of vaccines.

All AI vaccination programmes should have an epidemiologically relevant surveillance programme to check for emerging variants and representative isolates of AI viruses obtained should be assessed for genetic and antigenic variation. Screening can be done by HI testing using genetic variant field viruses and vaccine seed strains as antigen, and isolates suspected of being antigenic variants should then be analyzed by methods such as antigenic cartography (2). H5 and H7 LPAI vaccine seed strains used in inactivated vaccines and recombinant vaccine viruses with AI hemagglutinin gene inserts should be re-evaluated and seed strains that are not protective should be discontinued: a) whenever there is evidence of emergence of antigenic variants or vaccine failure (clinical disease in vaccinated flocks with a solid immune response to the vaccine antigen); or b) every 2-3 years for efficacy against circulating field viruses, and the use of seed strains that are not protective should be discontinued. The vaccine seed strain evaluation should include field viruses from all relevant geographic regions and production sectors, and sequence analyses of such viruses to identify genetic variants that can be further evaluated for antigenic change that may reduce the efficacy of the vaccine(s) in use. Strains representative of the major circulating antigenic lineage(s) plus selected antigenic variants should be used in challenge trials against current licensed vaccine seed strains, as well as potential future seed strains. Based on this scientific information, the competent veterinary authority within the country should establish, in consultation with leading veterinary vaccine scientists and international organizations, naturally isolated or reverse genetics LPAI vaccine seed strains for conventional inactivated vaccines, and H5 and H7 hemagglutinin gene insert cassettes for recombinant vaccines. In some situations, more than one seed strain may be necessary to cover all production sectors within a country. Only high quality and potent vaccines should be licensed and used in AI control programmes. Proper administration of high quality, potent vaccines is critical in inducing protective immunity in poultry populations.

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Project Title: Expansion of the avian influenza participatory disease surveillance and response program in Indonesia

Extension Title: Reinforcement and expansion of the avian influenza participatory disease surveillance and response program in Indonesia

Period: October 2010 - March 2011

Country: Indonesia
Project title: Reinforcement and expansion of the avian influenza participatory disease surveillance and response program in Indonesia
Code: OSRO/INS/604/USA
Budget: USD 44.2 million ¹
Effective starting date: 9 June 2006
Planned end date: 30 September 2011
Context of the project The purpose of the project is to enhance the capacity and ability of the Government of Indonesia and partners to control HPAI in order to help safeguard the health and livelihoods of the Indonesian population by providing broad-based support to the FAO Indonesia HPAI Control Programme implemented by ECTAD Indonesia.
Objectives of the project Output A: Sustainable surveillance, prevention and control of HPAI in village poultry Output B: Improved biosecurity and vaccination practices in commercial sectors Output C: Improved HPAI surveillance and control along the poultry marketing chain Output D: Engagement with duck producers for improved control of HPAI Output E: Sustainable virus monitoring and vaccine development Output F: Coordinated and enhanced management of the HPAI control programme
Planned Activities Output A: Sustainable surveillance, prevention and control of HPAI in village poultry <i>A.1 Maintain, develop and adapt local government prevention, passive surveillance and outbreak control capacity for village poultry across endemic areas of Indonesia, prioritized by level of HPAI risk; manage a staged transition of costs to local government</i> <i>A.2 Strengthen the capacity of Puskesmas (animal health centres) by integrating participatory diseases surveillance and response techniques; pilot system first in ten Puskesmas animal centres</i> <i>A.3 Increase local government veterinary service competency to detect, diagnose, report and control other animal diseases of zoonotic and economic importance in villages</i> <i>A.4 Develop locally-realistic methods and communication materials for prevention and control of HPAI and other animal diseases of zoonotic and economic importance to enable communities to make informed decisions together and supported by local government</i> Output B: Improved biosecurity and vaccination practices in commercial sectors <i>B.1 Provide specialized technical support to selected layer farmers to enhance production efficiency and quality of layer vaccination and biosecurity measures</i> <i>B.2 Support local government veterinary and laboratory services to engage more effectively with poultry farmers on disease prevention and outbreak investigations (PVUK programme)</i> <i>B.3 Facilitate trial of private sector-funded compensation programme</i> <i>B.4 Facilitate government and industry to establish a functional public-private partnership via a</i>

¹ The breakdown of the total contribution is as follows: USD 4 million for first year (June 2006-May 2007), USD 11 million for second year (June 2007-May 2008), USD 2.7 million for interim extension (June -September 2008), USD 7.5 million for third year (October 2008-May 2009), USD 11 million (June 2009-September 2010) and USD 8 million (October 2010-September 2011).

National Poultry Quality Improvement Programme, including regular Biosecurity Coordination meetings

B.5 Evaluate effectiveness of biosecurity measures implemented by poultry producers

B.6 Facilitate design of local government-implemented poultry farm profiling and certification system

B.7 Assist central government to monitor commercial poultry producer compliance with avian influenza vaccination regulations

Output C: Improved HPAI surveillance and control along the poultry marketing chain

C.1 Support local government to conduct longitudinal surveillance and trace-back for H5 subtype virus and HPAI in live bird markets, collector yards and slaughterhouses

C.2 Support implementation of minimum standards of biosecurity and sanitation in selected live bird markets, collector yards and slaughterhouses

C.3 Facilitate poultry market restructuring with emphasis on food safety in DKI Jakarta and surrounding areas

C.4 Explore mechanisms to improve inter-provincial movement control out of HPAI high risk provinces

Output D: Engagement with duck producers for improved control of HPAI

D.1 Assess role of ducks in the epidemiology of HPAI in selected areas of Java

D.2 Conduct duck vaccination field trial in one identified high risk HPAI-endemic area

Output E: Sustainable virus monitoring and vaccine development

E.1 Assist public and private sectors to develop a centrally-managed system to monitor circulating viruses and sustain vaccine efficacy

E.2 Increase knowledge of best practices for avian influenza vaccination in poultry

Output F: Coordinated and enhanced management of the HPAI control programme

F.1 Facilitate implementation of integrated HPAI control plan on one island where the HPAI situation is considered readily controllable

F.2 Strengthen government capacity to conduct veterinary services training and continuing education

F.3 Improve competencies of local government decision-makers to manage sustainable and effective HPAI control programmes and to promote understanding of the economic impact of animal diseases on livelihoods and public health

F.4 Assist central and local governments to design and implement a national veterinary service strategy

F.5 Develop and integrate emerging databases into the national veterinary information system

F.6 Provide technical assistance for establishment of local cold chain capacity

F.7 Increase public visibility of the HPAI control programme

F.8 Provide operational support to enable implementation of the ECTAD Indonesia programme

Activities undertaken during the reporting period

Output A: Sustainable surveillance, prevention and control of HPAI in village poultry

A.1 Maintain, develop and adapt local government prevention, passive surveillance and outbreak control capacity for village poultry across endemic areas of Indonesia, prioritized by level of HPAI risk; manage a staged transition of costs to local government

- A meeting was held on the initial design to improve village-based decision making for the prevention and control of HPAI in sector 4 poultry.
- Local government capacity was strengthened through the training of 25 PDSR officers in West Bandung; initial training for these officers was carried out in August 2010 and this training, Continuing Education A and the training of ten PDSR officers in Continuing Education B, reinforced the skills learned in the introductory training.
- A modified PDSR training module was developed for low risk areas to focus on HPAI rapid response and control and 20 local government livestock service staff in Papua Province were trained in the Introductory I module in February 2011.
- Cost-sharing methods between FAO and local government to ensure sustainability of the PDSR programme were developed and presented at the Yogyakarta Decision Makers' Meeting (DMM) in December 2010; the concept of cost-sharing was agreed to during the meeting by the

participants present.

- A draft plan for rewarding the districts which are early-adopters of cost-sharing agreements was developed and discussed at the LDCC Coordinators' meeting held in October 2010 in Semarang. West Bandung, Papua and Samarinda districts have allocated funds to cover the costs of PDSR officers.

A.2 Strengthen the capacity of Puskesmas (animal health centres) by integrating participatory diseases surveillance and response techniques; pilot system first in ten Puskesmas

- Individual reports on structured active surveillance for HPAI in village poultry conducted in 6 selected districts on Java were completed.
- The Participatory Community Engagement (PCE) training course, which uses elements of PDSR training and will underpin training for the National Veterinary Service (NVS), was developed and the curriculum for three levels of training agreed. Ten modules have been prepared for levels 1 and 2 and tested as part of the pilot PVUK training programme.
- An evaluation of human and capital resources of all NVS Puskesmas has been carried out based on Government information.

A.3 Increase local government veterinary service competency to detect, diagnose, report and control other animal diseases of zoonotic and economic importance in villages

- The USDA/Cornell University Sample Collection and Necropsy Videos with narration in Bahasa Indonesia were produced. These videos were distributed to 40 PVUK trainees as a training aid and to assist them with their field work.
- The Directorate General of Livestock and Animal Health Services (DGLAHS) NVS Task Force agreed on a tiered training approach for all local government veterinarians, including those who have received PDSR training.
- The NVS Task Force also agreed to pilot the new approach with the rabies control programme in Bali.
- Seven draft SOPs, work flow and technical guidelines and training curricula have been developed to train PDSR staff in the detection and control of rabies as a pilot of the NVS concept. These will be tested in Bali and linked to PCE training.
- Avian Influenza Bulletin Vol. 7, in Bahasa Indonesia and English, was produced and distributed to PDSR officers, laboratories and government offices.

A.4 Develop locally-realistic methods and communication materials for prevention and control of HPAI and other animal diseases of zoonotic and economic importance to enable communities to make informed decisions together and supported by local government

- Plans developed for biosecurity communication material based on experience in South Sulawesi.
- Overview video of FAO Indonesia communication activities produced and shared with DGLAHS during Technical Briefing Meeting in December.
- With the proposed changes in PDSR and development of NVS, the existing communication material is being reviewed for relevance in the new system. Material on rabies in Bali is being developed.
- Development of communication material for farmers to complement PVUK training is ongoing.
- Interviewed farmers and workers at commercial poultry farms in Central Java to get better understanding on the communication needs and methods/materials suitable for commercial poultry farms.

Output B: Improved biosecurity and vaccination practices in commercial sectors

B.1 Provide specialized technical support to selected layer farmers to enhance production efficiency and quality of layer vaccination and biosecurity measures

- Farm profiling of six participating layer farms was completed.
- Farm flock health status was tested in collaboration with participating farmers.
- Feed and water samples were quality tested in collaboration with participating farmers.
- Farm assessments for each participating farm were completed.

- Meetings were held with each farmer to identify their top priorities and a Phase I management plan was agreed to address non-biosecurity issues for each participating farm.
- Assistance was provided to each farm to implement their Phase I management plan.
- Baseline bird and environmental sampling was carried out to determine the presence of H5-subtype virus on each farm.

B.2 Support local government veterinary and laboratory services to engage more effectively with poultry farmers on disease prevention and outbreak investigations (PVUK programme)

- PVUK teams were established in eight districts from four provinces.
- The training module outlines and methodologies were agreed. The curriculum for three levels of training was agreed and modules were prepared for the three levels.
- Ten PVUK trainees were given level 1 and 2 training in Lampung and the remaining 30 participants received level 1 training in Solo.
- The ten trainees in Lampung commenced work and are being backstopped by the training team as they begin to implement the pilot project. Data collection forms were tested and refined to produce final formats.

B.3 Facilitate trial of private sector-funded compensation programme

- Agreed with ADPHI (Indonesian Poultry Veterinary Association) to include a private-sector compensation pilot as a signature activity of the National Poultry Quality Improvement Programme (NPQIP).
- Met with GOPAN-associated broiler farmers to further discuss the opportunities and constraints to establishing a private-sector funded compensation programme.

B.4 Facilitate government and industry to establish a functional public-private partnership via a National Poultry Quality Improvement Programme, including regular Biosecurity Coordination meetings

- Responsibility for NPQIP development has now been assumed by ADPHI with USDA and FAO providing technical support.
- Agreed with ADPHI to focus on five signature activities, including a compensation scheme for producers and a continuing education programme for poultry veterinarians, on which immediate progress can be made in order to increase farmer support and enthusiasm for the NPQIP.
- Draft Terms of Reference (TOR) for Commercial Poultry Health Master Trainers were developed.
- The NPQIP concept was discussed with the DGLAHS and is now fully supported by the Director-General.

B.5 Evaluate effectiveness of biosecurity measures implemented by poultry producers

- The baseline collection of economic data on six layer farms was completed
- A farmers' feedback meeting was conducted to discuss the baseline findings and to present the findings of production cost data analysis and the overall productivity assessment
- The farmers' perception and decision-making study on the commercial layer chicken production system was drafted.

B.6 Facilitate design of local government-implemented poultry farm profiling and certification system

- Twenty-four data managers, assisted in the training and supervision of 358 enumerators to collect profiling data on commercial farms in the eight PVUK districts. Profiling information from a total of 11,130 farms was collected and entered into district-level databases.
- Draft maps showing the distribution of poultry farms were produced for each district.
- Vector layers were installed on the PVUK computers in all districts and refresher training for data managers was carried out in all districts.

B.7 Assist central government to monitor commercial poultry producer compliance with avian influenza vaccination regulations

- To complete this activity, FAO ECTAD's Commercial Poultry Health programme is reviewing

the vaccine selection and vaccination practices of layer farmers participating in the programme.

Output C: Improved HPAI surveillance and control along the poultry marketing chain

C.1 Support local government to conduct longitudinal surveillance and trace-back for H5 subtype virus and HPAI in live bird markets, collector yards and slaughterhouses

- Local government market surveillance officers (PSP) collected and tested environmental samples from 260 LBMs every month in the Jabodetabek area as part of the live bird market surveillance programme.
- A National Technical Advisor for Market Chain Surveillance was successfully recruited.
- The analysis of collector yard surveillance and targeted research data was continued (Phase II).
- A rapid field assessment of the Semanggi Collector Yard in Central Java was carried out.
- The LBM database was evaluated to improve LBM surveillance in Jabodetabek by holding meetings with the Jakarta category B Animal Health Laboratory and with Data Encoders (DE) from LDCC Jakarta, Bogor and Serang.
- The new list of LBMs to participate in the surveillance programme was finalized.
- A coordination meeting was held with PSP, LDCC and the Jakarta category B animal health laboratory to evaluate the implementation of LBM surveillance in Jabodetabek.
- Refresher training was conducted for all PSP staff and additional training of new PSP officers in Jabodetabek was carried out.

C.2 Support implementation of minimum standards of biosecurity and sanitation in selected live bird markets, collector yards and slaughterhouses

- Conducted field assessment to introduce improved cleaning and disinfection (C&D) practices in 21 collection yards, 17 LBMs and three vehicle C&D stations in Jabodetabek.
- Conducted training on C&D practices and public awareness activities for cleaning workers and owners of 21 collector yards, 17 LBMs and three vehicle C&D stations. Local Agricultural Dinas officials were also included in the trainings.
- Distributed 41 high pressure washers, 163 metal cages as well as C&D tools and materials to 21 collector yards, three C&D stations and 17 live bird markets in Jabodetabek.
- FAO supported local government monitoring and evaluation of market chain C&D activities in 31 collector yards in Jabodetabek.
- Focus group discussions were held at five LBMs in Jabodetabek to develop appropriate market rehabilitation designs.
- The design and budget estimates were finalized for the establishment of two vehicle C&D stations and the rehabilitation of five LBMs in Jabodetabek.
- Training materials were prepared and a schedule for collaboration with WHO and MOH on live bird market C&D training was agreed.
- Two vehicle C&D stations were established in Bekasi and Bogor.
- The construction of two rehabilitated LBMs in Tangerang was supervised.
- On-site refresher training was conducted for staff at 21 collector yards and 17 LBMs previously equipped with high pressure washer machines.
- Recruitment for the National Engineer and Assistant National Engineer positions was completed
- The DKI market restructuring programme supported market C&D training and a food safety inspection workshop in accordance with DKI Jakarta regulation No. 5/1992.
- Meetings were held with the West Java Agriculture Service in Bandung regarding an assessment plan for C&D activities and field assessments at collector yards/ slaughterhouses in high-risk areas in Western Java were carried out.

C.3 Facilitate poultry market restructuring with emphasis on food safety in DKI Jakarta and surrounding areas

- Assistance was provided in the adaptation of the Jakarta poultry markets restructuring strategy, moving towards an increase in the number of designated relocation / slaughtering centres.
- A targeted public awareness campaign for the promotion of "healthy chicken meat" was continued via editorials in Jakarta newspapers similar to the previous semester and the publicity

campaign in markets was continued. A comprehensive promotion campaign for “healthy chicken meat” was successfully implemented with consumers and traders in two traditional markets (Klender, November 2010 and Kramat Jati, February 2011) selling poultry meat.

- The market programme continued its close collaboration with the private sector and the local government administration in the development of adapted cold chain equipment and restructuring of distribution channels, including the cold chain. The distribution channel from one of the five collection yards/ slaughterhouses to two traditional markets (Rawa Keping to Klender & Kramat Jati) was trialed this semester.
- Technical support was provided to local government to strengthen food safety measures and government structures. The national food safety expert assessed the situation and formulated a number of recommendations for food safety and meat inspection improvements and tried them out during the pilot activity in the slaughterhouse and traditional market. In February 2011 a workshop was held to validate the assessment of the capacity of the Jakarta Livestock Service staff and the law enforcement structures on food safety and proposing the gradual strengthening of food safety information, inspection and law enforcement in relocation centres and traditional markets.
- Plans for collaboration on the establishment and promotion of relocation centres (collection yards with slaughtering facilities) in the sub-districts of Tangerang Kota, Tangerang Kabupaten, Tangerang Selatan and Depok were downsized because of delays in the implementation of the Jakarta poultry restructuring process and expected programme budget constraints.

C.4 Explore mechanisms to improve inter-provincial movement control out of HPAI high risk provinces

- Recommendations were developed to renovate the Semanggi collector yard in Surakarta city in order to reduce the risk of viral amplification along the native chicken market chain.
- A technical meeting was conducted with Central Java provincial Dinas and the Agricultural Dinas and Market Dinas of Surakarta city regarding the epidemiological situation of the native chicken trade originating at the Semanggi collector yard and the high priority need to renovate the collector yard in order to reduce risk.
- An initial meeting was held with Jabodetabek agricultural Dinas and DAH on improving Animal Health Certification (SKKH) for poultry entering Jabodetabek.
- Meetings were held with the West Java Agriculture Dinas in Bandung regarding an assessment plan for checkpoint operation and Animal Health Certification (SKKH).
- In collaboration with DAH, a meeting was held with the mayor of Surakarta city to advocate for support for the initiation of high-priority renovations to the Semanggi collector yard.

Output D: Engagement with duck producers for improved control of HPAI

D.1 Assess role of ducks in the epidemiology of HPAI in selected areas of Java

- The Java duck survey was re-analysed.
- The PCR test results produced by the DKI laboratory on samples from the Java duck survey were verified
- The conclusions were completed and the draft final report produced.

D.2 Conduct duck vaccination field trial in one identified high risk HPAI-endemic area

- Further progress on this task is pending finalization of the Java duck study (Activity D.1).

Output E: Sustainable virus monitoring and vaccine development

E.1 Assist public and private sectors to develop a centrally-managed system to monitor circulating viruses and sustain vaccine efficacy

- The characterization of 244 H5N1 isolates (total of 266 viruses) from 317 samples representing approximately 90 districts predominantly from backyard chickens during 2007-08 was reported upon during the final OFFLU technical review meeting Oct 2010. This contributed to the ongoing efforts to monitor field viruses.
- Backstopping and ongoing support for the transfer of technology to Indonesia was provided by the FAO-OFFLU scientist in October-November 2010. Outputs included the following:

facilitating meeting with DGLS, CMU, BPM SOH, Pusvetma, FAO, OFFLU to discuss disposition of candidate vaccine and challenge strains, the status of avian influenza vaccine registration in Indonesia and the provision of reverse genetics constructs to Indonesia; prepared and conducted workshops for the laboratory network and the Final Technical Review meeting; meetings with the DAH and other relevant government officials as needed and with partners for coordination of ongoing activities.

- Laboratory Network meetings with bench-side work were jointly conducted (FAO-OFFLU /AAHL) for sequencing (25-27 October) and pre-screen HI partners (1-3 November) in support of the effort to monitor antigenic variation of circulating viruses. Standardized reagents were provided to all collaborating laboratories.
- Viruses selected from the Round 1 national pre-screen results were sent to AAHL for parallel generation of antigenic and genetic data for capacity building purposes (Feb 2010). The DIC Wates produced full panel antigenic cartography data on these 32 isolates with support from an AAHL scientist (March 2011). The DICs continued the pre-screening process, submitting raw data for the haemagglutination inhibition (HI) assay conducted using cartography sera on H5-positive fluids isolated through their ongoing diagnostic activities. Round 2 analysis was conducted in March 2011.
- Six Indonesian scientists participated in bench-side sequencing training at AAHL during November 2010.
- The national OFFLU technical facilitator coordinated OFFLU activities with representatives from the DAH/National HPAI Campaign Management Unit (CMU) and other relevant public sector units and private sector stakeholders. Outputs included the following: receipt of letter from the DG to release virus sequences characterized by the project into the public domain; approval to receive the reverse genetic construct viruses at the Pusvetma laboratory; securing the material transfer agreement and ensuring shipment of selected viruses to AAHL; and assisting in preparations for the workshops and meetings.
- A proposal was received from the three sequencing partners on continued molecular sequencing activities in addition to support of HPAI monitoring to include a more strategic approach, communication and sharing of biologic materials between partners. This will contribute to recommendations on establishing the mechanism for sustainable virus characterization.
- A paper titled "Initial study of antigenic diversities of avian influenza virus H5N1 in Indonesia using reference antisera produced for antigenic cartography" was presented by a national scientist at the National Scientific Conference organized by the Indonesian Veterinary Medical Association in Semarang, October 2010.
- A presentation on "OFFLU: Contributions toward improved vaccine strain selection for poultry" was made by an international scientist in collaboration with OFFLU at the 1st International One Health Congress in Melbourne, Australia, February 2011.

E.2 Increase knowledge of best practices for avian influenza vaccination in poultry

- The final OFFLU project technical review meeting was conducted 28-29 October 2010 and recommendations were produced including guidance on registration and licensing for efficacious poultry vaccines.
- Clearance was received from the Director General to deliver the reverse genetics (RG) virus seed strains, generated at SEPRL, to Pusvetma.
- Following a meeting on 5 November 2010 facilitated by FAO/OFFLU, the DGLAHS informed vaccine manufacturers of the availability of the candidate vaccine and challenge viruses and invited them to retrieve the viruses from Pusvetma and BPM SOH. However, these strains have still not been released.

Output F: Coordinated and enhanced management of the HPAI control programme

F.1 Facilitate implementation of integrated HPAI control plan on one island where the HPAI situation is considered readily controllable

- The analysis of the market chain network study on Bali was completed. This was the last piece of work for phase I of the Bali project.

F.2 Strengthen government capacity to conduct veterinary services training and continuing education

- The curriculum for communication and improved training skills for Master Trainers (MT) has been developed and was approved and nine modules were prepared and tested. Linked to the Improved Training Skills, three Training of Trainers (TOT) sessions (GPS, sample submission and SMS gateway) have been developed so that the MTs can carry out these trainings at the provincial or district levels.
- Three national MTs have developed TOT skills and a further four MTs have been trained in Improved Training Skills.
- Three National MTs have returned to Jakarta and are learning how to develop training modules and have developed their abilities in module preparation and training. Two MTs in Bandung were given on-the-job support to improve their training skills. Data managers trained for the PVUK programme were supported to train enumerators in data collection.
- A need has been identified for a training module on understanding data which will build skills in data analysis and culminate in Quantum GIS training for Provincial and District staff. The curriculum for this training has been developed and module preparation commenced.

F.3 Improve competencies of local government decision-makers to manage sustainable and effective HPAI control programmes and to promote understanding of the economic impact of animal diseases on livelihoods and public health

- One Decision Makers' Meeting (DMM) for Yogyakarta was held on 21 and 22 December 2010. The meeting underlined the fact that backyard chickens are the main livestock species of the majority of people in Yogyakarta and are kept traditionally as an additional economic source or as a source of animal protein for the household. In addition, there are still many traditional markets in the province selling live chickens or birds.
- The meeting further highlighted the efforts made by the provincial and district Livestock Services (included PDSR-trained staff) in implementing effective HPAI control programmes with community participation and the need to implement more IEC activities to raise public awareness and to build off existing community cadres / volunteers at the village level. There is also a need to improve disease surveillance, control poultry movements in the market chain and build the capacity of Livestock Service officers (to be funded by local government).
- The output of this DMM meeting was a document signed by local government decision makers, stating that the provincial and district governments are ready with their 2011 and 2012 local government budgets to continue operational support of the PDSR programme.

F.4 Assist central and local governments to design and implement a national veterinary service strategy

- The NVS workplan was completed and approved by the Director of Animal Health.
- Guidelines on National Veterinary Services, establishment of Veterinary Authority and appointment of the Authorized Veterinarian were drafted and the content has been agreed in principle by DGLAHS NVS Task Force.
- Guidelines for the Control Strategy for rabies, anthrax, brucellosis and hog cholera were drafted by the DGLAHS NVS Task Force.

F.5 Develop and integrate emerging databases into the national veterinary information system

- The draft plan for the national animal disease surveillance system was completed.
- Database design for a generic animal disease surveillance system was initiated.
- Work on standardization of data collection to ensure compatibility of databases was continued.

F.6 Provide technical assistance for establishment of local cold chain capacity

- Inclusion of Bali in USAID-funded cold chain capacity strengthening activities was promoted
- Technical support was provided for the cold chain TOT implemented by JSI-Deliver.
- In collaboration with DAH/CMU and JSI-Deliver, a field assessment of the cold chain in Bali province was conducted.

F.7 Increase public visibility of the HPAI control programme

- FAO participated in the Indonesian Veterinary Medical Association conference and exhibition

in October 2010, establishing the programme's booth and disseminating public materials related to the project.

- The 2009 ECTAD Indonesia Annual Report (Indonesian version) distributed to partners and government offices.
- A Media Gathering on Market Restructuring was held in February 2011.
- Work has started on preparation of the 2010 ECTAD Indonesia Annual Report.

F.8 Provide operational support to enable implementation of the ECTAD Indonesia programme

- Service contracts were signed with vendors and partner organizations to facilitate various project activities, including the establishment of four cleaning and disinfection stations in East Jakarta, Bekasi and Tangerang, renovation of two markets in Tangerang, laboratory testing of samples for surveillance activities and a publicity campaign to promote "Ayam ASUH" (healthy chicken meat) in the Jabodetabek area.
- 355 IT equipment packages were procured and distributed to 29 provincial livestock service offices.
- The renewal of vehicle registration for 632 motorcycles and 38 cars was initiated.
- A Memorandum of Understanding (MOU) for testing of samples from layer farms participating in the biosecurity cost-effectiveness study was signed.
- In line with technical activities undertaken during the quarter, project personnel were recruited, project equipment and supplies were procured and distributed and Letters of Agreement (LOA) were signed with partner organizations.

Planned activities for the next six-month period

Output A: Sustainable surveillance, prevention and control of HPAI in village poultry

A.1 Maintain, develop and adapt local government prevention, passive surveillance and outbreak control capacity for village poultry across endemic areas of Indonesia, prioritized by level of HPAI risk; manage a staged transition of costs to local government

- Village empowerment strategies to be developed for incorporation into a modified version of PDSR that will evolve over the semester to focus on improving passive reporting and reducing amount of time spent on active reporting. New and simplified reporting methods will be developed to allow PDSR staff to work to empower the village community to take a greater role in decision-making. Strategies to develop village decision-making skills will be developed.
- Fourteen new PDSR staff will be trained in West Bandung and 39 officers in Samarinda. A review of existing PDSR coverage will be carried out to determine future needs for ongoing training. Twenty livestock service officers in Papua will be given Intro II training.
- Further DMMs will be held in Banten, West and Central Java to discuss cost-sharing.

A.2 Strengthen the capacity of Puskesmas by integrating participatory diseases surveillance and response techniques; pilot system first in ten Puskesmas

- Implementation of PCE field training will be linked to the development of the NVS. Initially this will take place in Bali to control rabies and this will serve as a model for other areas affected by rabies that are included within the NVS programme.

A.3 Increase local government veterinary service competency to detect, diagnose, report and control other animal diseases of zoonotic and economic importance in villages

- Eleven SOPs for the prevention and control of rabies will be completed and used in the NVS rabies eradication programme in Bali.
- Sixty-nine PDSR staff will be trained to carry out vaccination, rapid response and vaccination to control rabies in Bali.
- A system will be developed to increase passive reporting of suspect rabies cases and increase the communities' understanding of herd immunity amongst vaccinated dogs.
- PDSR Disease Transmission Video will be transitioned to commercial poultry and PVUK programmes following further discussion with the CPH and Local Government teams.
- SOP, workflow and technical guidelines and training will be developed for detection and control of rabies as a pilot of the NVS concept. These will be tested in Bali and linked to PCE

training.

A.4 Develop locally-realistic methods and communication materials for prevention and control of HPAI and other animal diseases of zoonotic and economic importance to enable communities to make informed decisions together and supported by local government

- An overall communication strategy will be developed to pass information from central government to commercial farmers through the LDCC system.
- Completion and distribution of IEC material as part of piloting the NVS concept in Bali.
- With the proposed changes in PDSR and development of NVS, the existing communication material will be reviewed for relevance in the new system.
- Development of communication material for farmers and farm workers to complement PVUK training and the CPH programme.

Output B: Improved biosecurity and vaccination practices in commercial sectors

B.1 Provide specialized technical support to selected layer farmers to enhance production efficiency and quality of layer vaccination and biosecurity measures

- Meet with each farmer to identify the farmer's top priorities and agree on a management plan to address biosecurity issues for each participating farm (phase-2 period).
- Continue to assist each farm to implement management plan phase-1 and phase-2.
- Sample birds and environment to determine presence of H5-subtype virus at end of phase 1 and 2 periods.
- Begin implementation study of farmers' perceptions and decision-making.

B.2 Support local government veterinary and laboratory services to engage more effectively with poultry farmers on disease prevention and outbreak investigations (PVUK programme)

- Complete final introductory level (level 3) training of pilot PVUK officers so they can formally begin to work as PVUK officers.
- Conduct Knowledge, Attitudes and Practices (KAP) study in selected districts as a baseline to later assess changes attributable to PVUK activities.
- A project evaluation will be carried out to document the impact of the PVUK pilot and make recommendations for scale-up.
- The PVUK database will be developed and managed at the district level.

B.3 Facilitate trial of private sector-funded compensation programme

- Further discuss opportunities to pilot a compensation system with GOPAN-associated broiler farmers.
- Identify early adopter farmers based on discussions above and initiate design.

B.4 Facilitate government and industry to establish a functional public-private partnership via a National Poultry Quality Improvement Programme, including regular Biosecurity Coordination meetings

- Continue development of the NPQIP document.
- Hold consultation meeting with farmers in collaboration with ADPHI, USDA and DGLAHS.
- Finalize TOR for Commercial Poultry Health Master Trainers in collaboration with ADPHI and USDA.

B.5 Evaluate effectiveness of biosecurity measures implemented by poultry producers

- Continue monitoring the implementation of the cost-effectiveness study.
- Analyze data from study and begin preparing preliminary report.
- Meet the farmers and key stakeholders to share study analyses and findings.
- Provide farmers with digital production cost data management system (database).
- Continue monitoring farmer decision-making patterns and conduct preliminary analysis.

B.6 Facilitate design of local government-implemented poultry farm profiling and certification system

- Further training for data managers on encoding the data generated by the PVUK officers will be carried out.
- Data managers will be given “understanding data” training to enable them to make best use of the profiling data.

B.7 Assist central government to monitor commercial poultry producer compliance with avian influenza vaccination regulations

- Prepare report to DGLAHS on findings of vaccination practices of farmers participating in CPH programme.

Output C: Improved HPAI surveillance and control along the poultry marketing chain

C.1 Support local government to conduct longitudinal surveillance and trace-back for H5 subtype virus and HPAI in live bird markets, collector yards and slaughterhouses

- Continue to support monthly LBM surveillance by local government in Jabodetabek.
- Conduct coordination meeting with Provincial Livestock Services of West Java, Jakarta and Banten, district/city livestock services and PSP in Jabodetabek.
- Complete analysis of collector yard surveillance data (Phase II) once PCR results are verified and then design Phase III market chain surveillance based on Phase II findings.
- Prepare training for Phase III market chain surveillance.
- Conduct Phase III market chain surveillance.

C.2 Support implementation of minimum standards of biosecurity and sanitation in selected live bird markets, collector yards and slaughterhouses

- Conduct market C&D training at ten pilot LBMs in collaboration with the MOH-WHO healthy markets programme.
- Supervise the operation of the new C&D stations in Bekasi and Bogor.
- Continue to develop C&D station design, budget estimation and contractor selection for 3 slaughterhouses in Jabodetabek.
- Develop minimum standards guidelines for sanitation along the poultry market chain.
- Support ongoing local government monitoring and evaluation of market chain C&D activities in Jabodetabek.
- Continue to oversee construction works at Anyar market in Tangerang City and Bonang market in Tangerang District.
- Develop and supervise the bidding process and contractor selection for Parung Panjang market (Bogor district), Anyar market (Bogor city) and Kranggan Market (Bekasi city).
- Conduct monitoring and evaluation of the implementation of cleaning day at LBMs in Jabodetabek.
- Provide documented lessons learned and recommendations to improve implementation of C&D activities.

C.3 Facilitate poultry market restructuring with emphasis on food safety in DKI Jakarta and surrounding areas

- Continue to provide assistance in the consolidation of the Jakarta poultry market restructuring strategy, which has agreed an increase in the number of designated relocation centres as a more accommodating approach towards the poultry operators.
- Help identify and assess potential locations proposed by collectors and slaughterers that can become official relocation centers.
- Continue to implement comprehensive promotion campaigns for “healthy chicken meat” with consumers and traders in other traditional markets selling poultry meat.
- Continue to collaborate closely with the private sector and the local administration in the restructuring of distribution channels, including the cold chain; continue the trial of a new distribution channel from one of the five collection yards to the traditional markets (Rawa Keping to four more traditional markets) and adoption of adapted cold chain equipment.
- Continue to collaborate closely with local government to strengthen food safety measures by ensuring the government relocation centres comply by food safety standards, develop training

programmes for meat inspectors and enforce specific inspection for the markets and slaughterhouses.

- Continue to assist provincial government to identify alternative income-generating activities for poultry stakeholders who may become unemployed by the market restructuring programme and design support programmes accordingly.

C.4 Explore mechanisms to improve inter-provincial movement control out of HPAI high risk provinces

- Hold focus group discussions with traders and vendors in Semanggi collector yard once the requisite support has been obtained from local government.
- Explore the possibility of establishing a poultry health monitoring system for all poultry entering Semanggi collector yard.
- Conduct follow-up meetings with central and local government on Animal Health Certification (SKKH) and field assessment to check points in Western Java.
- Follow up the agreement between FAO, DAH and local government of Surakarta city regarding Semanggi collector yard upgrading plan.
- Provide inputs to the local government of Western Java regarding checkpoint operation improvement.

Output D: Engagement with duck producers for improved control of HPAI

D.1 Assess role of ducks in the epidemiology of HPAI in selected areas of Java

- Clear and circulate the final report to partner organizations.
- Review the potential value and feasibility of AI vaccination of ducks in Indonesia.

D.2 Conduct duck vaccination field trial in one identified high risk HPAI-endemic area

- Further investigate decrease in detected HPAI cases in Yogyakarta province during the 2009-2010 influenza season.
- Reassess value of targeted duck vaccination trial once Java duck study and Yogyakarta assessment complete.

Output E: Sustainable virus monitoring and vaccine development

E.1 Assist public and private sectors to develop a centrally-managed system to monitor circulating viruses and sustain vaccine efficacy

- Facilitate ongoing Laboratory Network meetings in support of the effort to monitor antigenic variation in circulating viruses (May - Sequencing Network; Jul-Aug Pre-screening Network); and follow-up on the characterization of isolates selected based upon pre-screen data from DIC Wates as part of the parallel data generation for capacity building.
- Conduct "Communicating Science - Scientific Writing Workshop".
- The FAO-OFFLU Scientist will continue to provide support to the ongoing transfer of technology to Indonesia. The next inputs are scheduled for July-August 2011.
- Conduct workshop for improvement of laboratory data management including Excel, EMPRES-i Asia and InfoLabPlus.
- Assist AAHL to conduct workshop on quality reagent production at Pusvetma.
- Expand pre-screen effort to partner labs (e.g. industry/university) with DAH approval.
- Develop a module for InfoLabPlus to record and network all DIC results for the pre-screening and antigenic cartography (to be called Infolab Cartography) and provide training for DIC staff in the use of this new module (contingent upon DAFF support for InfoLabPlus).

E.2 Increase knowledge of best practices for avian influenza vaccination in poultry

- Confirm disposition of candidate vaccine and challenge strains returned to Indonesia for vaccine industry to develop updated vaccines.
- Support SEPRL to provide assistance to MoA designated laboratories for the preparation of vaccine master seeds from RG H5N1 avian influenza constructs provided through the project and to provide didactic and on-site challenge test training for efficacy and potency

determination to demonstrate efficacy and potency of vaccines for purposes of registration/licensing.

- Facilitate workshop on practical aspects of vaccines and vaccination. This workshop will increase the knowledge of poultry veterinarians and industry representatives on all practical aspects of vaccines and vaccination in poultry for improved control of avian influenza.
- Provide technical support for serosurveillance using homologous vaccine antigen and Wates-1 antigen and coordinate with existing vaccination efforts when possible.
- Prepare updated technical recommendations on vaccination strategy based upon recent field vaccine trials, continued epidemiological analysis of the disease situation in Indonesia and global epidemiological knowledge on HPAI.

Output F: Coordinated and enhanced management of the HPAI control programme

F.1 Facilitate implementation of integrated HPAI control plan on one island where the HPAI situation is considered readily controllable

- Write the report for phase 1 of the Bali project.
- Plan activities for phase 2 (intervention phase) of the project.
- Develop the plan with the Bali authorities.
- Start interventions depending on funds availability.

F.2 Strengthen government capacity to conduct veterinary services training and continuing education

- Provide the remaining 49 MTs with Improved Training Skills training and TOT training in GPS, SMS gateway and sample submission. They will then be able to carry out trainings of PDSR-trained staff at the local level.
- Assist DAH to recruit more National MTs to participate in the in-service training programme in Jakarta.
- Complete the “understanding data” modules, field test and begin field implementation.
- Hold DMM in the provinces of Banten, Lampung and East Java.

F.3 Improve competencies of local government decision-makers to manage sustainable and effective HPAI control programmes and to promote understanding of the economic impact of animal diseases on livelihoods and public health

- Revise DMM model to incorporate epidemiology and disease management training and NVS development, as well as the redesigning of the PDSR system. Conduct at least two newly designed DMMs in the next reporting period.
- Plan three DMMs to be attended by local government decision makers [representatives of provincial planning authorities (BAPPEDA), provincial parliaments (DPRD I and II) and the Assistant Governor for economic development] for Lampung, Banten and East Java provinces.

F.4 Assist central and local governments to design and implement a national veterinary service strategy

- Revise PDSR system to incorporate the NVS approach.
- Complete development of PCE training module.
- Implement pilot PCE training in Bali province.
- Facilitate meeting between MoA and Ministry of Internal Affairs to discuss NVS and the issuing of Joint Circular Letter.
- Finalize Joint Circular Letter of Minister of Agriculture and Minister of Internal Affairs on Guidelines on National Veterinary Services.
- Finalize guidelines for control strategy for rabies, anthrax, brucellosis and hog cholera.
- Develop reporting forms for rabies, anthrax, brucellosis and hog cholera.
- Advocate with Local Government on National Veterinary Services plan in pilot areas.

F.5 Develop and integrate emerging databases into the national veterinary information system

- Complete version 1.0 of the database for the animal disease surveillance system.
- Continue work on standardization of data collection to ensure compatibility of databases.
- Commence training on the new animal disease surveillance system in NVS pilot areas.

- Commence field trial of the new animal disease surveillance system in NVS pilot areas.

F.6 Provide technical assistance for establishment of local cold chain capacity

- In collaboration with DAH/CMU and JSI-Deliver, provide technical support for cold chain training to local government staff and capacity strengthening in Bali province.

F.7 Increase public visibility of the HPAI control programme

- Produce and distribute the Programme's Promotional Video Vol. 2.
- Produce and distribute the 2010 FAO ECTAD Indonesia Annual Report.

F.8 Provide operational support to enable implementation of the ECTAD Indonesia programme

- Facilitate service contracts and provide operational support to activities, such as the establishment of three cleaning and disinfection stations in South Jakarta, West Java and Tangerang and renovation of three markets in Bekasi and Bogor.
- Complete renewal of vehicle registrations for project vehicles and motorcycles.
- Complete distribution of 355 IT equipment packages to district livestock service offices.
- In line with planned technical activities for the next quarter, continue to recruit project personnel, procure and distribute project equipment and supplies and facilitate signing of Letters of Agreements (LOA) with partner organizations.
- Commence transfer of OSRO/INS/604/USA project assets to government.

Main challenges encountered and response provided

The most significant challenge faced this quarter was moving forward with timely implementation of multiple programmes and close collaboration with and in support of, our government counterparts. By combining timely technical expertise with experience facilitating cooperation between the Government of Indonesia and the international community, as well as intra-governmental cooperation, ECTAD Indonesia has been successful in making progress in all major areas of the HPAI Control Programme. Specific technical difficulties continue to be encountered with data management and diagnostic testing procedures in partner laboratories. As previously reported, these difficulties have caused delays in finalizing analyses for target research on collector yard surveillance, as well as the epidemiology of HPAI in ducks. Better progress in this area can be expected with more focused technical support tailored to the individual needs of each laboratory, as well as a greater focus on improving data management practices in general. Finally, the FAO programme is now facing the challenge of increasing the positive impact of activities, while faced with a significant budget reduction for FY 12 budget. ECTAD Indonesia is working closely with the DGLAHS and USAID to conduct a programme review and planning exercise for 2011-2012, which should enable the limited funds available to be focused on those activities which will have greatest impact in terms of both H5N1 risk reduction and long-term sustainability. Consultation on activities to be included in a new follow-on HPAI project will take place this semester and a project document will be drafted.

Main progress made towards the achievement of project outcomes (from the start of the current project phase)

Output A: Sustainable surveillance, prevention and control of HPAI in village poultry

- Activities have been designed to increase passive surveillance of HPAI. As active surveillance activities will be reduced, the PDSR and other local government staff will be trained to work closely with villages to encourage village-based solutions to HPAI prevention and control.
- There is now strong commitment, support and integration at the local government level (e.g. between the LDCC and provincial/district livestock services) in animal health and HPAI disease control programmes as a direct result of the FAO project.
- The PDSR programme has strengthened veterinary services capacity to detect and respond to HPAI outbreaks in village poultry throughout HPAI-endemic areas of Indonesia.
- The LDCC system has enabled more effective communication and coordination between central and local governments within the highly decentralized Indonesian governance system.
- Additional local governments have allocated funding specifically to support the establishment and operations of LDCC and PDSR activities, thereby contributing to sustainable disease control.

Output B: Improved biosecurity and vaccination practices in commercial sectors

- The commercial poultry health programme team has built rapport and trust with participating farmers, ensuring a healthy veterinarian-client relationship required for further progress in improving biosecurity and vaccination practices in commercial sectors.
- The understanding of the role of commercial poultry production in the maintenance and spread of HPAI has improved.
- The PVUK pilot programme has been developed in close collaboration with farmers, central and local governments in order to improve communication and cooperation between farmers and local government animal health services.
- Databases profiling the commercial poultry farms in each pilot district have been established by district livestock services.
- Public sector collaboration with commercial poultry producers has been accelerated. In particular, public sector disease controllers and international agencies are both more aware of the complexity of commercial poultry production in Indonesia and more engaged with private sector stakeholders involved in commercial poultry production.
- As a result of CPH programme activities, the HPAI Control Programme now understands that one of the key constraints poultry farmers are facing is a very limited capacity to track and interpret their farm's productivity and profit. Training and engagement activities are being adjusted to directly address this fundamental need.

Output C: Improved HPAI surveillance and control along the poultry marketing chain

- Test results from the DKI Jakarta category B animal health laboratory were distributed to all livestock services at district level throughout Jabodetabek to increase local government awareness and responsiveness to market chain contamination and veterinary public health issues.
- A targeted research activity to test collector yard-based surveillance methods to assess relative risk of poultry production areas and poultry type was developed and successfully implemented.
- Improved understanding of poultry market dynamics in DKI Jakarta by the public sector.
- Increased private and public sector C&D capacity and increased implementation of C&D practices along the poultry market chain in greater Jakarta.
- Critical weaknesses in the DKI Jakarta market restructuring preparations were identified and corrective measures proposed and subsequently implemented by the Government.
- A specific high-risk poultry market system has been identified as a result of project-implemented surveillance activities and is now being addressed with the relevant government stakeholders.

Output D: Engagement with duck producers for improved control of HPAI

- The database of duck flocks developed from the study area provides a sample frame for the prevalence study and other future activities to be undertaken in duck populations by animal health authorities; knowledge of locations of high density duck populations is a critical first step to identifying critical control points for targeted interventions to control HPAI.

Output E: Sustainable virus monitoring and vaccine development

- Development of a safe and efficacious vaccine for use in Indonesia.
- Characterization of AI viruses circulating in Indonesia.
- Increased capacity of Indonesian laboratories to perform antigenic and genetic characterization of viruses and analyse results.
- Improved collaboration between Indonesian private sector and public sector on field virus monitoring.

Output F: Coordinated and enhanced management of the HPAI control programme

- The human resource capacity of local government livestock services has been improved through PDSR training and preparation of Master Trainers to lead training and continuing education activities within the HPAI Control Programme.
- Improved knowledge of factors associated with outbreaks of HPAI in village poultry to be used to inform and refine surveillance and control strategies.

- Critical control points identified. Data and subsequent analysis leading to identification of further points for disease control efforts to be targeted.
- Significant improvement in technical capacity and management of local government human resources working in the field throughout all known HPAI-endemic areas.
- Guidelines for the implementation of the NVS have been prepared by DGLAHS under the direction of the NVS Task Force with technical advice provided by ECTAD Indonesia.
- The NVS approach has been made operational via the rabies eradication programme in Bali, allowing capacities developed by the project to be utilized for other major Indonesian public health priorities in addition to H5N1 HPAI.

I Quarter 2010

Project Monitoring Sheet: **OSRO/INS/703/USA**

Project Title: **Monitoring AI virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy**

Reporting Period: **January - March 2010**

Country: Indonesia
Project title: Monitoring AI virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy
Project Code: OSRO/INS/703/USA
Budget: USD 830 500 (Phase I), USD 800 000 (Phase II) Budget total: USD 1 630 500 ¹
Effective starting date: Phase I (October 2007-September 2008), Phase II (1 October 2008)
Planned end date: Phase II: 30 Sep 2010
<p>Context of the Project:</p> <p>Since 2005, Indonesia has become one of the major global hotspots for the Highly Pathogenic Avian Influenza (HPAI) epizootic in both poultry and humans. To help control HPAI in the field, an understanding of the circulating field isolates is needed to both monitor poultry vaccine efficacy and to identify appropriate strains for new vaccine development.</p>
<p>Objectives of the Project: Phase 2 Extension</p> <ul style="list-style-type: none"> • H5N1 HPAI virus field isolate collection for biological and genetic characterization. • Challenge testing of antigenic variants against newly developed vaccine strain. • Capacity building. • Technical recommendations for vaccination strategy.
<p>Planned activities</p> <p>Output A-B. HPAI field isolate collection for biologic and genetic characterization</p> <p><i>Activity AB1. To continue collection of samples.</i></p> <p><i>Activity AB2. To Support beta testing of InfoLab-Plus by Peter Durr, Australian Animal Health Laboratory (AAHL) to allow for field entry of standardized sample information, improved data integration and communication between laboratories, and to ensure data integrity. This activity has been completed.</i></p> <p><i>Activity AB3. To screen samples by real-time polymerase chain reaction (RT-PCR) in Disease Investigation Centre (DIC), Bbalitvet, and new partners where possible.</i></p> <p>Submission of specimens to laboratories continues both through participatory disease surveillance (PDSR) and normal activities.</p> <p><i>Activity AB4. To provide samples positive for avian influenza to the AAHL for characterization.</i></p>

¹ Under the first phase, an additional USD 200 000 was allocated from OSRO/INS/701/AUL in support of project activities. The duration of the project has been extended from 12 months to 24 months.

To continue to pursue collaborative efforts to obtain needed isolates from underrepresented and high-risk species and geographical areas.

Activity AB5. To conduct genetic and antigenic characterization of HPAI isolates in Indonesia.

- National and international reference laboratories continue with the characterization of available isolates.
- To produce/distribute antisera panel confirmed for use in antigenic cartography to additional partners named by the Department of Animal Health (DAH) using the protocols agreed to by Erasmus Medical Center (MC) and AAHL.

Output C. Challenge testing of antigenic variants and vaccine strains selection

Activity C1. Perform challenge testing with priority isolates against new vaccine(s) strain.

- To continue efforts to send the reverse genetics low pathogenicity certified master seed to Indonesia. Awaiting response from the Director General of Livestock Service (DGLS); once approved, master seed can be shipped to the National Veterinary and Drug Assay Laboratory (NVDAL).
- To continue characterization of additional constructs.

Output D. Capacity building

Activity D1. Five-month support from the World Organisation for Animal Health (OIE)- Food and Agriculture Organization of the United Nations (FAO) Network of Expertise on Avian Influenza (OFFLU) Scientist in close coordination with AAHL.

- The OFFLU scientist from FAO will continue to provide in-country technical assistance to support laboratory capacity and establishment of activities for antigenic cartography. Next inputs will be scheduled for February and March 2010.
- To continue procurement of needed reagents and equipment for Disease Investigation Centre (DIC) Wates.
- To confirm activities at DIC Wates for antigenic cartography and prescreening activities at the DICs to include OFFLU Recommendation to include a standardized reference H5 hyperimmune antisera and the homologous antigen based on an updated common Indonesian lineage for use in the DICs and other national laboratories.
- A joint assessment visit to Pusvetma in March 2010 by AAHL, OFFLU, and Indonesia Dutch Partnership (IDP) to determine needs.
- To continue to encourage cooperation with industry to conduct virus monitoring activities.

Activity D2. Molecular and antigenic analysis workshops.

A follow-up of Workshop on Serology and Virus Typing for Antigenic Cartography held from 2 to 4 September and 30 November to 4 December 2009 scheduled to be held during this reporting period has been rescheduled in June 2010. This is because of the delay in the transmittal of the letter to DICs from DAH regarding roles and responsibilities for Antigenic Cartography.

Activity D3. Develop capability to conduct vaccine efficacy tests in Indonesia.

- To suggest improved involvement of industry to sustain vaccine efficacy testing.
- To determine training needs for either Bbalitvet or NVDAL on challenge testing at AAHL.
- To continue to encourage DAH to partner with private companies to pursue challenge testing field trials.

Output E. Technical recommendations for the vaccination strategy

Activity E1. Continue development of reverse genetic vaccine based upon the drift variant identified in Phase I. This activity has been completed.

Activity E2. Support field trials with alternative vaccines.

To support field trials with alternative vaccines and continue to encourage DAH to partner with private companies to pursue trials using candidates demonstrated likely to be efficacious, especially against variant viruses in Indonesia.

Activity E3. Encourage the Government of Indonesia to streamline registration of efficacious recombinant and reverse genetic vaccines. This activity has been suspended, since investigations in support of product registration are considered as a “private good” and should be conducted at the expense of the vaccine company.

Activity E4. Continue the assessment of costs and cost-effectiveness of vaccination strategies in Indonesia.

Initiate data entry of the Indonesian Center for Agriculture Socio-Economic and Policy Studies (ICASEPS) field survey conducted in Western Java area for “Assessment of Farm Level Financial Incentives and Willingness to Pay for HPAI Vaccination in Indonesia”.

Activity E5. Prepare updated technical recommendations on a vaccination strategy.

- To prepare and conduct consultation to develop recommendations for a comprehensive vaccination strategy in Indonesia for July 2010.

Activity E6. Organize technical review meetings.

- To prepare for final Technical Review Meeting scheduled for September to October 2010.

Activities undertaken during the reporting period

Output A-B. HPAI field isolate collection for biologic and genetic characterization

Activity AB1. Continue collection of samples

Reviewed proposal from DIC Wates to increase sample submission. DIC Wates was advised to proceed with clearance from the head of the PDSR programme.

Activity AB2. Support beta testing of InfoLab-Plus by Peter Durr, AAHL to allow for field entry of standardized sample information, improved data integration and communication between laboratories, and to ensure data integrity. This activity has been completed.

Activity AB3. Screen samples by RT-PCR in DICs, Bbalitvet, and new partners where possible
Submission of specimens to laboratories has continued both through PDSR and normal activities.

Activity AB4. Provide samples positive for avian influenza to AAHL for characterization.

- Continued to pursue collaborative efforts to obtain needed isolates from underrepresented and high risk species and geographical areas. Communication with Medion, which has expressed interest in sharing and receiving training for antigenic cartography, was initiated.
- Advocacy for release of virus sequences in the public domain - response awaited from DGLS to letters from OFFLU in August 2008 and on 15 March 2010 to authorize release of available cDNA sequences to a publicly held database.
- Collaboration with AAHL to prepare draft for collaborative manuscripts is in process.

Activity AB5. Conduct genetic and antigenic characterization of HPAI isolates in Indonesia

- National and international reference laboratories continued with the characterization of available isolates.
- Request was made to AAHL to supply standard reference materials.

Output C. Challenge testing of antigenic variants and vaccine strains selection

Activity C1. To perform challenge testing with priority isolates against new vaccine(s) strain.

- Continued characterization of additional constructs at the Southeast Poultry Research Laboratory (SEPRL).
- Cartography reagents from AAHL received at SEPRL, pending confirmation from Erasmus.
- Continued to encourage DAH to partner with private companies to pursue challenge testing field

trials.

- Initiated processing of Materials Transfer Agreement (MTA) to ship characterized vaccine master seeds and challenge viruses to Indonesia.

Output D. Capacity building

Activity D1. Five-month support from OFFLU Scientist in close coordination with AAHL.

- The OFFLU scientist from FAO has continued to provide in-country technical assistance to support laboratory capacity.
- Positive response received from Bbalitvet to participate in OFFLU activities such as the pre-screening process to monitor avian influenza viruses for antigenic variation and participation in generating genetic data for antigenic cartography in parallel and with guidance from AAHL.
- The DAH nominated three laboratories to receive capacity building for molecular characterization of antigenic variant HPAI isolates identified through antigenic cartography (DIC Bukittinggi, Pusvetma, and Bbalitvet), and an introductory meeting was conducted on 22 March 2010 in coordination with AAHL for the three laboratories. The DAH and Campaign Management Unit (CMU) were in attendance.
- Initiated procurement of reagents to support molecular characterization efforts.
- Pusvetma can now produce small amounts of antisera for cartography e.g. ~500 mls of a single sera per each ten week period using the facilities available.
- National technical facilitator for OFFLU proposed to assist with the coordination of the OFFLU project in close collaboration with representatives from the DAH/CMU, the seven DICs, particularly DIC Wates, and other relevant public sector structures and private sector stakeholders. The incumbent will facilitate the coordination of the project's day-to-day activities and operations for identifying isolates for characterization, screening antigenic variants, and conducting efficacy studies on poultry vaccines for avian influenza.
- Site visit to DIC Wates was conducted by the OFFLU scientist in coordination with CMU to follow up on activities for antigenic cartography and analysis of data generated to date (March 2010).
- Positive response received from DAH to include Vaxindo and Medion in cartography activities.
- Continued procurement of needed reagents and equipment for DIC Wates – OFFLU scientist confirmed the arrival of needed equipment and consumables – more needs were identified during the March 2010 visit.
- Conducted joint assessment visit to Pusvetma by AAHL and OFFLU, (IDP were unavailable) to determine needs.

Activity D2. Molecular and antigenic analysis workshops.

The launching meeting for laboratories nominated for molecular characterization of antigenic variants was conducted in March 2010.

Activity D3. Develop capability to conduct vaccine efficacy tests in Indonesia.

- Visited Bbalitvet in March 2010 to revisit its participation in the pre-screening process to monitor avian influenza viruses for antigenic variation. As one of the sequencing partners recently nominated by the DAH, Bbalitvet is being encouraged to participate in the capacity building effort by OFFLU and AAHL to support the sequencing of antigenic variants detecting using antigenic cartography, and in the capacity building effort on challenge testing of new vaccines using the reverse genetics vaccine strains developed at SEPRL.
- Continued to encourage DAH to partner with private companies to pursue challenge testing field trials.

Output E. Technical recommendations for the vaccination strategy

Activity E1. *Continued development of reverse genetic vaccine based upon the drift variant identified in Phase I.* This activity has been completed

Activity E2. *Support field trials with alternative vaccines.*

Suggested support field trials with alternative vaccines and continuation to encourage DAH to partner with private companies to pursue trials using candidates demonstrated to be efficacious, especially against variant viruses in Indonesia

Activity E3. *Encourage the Government of Indonesia to streamline registration of efficacious recombinant and reverse genetic vaccines.* This activity has been suspended, since investigations in support of product registration are considered as a “private good” and should be conducted at the expense of the vaccine company.

Activity E4. *Continue the assessment of costs and cost-effectiveness of vaccination strategies in Indonesia.*

- ICASEPS field survey conducted in 13 districts/municipalities is being continued in Western Java area for “Assessment of Farm Level Financial Incentives and Willingness to Pay for HPAI Vaccination in Indonesia”.
- Initiated data entry of surveys

Activity E5. *Prepare updated technical recommendations on a vaccination strategy.*

- Preparation for the consultation to develop recommendations for a comprehensive vaccination strategy in Indonesia for July 2010 is underway.

Activity E6. *Organize technical review meetings.*

- Preparation for final Technical Review Meeting September-October 2010 has been initiated.

Planned activities for the next quarter**Output A-B. HPAI field isolate collection for biologic and genetic characterization**

Activity AB1. *Continue collection of samples.*

Activity AB2. *Support beta testing of InfoLab-Plus by Peter Durr, AAHL to allow for field entry of standardized sample information, to improve data integration and communication between laboratories, and to ensure data integrity.* This activity has been completed.

Activity AB3. *Screen samples by RT-PCR in DICs, Bbalitvet, and new partners where possible.*

- Submission of specimens to laboratories continues both through PDSR and normal activities.
- Follow up with proposal from DIC Wates (after approval through PDSR) to conduct surveillance under the OFFLU project.

Activity AB4. *Provide samples positive for avian influenza to AAHL for characterization.*

- To continue to pursue collaborative efforts to obtain needed isolates from underrepresented and high risk species and geographical areas.
- To select a set of 25-30 isolates from existing pre-screened data generated at DIC Wates to be sent to the three labs selected for molecular characterization (DIC Bukittinggi, Pusvetma, and Bbalitvet) as well as AAHL for parallel generation of antigenic and genetic data for capacity building purposes.

Activity AB5. *To conduct genetic and antigenic characterization of HPAI isolates in Indonesia.*

- National and international reference laboratories continue with the characterization of available isolates.
- To produce/distribute antisera panel confirmed for use in antigenic cartography to additional partners named by the DAH using the protocols agreed to by Erasmus MC and AAHL.

Output C. Challenge testing of antigenic variants and vaccine strains selection

Activity C1. Perform challenge testing with priority isolates against new vaccine(s) strain.

- DAH suggested that the OFFLU Technical Facilitator continue the follow up on submitted letters to DGLS for receipt of reverse genetics low pathogenicity H5N1 virus strains, antigenic cartography, and sequence deposit.
- To follow-up MTA to ship characterised vaccine master seeds and challenge viruses to Indonesia.
- To continue characterization of additional constructs at SEPRL.

Output D. Capacity building

Activity D1. Five-month support from OFFLU Scientist in close coordination with AAHL.

- The OFFLU scientist from FAO will continue to provide in-country technical assistance to support laboratory capacity and establishment of activities for antigenic cartography. Next inputs will be scheduled for June and July 2010.
- To finalize recruitment of National Technical Facilitator for OFFLU activities in Indonesia.
- To continue follow-up on Phase II procurement for DIC Wates.
- To follow-up procurement of reagents to support molecular characterization efforts.
- National Technical Facilitator for OFFLU will assist with the initiation of prescreening activities at DICs to include OFFLU Recommendation to include a standardised reference H5 hyperimmune antisera and the homologous antigen based on an updated common Indonesian lineage for use in DICs and other national laboratories.
- To determine antigenic cartography training needs for industry.

Activity D2. Molecular and antigenic analysis workshops.

- Follow-up to the Workshop on Serology and Virus Typing for Antigenic Cartography held from 2 to 4 September and 30 November to 4 December 2009 at DIC Wates will be scheduled in June 2010.
- AAHL to prepare and conduct Sequencing Workshop and possible biosafety/security at Pusvetma in April and May 2010 with support from OFFLU Technical Facilitator, FAO-Indonesia and CMU.

Activity D3. Develop capability to conduct vaccine efficacy tests in Indonesia.

- To determine training needs for either Bbalitvet or NVDAL on challenge testing at AAHL.
- To determine need for a memorandum of understanding (MoU) with industry partners named by DAH for cartography activities.
- To continue to encourage DAH to partner with private companies to pursue challenge testing field trials.

Output E. Technical recommendations for the vaccination strategy

Activity E1. Continue the development of reverse genetic vaccine.

SEPRL to report on data from completed challenge tests using available reverse genetic constructs.

Activity E2. Support field trials with alternative vaccines.

To support field trials with alternative vaccines and continue to encourage DAH to partner with private companies to pursue trials using candidates demonstrated likely to be efficacious, especially against variant viruses in Indonesia.

Activity E3. To encourage the Government of Indonesia to streamline registration of efficacious recombinant and reverse genetic vaccines. This activity has been suspended, since investigations in support of product registration are considered as a "private good" and should be conducted at the expense of the vaccine company.

Activity E4. To continue the assessment of costs and cost-effectiveness of vaccination strategies in Indonesia.

To continue data entry and analysis for ICASEPS field survey.

Activity E5. To prepare updated technical recommendations on a vaccination strategy.

To prepare a consultation to develop recommendations for a comprehensive vaccination strategy in Indonesia for July 2010.

Activity E6. To organize technical review meetings.

To prepare for final Technical Review Meeting scheduled from September to October 2010.

Main challenges encountered and response provided (*This section refers to external challenges only*)

Delay in the arrival of the letter from the DAH regarding roles and responsibilities of the DICs for Antigenic Cartography has resulted in confusion among the DICs about the prescreen process. Also, the Director of DIC Wates was distributing misinformation to the other DICs regarding shipment of HPAI positive samples. This confusion is in the process of being corrected but will hinge on accurate and timely information from the DAH. It is hoped that the National Technical Facilitator for OFFLU will be instrumental in this. The request to release the sequences to public databases is still pending DAH approval; another letter has been sent to the DG.

Main progress made towards the achievement of project outcomes (*from the start of the project activities*)

Output A-B: HPAI field isolate collection for biologic and genetic characterization:

- Characterization of 175 isolates from 215 samples representing ~90 districts predominantly from backyard chickens.
- Completion of the UAT Workshop and subsequent activities to launch InfoLabPlus.
- Selection and production of reference antisera and antigens for Indonesia.
- Antigenic cartography data from 100 isolates in addition to biologic and molecular data was used to select five candidate vaccine strains and six potential challenge strains for further investigation. Viruses have been received at SEPRL for vaccine construct and challenge studies in June 2009.
- Nomination of DIC Wates as focal point for antigenic cartography; work plan developed 1 July 2009; capacity building activities for antigenic cartography launched July 2009.
- Nomination of three laboratories to support genetic characterization of antigenic variants and launch of the capacity building activities for sequencing in March 2010.
- Selection of five vaccine strains and six challenge strains based upon data generated from antigenic and molecular characterization of isolates.
- Data available to date presented at November 2009 Technical review meeting.
- Presentation at the 7th International Symposium for Avian Influenza in April 2009.
- Presentation at the Regional Meeting on Molecular Epidemiology of Origin and Evolution of H5N1 Highly Pathogenic Avian Influenza Virus in Asia, USDA/FAO, Bangkok, Thailand, September 2009.

Output C: Challenge testing of antigenic variants and vaccine strains selection:

- Signing of collaborative MTA between DGLS, AAHL, SEPRL, and industry and receipt of selected vaccine candidate and challenge strains at SEPRL in June 2009 to continue vaccine development and challenge testing.
- Collaborative MTA to return fully characterized isolates to Indonesia.

- Challenged the tests conducted using available reverse genetics constructs at SEPRL using updated challenge viruses selected from the OFFLU project data.
- Continued efforts to deliver the certified LP master seed to Indonesia. Awaiting response from DGLS; once approved, master seed can be shipped to NVDAL.
- Continued to encourage DAH to partner with private companies to pursue challenge testing field trials.

Output D: Capacity building

- OFFLU workshops have been conducted on introductory molecular and antigenic analysis for 56 Indonesian scientists representing all DICs, four veterinary faculties, industry and MoA (November 2008, March and September 2009).
- The FAO/OFFLU scientist has completed the five-month capacity building activities in close coordination with AAHL; support visits and technical assessments have been conducted at DIC Wates, Denpasar, and Bukittinggi. Capacity building activities for antigenic cartography will continue in close coordination with AAHL.
- Capacity building activities conducted to allow DICs to perform antigenic characterization of viruses and analyse resulting data in order to identify isolates to be further tested with challenge studies. This will help to ensure that vaccines in use in Indonesia are efficacious.
- Positive response from the DAH to engage the industry in the virus monitoring effort will contribute to a broader understanding of viruses circulating in Indonesia.

Output E: Technical recommendations for the vaccination strategy

- Two constructs near completion and full low pathogenic certification, others in characterization process.
- Consultation with legal firm specializing in intellectual property has been completed, final report is in preparation
- Final report prepared by socio-economist on "Vaccination and surveillance costs for operational research project in Indonesia".
- FAO interim recommendations submitted to the DGLS in April 2008.
- An update to the FAO interim recommendations was submitted to the DGLS in June 2009 based upon data analysed from the OFFLU project.
- Development and assessment of newly engineered low pathogenicity reverse genetics vaccine strain(s) for Indonesia selected through data gathered from this project.
- OFFLU Technical review meetings with open forum held in June and November 2008 and November 2009.
- Presentation at the 7th International Symposium on Avian Influenza in Athens, GA, from 5 to 8 April 2009 "Characterization of H5 HPAI virus variants in Indonesian poultry – OFFLU Indonesia Project"
- Presentation of the OFFLU project at the Regional Meeting on Molecular Epidemiology of Origin and Evolution of H5N1 Highly Pathogenic Avian Influenza Virus in Asia, USDA/FAO, Bangkok, Thailand, 9 September 2009.

I Quarter 2010**Project Monitoring Sheet: OSRO/INS/604/USA**

Project Title: Expansion of the avian influenza participatory disease surveillance and response programme in Indonesia

Extension Title: Reinforcement and expansion of the avian influenza participatory disease surveillance and response programme in Indonesia

Period: January-March 2010

Country: Indonesia
Project title: Reinforcement and expansion of the avian influenza participatory disease surveillance and response programme in Indonesia
Code: OSRO/INS/604/USA
Budget: USD 4 million (Phase I), USD 13.7 million (Phase II), USD 7.5 million (Phase III), USD 11 million (Phase IV)
Total budget: USD 36.2 million
Effective starting date: 9 June 2006
Planned end date: 31 May 2010 (no-cost extension approved until 30 September 2010)
<p>Context of the project</p> <p>The purpose of the project is to enhance the capacity and ability of the Government of the Republic of Indonesia and partners to control Highly Pathogenic Avian Influenza (HPAI) in order to help safeguard the health and livelihoods of the Indonesian population by providing broad-based support to the Food and Agriculture Organization of the United Nations (FAO) Indonesia HPAI Control Programme, implemented by the FAO Emergency Centre for Transboundary Animal Disease Operations (ECTAD) in Indonesia.</p>
<p>Objectives of the project</p> <ul style="list-style-type: none"> • Sustainable surveillance, prevention and control of HPAI in village poultry. • Improved biosecurity and vaccination practices in commercial sectors. • Improved HPAI surveillance and control along the poultry marketing chain. • Engagement with duck producers for improved control of HPAI. • Coordinated and enhanced management of the HPAI control programme.
<p>Planned activities</p> <p>Output 1: Sustainable surveillance, prevention and control of HPAI in village poultry</p> <p><i>Activity 1.1: Maintain village surveillance, prevention and outbreak control capacity across endemic areas of Indonesia, prioritized by strategic importance.</i></p> <p><i>Activity 1.2: Assess the potential of the participatory disease surveillance and response (PDSR) system, structure and capacities to strengthen the national veterinary service.</i></p> <p><i>Activity 1.3: Facilitate the drafting of a national veterinary service strategy and work plan.</i></p> <p><i>Activity 1.4: Assist the Campaign Management Unit (CMU) in advocating to local governments for budgetary support for HPAI control, including PDSR and local disease control centres (LDCC) activities.</i></p>

Output 2: Improved biosecurity and vaccination practices in commercial sectors

Activity 2.1: Provide specialized technical support to selected layer producers within high-risk areas of West Java to enhance efficiency and quality of layer vaccination and biosecurity measures.

Activity 2.2: Provide biosecurity training of trainers for commercial producers and relevant government agencies.

Activity 2.3: Assist government and industry in establishing an advisory council modeled on the United States (US) National Poultry Improvement Plan (NPIP) to gain more coordinated and broad-based support for partnership between public and private sectors.

Activity 2.4: Evaluate the effectiveness of biosecurity measures implemented by poultry producers.

Activity 2.5: Provide expert technical assessments to Sectors 1 and 2 farms in high-risk locations.

Output 3: Improved HPAI surveillance and control along the poultry marketing chain

Activity 3.1: Conduct longitudinal surveillance for HPAI in live bird markets and collector yards.

Activity 3.2: Implement biosecurity and sanitation interventions in selected live bird markets, collector yards and slaughterhouses.

Activity 3.3: Facilitate DKI (special zone) Jakarta poultry market restructuring.

Output 4: Engagement with duck producers for improved control of HPAI

Activity 4.1: Conduct duck vaccination field trial in selected districts of Java.

Activity 4.2: Expand duck producer profiling and HPAI surveillance to selected districts in Java, Lampung and Bali.

Output 5: Coordinated and enhanced management of the HPAI control programme

Activity 5.1: Integrate and analyse data sets to identify critical control points.

Activity 5.2: Once western Java activities are consolidated, extend essential control programme elements (e.g. market surveillance, commercial profiling, targeted support for high-risk producers) to other priority regions based on outcomes of western Java intensification activities and lessons learned.

Activity 5.3: Expand the monitoring and evaluation system (M&E system) programme-wide with increased integration with government.

Activity 5.4: Improve technical capacity of government human resources.

Activity 5.5: Improve virus strain monitoring, including training, sample submission, collection of field isolates and improved surveillance.

Activity 5.6: Increase the capacity of Indonesian laboratories to conduct antigenic and genetic characterization of virus isolates.

Activity 5.7: Provide technical recommendations on vaccination strategy.

Activity 5.8: Conduct vaccination challenge testing and field challenge testing of antigenic variants.

Activities undertaken during the reporting period

Output 1: Sustainable surveillance, prevention and control of HPAI in village poultry

Activity 1.1: Maintain village surveillance, prevention and outbreak control capacity across endemic areas of Indonesia, prioritized by strategic importance.

Epidemiology

- Technical and operational support for Participatory Disease Surveillance/Response (PDSR) teams and Local Disease Control Centres (LDCCs) throughout Java, Sumatra, Bali, South Sulawesi and West Sulawesi provinces is ongoing.
- Analysis of the PDSR database is also ongoing and provides information on the HPAI status of village poultry throughout the PDSR coverage areas. The village HPAI positive detection rate for this quarter (January-March 2010) was 19.8 percent (713/3 601) as compared with the previous quarter's village detection rate of 6.2 percent (182/2 945). All but 14 of the positive cases were a result of passive surveillance (callout report). Due to the reliance of HPAI detections on passive surveillance, the method of reporting PDSR detection rates will change next quarter to more accurately reflect disease incidence rates. Analysis of the data contained in the village information reports is nearly finished and will contribute information to help improve disease control at village level.
- Structured village surveillance to assess the prevalence of HPAI-infected villages was completed in Banyuwangi, Blitar and Ciamis. About 3 percent of villages had HPAI-like sickness in village chickens, but none had HPAI based on rapid antigen detection test results.

Programme Management and Operations

- FAO continues to provide operational and technical support for 23 LDCCs in Java, Sumatra, Bali and South Sulawesi and West Sulawesi provinces of Sulawesi island.
- The World Bank (WB) project funding for Coordinators of Community Vaccinators (KVM) ended in December 2009. A CMU/FAO/LDCC decision was made in a meeting held on 23 February 2010 to include KVMs under the management of the LDCCs (there were four LDCCs under which KVMs are operating: Yogyakarta, Bandung, Purwokerto and Semarang). FAO supports the operational expenses and daily subsistence allowance payment for KVM officers through the already-established LDCC system.
- A consultation mission on project management was carried out during this reporting period. It focused on the preparation of work plans and performance evaluation for project staff and managers. A performance evaluation sheet was drafted based on inputs from the managers and staff.
- The registration process for motorcycles and vehicles is ongoing. FAO and the Ministry of Agriculture (MOA) are waiting for a confirmation letter from provincial governments stating that they would cover all costs incurred for the vehicle and motorcycle registration and taxes.

Activity 1.2: Assess the potential of the PDSR system, structure and capacities to strengthen the national veterinary service

- Following the consultancy last quarter to review the data collected in the PDSR activity reports and to identify essential information for disease control and management, revised PDSR reports have been drafted and are currently under technical review.
- An external evaluation of the PDS training and continuing education programme was conducted this quarter via an expert consultancy. The evaluation included a desk study, interviews of key stakeholders and field visits to multiple district locations on Java and

Sumatra islands. A seminar to present initial evaluation findings to the government, FAO and donor stakeholders was held at the conclusion of the evaluation consultancy. The final evaluation report is under review for technical clearance and will be distributed next quarter.

- The Strengthening Veterinary Services in West Sulawesi Workshop was held in March 2010 in Mamuju, West Sulawesi in order to address key issues for the integration of PDSR activities with West Sulawesi government services as part of the overall development of a National Veterinary Service (NVS).

Activity 1.3: Facilitate the drafting of a national veterinary service strategy and work plan

- The draft concept for the NVS was shared with the MOA NVS Task Force; the task force held its first meeting this quarter.
- A meeting between central and local government stakeholders to determine the way forward on NVS is scheduled for the next quarter. Activities in South and West Sulawesi (as highlighted in Activity 1.3 above) are also contributing to the development of an effective NVS strategy.
- A suitable candidate for the NVS Facilitator consultancy was identified this quarter and will take up his appointment early next quarter.

Activity 1.4: Assist the CMU to advocate to local governments for budgetary support for HPAI control, including PDSR and LDCC activities

- In close collaboration with the Directorate of Animal Health (DAH) and CMU, FAO continues to advocate for sustainability of the local government's HPAI control activities. With facilitation from CMU, further efforts have been made to coordinate with local governments to ensure provision of sufficient funding at provincial and district levels. During this quarter, two Decision-Makers' Meetings were held in Sumatra in order to engage the local government in the HPAI control activities and to advocate for the long-term sustainability of animal disease control services. The DMM for Kepulauan Riau Province was held on 10 and 11 February 2010 in Batam and the DMM for Aceh province was carried out on 17 and 18 February 2010 in Banda Aceh. In both regions, control of HPAI is one of the priorities of the local government and the provincial/district livestock services, with disease management carried out through surveillance, outbreak control and prevention activities.
- The local governments in both regions support the sustainability of PDSR and have already included PDSR activities in their 2010 budget plan. Some provincial governments have allocated additional funding for sustainability of PDSR and for HPAI control in general, including funds to cover the taxes for vehicles to be used by PDSR officers/LDCC in the field to support HPAI control in their respective areas.

Output 2: Improved biosecurity and vaccination practices in commercial sectors

Activity 2.1: Provide specialized technical support to selected layer producers within high-risk areas of West Java to enhance efficiency and quality of layer vaccination and biosecurity measures

- The ECTAD Indonesia programme is continuing to provide technical, logistic and operational support in collaboration with partners for targeted vaccination of small-scale layer producers in ten districts in Yogyakarta, Central Java and West Java under the InVak intensified vaccination programme.
- The International Technical Advisor (Commercial Poultry Health) began in-country activities this quarter.
- A rapid field assessment of the pilot layer farms identified in Central Java for the layer engagement programme was conducted at the end of the quarter and the inception workshop for the layer programme will be held next quarter.

Activity 2.2: Provide biosecurity training of trainers for commercial producers and relevant government agencies

- A stakeholder workshop with key central and local government staff, poultry farmers and FAO was held to initiate design of a local government commercial poultry programme.
- A concept note and implementation plan was subsequently developed in conjunction with DAH and CMU for the pilot programme for training district livestock officials to engage with commercial poultry producers.
- Field visits were conducted to farmers and local governments in Central Java, West Java and Lampung to refine the plan and identify potential pilot locations.
- References for training materials were compiled.

Activity 2.3: Assist government and industry in establishing an advisory council modeled on the US National Poultry Improvement Program to gain more coordinated and broad-based support for partnership between public and private sectors

- Support for activities related to the National Poultry Quality Improvement Program (NPQIP) by ECTAD Indonesia is continuing.
- An Indonesian expert was recruited for the NPQIP Facilitation consultancy.
- The NPQIP Facilitator conducted interviews of stakeholders for NPQIP concept development in West Java, Lampung and South Sulawesi.
- Monthly coordination meetings on NPQIP progress were held between the United States Department of Agriculture (USDA) and ECTAD Indonesia.
- A second individual to assist in NPQIP development was identified and will be recruited next quarter as a NPQIP Facilitator.

Activity 2.4: Evaluate the effectiveness of biosecurity measures implemented by poultry producers

This activity has been integrated with Activity 2.1 above, and will commence concurrently. An initial assessment of layer farms included in the biosecurity effectiveness study was conducted at the end of this quarter, and the cost-effectiveness evaluation methods will be developed next quarter in collaboration with the ECTAD Socioeconomics Unit.

Activity 2.5: Provide expert technical assessments to Sectors 1 and 2 farms in high-risk locations

Upon further consultations with Sector 1 and 2 industry representatives, this activity will be integrated within activities to be carried out under the NPQIP. With the Technical Advisor (Commercial Poultry Health) now on duty, ECTAD Indonesia is awaiting assessment requests from Sector 1 and 2 farms in addition to the Sector 2 layer farms already included in the layer engagement programme.

Output 3: Improved HPAI surveillance and control along the poultry marketing chain

Activity 3.1: Conduct longitudinal surveillance for HPAI in live bird markets and collector yards

- Environmental sampling continued at live bird markets through Jabodetabek (Jakarta province and surrounding metropolitan areas).
- The targeted research activity to identify a cost-effective collector yard surveillance method was successfully implemented in East Jakarta and Tangerang city. The data is currently being analysed and will be used to help determine high-risk geographic areas and types of birds.
- An additional training course for new Market Surveillance Officers (PSP) was conducted and numerous meetings on collector yard surveillance were held with related stakeholders to ensure smooth implementation.

- A refresher training course for all PSP was held along with a market chain surveillance coordination meeting among market surveillance stakeholders to improve M&E efforts.
- The market list for live bird market surveillance was also revised this quarter.

Activity 3.2: Implement biosecurity and sanitation interventions in selected live bird markets, collector yards and slaughterhouses

- A new Engineer Field Assistant was recruited for cleaning and disinfection station establishment.
- A manual describing cleaning and disinfection practices in collector yards was finalized.
- Ten selected private collector yards in Bodetabek (metropolitan area surrounding Jakarta) received training in biosecurity principles and were equipped with gasoline-powered high-pressure washing equipment. On-site refresher training on cleaning and disinfection for cleaning workers in collector yards was conducted.
- A locally available alternative disinfectant was procured for collector yards and live bird markets in Jabodetabek.
- The ongoing cleaning day in Kutabumi market was monitored and lessons learned were utilized to revise standard operating procedures (SOPs) for other live bird markets in Tangerang. A field assessment was conducted to select the potential live bird markets in Tangerang for introduction of a market cleaning day.
- Construction of the cleaning and disinfection station in Pulo Gadung poultry collection yard and slaughterhouse was completed and the station was operationally tested. The station will begin service early next quarter.
- Supervision was provided for tiling and drainage upgrading at the Cakung poultry collection yard and slaughterhouse.
- Meetings were held with DKI Jakarta provincial livestock services, East Jakarta and South Jakarta district livestock services and PT Dharma Jaya management regarding the possibility of establishing cleaning and disinfection stations in Rawa Kepiting, Cakung and Petukangan collector yards, in addition to the station under construction at Pulo Gadung.
- An agreement was reached among all stakeholders in Jakarta to establish dedicated cleaning and disinfection stations for poultry transport trucks in all major collector yards. The purpose of the cleaning station is to clean and disinfect all trucks leaving the collector yard.

Activity 3.3: Facilitate DKI Jakarta poultry market restructuring

- The targeted public awareness campaign for the promotion of healthy chicken meat was initiated with press conferences, talk shows and organized visits to the marketing and slaughter areas in DKI Jakarta. Close liaison with the DKI Governor's office and its administration is increasing the likelihood of success for DKI restructuring.
- ECTAD Indonesia has also provided technical support for the development of SOPs related to the organization of the five collection yards/slaughterhouses and their management, as well as operational assistance for the start-up of one of the five collection yards (Rawa Kepiting).
- Support for the promotion of the collection yards with the collectors and slaughterers, in collaboration with the local administration, was continued.
- Further technical support was provided to law enforcement units and FAO facilitation continued for the set-up of poultry transport checkpoints at the entrance to the city.
- Finally, ECTAD Indonesia continued to facilitate private sector participation in a study tour to Viet Nam as a follow-up to the completed December 2009 study tour by public sector representatives.

Output 4: Engagement with duck producers for improved control of HPAI

Activity 4.1: Conduct duck vaccination field trial in selected districts of Java

ECTAD Indonesia further pursued the opportunity to initiate this activity during the current project period; however, the current Directorate General of Livestock Services (DGSL) vaccination policy does not include ducks. ECTAD is working with DAH and DGSL to determine if the activity can be pursued strictly as a research project and thus be permissible under the current vaccination policy.

Activity 4.2: Expand duck producer profiling and HPAI surveillance to selected districts in Java, Lampung and Bali

- The profiling of duck flocks in the remaining districts of Banten and West Java provinces was completed.
- Activities to support the implementation of targeted surveillance to determine the prevalence of AI subtype H5 in duck flocks in Banten and West Java were initiated. These included training of district staff in sampling techniques, coordination with district authorities to obtain permission to conduct the study, as well as coordination with the three laboratories responsible for processing the collected samples.
- ECTAD Indonesia also made available a virus transport medium (VTM) to the implementing agency to be used for sampling.

Output 5: Coordinated and enhanced management of the HPAI control programme

Activity 5.1: Integrate and analyse data sets to identify critical control points

- A study of the prevalence of HPAI in the duck population of South Kalimantan was completed and the report drafted. Findings indicate that the duck population in the study was not acting as a reservoir for HPAI in Kalimantan, thus warranting further studies to better understand the role of ducks in the epidemiology of HPAI.
- Analysis of the InVak data on the willingness of farmers to pay for AI vaccine was completed indicating that over 80 percent of farmers had been using HPAI vaccine in the past, thereby indicating a likelihood that most farmers in the programme would continue to purchase AI vaccine on their own following completion of InVak programme.
- Work has commenced in comparing the data from PDSR activities with the random field prevalence studies in three of the planned six districts of Java. Initial results indicate similar results from both methods.

Activity 5.2: Once western Java activities are consolidated, extend essential control programme elements (e.g. market surveillance, commercial profiling, targeted support for high-risk producers) to other priority regions based on outcomes of western Java intensification activities and lessons learned

- This activity is ongoing and contingent on the successful implementation of a complete "suite" of commercial, market and village-based surveillance, prevention and control activities in the western Java area. Currently village-based activities are fully operational in all priority regions, and targeted vaccination of small-scale producers is underway in central Java. Market, village and commercial activities are underway in South Sulawesi under an AusAID-funded project.
- The commercial poultry programme was initiated this quarter in Central Java. Expansion of market activities to Central Java and Yogyakarta will commence once all planned activities in western Java have been successfully implemented. In particular, a critical market for export of poultry to Jakarta has been identified in Central Java and it is expected that market chain activities in Central Java will be initiated in the next project cycle.

Activity 5.3: Expand the M&E system programme-wide with increased integration with government

- The collector yard surveillance database commenced operation, providing monitoring information while collector yard surveillance was underway, and continues to receive laboratory test results of samples submitted. Improvements were made to the market surveillance database to allow increased accuracy of place name identification. Minor improvements were made to the PDSR database and this database is now at version 3.1.2.
- A new database for tracking collector yard cleaning and disinfection activities was designed.
- A project log database was designed and implemented to assist management in reporting FAO activity to senior DAH officials. Twenty-eight regular monitoring reports were produced for FAO and DAH management each month.
- Work plan preparation support was provided to ECTAD Indonesia management.

Activity 5.4: Improve technical capacity of government human resources

- Three continuing education training workshops (Package A & B) for PDSR officers were conducted in Bekasi, West Java and Kupang, East Nusa Tenggara (155 persons: 107 male, 48 female).
- One continuing education training workshop (Package B) for former participatory impact assessment officers was conducted in Semarang (31 persons: 22 male, 9 female).
- Training team members participated in and provided technical inputs to 18 LDCC monthly meetings and 11 district focal person meetings at various LDCCs.
- Members of the training team participated in two Decision-Makers' Meetings in Kepulauan Riau and Aceh provinces.
- The training team also provided requested information for the evaluation of the PDSR training programme conducted this quarter. The evaluator was assisted by training team staff during her visits to Semarang, Purwokerto, Bandung and Pekanbaru LDCC.
- The training team participated in a stakeholders' workshop conducted in Jakarta on the proposed local government commercial poultry programme and at a similar workshop in Jambi, Sumatra organized by the Jambi provincial government.
- An additional Training Specialist joined the programme this quarter in order to provide technical input for the development of the local government commercial poultry programme in collaboration with DAH, CMU, local government and poultry farmers.

Activity 5.5: Improve virus strain monitoring, including training, sample submission, collection of field isolates and improved surveillance

The DAH has still not cleared and distributed the Sample Submission SOP to local governments in order to officially initiate the sample submission programme. FAO continues to work closely with the DAH to facilitate issuance of the Sample Submission SOP so that the activity can commence in the field in all locations with PDSR.

Activity 5.6: Increase the capacity of Indonesian laboratories to conduct antigenic and genetic characterization of virus isolates

- The OIE-FAO Network of Expertise on Avian Influenza (OFFLU) scientist continues to provide in-country technical assistance to support laboratory capacity. A positive response was received from the Bbalitvet laboratory to participate in OFFLU activities such as the pre-screening process to monitor AI viruses for antigenic variation, and participation in generating genetic data for antigenic cartography in parallel and with guidance from the Australian Animal Health Laboratory (AAHL).

- The DAH nominated three laboratories to receive capacity building for molecular characterization of antigenic variant HPAI isolates identified through antigenic cartography (DIC Bukittinggi, Pusvetma and Bbalitvet), and an introductory meeting was conducted for the three laboratories on 22 March 2010 in coordination with AAHL. DAH and CMU also attended this meeting.
- Procurement of reagents was initiated to support molecular characterization efforts. Pusvetma can now produce small amounts of antisera for cartography (e.g. ~500 mls of a single serum per each ten-week period) using the facilities available.
- The position of national technical facilitator for OFFLU was proposed to assist with the coordination of the OFFLU project in close collaboration with the DAH, CMU, the seven Disease Investigation Centres, particularly DIC Wates and other relevant public sector structures and private sector stakeholders.
- A site visit to DIC Wates was conducted by the OFFLU scientist in coordination with the CMU to follow up on antigenic cartography activities and analysis of data generated to end in March 2010.
- A positive response was received from DAH to include poultry vaccine producers Vaksindo and Medion in antigenic cartography activities.
- Procurement of needed reagents and equipment for DIC Wates continued. The OFFLU scientist confirmed the arrival of equipment and consumables. More needs were identified during the March 2010 visit.
- The OFFLU scientist also conducted a joint assessment visit to Pusvetma in conjunction with AAHL to determine laboratory needs.

Activity 5.7: Provide technical recommendations on vaccination strategy

- OFFLU continues to encourage the DAH to support field trials of alternative vaccines and to partner with private companies to pursue vaccine trials using candidate vaccines demonstrated likely to be efficacious, especially against variant viruses in Indonesia.
- A field survey was conducted by the Indonesian Center for Agriculture Socio-Economic and Policy Studies (ICASEPS) in 13 districts/municipalities and continues in the western Java area for "Assessment of Farm Level Financial Incentives and Willingness to Pay for HPAI Vaccination in Indonesia." Data entry of survey results was initiated.

Activity 5.8: Conduct vaccination challenge testing and field challenge testing of antigenic variants

- Characterization of additional vaccine constructs at the Southeast Poultry Research Laboratory (SEPR) in Athens, Georgia, USA continues.
- Cartography reagents from AAHL were received at SEPR, pending confirmation from Erasmus University.
- DAH is encouraged to partner with private companies to pursue challenge testing field trials.
- A Material Transfer Agreement (MTA) is in process to ship characterized vaccine master seeds and challenge viruses back to Indonesia from AAHL.
- The OFFLU scientist visited Bbalitvet in March to re-discuss their participation in the pre-screening process to monitor AI viruses for antigenic variation and other project activities.

Cross-cutting activities

Information, Education and Communication

Activities this quarter continued to focus on developing and distributing materials for public awareness and PDSR continuing education. The following activities were completed/initiated:

- Printed and distributed the 6th Edition of the PDSR Newsletter and the 6th Edition of the Avian Influenza Bulletin in cooperation with the MOA.
- Finalized and distributed the flipchart animation video.
- Continued the development of the PDSR training video and the Dinas Briefing Package (video).
- Continued discussion with CMU on how to proceed with implementation of the National Communication Strategy on HPAI for the MOA.
- Additional progress made on concept development of the Disease Transmission Video in collaboration with the production company.
- Continued the subscription to a media monitoring company for AI-related news and coverage of selected animal diseases.
- Commenced the development of PDSR Hotline stickers and calendars.
- Commenced planning for a promotional video for DKI Jakarta's market restructuring programme.

Planned activities for the next quarter

Output 1: Sustainable surveillance, prevention and control of HPAI in village poultry

Activity 1.1: Maintain village surveillance, prevention and outbreak control capacity across endemic areas of Indonesia, prioritized by strategic importance

- Maintain technical and operational support for PDSR teams throughout Sumatra, Java, Bali and southern Sulawesi. Continue with technical support for government-implemented LDCCs in Kalimantan and remainder of Sulawesi funded by local government.
- In close consultation with DGLS/DAH/CMU and USAID, conduct meetings to plan the next phase of the PDSR programme.
- Conduct village HPAI prevalence surveys in Serang and Situbondo districts.
- Complete all individual district survey reports and a consolidated survey report for all six Java districts, including a cost-efficiency comparison between village surveys and PDSR surveillance.
- Continue follow-up on vehicle procurement and registration with relevant government authorities.

Activity 1.2: Assess the potential of the PDSR system, structure and capacities to strengthen the national veterinary service

- Clear revised PDSR forms with LDCC Coordinators and DAH.
- Collaborate with the training team to revise training modules to incorporate revised PDSR forms.
- Select trial districts for surveillance data entry at district level as part of the local government commercial poultry health programme.
- Translate and distribute the PDSR training evaluation report.

Activity 1.3: Facilitate the drafting of a national veterinary service strategy and work plan

- Facilitate a stakeholder workshop on NVS for improvement of disease control capacity of animal health services in Indonesia.
- Complete the recruitment of a NVS Facilitator.

- Conduct a site visit to West Sumatra province to assess the possibility of a NVS pilot programme in West Sumatra.

Activity 1.4: Assist the CMU to advocate to local governments for budgetary support for HPAI control, including PDSR and LDCC activities

- Continue facilitation of Decision-Makers' Meetings in selected provinces in Sumatra and Java.
- Assist the CMU and DAH to coordinate with local government on budgetary support for HPAI control.
- In close consultation with DGLS/DAH/CMU and USAID, modify the next phase of the OSRO/INS/604/USA project to encourage further government investment in HPAI control.

Output 2: Improved biosecurity and vaccination practices in commercial sectors

Activity 2.1: Provide specialized technical support to selected layer producers within high-risk areas of West Java to enhance efficiency and quality of layer vaccination and biosecurity measures

- Recruit national technical and operational staff for the commercial poultry health team.
- Develop farm assessment (including biosecurity, vaccination and management) methods.
- Conduct an inception workshop for the layer engagement programme with participating layer farmers.

Activity 2.2: Provide a biosecurity training of trainers for commercial producers and relevant government agencies

- Finalize a plan for piloting a local government commercial poultry health programme and coordinate closely with local governments to ensure local support.
- Continue to compile training references (including the translation of training videos and guides) and develop training modules.

Activity 2.3: Assist government and industry in establishing an advisory council modeled on the US National Poultry Improvement Program to gain more coordinated and broad-based support for partnership between public and private sectors

- Continue interviewing key stakeholders from all sectors of the commercial poultry industry.
- Hire an additional part-time NPQIP Facilitator.
- Prepare an updated draft of the NPQIP roadmap.
- Plan a national workshop on NPQIP in collaboration with USDA and the commercial poultry industry.

Activity 2.4: Evaluate the effectiveness of biosecurity measures implemented by poultry producers

- Develop methods to measure biosecurity effectiveness in farms participating in the layer engagement programme (see Activity 2.1 above) and control farms.
- Conduct baseline farm assessments.

Activity 2.5: Provide expert technical assessments to Sectors 1 and 2 farms in high-risk locations

- Conduct specialized assessments upon request from Sector 1 and 2 farms and companies.

Output 3: Improved HPAI surveillance and control along the poultry marketing chain

Activity 3.1: Conduct longitudinal surveillance for HPAI in live bird markets and collector yards

- Continue environmental sampling at live bird markets in Jabodetabek.
- Conduct trial of a sustainable sentinel bird system, using collector yard managers as sentinel bird monitors.

- Determine the most cost-effective means of collector yard surveillance from targeted research study and utilize to prepare a long-term market chain surveillance system.
- Conduct additional training for new and/or replacement PSP.
- Assess options for the most sustainable method of providing ongoing supply of sentinel birds.

Activity 3.2: Implement biosecurity and sanitation interventions in selected live bird markets, collector yards and slaughterhouses

- Establish a cleaning and disinfection station in Rawa Kepiting and Cakung collector yards.
- Train cleaning workers on cleaning and disinfection station operations.
- Continue on-site refresher training on cleaning and disinfection activities for cleaning workers in collector yards.
- Monitor and evaluate cleaning and disinfection activity within the market chain in Jabodetabek.
- Supervise tiling and drainage upgrading in Petukangan collector yard.
- Conduct public awareness and training for live bird market stakeholders in Tangerang to implement market cleaning and disinfection day.
- Conduct a market cleaning and disinfection day in two live bird markets in Tangerang.
- Distribute alternative locally available disinfectant to selected collector yards and live bird markets in Jabodetabek.
- Rehabilitate the floors, walls and waste drainage system in Kutabumi market Tangerang as a pilot for determining ideal rehabilitation specifications for live bird markets in general.

Activity 3.3: Facilitate DKI Jakarta poultry market restructuring

- Continue a targeted public awareness campaign for the promotion of healthy chicken meat via press conferences, talk shows and organized visits to the marketing and slaughter areas in DKI Jakarta.
- Liaise with the DKI Governor's office and its administration to reconsider the critical deadline for relocation of live poultry and the potential for postponement.
- Continue support for the development of SOPs related to the organization of the five collection yards and their management, as well as the training of the collectors and slaughterers.
- Continue providing support for the promotion of the collection yards with the collectors and slaughterers, in collaboration with the local administration.
- Collaborate closely with the private sector and local administration in the restructuring of distribution channels from the five collection yards/slaughterhouses to the traditional markets, particularly regarding cold chain.
- Continue to provide limited technical support to law enforcement units in view of the postponement of the relocation.
- Design a further assistance programme of ECTAD Indonesia in view of the postponement of the relocation of the collectors and slaughterers to the five designated collection yards/slaughterhouses.

Output 4: Engagement with duck producers for improved control of HPAI

Activity 4.1: Conduct duck vaccination field trial in selected districts of Java

Continue to engage with DGLS to determine if a duck vaccination research study can be conducted on Java in case duck vaccination is required in the future to bring HPAI under control in Indonesia.

Activity 4.2: Expand duck producer profiling and HPAI surveillance to selected districts in

Java, Lampung and Bali

- Distribute the report of the Kalimantan duck study.
- Complete sampling for targeted surveillance to determine the prevalence of AI subtype H5 virus in duck flocks in Banten and West Java provinces.

Output 5: Coordinated and enhanced management of the HPAI control programme*Activity 5.1: Integrate and analyse data sets to identify critical control points*

- Complete the analysis of collector yard surveillance and review market chain surveillance results from other organizations.
- Complete the review of poultry type as a risk factor for HPAI on Java, utilizing market chain surveillance data.
- Complete the comparison of the results from district village HPAI active structured surveillance to equivalent results collected by PDSR.

Activity 5.2: Once western Java activities are consolidated, extend essential control programme elements (e.g. market surveillance, commercial profiling, targeted support for high-risk producers) to other priority regions based on outcomes of the western Java intensification activities and lessons learned

- Expand commercial poultry activities in Central Java via initiation of the layer engagement programme.
- Facilitate the development of a local government-implemented commercial poultry HPAI control tool for potential deployment in priority regions.
- Conduct meetings with local stakeholders to develop a market chain strategy in Solo area of Central Java.

Activity 5.3: Expand the M&E system programme-wide with increased integration with government

- Continue to operate the collector yard database system to log laboratory sample results and produce required datasets and reports.
- Revise the PDSR database based on recommendations from management for streamlining the PDSR forms.
- Continue operation of the market surveillance database.
- Commence operation of the collector yard cleaning and disinfection database.
- Transfer selected regular database reporting tasks to the CMU.

Activity 5.4: Improve technical capacity of government human resources

- Prepare and finalize the local government commercial poultry programme by designing material/modules, preparing schedules and selecting districts for the initiation of pilot work.
- Plan and implement various PDSR training courses at various LDCCs.
- Develop a revised training programme to implement recommendations of the PDSR training evaluation.

Activity 5.5: Improve virus strain monitoring, including training, sample submission, collection of field isolates and improved surveillance

- Facilitate a meeting with DAH to discuss clearance and issuance of Sample Submission SOP.

Activity 5.6: Increase the capacity of Indonesian laboratories to conduct antigenic and genetic characterization of virus isolates

- The OFFLU scientist from FAO will continue to provide in-country technical assistance

to support laboratory capacity and the establishment of activities for antigenic cartography. Next inputs are scheduled for June and July 2010.

- Finalize the recruitment of a national Technical Facilitator for OFFLU activities in Indonesia.
- Continue follow-up on phase 2 procurement for DIC Wates.
- Follow up on the procurement of reagents to support molecular characterization efforts.
- National Technical Facilitator for OFFLU to assist with the initiation of pre-screening activities at the DICs to affect OFFLU Recommendation. This will include a standardized reference H5 hyperimmune antisera and the homologous antigen based on an updated common Indonesian lineage for use in the DICs and other national laboratories.
- Determine antigenic cartography training needs for industry.

Activity 5.7: Provide technical recommendations on vaccination strategy

- SEPRL to report on data from the completed challenge tests using available reverse genetic constructs.
- Support field trials with alternative vaccines and continue to encourage DAH to partner with private companies to pursue trials using candidate vaccines demonstrated likely to be efficacious, especially against variant viruses in Indonesia.
- Continue data entry and analysis for ICASEPS field survey.
- Prepare consultation to develop recommendations for a comprehensive vaccination strategy in Indonesia for July 2010.
- Prepare for the final Technical Review Meeting, September-October 2010.

Activity 5.8: Conduct vaccination challenge testing and field challenge testing of antigenic variants

- DAH suggested that the OFFLU Technical Facilitator should follow up on submitted letters to DGLS for receipt of reverse genetics low pathogenicity H5N1 virus strains, antigenic cartography and sequence deposit.
- Follow up on MTA to ship characterized vaccine master seeds and challenge viruses to Indonesia.
- Continue characterization of additional constructs at SEPRL.

Cross-cutting activities

Information, Education and Communication

- Provide contributions to the DAH Newsletter as the replacement of the PDSR Newsletter.
- Produce the 7th Edition of the Avian Influenza Bulletin in cooperation with the MOA.
- Duplicate and distribute the animation video to all districts with PDSR.
- Continue the preparation of the PDSR training video.
- Continue the preparation of the Dinas Briefing Package.
- Finalize the National Communication Strategy on HPAI with the MOA.
- Produce the Disease Transmission Video.
- Continue monitoring and documenting news coverage related to the ECTAD programme.
- Produce PDSR Hotline stickers and calendars.
- Finish preparation of the 2009 FAO Annual Report (print, electronic and video versions).
- Produce promotional video for DKI Jakarta's Market Restructuring Project.
- Produce related posters.
- Repackage Media Partnership materials for global dissemination.
- Hold a media gathering to improve relationships with the media and update them on interesting and important information from the project and MOA.

Main challenges encountered and response provided

As expected with a programme of this magnitude, a number of challenges were encountered this quarter. Specific details on the difficulties encountered and response provided can be found in the sections above. In addition to the fundamental challenge of limited government financial commitment to HPAI control described in previous quarters, the ECTAD Indonesia management continues to experience challenges in the area of technical advisor recruitment. The FAO-selected candidate for the Poultry Market Chain Technical Advisor position was not approved by government and that position remains unfilled. Also recruitment of the Technical Advisor for Commercial Poultry Health was significantly delayed due to difficulties in receiving government clearance. ECTAD Indonesia management has responded to this by engaging more directly with DGLS early in the recruitment process, including screening all candidates for international and national technical positions with CMU before formally requesting clearance. Management has also increased the number of national technical recruitments and has decreased the number of long-term international staff. Another challenge for the HPAI Control Programme, which became more apparent this quarter, is the lack of DGLS engagement with MOA Quarantine Services. Movement control is a major gap in the current HPAI Control Programme, and this would best be resolved by more direct engagement with quarantine services at both national and local levels.

Main progress made towards the achievement of project outcomes *(from the start of the current project phase)*

Output 1: Sustainable surveillance, prevention and control of HPAI in village poultry

- The PDSR programme has strengthened veterinary services' capacity to detect and respond to HPAI outbreaks in village poultry throughout HPAI-endemic areas of Indonesia.
- The LDCC system has enabled more effective communication and coordination between central and local governments within the highly decentralized Indonesian governance system.
- As a direct result of advocacy conducted through local government village poultry HPAI control activities (e.g. PDSR), central and local governments are well aware of the need for cost-sharing for the HPAI control programme and animal disease control activities in general. In addition, government stakeholders are now more committed to support and advocate for animal health and HPAI disease control as a result of the FAO project.

Output 2: Improved biosecurity and vaccination practices in commercial sectors

- Understanding of the role of commercial poultry production in the maintenance and spread of HPAI has improved.
- Public-private partnership for targeted vaccination of at-risk small-scale poultry producers has been initiated.
- Public sector collaboration with commercial poultry producers has accelerated. In particular, public sector disease controllers and international agencies are both more aware of the complexity of commercial poultry production in Indonesia and more engaged with private sector stakeholders involved in commercial poultry production.

Output 3: Improved HPAI surveillance and control along the poultry marketing chain

- Test results from the DKI Jakarta category B animal health laboratory were distributed to all livestock services at district level throughout Jabodetabek to increase local government awareness and responsiveness to market chain contamination and

veterinary public health issues.

- Programme to test collector yard-based surveillance methods to assess relative risk of poultry production areas and poultry type were developed and successfully implemented.
- Understanding of poultry market dynamics in DKI Jakarta by the public sector has improved.
- There is increased private and public sector cleaning and disinfection capacity and increased implementation of cleaning and disinfection practices along the poultry market chain in greater Jakarta.
- Critical weaknesses in the DKI Jakarta market restructuring preparations have been identified and corrective measures proposed and subsequently implemented by the government.

Output 4: Engagement with duck producers for improved control of HPAI

The database of duck flocks developed from the study area provides a sample frame for the prevalence study and other future activities to be undertaken in duck populations by animal health authorities; knowledge of locations of high-density duck populations is a critical first step towards identifying critical control points for targeted interventions to control HPAI.

Output 5: Coordinated and enhanced management of the HPAI control programme

- Improved knowledge of factors associated with outbreaks of HPAI in village poultry to be used to inform and refine surveillance and control strategies.
- Critical control points identified. Data and subsequent analysis leading to identification of further points for disease control efforts to be targeted.
- Significant improvement in technical capacity and management of local government human resources working in the field throughout all known HPAI-endemic areas.
- Development of a safe, efficacious vaccine for use in Indonesia.
- Characterization of avian influenza viruses circulating in Indonesia.
- Increased capacity of Indonesian laboratories to perform antigenic characterization of viruses and analyse results.
- Improved collaboration between Indonesian private sector and public sector on field virus monitoring.

Project Monitoring Sheet: **OSRO/INS/103/USA**Project Title: **Enhancing the capacity of the Government of Indonesia and partners to control Highly Pathogenic Avian Influenza**Reporting period: **April 2013 to September 2013**

Country: Indonesia
Project title: Enhancing the capacity of the Government of Indonesia and partners to control Highly Pathogenic Avian Influenza
Code: OSRO/INS/103/USA
Budget: Initial budget: USD 8.2 million Amendment No.1: USD 5.2 million Amendment No. 2: USD 3.9 million
Total Budget: USD 17.3 million
Effective starting date: 1 October 2012
Planned end date: 30 September 2014
Context of the project The purpose of the project is to contribute to the control of Highly Pathogenic Avian Influenza (HPAI) in poultry in Indonesia, thus safeguarding the health and livelihoods of the Indonesian population. The expected outcome of the project is that the capacity and ability of the Government of Indonesia and partners to control HPAI are enhanced.
Objectives of the project Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined Participatory Disease Surveillance and Response (PDSR) system. Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders. Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders. Output D: Improved biosecurity practices in backyard and commercial duck-raising. Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored. Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders.
Planned activities for the reporting period (April to September 2013) Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system. <i>A.1 Distribute and use communication materials to support HPAI prevention and control activities.</i> <i>A.2 Revise and streamline PDSR system to incorporate more community-based decision-making for improved HPAI prevention and control.</i> <i>A.3 Provide Local Disease Control Centre (LDCC)/PDSR operational budget by local government.</i> <i>A.4 Extend PDSR database system to district level for improved local disease control management.</i> Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders. <i>B.1 Establish effective communication and coordination between government and commercial poultry industry in order to build trust among the stakeholders.</i> <i>B.2 Establish a confidential database of outbreak information from commercial farms.</i> <i>B.3 Increase competency in commercial poultry health (CPH) in both public and private sectors.</i> <i>B.4 Advocate for best practices for CPII.</i> <i>B.5 Conduct trials on private sector-funded compensation system.</i> Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders. <i>C.1 Improve the surveillance system along the post-production market chain and make it more cost-effective.</i> <i>C.2 Improve biosecurity along post-production market chain.</i>

C.3 Increase demand for healthy poultry end-product.

Output D: Improved biosecurity practices in backyard and commercial duck-raising.

D.1 Advocate for best practices in duck health management.

D.2 Implement duck epidemiological data analysis in low incidence areas in Indonesia to improve understanding of the reservoir role of ducks.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored.

E.1 Promote use of effective vaccine by farmers.

E.2 Establish partnership between commercial poultry industry and government for sharing of influenza virus data and isolates.

E.3 Establish sustainable laboratory system for influenza virus monitoring.

Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders.

F.1 Pilot National Veterinary Services (NVS) in three provinces for selected priority diseases.

F.2 Ensure effective programme management with respect to finance, administration, technical inputs, and partner relations (donor and Government of Indonesia).

F.3 Ensure appropriate support to programme components and management to maximize stakeholder participation and build capacity of animal health services.

F.4 Conduct epidemiological studies to better inform disease control and support government strategic planning.

F.5 Provide technical support to the Directorate of Animal Health (DAH) for HPAI policy development.

F.6 Contribute to the Komnas Zoonosis One Health communication and advocacy strategy.

Activities undertaken during the reporting period (April to September 2013)

Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system.

A.1 Distribute and use communication materials to support HPAI prevention and control activities.

- Produced, printed, and distributed 200 copies of the bilingual English/Bahasa Indonesia Food and Agriculture Organization of the United Nations (FAO) Emergency Centre for Transboundary Animal Diseases (ECTAD) Annual Report 2012; the electronic version of the annual report was distributed electronically to over 110 recipients, including LDCC Coordinators for redistribution to over 2 000 PDSR/ Commercial Poultry Veterinarian Programme (PVUK) field staff;
- Designed booth and communication materials for the 2013 Indo Livestock Expo & Forum held in Nusa Dua, Bali and for the National Poultry Farmers' Seminar which followed; and
- Initiated design of topic-based posters and factsheets to encourage and motivate Sector 3 layer farmers to conduct more effective vaccination programmes.

A.2 Revise and streamline PDSR system to incorporate more community-based decision-making for improved HPAI prevention and control.

- A meeting on Sustainability of PDSR and Socialization of *Unit Respons Cepat Penyakit Hewan Menular Strategis* (Rapid Response Unit – Strategic Infectious Animal Diseases [URC-PHMS]) was held in Surabaya for 61 participants with 30 LDCC coordinators, 13 DAH representatives and 18 Provincial Heads of Animal Health Section. The participants agreed that:
 - Central, provincial and local government would continue the process of taking over financial responsibility for PDSR, PVUK, NVS operational costs;
 - An Incident Command System (ICS) will be used to respond to outbreaks of strategic diseases;
 - For HPAI outbreaks, short message service (SMS) reports should always be followed by paper reports; and
 - The role of LDCC will be incorporated into the provincial URC-PHMS;
- Provided training for 115 (53 male, 62 female) new PDSR officers in Bengkulu, Samarinda, Tanjung Pinang, Manado and Makassar with financial support from local government budget;
- Provided training for 181 (125 male, 56 female) PDSR officers on PDSR V3, bringing the total trained to date to 1 523 (1079 male, 444 female) PDSR field staff. In addition, 62 (41 male, 21

female) PDSR officers were mentored and supported in the implementation of PDSR V3 in 16 districts and six provinces, bringing the total mentoring coverage of the project period to 39 districts in 13 provinces; and

- Updated and revised the PDSR training curriculum into one six-day training for Introduction and one six-day training for Continuing Education. Seventeen modules have been prepared to support the network of Master Trainers to conduct their own trainings.

A.3 Provide LDCC/PDSR operational budget by local government.

- Successfully recruited the Senior National Veterinary Advisor (local government) to provide high-level representational and technical support to the Local Government Advocacy and Training teams;
- Conducted an evaluation meeting with DAH/Rapid Response Unit (*Unit Respons Cepat* [URC formerly CMU]) to review the results of advocacy meetings and develop strategies to communicate the identified issues and gaps in relation to the implementation of local government commitment made during the advocacy meetings, including the development of an integrated advocacy strategy which will incorporate the development of national budget planning guidelines, local government strategic planning, and local government advocacy;
- Provided the final budget proposal developed by FAO in collaboration with URC and the West Java Provincial Livestock Service to obtain additional funding from the local government contingency budget for improved sustainability of PDSR activities in 2013 in the province;
- Held follow-up meetings with Lampung, Central Java, East Java, Yogyakarta, *Daerah Khusus Ibukota Jakarta* (Special Capital City District [DKI]) Jakarta, North Sumatra, and Banten provinces which had received previous advocacy visits in order to identify progress and challenges on the PDSR payment and reporting system using committed local government budgets;
- Conducted a coordination meeting with DAH/ Directorate General of Livestock and Animal Health Services (DGLAHS) to report on and evaluate the results of follow-up meetings and the performance of current government-funded PDSR activities, as well as to develop follow-up actions;
- Conducted presentation for LDCC coordinators and provincial heads of animal health on the transition, change, and sustainability of PDSR, PVUK, and other FAO programmes, in addition to the evaluation of PDSR performance now funded by Government of Indonesia budget;
- Held evaluation meeting with DAH and Central URC-PHMS on the results of follow-up advocacy meetings that have been implemented in eight provinces;
- Conducted an advocacy meeting with the Secretariat of DGLAHS and DAH regarding the sustainability of the PDSR method funded by the Government of Indonesia; and
- Conducted an internal meeting between FAO, DAH and URC-PHMS to prepare the next step of advocacy strategies and to follow-up on the recommendations of the advocacy meeting.

A.4 Extend PDSR database system to district level for improved local disease control management.

- Provided specialized training to DAH staff members on database management, including data downloading and compilation, in preparation for eventual handover of PDSR data management responsibility to DAH;
- Collaborated with URC-PHMS on the development and rollout of the operational aspects of PDSR V3 district-provincial-national system and prepared formal standard operating procedures (SOPs) for use by URC;
- Prepared curriculum and software for training of trainers (TOT) activities for provincial data encoders who are to train district data encoders in PDSR V3 software;
- Conducted TOT activities for provincial data encoders who are to train district data encoders in PDSR V3 software; and
- Provided funding and technical support for six district data encoder training programmes in Jakarta, Malang, Jambi, Padang, Makassar, and Pekanbaru LDCCs.

Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders.

B.1 Establish effective communication and coordination between government and commercial poultry industry in order to build trust among the stakeholders.

- Conducted coordination meeting with the National Poultry Health Committee (KKUN) to discuss and prepare activities to be conducted by KKUN to endorse more communication between academia, government and the commercial poultry industry;
- Developed a “Grand Rounds” concept as a means to bring the private and public sectors together to discuss technical issues related to poultry health under the umbrella of KKUN;
- Participated in the 2013 Indo Livestock Expo & Forum in Nusa Dua, Bali through the “Warung Nasihat” booth concept, which enabled farmers to receive practical recommendations for biosecurity implementation and the most up-to-date information on vaccination against H5N1 in a relaxed and welcoming environment;
- Conducted the second annual National Poultry Farmers’ Seminar for 120 layer farmers immediately following the Indo Livestock Expo & Forum to enable farmers to share their experiences and to provide more detailed recommendations on effective vaccination and biosecurity practices for layer farms;
- In coordination with the KKUN and Bogor Agricultural University (IPB), presented experiences in implementing three-zone biosecurity concept in layer farms in Solo at the IPB *Dies Natalis* seminar on Zone-Based Poultry Farm Biosecurity; and
- Prepared for FAO participation in the International Livestock and Dairy Expo (ILDEX Indonesia), from 3 to 5 October 2013 in Jakarta; and the Farmers Seminar on 4 October 2013. FAO will have two booths at ILDEX Indonesia that will provide information in detail on the three-zone biosecurity concept and good vaccination practices. An outdoor booth will provide visitors with hands-on experience, giving them a better understanding of three-zone biosecurity and the gentle vaccination concept.

B.2 Establish a confidential database of outbreak information from commercial farms.

- Integrated HPAI outbreak reporting within the PVUK database and reporting system; and
- Conducted mentoring activities for PVUK-trained veterinarians to further develop farmer groups as a trusted space in which farmers can report disease events.

B.3 Increase competency in CPH in both public and private sectors

- Thirteen mentoring visits were held in 22 districts to assist all PVUK staff to conduct farmer trainings, conduct stakeholder meetings, assist in farm investigations, and help develop local farmer groups;
- Held a TOT for Master Trainers for 11 participants (6 male, 5 female) to prepare the Master Trainers for training and mentoring in the Government of Indonesia-funded PVUK replication areas;
- Supported PVUK Levels 1, 2 and 3 training for 16 (6 male, 10 female) participants from eight districts in the Government of Indonesia-funded PVUK replication areas;
- Provided specialized training in humane euthanasia of poultry, including ducks, to 76 PVUK and government veterinarians;
- Conducted Continuing Education II training on vaccination skills for 44 (21 male 23 female) PVUK staff;
- Assisted PVUK to conducted six stakeholder meetings for 161 farmers (161 male, 19 female) to introduce the PVUK programme to poultry farmers;
- Developed two SOPs on cleaning feeders and drinkers, two on humane euthanasia of poultry, and three on vaccination skills; PVUK staff have been trained in their use;
- Assisted PVUK to conduct two farm outbreak investigations in Lampung and Central Java; and
- Provided technical support for PVUK to conduct two farmer trainings in Central Java for poultry associations.

B.4 Advocate for best practices for CPH.

- Conducted three Poultry Layer Farmers Seminars on Good Biosecurity Practices and Vaccination Strategy for 240 poultry layer farm owners and managers in Sukorejo and Solo, Central Java;
- Completed additional data analysis and composition of the Phase I report of the biosecurity

cost-effectiveness study and submitted them to the ECTAD-FAO Regional Office for Asia and the Pacific (RAP) Regional Economist for further input and revision;

- Conducted weekly farm visits and monthly feedback meetings with participating farmers to provide technical support and monitoring for proper implementation of the agreed biosecurity interventions;
- Assisted a CPH study with designing and implementing participating farmers' agreed biosecurity intervention plans;
- Initiated collection of the study's Phase II farm production and financial data. The production and financial data are required for the study to assess the cost-effectiveness and cost-benefit of biosecurity implementation in the participating farms;
- Designed, prepared, and conducted a poultry health information booth during the 2013 Indo Livestock Expo & Forum in Nusa Dua, Bali. More than 500 visitors were introduced to and received detailed information on simple profitable poultry farm biosecurity interventions and important vaccination guidance to protect poultry layer farms from clades 2.1.3 and 2.3.2.1 H5N1 HPAI viruses, and also promoted the ASUH (*Aman-Sehat-Utuh-Halal*: Safe-Healthy-Whole-Halal) chicken concept through the *ayam betutu* and *sate lilit* served in the booth;
- Designed, prepared, and conducted a National Poultry Farmers' Seminar following Indo Livestock Expo & Forum in Nusa Dua, Bali. One-hundred and twenty poultry layer farmers attended the seminar in which the six poultry layer farmers participating in the CPH biosecurity cost-effectiveness study shared their experiences and the benefits of the chicken layer farm best practices they have implemented;
- Designed, produced, and distributed 18-month 2013-2014 calendars filled with readily understandable information on proper vaccination and farm biosecurity that will be used by farmers and farm managers for further on-farm training;
- Conducted progress meeting of the Indo CPH biosecurity cost-effectiveness study in which CPH assisted to fine tuning the agreed biosecurity intervention implementation of each farm. Real-time technical support and facilitation of technical and economic data collection from all layer farms are still regularly provided;
- Completed the development of vaccination SOPs for all types of chicken production (broilers and layers) that will be used in PVUK Level 1-3 trainings and their various continuing education trainings, as well as in CPH trainings on proper vaccination techniques for Cold Chain Master Trainers and veterinary pharmaceutical companies vaccinators and vaccinator supervisors;
- Presented experiences in implementing the three-zones biosecurity concept in layer farms in Solo at the IPB *Dies Natalis* seminar on Zone-Based Poultry Farm Biosecurity in Bogor, in coordination with KKUN. A small working group was established to further discuss the possibility of including the concept in government regulation; and
- Provided technical assistance for the PVUK Continuing Education training in Bandung and Level-2 PVUK training in Bogor.

B.5 Conduct trials on private sector-funded compensation system.

- Continued one-on-one and group meetings with members of broiler farmer groups in the Bogor area to provide information and advocate for the introduction of a farmer-funded compensation system; and
- Worked with "nucleus" of the farmers group in the Bogor area to organize member "plasma" farmers to participate in the private sector-funded culling compensation pilot programme.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders.

C.1 Improve the surveillance system along the post-production market chain and make it more cost-effective.

- Provided operational and technical support for monthly environmental surveillance of live bird markets (LBMs), as well as for additional market profiling in the greater Jakarta area. Preparations were made for additional testing and characterization of isolated H5 viruses at Bbalitvet;

- Conducted coordination meetings with market surveillance officers (PSPs) and related local livestock services in the greater Jakarta area for reviewing and updating LBM surveillance activities;
- Held a refresher training for LBM surveillance and profiling for PSPs in the greater Jakarta area and conducted training on profiling and surveillance for the initiation of LBM surveillance in Medan, North Sumatra, and Surabaya, East Java;
- Supported PSPs to conduct LBM profiling and surveillance in Surabaya and Medan and provided technical and operational support to the LBM surveillance activities. Data was collected from both the market and vendor level to allow back tracing of positive LBMs;
- Supported PSPs to conduct additional LBM sample collection in greater Jakarta, Medan and Surabaya for rapid H7N9 virus surveillance;
- Held coordination meeting on LBM environmental surveillance with the World Health Organization (WHO) and also with the Bhalitvet laboratory for collaboration activity on molecular characterization (sequencing) of isolates from LBMs in the greater Jakarta area; and
- Conducted monitoring visits in greater Jakarta, Surabaya and Medan and LBM surveillance sample testing at BKHI laboratory Jakarta, the Diagnostic Unit of FKH UNAIR Surabaya, Disease Investigation Centre (DIC) Medan, and DIC Wates respectively.

C.2 Improve biosecurity along post-production market chain

- Held cleaning and disinfection (C&D) refresher training and cleaning day events at two LBMs in the Jabodetabek area to strengthen the implementation of market C&D activities;
- Conducted quarterly monitoring and evaluation reviews of C&D implementation at 22 LBMs in Jabodetabek;
- Conducted coordination meetings with market managers and local authorities of two markets under rehabilitation in order to finalize the markets' rehabilitation designs;
- Commenced the construction and conducted site monitoring of the truck C&D station at the Semanggi native chicken collector yard in Surakarta, Central Java;
- Conducted introductory C&D training for cleaning workers and market managers, in addition to a TOT for local livestock services, in Surabaya, East Java with funding provided by the DAH;
- Provided technical support for trainers of local livestock services in the implementation of C&D refresher training for cleaning workers and market managers in Bekasi, West Java, with funding provided by Bekasi City Livestock Services;
- Finalized the market rehabilitation design and commenced the construction work at Baru Market in Bekasi City, West Java;
- Conducted site assessment and follow-up meetings at Leluwiliang Bogor Market, Kojak Jakarta Market, Tugu Jakarta Market, Ramadani Tangerang Market and Family Bekasi Market, which were proposed as possible LBMs to be rehabilitated under the market rehabilitation plan;
- Conducted a quarterly monitoring and evaluation of C&D implementation at 22 pilot LBMs at Jabodetabek areas in September 2013;
- Completed the construction of a C&D station at Semanggi collector yard in Surakarta city;
- Conducted C&D introductory training for C&D station workers and staff from related local administrations at Semanggi collector yard Surakarta city; and
- Conducted socialization activities in collaboration with URC-PHMS DAH and Surakarta administration on C&D station activities in the market before starting operation for all poultry truck owners and drivers entering Semanggi collector yard.

C.3 Increase demand for healthy poultry end-product.

- No further activities planned; activities completed during Phase 1.

Output D: Improved biosecurity practices in backyard and commercial duck-raising.

D.1 Advocate for best practices in duck health management.

- No further activities planned; activities completed during Phase 1.

D.2 Implement duck epidemiological data analysis in low incidence areas in Indonesia to improve understanding of the reservoir role of ducks.

- No further activities planned; activities completed during previous reporting period.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored.

E.1 Promote use of effective vaccine by farmers.

- Conducted three Poultry Layer Farmers Seminars on Good Biosecurity Practices and Vaccination Strategy for 240 poultry layer farm owners and managers in Sukorejo and Solo, Central Java;
- Shared the most up-to-date vaccination recommendations for protecting against both clade 2.3.1 and 2.3.2.1 H5N1 viruses with over 600 farmers during the Indo Livestock Expo & Forum 2013 and the National Farmers' Seminar held in Nusa Dua Bali; and
- Designed and distributed 1 000 18 month 2013-2014 calendars containing specific key messages for effective poultry vaccination against H5N1 and began development of modified calendar and vaccination recommendations booklet for distribution during the 2013 ILDEX livestock exhibition and concurrent National Farmers' Seminar for Western Indonesia.

E.2 Establish partnership between commercial poultry industry and government for sharing of influenza virus data and isolates.

- Met with three local avian influenza vaccine producing companies during the 2013-14 FAO-Government of Indonesia-United States Agency for International Development (USAID) OSRO/INS/103/USA planning workshop and subsequent meetings to develop training a plan for their technical vaccination staff on vaccination biosecurity and proper vaccination techniques; and
- Facilitated DAH to enable receipt, testing and production of candidate reverse genetic vaccine strains from the United States Department of Agriculture's Southeast Poultry Research Laboratory (SEPRL) under cooperative agreement between Pusvetma and IPB Shigeta.

E.3 Establish sustainable laboratory system for influenza virus monitoring.

- Drafted and secured technical clearance of the fourth FAO- Australian Animal Health Laboratory (AAHL) letter of agreement to be funded by the IDENTIFY Indonesia project;
- Developed the Influenza Virus Monitoring (IVM) *Alat Preskrin* and *Alat Skrin Lengkap* (IVM Online) software under the FAO-AAHL letter of agreement and compiled a subset of H5N1 isolates with complete antigenic and genetic data for advanced bioinformatics analysis (30 50 isolates);
- In consultation with AAHL, prepared a list of pre-screening and screening reagents to be procured for IVM participant laboratories under the IDENTIFY project;
- Delivered reference reagents for quantitative reverse transcription - polymerase chain reaction (qRT-PCR), including primers/probes, positive and negative controls for both H7 and N9 genes, for a minimum of 8 000 tests, along with the suggested diagnostic protocols developed by FAO-RAP and AAHL to Indonesia; reference reagents prepared and maintained at the DKI Jakarta category B animal health laboratory (BKHI) were made available to 10 laboratories within the network;
- Provided conventional PCR H7N9 primers, test protocols and control reagents to the Faculty of Veterinary Science laboratory, Airlangga University, DIC Wates, and the BKHI laboratory Jakarta;
- Delivered reference reagents for qRT-PCR including primers/probes, positive and negative controls for H5N1 clade 2.3.2.1 for a minimum of 4 000 tests, along with the suggested diagnostic protocols to DIC Wates, the BKHI laboratory, and DIC Subang;
- Facilitated laboratory networking at national and regional level through participation in the Four-Way Linking Workshop held in Bali, with participation from virology laboratory and epidemiology staff from both animal and human health sectors; and
- Facilitated participation in regional training events, including two participants from DIC Bukittinggi and DIC Denpasar and two participants from Banten and West Sumatra Provincial Animal Health Services for Training on Laboratory-Epidemiology linkage. Two participants from DIC Bukittinggi and Pusvetma participated in Training on Applied Veterinary Bioinformatics.

Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders.

F.1 Pilot NVS in three provinces for selected priority diseases.

- Conducted technical mentoring visits for 26 NVS officers in Dumai and Agam districts to support development of NVS competencies;
- Held NVS level three training for 42 participants in the pilot NVS districts. The training reinforced earlier trainings on control of HPAI and rabies and introduced brucellosis control (Dumai and Agam), Jembrana disease control (Dumai and Klungkung), classical swine fever control (Klungkung), and control of blood borne parasites in cattle (Agam) were covered as part of the broad veterinary service strengthening approach of the NVS programme. All training included participation by senior staff from the district, province and DIC;
- Held five advocacy visits on the establishment of the Veterinary Authority; reviewed the implementation of NVS in the field in relation to Veterinary Authority issues; and discussed animal disease surveillance and response funding support for 2014 with livestock services of West Sumatra Province and Agam District, Riau Province and Dumai City, and Klungkung District in Bali Province;
- Visited the Australian Department of Agriculture, Fisheries and Forestry (DAFF) project in Sulawesi to observe the SMS gateway training for syndromic surveillance with a view of including the training in the NVS pilots;
- Involvement of West Sumatra Provincial Livestock Services in the planning of activities resulted in decisions on replication of NVS to all districts in West Sumatra during the next project phase and agreement on cost-sharing between DAH, province, districts, and FAO;
- Continued participation in the preparation process of NVS Guidelines led by DAH; and
- Facilitated regular communication with Provincial Livestock Services of West Sumatra on the harmonization of Local Government funded and FAO funded activities on the replication of NVS to other districts within West Sumatra.

F.2 Ensure effective programme management with respect to finance, administration, technical inputs, and partner relations (donor and Government of Indonesia)

- Continued active participation in all monthly USAID Chief of Party meetings, as well as coordination meetings with other partners, including Komnas Zoonosis, the DAFF Australia Indonesia Partnership for Emerging Infectious Diseases (AIP-EID), and WHO;
- Continued facilitating weekly coordination meetings with both URC and the DAH, in order to synchronize project activities and challenges and minimize risks of delays and constraints to project implementation;
- Prepared project progress reports in accordance with the project document and local agreement with USAID Indonesia;
- Continued monitoring of project activities as per workplan and budget. Activities are carried out based on a continuously updated workplan and budget in order to keep track of activity implementation and expenditures and ensure proper funds allocation for the implementation of all activities;
- Continued preparation and submission to project management of updated financial reports at activity level in order to allow for the timely re-adjustment of activities and budgets; and
- Continued operational support to the project in order to minimize delays and ensure timely delivery of project inputs for successful implementation of project activities.

F.3 Ensure appropriate support to programme components and management to maximize stakeholder participation and build capacity of animal health services.

- Continued technical support and management supervision for the various components of the ECTAD Indonesia programme. During this reporting period additional emphasis was placed on ensuring an effective project planning process with related public and private sector stakeholders for the next project phase despite many stakeholders being fully engaged in implementing activities required for successful completion of the current project phase;
- Dealt with administrative issues in a timely fashion, such as travel arrangements, staff recruitment, procurement and service contracts to allow for the smooth implementation of project activities during the reporting period;

- Dealt with financial transactions in a timely manner, such as budget authorizations and petty cash for trainings, which allowed for the effective implementation of project activities; and
- Carried out workplan and budget reviews and updates at activity and output (project component) levels to improve resource allocation and monitoring and to assure appropriate availability of resources for the implementation of activities.

F.4 Conduct epidemiological studies to better inform disease control and support government strategic planning.

- Initiated the planned evaluation of the influenza A rapid antigen test was; however, field testing has not been conducted yet because no outbreaks in ducks have occurred within the study area. The evaluation will be continued in the next project phase; and
- Initiated study design planning for testing control strategies for reducing the risk of native chicken transport from Central Java as well as to better elucidate the viral amplification process along the extended market chain. The study may also be adapted to include the assessment of the risk factors for viral contamination within the greater Jakarta area.

F.5 Provide technical support to DAH for HPAI policy development.

- Provided technical recommendations to the DAH on vaccination policy in light of the continued circulation of clade 2.3.2.1 and 2.1.3 viruses, including specifically the recommendation to update the vaccine registration regulations and to consider the approval of multivalent vaccines from Indonesian vaccine manufacturers, as well as advising against monovalent 2.3.2.1 vaccine production for use in chickens;
- Held a week-long workshop in outbreak investigation and control to increase the response capacity of Government officers at central and provincial levels; and
- Held a three-day workshop on decision making in outbreaks and contingency planning with representatives of all sub-Directorates of Animal Health as well as the National Quarantine Service to initiate a process of contingency planning for outbreaks of exotic or new animal diseases.

F.6 Contribute to the Komnas Zoonosis One Health communication and advocacy strategy.

No further activities planned, activities completed during Phase I.

Planned activities for the next six-month period (October 2013 to March 2014)

Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system.

A.1 Distribute and use communication materials to support HPAI prevention and control activities.

- Support the PDSR programme in the development and production of success stories from officers in the field. The stories will be disseminated to PDSR officers through multiple channels, including social media.
- Revise the design of information, education and communication (IEC) brochure on HPAI control in villages and conduct field testing.
- Design funhouse-inspired activity booth for use by the CPH team at the 2013 ILDEX livestock exposition. Visitors will actively participate in the funhouse to gain practical experience in the three-zone biosecurity concept and gentle vaccination technique advocated by FAO.
- Develop 16-month and 12-month versions of the CPH calendar for distribution to farmers at ILDEX and to private sector technical staff and PVUK officers during trainings which will be conducted during the next reporting period.
- In close collaboration with the local government team, develop first set of IEC materials specifically for support of the NVS pilot programme.

A.2 Revise and streamline PDSR system to incorporate more community-based decision-making for improved HPAI prevention and control.

- Stimulate officers within the PDSR programme by the development, collection and dissemination of PDSR success stories. A competition will be held for the best stories and photographs. Success stories will be subsequently disseminated via social networking and LDCCs.
- Finalize condensed curriculums and modules for Introductory and Continuing Education and

disseminate revised training material to Master Trainers.

- Hold National LDCC Coordination Meeting in November 2013.
- Conduct TOTs for 50 Master Trainers on new skills for PDSR, after which the Master Trainers will conduct refresher trainings for PDSR officers in their areas.
- Facilitate training of at least 40 new PDSR officers with funding provided by local government budget in Indramayu District and Padang LDCC, and conduct mentoring after the new PDSR officers have worked for three months.
- Coordinate with Local Government Advocacy and Monitoring and Evaluation teams on their activities for increasing local government resource allocation, strengthening local government data management systems, and monitoring field reporting to determine if progress is being made in improving the timeliness and consistency of PDSR reporting and data entry.

A.3 Provide LDCC/PDSR operational budget by local government.

- Facilitate meetings with central Government to develop national technical guidelines for local governments in the use and proposal of central budget (APBN Dekon) for HPAI control activities.
- Conduct a meeting with DAH in order to identify existing budget structure and needs in targeted provinces.
- Conduct a national consultation meeting with central and local governments to share the lessons learned and success stories from selected provinces on their approaches to achieving targeted budget allocations.
- Disseminate information on the national technical guidelines on use and proposal of central government budget (APBN Dekon) to targeted provinces.
- Participate in and observe the fiscal year 2015 budget allocation process, including allocation of local government data encoders in regular coordination meetings (with district governments) conducted by selected provincial governments.
- Conduct field visit to eight targeted provinces to ensure the budget allocation and programme implementation in fiscal year 2014 and fiscal year 2015.

A.4 Extend PDSR database system to district level for improved local disease control management.

- Provide funding and technical support for remaining district data encoder training programmes in provinces where URC has determined sufficient levels of capability are in place.
- Conduct assessments of district-level use of data for planning and programme management.
- Provide capacity building training for district data encoders in the use of database outputs for reporting and analysis.
- Conduct refresher training for provincial data encoders in use of the PDSR V3 database.

Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders.

B.1 Establish effective communication and coordination between government and commercial poultry industry in order to build trust among the stakeholders.

- Conduct and support KKUN with regular meetings and its related working group meetings, including the piloting of a Grand Rounds session to bring together both public and private sector poultry veterinarians to discuss challenging field cases.
- Collaborate with commercial poultry industry representatives to participate in the 2013 ILDEX Indonesia Expo in Jakarta and integrate the FAO-MOA National Farmers' Seminar within ILDEX in order to enable the participation of a greater number of farmers in the seminar.
- Continue to facilitate local government collaboration with the poultry industry in their areas through the activities of PVUK-trained government veterinarians to hold farmer meetings and to establish collaborations with local poultry associations.
- Establish and implement vaccination and biosecurity training programmes for technical service providers, vaccinators, and vaccinator supervisors with multiple vaccine and poultry companies servicing the commercial poultry industry.

B.2 Establish a confidential database of outbreak information from commercial farms.

- HPAI outbreak reporting has been integrated within the PVUK database and reporting system; no further activities planned.

B.3 Increase competency in CPH in both public and private sectors.

- Conduct ongoing technical mentoring for all 72 active PVUK officers on farmer training, farm evaluation, and on-farm disease investigation.
- Update PVUK approaches to farm evaluation and farmer training based on latest findings and best practices identified by the CPH programme and also facilitate establishment of closer working relationships between PVUK and CPH activities in locations where both programmes are active.
- Initiate project-funded sample submission for suspected HPAI or Newcastle disease outbreaks and post-vaccination sero-surveillance as a means of improving government capacity to detect outbreaks on commercial poultry farms by increasing farmers' willingness to report disease events.
- Conduct Continuing Education II trainings on vaccination for PVUK officers in government expansion areas.
- Develop Continuing Education III training based on needs arising from PVUK officers and farmers.
- Plan project-funded PVUK expansion in three districts of South Sulawesi and to expand the PVUK programme to eight additional districts via central government funding sources.
- Hold PVUK TOT for Master Trainers to increase the number PVUK Master Trainers and to strengthen their training and technical competencies.
- Conduct initial meetings with stakeholders for brainstorming and subsequent consensus-building on a proposed national poultry health programme.
- Develop and field test simplified reporting PVUK formats as a means of reducing reporting burden and increasing reporting frequency.

B.4 Advocate for best practices for CPH.

- Continue Phase 2 of the CPH biosecurity cost-effectiveness study in Central Java, including regular collection of technical and economical data from participating layer farms and control layer farms.
- Develop and field test training modules on vaccination to be used in trainings for private veterinary company vaccinators and vaccinator coordinators.
- Initiate training of vaccinator coordinators and training of vaccinators of private veterinary companies including Medion, Caprifarmindo, Vaksindo, Kalbe Farma, and JAPFA Comfeed.
- Perform basic quality testing of avian influenza vaccines currently produced and sold in Indonesia.
- Design, build, and present new "funhouse" inspired activity booth at the 2013 ILDEX Indonesian livestock expo focused on providing participants with practical experience in the three-zone biosecurity concept and gentle vaccination technique advocated by FAO.

B.5 Conduct trials on private sector-funded compensation system.

- Conduct workshop with participating farmers to plan financial contribution component of private sector-funded culling compensation pilot.
- Collaborate with PVUK officers in Bogor District on the technical implementation of the private sector-funded culling compensation pilot, including diagnosis and subsequent culling in the event of an HPAI outbreak.
- Continue to work with the nucleus of the farmers group to organize plasma farmers participating in the pilot programme.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders.

C.1 Improve the surveillance system along the post-production market chain and make it more cost-effective.

- Continue providing technical and operational support to the LBM surveillance activity in greater Jakarta, East Java and North Sumatra.

- Analyse collected LBM surveillance and profiling data from the three urban centres and evaluate the potential for using the data to increase risk-based surveillance and backtracing.
- Conduct coordination meetings with PSPs and related local livestock services in East Java and North Sumatra for reviewing LBM surveillance activities and LBM profiling results.
- Continue monitoring for greater Jakarta, Surabaya and Medan LBM surveillance sample testing at BKHI laboratory Jakarta, the Diagnostic Unit of FKH UNAIR Surabaya, DIC Medan and DIC Wates respectively.
- Conduct monitoring visit to Bbalivet for laboratory sequencing testing of LBM isolates and hold coordination meeting with WHO to review LBM environmental surveillance activities in the greater Jakarta area.
- Provide technical and operational support for laboratory testing for real-time PCR testing for subelade 2.3.2.1 virus from greater Jakarta LBM samples tested at DIC Subang.

C.2 Improve biosecurity along post-production market chain.

- Supervise and monitor the construction work for rehabilitation of the Baru Bekasi LBM in West Java to ensure timely and quality completion of the required construction activities.
- Conduct a handover ceremony to handover the rehabilitated market to local authority and conduct C&D introductory training for vendors and cleaning workers at Baru Bekasi Market.
- Conduct minor rehabilitation improvements at Ramadani LBM in Tangerang City to improve sanitary and hygienic conditions within in the market.
- Procure and distribute metal cages to replace bamboo cages at selected traditional markets.
- Conduct refresher training as well as monitoring and evaluation of C&D activities at the C&D station in Semanggi collector yard in Surakarta city and Baru market in Bekasi City.
- Prepare a draft proposal for generating novel surveillance and risk reduction strategies to improve detection of rare viruses and reduce the health risks of poultry marketing within Jakarta.

C.3 Increase demand for healthy poultry end-product.

- No further activities planned; activities completed during Phase 1.

Output D: Improved biosecurity practices in backyard and commercial duck-raising.

D.1 Advocate for best practices in duck health management.

- No further activities planned; activities completed during Phase 1.

D.2 Implement duck epidemiological data analysis in low incidence areas in Indonesia to improve understanding of the reservoir role of ducks.

- No further activities planned; activities completed during previous reporting period.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored.

E.1 Promote use of effective vaccine by farmers.

- Finalize design of trainings in best vaccination practices for vaccinators and supervisors of vaccinators within the three Indonesian vaccination production companies and initiate trainings.
- Develop specialized training programme which includes training in vaccination theory, vaccination schedules, and vaccination practices for 'technical service' veterinarians within collaborating poultry industry companies.
- Finalize revision of vaccination module for use in PVUK refresher trainings, and by Government of Indonesia cold chain Master Trainers, and private sector veterinarians.
- Develop a 12-month CPH calendar to include messages of optimum vaccination scheduling, vaccine selection, and vaccination technique.
- Share advice on vaccination with poultry farmers during the 2013 ILDEX livestock expo and accompanying National Farmers' Seminar in Jakarta.
- Share farmer opinions and experiences with vaccination against avian influenza during the OIE (World Organization for Animal Health)/FAO Network of expertise on animal influenza (OFFLU) Technical Meeting on avian influenza vaccination.

E.2 Establish partnership between commercial poultry industry and government for sharing of influenza virus data and isolates.

- Continue to support collaboration between government stakeholders and FAO ECTAD Indonesia with poultry industry representatives, farmers, technical service staff, vaccinators, and vaccinators coordinators through the variety of activities implemented by the project to support avian influenza control in the commercial poultry industry.
- Facilitate technical meeting on HPAI strain information sharing between private sector laboratories and government.
- Assist to organize and facilitate meeting with DAH and stakeholders to discuss government review and revision of AI vaccine registration policy and procedures.

E.3 Establish sustainable laboratory system for influenza virus monitoring

- Conduct refresher training course for laboratory staff on performance of quality control of PCR at DIC Subang.
- Launch IVM Online website and reporting system in Jakarta and conduct next IVM coordination meeting in early 2014.
- Prepare government laboratory training programme for application of PREDICT viral detection tools to Indonesian livestock samples in collaboration with PREDICT and DIC laboratories.

Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders.

F.1 Pilot NVS in 3 provinces for selected priority diseases.

- Provide training and technical support to extend the NVS programme to 83 additional local government officers in 18 more districts in West Sumatra Province via a cost-sharing funding arrangement with local government.
- Condense the NVS curriculum to two levels of training and provide technical support to NVS Master Trainers to implement the revised training curriculum.
- Hold a local government workshop in West Sumatra to introduce the NVS programme to the new districts and then provide PDSR V3 training to 20 Puskesmas staff that have not yet been trained in PDSR.
- Provide regularly scheduled technical mentoring support to both NVS pilot areas and expansion areas.
- Develop Continuing Education training based on identified needs and competency gaps to support further development of the NVS pilot.
- Test the SMS gateway developed by the DAFF EID project for syndromic surveillance and for engaging village cadres in NVS pilot districts.
- Develop IEC materials specifically for the NVS programme.
- Train and support NVS Master Trainers to manage and implement the training and mentoring programme for the expansion of NVS across West Sumatra.
- Advocate DAH to finalize NVS Guidelines in line with Law No. 18 of 2009.
- Conduct advocacy visits to Provincial and District Livestock Services of West Sumatra, Riau, and Bali pilot provinces to encourage further progress on the establishment of Veterinary Authority and Authorized Veterinarian in line with Law No. 18 2009.

F.2 Ensure effective programme management with respect to finance, administration, technical inputs, and partner relations (donor and the Government of Indonesia).

- Continue facilitation of weekly coordination meetings with both URC and the Director of DAH.
- Continue preparation of project progress reports in accordance with the project document and local agreement with USAID Indonesia.
- Continue participating at the USAID Chief of Party meeting, in coordination with Komnas Zoonosis and WHO.
- Review the overall workplan of the project in consideration of the approval of Phase III and finalise the operational budget and share with project management and technical teams.
- Continue the implementation of necessary operational actions to ensure the timely delivery of project inputs to enable successful implementation of activities.

F.3 Ensure appropriate support to programme components and management to maximize stakeholder participation and build capacity of animal health services.

- Provide support and management supervision on a regular basis to the various components of the ECTAD Indonesia programme.
- Continue dealing with all administrative issues in a timely fashion, such as travel arrangements, recruitments, procurement and service contracts to allow for the smooth implementation of project activities.
- Ensure the proper and timely dealing of financial transactions, such as budget authorizations and petty cash for trainings, to allow smooth implementation of project activities.
- Prepare provisional operational budgets for all the project components to improve resource allocation and monitoring and revise periodically in order to assure appropriate availability of resources for the implementation of the activities.

F.4 Conduct epidemiological studies to better inform disease control and support government strategic planning.

- Evaluate factors which may impact on H5N1 endemicity in Indonesia and means of reducing amplification along long-distance poultry market chains.
- Finalize study design and initiate research plan for native chicken market chain and urban risk factor study.
- Provide training in outbreak investigation and epidemiology-laboratory linking in collaboration with DIC laboratories.

F.5 Provide technical support to DAH for HPAI policy development.

- Explore more effective means of addressing the current shortcomings with DAH policies on master seeds for avian influenza vaccine and on the restriction of multivalent vaccines, including engagement on these topics with global experts at OFFLU Technical Meeting on avian influenza vaccination.

F.6 Contribute to the Komnas Zoonosis One Health communication and advocacy strategy.

- No further activities planned, activities completed during Phase I.

Main challenges encountered and response provided

The most significant project implementation challenge encountered during this reporting period was the transition of the FAO operational management system to the Global Resource Management System (GRMS). The transition period, which also included shifting of project oversight responsibilities to the country level, resulted in intermittent delays in implementation of some planned activities. However, through a concerted effort between country, regional, and global offices, delays were self-limiting and sustainable solutions were found for each of the GRMS challenges encountered.

In relation to technical challenges, difficulties continued to be experienced in the Government of Indonesia's reluctance to update AI vaccination policy following the introduction of clade 2.3.2.1 H5N1 in mid-2012. ECTAD Indonesia responded to this issue by providing specific technical advice to the URC-PHMS and the Director of Animal Health in response to each concern raised regarding the safety and efficacy of a combined clade 2.1.3 and 2.3.2.1 vaccine. In addition, the Indonesia programme sought further advice from OFFLU Chairperson for Vaccine and Vaccine Technology, who submitted two technical letters to ECTAD Indonesia and DAH regarding the safety, use, and benefits of bivalent AI vaccines. Despite providing sufficient technical justification, the DAH has still not appropriately updated its vaccine policy, nor approved any bivalent AI vaccines. Further sustained effort in this area is required over the next reporting period.

Regarding financial constraints, reporting of disease detection and control activities by local government field officers trained in PDSR decreased during the reporting period. This was a result of the gap in operational funding for field activities and data encoding following cessation of operational funding via the OSRO/INS/103/USA project at the end of 2012. Building upon the local government advocacy initiative previously reported, ECTAD Indonesia worked closely with local and central government representatives to develop an enhanced budget advocacy approach

which integrates the active advocacy directly with local government decision-makers with the development of national animal disease control budgeting guidelines and sharing of budgeting best practices and success stories between local governments. Advocacy activities implemented during the reporting period increased local government budget for HPAI surveillance and control activities by 79% compared to funding levels before advocacy activities were initiated. Transition to PDSR V3 and district-level data management should further ease the financial and human resource burden on local governments. Efforts are also underway with DAFF to integrate HPAI outbreak reporting within a national SMS-based animal disease surveillance system currently under development, which may also further alleviate the data entry burden at local level in the future.

Main progress made towards the achievement of project outcomes (from the start of the current project phase).

Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system.

- During the 2012-2013 project period, 1 523 PDSR officers have been trained in PDSR V3 and a total of 1 946 PDSR officers from 30 provinces are able to use PDSR V3.
- The database has been modified to utilize simplified data forms. PDSR officers are now networking with the community, community leaders and village poultry farmers to explain the need for HPAI reporting.
- Reporting levels have dropped; although field work is still being conducted, the reports are not being entered into the national database owing to financial and human resource constraints for data management at the provincial level. Only 896 passive networking reports were entered into the database as compared with 1 900 reports in the previous six month period.
- Fifty-three village HPAI outbreaks were identified and controlled by PDSR during the reporting period.
- PDSR have identified outbreaks of HPAI clade 2.3.2.1 H5N1 in duck farms and have been able to explain the new clade to the community and to colleagues in the local government, thereby helping to reduce fear and misunderstandings. SOPs for humane euthanasia, developed by FAO and following OIE guidelines, have assisted in outbreak control.
- The technical capacity of local government staff in 24 LDCCs has increased on the use of the enhanced PDSR V3 information system for data analysis and reporting. Twenty-five provincial DEs from 24 of 32 LDCCs have been trained using PDSR V3. Currently, 20 LDCCs are using PDSR V3. However, despite the trainings provided and the ongoing field activities by PDSR, data entry and management has decreased substantially as a result of limited financial support for LDCC activities at the provincial level.
- Central government and 13 provincial governments targeted in advocacy activities have supported animal disease control activities by allocating additional government budget in 2013 and 2014. However, nationwide, the level of support varies depending on their financial situation and political commitment.
- Central government, local governments, and relevant government institutions have raised their level of awareness and coordination concerning the proper allocation of budget for animal health issues.
- The central government, through the DGLAHS, committed to follow up the inputs obtained from the local government advocacy conducted by FAO and DAH by establishing a team who will develop guidance for the utilization of the central Government budget distributed to each province.

Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders.

- Improved understanding of the commercial poultry sector as a result of profiling 4 000 farms in the PVUK expansion areas. Profiling information is available to the DLS for decision-making.
- Following the Master Trainer TOT, Master Trainers had the confidence and skills to pass on clear information on HPAI clade 2.3.2.1. They conducted one interactive radio programme, one TV programme, 11 coordination meetings for 276 local government staff (191 male, 85 female), and 15 farmer and community meetings for 224 participants (183 male, 41 female).
- The PVUK programme has increased trust between local government animal health services

and commercial poultry farmers. PVUK officers continue to conduct farmer trainings and farm visits. A noticeable change has been seen in the attitude of poultry farmers who now contact PVUK officers to book trainings, request assistance with farm hygiene and vaccination, and request PVUK to assist with problem solving. In total, PVUK have carried out 34 farmer trainings for 772 participants (620 male, 172 female) and eight farmer trainings have been requested and funded by farmer groups.

- There has been a noticeable change in behaviour with farmers following good vaccine cold chain management, improved farm biosecurity, including movement control, and improved farm hygiene. In the reporting period, 591 farm visits were conducted and during these visits, 190 farmers have changed their behaviour, indicating that 32 percent of farm visits appear to be contributing to farmer behaviour change. Once a monitoring visit has taken place, over 50 percent of farmers have fully complied with the PVUK recommendations.
- PVUK have successfully conducted 80 problem investigations using the SOAP (subjective, objective, assessment, and plan) diagnostic and treatment planning method.
- Best practices in poultry vaccination and farm management have been identified via the CPH biosecurity cost-effectiveness study and have been subsequently incorporated to the training modules, advocacy materials, and academic outreach activities related to CPH. The biosecurity intervention phase of the study is now underway in order to evaluate the cost-effectiveness of specific biosecurity practices.
- Layer farmers in high-risk production areas have adopted best practices as identified via the CPH programme, and as disseminated via the PVUK programme and CPH outreach activities. Farmers have improved biosecurity through building fences, locked gates, displaying no entry signs and changing footwear when entering a shed. Others have improved cold storage for vaccines and have improved their vaccination scheduling and vaccination technique to increase vaccination compliance during the egg production period.
- Since project inception, 74 farmers groups (for chicken, duck and quail farmers) have been formed for on-farm training and to develop biosecurity plans for the farms. These groups will improve biosecurity measures in the members and encourage better disease reporting.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders.

- There has been a significant increase in the understanding of controlling H5N1 in Indonesia and H5N1 epidemiology in general as a result of using specially-designed market surveillance tools, such as regularly scheduled environmental surveillance of LBMs and targeted surveillance at collector yards and along the market chain.
- Viruses originating from the commercial industry have been detected and can be further isolated for antigenic and genetic characterization, with specific isolates potentially serving as vaccine master seeds in the future.
- Lessons learned from the LBM environmental surveillance system have been incorporated into the global surveillance recommendations for detection of the novel H7N9 virus.
- There has been more cleaning and disinfection activities and awareness of the importance of maintaining cleanliness in selected markets in the greater Jakarta area that have been trained by FAO in collaboration with local governments. This has provided a considerable impact both in terms of the level of cleanliness of the markets' environment and the participation of traders and market managers.
- Central and local governments have allocated funds for the sustainability of market cleaning and disinfection activities through support on C&D training for markets that had not received the training previously.
- The cleanliness of the markets that are implementing cleaning and disinfection activities has improved.

Output D: Improved biosecurity practices in backyard and commercial duck-raising.

- The understanding of the relatively limited role played by ducks in the persistence of clade 2.1.3 virus has increased as a result of the successful implementation of the Lombok duck study.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored.

- The commercial poultry farming community has been provided with examples of commercial layer farms that are successfully using local strain HPAI vaccines with a specific vaccination regime that yields excellent protection for the flock against H5N1.
- There has been an overall reduction in H5N1 virus detection since 2009, correlated with an increase in the use of local strain vaccines supported by laboratory-based vaccine research, evaluated on the farm by the CPH programme, and advocated to farmers via the PVUK and CPH outreach programmes. Of note is the recent increase in virus detection following introduction of clade 2.3.2.1 virus. Vaccine policy, and likewise vaccine formation, will need to adapt in order to prevent infection from both clades, and thereby contribute to further reduction in viral load going forward.

Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders.

- Since the NVS started working in early 2013, 3 306 activity reports have been received, the majority of which are passive surveillance reports. From April to September 2013, reports have been received from the pilot districts of Agam and Dumai, although less activity has been observed in Klungkung district.
- Agam and Dumai Districts have carried out 565 syndromic surveillance activities (covering dogs, poultry, cattle, goats and monkeys) and 659 networking meetings.
- The importance of human health and livestock health working together has been recognized at the local government level as a result of the NVS pilot programme. For rabies control activities, 137 rapid responses to bite cases were investigated, with three samples submitted and one found positive for rabies. Emergency vaccination was conducted around the positive case in order to reduce further spread. In total, 47 coordination activities between livestock and human health, in response to bite cases, has continued to improve communication between human and animal health counterparts.
- Rabies vaccination has been conducted in all pilot districts with 1 020, 4 000 and 5 580 dogs vaccinated in Agam, Dumai and Klungkung respectively in the last six months. The NVS information system, including database designed for district-level data entry, has been successfully deployed in NVS pilot areas.
- The close involvement of the West Sumatera Provincial Livestock Services in the planning process for the next project phase, and agreements on cost-sharing between DAH, resulted in the decision to scale up the NVS to all districts in West Sumatera districts.
- There has been an overall marked improvement in HPAI control in poultry in Indonesia since inception of the ECTAD Indonesia programme.
- There has been effective detection and identification via the field rapid response and laboratory networks of the clade 2.3.2.1 H5N1 virus, newly introduced into Indonesia in mid-2012.

Quarter III 2010

Project Monitoring Sheet: OSRO/RLA/901/USA

Reporting period: July - September 2010

Regional Component: Latin America and the Caribbean

Project Title: Strengthening regional capacity for surveillance of Influenza A H1N1 virus and other subtypes of swine flu in pig populations in Central America and other countries in Latin America

Code: OSRO/RLA/901/USA

Budget:	USD 700 000
Effective Starting Date:	28 July 2009
Planned End Date:	31 December 2010
<p>Context of the Project:</p> <p>Pandemic H1N1 2009 has been reported in animals (pigs and turkeys) in several countries, including Argentina, Canada, Chile and the United States on the American continent, raising the concern of the international community. Pigs can harbour influenza viruses of both avian and mammalian origin and act as "mixing vessels" in which the re-assortment of human, swine influenza (SI) and avian influenza (AI) virus may occur, producing a virus capable of human-to-human transmission leading to human pandemics.</p> <p>Studies in the developed countries have shown that various subtypes (H1N1, H3N2 and H1N2) co-circulate in pig populations in those countries. However, it is still unknown whether these subtypes are also widespread in swine populations in Central America and the neighbouring countries because of the lack of appropriate monitoring and surveillance networks for SI.</p>	
<p>Objectives of the Project:</p> <p>The project aims at strengthening the surveillance capacities of the affected countries, or the countries at risk, to deal with Influenza A/H1N1, other influenza viruses and other transboundary animal diseases (TADs) in Central America and neighbouring countries.</p> <p>Specifically, the project will improve the knowledge of the epidemiology and ecology of Influenza type A viruses in swine populations in the target countries.</p>	
<p>Planned activities for the reporting period:</p> <p><i>Output 1: The ECTAD Decentralized Coordination Unit (DCU) for Central America is established and operational.</i></p> <p>Activity 1.4: Provision of services to the Central American and neighboring countries.</p> <p>The Emergency Center for Transboundary Animal Diseases Operations (ECTAD) Decentralized Coordination Unit (DCU) in Panama has been responsible for continuing the backstopping of the veterinary services of the beneficiary countries and reinforcing the regional epidemio-surveillance network in order to improve communication and the exchange of information on TADs and other respiratory diseases in swine populations, as well as to provide special support to countries facing outbreaks, if needed. Activities are conducted in close coordination with other organizations, such as Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA) and Pan American Health Organization (PAHO).</p> <p><i>Output 2: Surveillance activities implemented and the extent and intensity of possible influenza viruses type A in circulation better understood and a proposal for contingency plans prepared.</i></p> <p>Activity 2.1: Signing of Letter of Agreement (LoA) with a research institution for field investigation/training.</p> <p>Upon finalization of the review and approval process by the counterpart, an agreement was signed with the National Veterinary Services Laboratory (NVSL) in Ames, USA. This institution provided diagnostic training in the Vesicular Disease Diagnostic Laboratory (LADIVES) located in Panama City, Panama, for three lab experts and will train a LADIVES staff on virus sequencing as well as will act as a reference laboratory for</p>	

25 samples of positive cases detected in LADIVES.

Activity 2.3: Training and conducting of field investigations and finalization of the guidelines.

Field investigations are carried out in beneficiary countries and up to 500 samples (per country) of suspected swine populations are collected and sent to LADIVES for real time – polymerase chain reaction (RT-PCR) diagnosis. Required field equipment and shipping costs is covered by the project.

Activity 2.5: Awareness raising and reporting of respiratory cases.

National workshops aimed at raising awareness and reporting of suspected cases in pigs are carried out with support of OIRSA, according to the methodology provided to the participants of the regional workshop on communication held in Panama in May 2010. FAO provides assistance and follow up to these activities.

Output 3: National animal health information systems to collect, process and analyse data from surveillance activities reinforced.

Activity 3.1: Procurement and distribution of equipment and software.

Two desktop computers are distributed to veterinary services in Guatemala, San Salvador, Honduras, Belize, the Dominican Republic and Panama to strengthen their capacity to process animal health-related information and to install TADInfo software.

Activity 3.2: Revision and updates of national animal health information systems used by countries (provided by FAO).

Customization of TADInfo maps for Belize, El Salvador, Guatemala and Honduras is finalized. A one-week regional workshop on TADInfo is carried out in August 2010 to train the key staff in the installation and use of this tailor-made software.

Output 4: Laboratory diagnostic capacities reinforced and network established between national laboratories and international reference laboratories.

Activity 4.2: Procurement and distribution of laboratory equipment and supplies.

Over 100 items are distributed to beneficiary countries, especially those that will carry out RT-PCR diagnostic (Costa Rica, Guatemala and Panama). In addition, LADIVES in Panama receives equipment (including a second block for PCR) in order to be able to process samples from other beneficiary countries and act as a project regional laboratory.

Activity 4.3: Signing of a Letter of Agreement (LoA) with a specialized laboratory.

Upon signature of the agreement with NVSL (see activity 2.1), an agreement is signed with LADIVES. Under the agreement, this Panamanian laboratory is to process up to 3 000 samples of suspected swine populations from Belize, El Salvador, Honduras, Nicaragua, Panama and the Dominican Republic.

Activity 4.4: Training of personnel working in animal health diagnostic laboratories at national level.

Under the framework of the agreement with NVSL and LADIVES, laboratory staff from Panama, Guatemala and Honduras are trained on RT-PCR diagnostic and sequencing according to the protocol developed by NVSL.

Activity 4.6: Transport of samples to international reference laboratories for analysis, sequencing and molecular epidemiological analysis.

An agreement with an international carrier is reached to enable national veterinary services to ship samples of suspected swine to LADIVES for RT-PCR diagnosis. Up to 25 of those samples diagnosed positively are forwarded to NVSL for confirmation, sequencing and quality control.

Output 5: Early detection and notification of A/H1N1/2009.

Activity 5.1: Support national services and organizations in education and communication and reporting of respiratory cases in pigs.

FAO provides assistance and follow up to the national workshops aimed at raising awareness and promoting the reporting of suspected cases in pigs to be carried out by the participants of the regional workshop on communication techniques conducted in May 2010. Moreover, communication materials developed under a consultancy on communication covered by TCP/RLA/3206 are printed and distributed.

Activity 5.2: Coordination of veterinary authorities with national public health authorities to improve disease field investigation, detection and reporting of cases in particular from rural areas.

A final workshop is organized in September 2010 in Panama with the participation of Chief Veterinary Officers (CVOs) and national coordinators in order to present the results of the project and to discuss continuity of activities and achievements beyond the end of the project.

Activities undertaken during the reporting period:

Output 1: The ECTAD Decentralized Coordination Unit (DCU) for Central America is established and operational.

Activity 1.4: Provision of services to the Central American and neighboring countries.

The ECTAD DCU in Panama, jointly with OIRSA and PAHO, carried out an assessment about the response of Panamanian authorities to the outbreak of East Equine Encephalomyelitis in East Panama in June 2010. Conclusions have been shared with officials of the Ministry of Health and Ministry of Agriculture.

A mid-term regional strategy to prevent and control TADs in Latin America and the Caribbean and several concept notes have been drafted.

Output 2: Surveillance activities implemented and extent and intensity of possible influenza viruses type A in circulation better understood and a proposal for contingency plans prepared.

Activity 2.1: Signature of an LoA with a research institution for field investigation/training.

An agreement between FAO and NVSL was signed in August 2010. Within this Agreement, two NVSL technicians travelled to Panama and provided diagnosis training to three technicians from LADIVES, one from Costa Rica and one from Guatemala in August 2010. Moreover, the last week of September 2010, a technician from LADIVES attended a on-the-job training at NVSL in Ames, USA, on influenza virus sequencing.

Activity 2.3: Training and conduction of field investigations and finalization of the guidelines.

Field equipment was delivered to national counterparts in eight countries (Belize, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua and Panama) at the end of September 2010 and field active surveillance and sampling collection activities started immediately in most of the countries. Moreover, national project coordinators in Costa Rica, Honduras and Panama trained colleagues on collection and submission of samples of swine. A template to collect appropriate information has been prepared and distributed among field veterinarians.

Activity 2.5: Raising awareness and reporting of respiratory cases.

Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama organized national events to promote notification of respiratory cases in pigs. This activity was also supported by radio spots in local and national radio stations in the last four countries. Some reports have already been investigated in Honduras and samples were collected.

Output 3: National animal health information systems to collect, process and analyse data from surveillance activities reinforced.

Activity 3.1: Procurement and distribution of equipment and software.

Two desktop computers were distributed to veterinary services in Belize, El Salvador, Guatemala, Honduras, the Dominican Republic and Panama to strengthen the capacity at epidemiology and laboratory units to process epidemiological surveillance information and install TADinfo software.

Activity 3.2: Revision and updates of national animal health information systems used by countries (provided by FAO).

A one-week practical training workshop on the use and administration of TADinfo data base was carried out in Tegucigalpa, Honduras in August 2010 with participants from Belize, El Salvador and Honduras. The tailor-

made software for Honduras was used for training purposes. The customization of software for the other countries is at the final stage.

Output 4: Laboratory diagnostic capacities reinforced and network established between national laboratories and international reference laboratories.

Activity 4.2: Procurement and distribution of laboratory equipment and supplies.

Laboratory equipment and supplies have been delivered and handed over to national counterparts in Costa Rica, Guatemala and Panama. Laboratories in these countries are now equipped and trained to carry out PCR diagnostic on SI.

Activity 4.3: Signature of an LoA with a specialized laboratory.

An agreement between FAO and LADIVES was signed in August 2010. LADIVES has been provided with equipment and supplies and its staff has been trained by NVSL. Under the Agreement, LADIVES is acting as a regional laboratory and will process samples of sick swine from Belize, El Salvador, Honduras, Nicaragua, Panama and Dominican Republic. Moreover, LADIVES will provide technical support to laboratories in Guatemala and Costa Rica.

Activity 4.4: Training of personnel working in animal health diagnostic laboratories at national level.

Under the framework of the agreement with NVSL and FAO, laboratory staff from Panama, Guatemala and Costa Rica were trained during one week on RT-PCR diagnostic and virus isolation HA/HI in August 2010. A LADIVES staff attended a one-week hands-on training on sequencing in NVSL in September 2010. Other beneficiary countries do not have currently suitable laboratory premises to carry out this kind of diagnostic (biosecurity level 3 is required but only level 2 available) and diagnostic will be carried out by LADIVES in Panama (biosecurity level 3).

Activity 4.6: Transport of samples to international reference laboratories for analysis, sequencing and molecular epidemiological analysis.

An agreement with an international carrier has been reached to enable national veterinary services to ship samples of suspected swine to LADIVES for RT-PCR diagnosis. Up to 25 of those samples diagnosed positively are expected to be forwarded to NVSL for confirmation, sequencing and quality control. LADIVES expects to receive the first samples in October 2010.

Output 5: Early detection and notification of A/H1N1/2009.

Activity 5.1: Support national services and organizations in education and communication and notification of respiratory cases in pigs.

FAO, through an ad-hoc consultant, provided assistance to national communication officials in organizing national events to promote the reporting of suspected cases in pigs. Moreover, communication materials were printed and distributed to the countries in collaboration with OIRSA. Radio spots were broadcasted in Nicaragua, Honduras, Guatemala and Panama.

Activity 5.2: Coordination of veterinary authorities with national public health to improve disease field investigation, detection and reporting of cases in particular from rural areas.

Considering the no-cost extension of the project until 31 December 2010, the final workshop to present the results of the project and to discuss continuity of activities and achievements beyond the end of the project has been postponed until November 2010.

Planned activities for the next reporting period:

Output 1: The ECTAD Decentralized Coordination Unit for Central America is established and operational.

Activity 1.4: Provision of services to the Central American and neighbouring countries.

The ECTAD DCU in Panama to continue backstopping the veterinary services of the beneficiary countries and reinforcing the regional epidemio-surveillance network in order to improve the communication and exchange of information on TADs and other respiratory diseases in swine populations. All activities will be conducted in close coordination with other organizations, such as OIRSA and PAHO. Special support will be provided to countries facing outbreaks, if needed.

Output 2: Surveillance activities implemented and extent and intensity of possible influenza viruses type A in circulation better understood and a proposal for contingency plans prepared.

Activity 2.1: Signature of an LoA with a research institution for field investigation/training.

Extend the Agreement with NVSL will be extended until 15 December 2010 to enable NVSL to finalize all planned activities, namely confirmation of positive diagnostic of up to 25 samples of positive cases detected in LADIVES.

Activity 2.3: Training and conduction of field investigations and finalization of the guidelines.

Carry out field investigations in beneficiary countries in October and November 2010. Up to 500 samples (per country) of suspected swine populations will be collected and sent to LADIVES for RT-PCR diagnosis. Guatemala and Costa Rica will diagnose their own samples.

Activity 2.4: Assistance to the National Project Coordinators for the preparation of reports on the situation of A/H1N1 in beneficiary country.

National Project Coordinators to present results of field surveillance conducted in their countries during the Final Workshop to be held in November 2010, according to a format provided by FAO.

Activity 2.5: Raising awareness and reporting of respiratory cases.

Follow up on activities focused on raising awareness and promoting notification of suspected cases at national level will continue.

Activity 2.6: Preparation and discussion of proposed contingency plan for early response in each country.

Draft and discuss a manual on contingency planning with national counterparts during the Final Workshop.

Output 3: National animal health information systems to collect, process and analyse data from surveillance activities reinforced.

Activity 3.2: Revision and updates of national animal health information systems used by countries (provided by FAO).

Finalize and distribute tailor-made TADinfo software to the beneficiary countries of Belize, Guatemala and El Salvador for installation.

Output 4: Laboratory diagnostic capacities reinforced and network established between national laboratories and international reference laboratories.

Activity 4.3: Signature of an LoA with a specialized laboratory.

Extend the Agreement between FAO and LADIVES until 30 November 2010, in order to enable the Panamanian lab to process up to 3 000 samples collected during the field activities in the beneficiary countries.

Activity 4.6: Transport of samples to international reference laboratories for analysis, sequencing and molecular epidemiological analysis.

Send by courier up to 3 000 samples of suspected swine populations from Belize, El Salvador, Honduras, Nicaragua, Panama and the Dominican Republic to LADIVES for diagnostic. Up to 25 of these samples, if tested positive, will be forwarded to NVSL in USA.

Output 5: Early detection and notification of A/H1N1/2009.

Activity 5.2: Coordination of veterinary authorities with national public health to improve disease field investigation, detection and reporting of cases in particular from rural areas.

Organize a final workshop in November 2010 in Panama with the participation of CVOs, national coordinators, lab specialists and public health veterinarians in order to present the results of the project and to discuss continuity of activities and achievements beyond the end of the project. Other international organizations such as OIRSA, PAHO, OIE and the Inter-American Institute for Cooperation on Agriculture (IICA) will also be invited to attend.

Main challenges encountered and response provided:

The large procurement action carried out under the project (purchase and distribution of over 100 items [some

of them require cold chain] for laboratory diagnostic and field surveillance in nine countries) has been a complicated and time-consuming exercise. Due to the special nature of some of the goods, special import processes were necessary in some countries. FAO Representations in the beneficiary countries played an essential role in speeding up the importation of goods and all items were handed over to national counterparts in good condition.

Due to heavy rains in Guatemala in September 2010, field collection of samples was postponed until October 2010.

Main progress made towards the achievement of project outcomes:

- The ECTAD DCU in Panama has been established in the framework of this project and provides technical support to the national veterinary services in all beneficiary countries, including situations of outbreaks of TADs such as rabies, classical swine fever and equine encephalitis. Furthermore, the ECTAD DCU in Panama acts as a regional hub for reception and exchange of real-time information of animal health issues, linked to the Global Early Warning and Response System (GLEWS) FAO team.
- Technical backstopping missions have been carried out to all beneficiary countries, especially to support the preparation of surveillance guidelines in the framework of national workshops with key staff, and as a first step in carrying out the surveillance and sample collection activities intended under the project.
- LADIVES of Panama has agreed to provide RT-PCR diagnostic services to other beneficiary countries and serve as a regional laboratory for SI in the future. The diagnostic capacity of this laboratory (and other laboratories in Costa Rica and Guatemala) has been strengthened through training by NVSL (USA) and purchasing of a large number of laboratory equipment and supplies.
- The veterinary services of Belize, El Salvador, Guatemala and Honduras decided to strengthen their capacities to analyse epidemiological information and are received support to install and properly operate TADInfo as their tailor-made animal health information system. Related equipment was also procured and delivered to final users.
- Communication specialists from all beneficiary countries were trained on how to develop national trainings to raise awareness of respiratory diseases in swine and promote notification of suspected cases. Materials such as posters, radio commercial breaks, leaflets and brochures were prepared considering countries' feedback and made available to all national veterinary services. Raising awareness campaigns on radio were carried out in Guatemala, Honduras, Nicaragua and Panama and national training events were organized in Costa Rica, Guatemala, Honduras, Nicaragua and Panama.
- Two documents on good practices for biosecurity in the pig sector and preparation of African swine fever contingency plans (<http://www.fao.org/docrep/012/i1435c/i1435c00.htm>) were translated into Spanish and adapted to the region for distribution among key staff from the beneficiary countries.
- An agreement with OIRSA was reached to include the differential diagnosis of other respiratory diseases in swine, in addition to pandemic influenza H1N1/2009, to the diagnostic activities to be carried out under the framework of the project. This is crucial not only to determine whether the pandemic influenza H1N1/2009 is circulating in the region but also to determine which other viral and bacterial diseases are more prevalent in swine populations.

I Quarter 2010

Project Monitoring Sheet: OSRO/RLA/901/USA

Reporting period: January - March 2010

Regional Component: Latin America and the Caribbean	
Project Title: Strengthening regional capacity for surveillance of influenza A H1N1 virus and other subtypes of swine flu in pig populations in Central America and other countries in Latin America	
Code: OSRO/RLA/901/USA	
Budget: USD 700 000 (Phase I) Total budget: USD 700 000	
Effective Starting Date:	28 July 2009
Planned End Date:	30 September 2010
Context of the Project: <p>Pandemic H1N1 2009 has been reported in animals (pigs and turkeys) in several countries, including Argentina, Canada, Chile and the United States in the American continent, raising the concern of the international community. Pigs can harbour influenza viruses of both avian and mammalian origin and act as a “mixing vessels” in which the re-assortment of human, swine and avian influenza virus may occur producing a virus capable of human-to-human transmission leading to human pandemics.</p> <p>Studies in the developed countries have shown that various subtypes (H1N1, H3N2 and H1N2) co-circulate in pig populations in those countries. However, it is still unknown whether these subtypes are also widespread in swine populations in Central America and neighbouring countries due to lack of appropriate monitoring and surveillance networks for swine influenza.</p>	
Objectives of the Project: <p>The project aims at strengthening the surveillance capacities of the affected countries or countries at risk to deal with Influenza A/H1N1, other influenza viruses and other transboundary animal diseases in Central America and neighbouring countries.</p> <p>Specifically, the project will improve the knowledge on the epidemiology and ecology of Influenza type A viruses in swine populations in targeted countries.</p>	
Planned activities for the reporting period: <p>In the previous progress report, the following activities were planned to be carried out during the reporting period:</p> <p><i>Output 1: The ECTAD Decentralized Coordination Unit for Central America is established and operational</i></p> <p>Activity 1.4: Provision of services to the Central American and neighbouring countries</p> <p>The Emergency Centre for Transboundary Animal Diseases of FAO (ECTAD) Decentralized Coordination Unit (DCU) in Panama will continue backstopping the veterinary services of all beneficiary countries and reinforcing the regional epidemiological surveillance network in order to improve communication and the exchange of information on transboundary animal diseases and respiratory diseases in pigs.</p> <p><i>Output 2: Surveillance activities implemented and extent and intensity of possible influenza viruses type A in circulation better understood and a proposal for contingency plans prepared.</i></p> <p>Activity 2.1: Signature of Letter of Agreement (LoA) with a research institution for field investigation /training</p>	

Upon final agreement with an FAO/International Office of Epizootics (OIE) Reference Laboratory (discussions are being currently carried out with Ames, USA) a LoA to conduct training on reverse transcriptase PCR (RT-PCR) diagnosis for LADIVES laboratory staff will be signed and first activities to this effect will be carried out.

Output 3: National animal health information systems to collect, process and analyse data from surveillance activities reinforced.

Activity 3.1: Procurement and distribution of equipment and software

Technical specifications for computer equipment to install TADInfo database system will be prepared and equipment will be procured and delivered for all the countries, especially those interested in upgrading their national animal health information systems. Digital maps will be adapted.

Activity 3.3: Promotion and use of other animal health information systems including TADInfo and others

Promotion activities will continue in the countries with no database and appropriate animal diseases information systems.

Output 4: Laboratory diagnostic capacities reinforced and network established between national laboratories and international reference laboratories

Activity 4.2: Procurement and distribution of laboratory equipment and supplies

Upon the preparation of surveillance guidelines and the final estimation of the required supplies to test the samples, the list of inputs for laboratory diagnosis and epidemiological surveillance will be finalized and the procurement process will be started.

Activity 4.3: Signature of a LoA with a specialized laboratory

LADIVES laboratory in Panama has been identified as the most suitable laboratory in the Central American region to carry out the activities envisaged under this LoA (provide training at national level on RT-PCR diagnosis and diagnose samples collected in Belize, El Salvador, Honduras, Nicaragua, Panama and Dominican Republic).

Activities Undertaken during the reporting period:

Output 1: The ECTAD Decentralized Coordination Unit for Central America is established and operational

Activity 1.4: Provision of services to the Central American and neighbouring countries

The ECTAD DCU provided technical support to Guatemalan veterinary authorities to control rabies and classical swine fever outbreaks in this country in February 2010. The Unit continued playing a major role in coordinating the information exchange on transboundary animal diseases among the countries in the region and timely reported any important issues to the relevant early warning systems.

Output 2: Surveillance activities implemented and extent and intensity of possible influenza viruses type A in circulation better understood and a proposal for contingency plans prepared.

Activity 2.1: Signature of LoA with a research institution for field investigation/training

The National Veterinary Services Laboratory in Ames, USA, has been selected as the most suitable institution to provide high-level laboratory training. Upon beneficiary laboratory's request (LADIVES), an additional component (training on virus sequencing) was included in the agreement. This has delayed in some weeks the signature of the LoA, which is now under final consideration by USDA.

Output 3: National animal health information systems to collect, process and analyse data from surveillance activities reinforced.

Activity 3.1: Procurement and distribution of equipment and software

Technical specifications for Information Technology (IT) equipment suitable for animal health information systems have been prepared. Funds to provide with this equipment to all beneficiary countries have been allocated. The final purchase and distribution will depend on the finalization of the customization of TADInfo.

Activity 3.3: Promotion and use of other animal health information systems including TADInfo and others
Belize, El Salvador, Guatemala and Honduras officially requested assistance to FAO in January 2010 to establish TADInfo as their national animal health information system. Countries submitted necessary mapping information to start data customization. A home-based experienced IT consultant has been identified to provide this service.

Output 4: Laboratory diagnostic capacities reinforced and network established between national laboratories and international reference laboratories

Activity 4.2: Procurement and distribution of laboratory equipment and supplies

All laboratories expected to provide diagnostic services at national (Guatemala, Costa Rica) and regional levels (LADIVES in Panama for samples collected in Belize, El Salvador, Honduras, Nicaragua, Panama and Dominican Republic) provided a list of all required items. An international tender was launched in March 2010. Sixty-seven companies worldwide were invited to bid. Results are expected for May 2010.

Activity 4.3: Signature of a LoA with a specialized laboratory

In addition to RT-PCR diagnosis, LADIVES laboratory and FAO agreed to conduct virus sequencing in the premises of this Panamanian laboratory under the framework of the project. This will enable a more detailed and reliable diagnostic. This additional component and the sudden death of Director of LADIVES laboratory have delayed signature of the agreement. However, final agreement is expected to be signed shortly.

Planned activities for the next quarter:

Output 1: The ECTAD Decentralized Coordination Unit (DCU) for Central America is established and operational

Activity 1.4: Provision of services to the Central American and neighbouring countries.

The ECTAD DCU in Panama will continue backstopping the veterinary services of the beneficiary countries and reinforcing the regional epidemiological surveillance network in order to improve communication and the exchange of information on transboundary animal diseases and other respiratory diseases in swine populations. Special support will be given to countries facing outbreaks, if needed.

Output 2: Surveillance activities implemented and extent and intensity of possible influenza viruses type A in circulation better understood and a proposal for contingency plans prepared.

Activity 2.1: Signature of LoA with a research institution for field investigation/training.

An agreement will be signed with the National Veterinary Services Laboratory in Ames, USA. This institution will provide diagnostic training in LADIVES premises will train a LADIVES expert on virus sequencing and will act as a reference laboratory for positive cases detected in LADIVES.

Activity 2.3: Training and conduction of field investigations and finalization of the guidelines.

A regional workshop will be held in Panama on 13-14 May 2010 with participation of all national project coordinators in order to discuss biosecurity measures in the pig sector, using as guidance the joint FAO/OIE/World Bank document on good practices for biosecurity in the pig sector (<http://www.fao.org/docrep/012/i1435e/i1435e00.htm>) and agree on common procedures for the forthcoming surveillance and sample collection activities to be carried out at national level.

Activity 2.5: Raising awareness and reporting of respiratory cases.

A regional workshop will be held in Panama on 11-12 May 2010 with participation of 19 experts from all beneficiary countries. Participants will learn communication techniques to raise awareness and promote reporting of suspected cases in pigs in their countries. Participants are expected to organize national workshops on this matter with the collaboration of the International Regional Organization for Plant and Animal Health (OIRSA).

Output 3: National animal health information systems to collect, process and analyse data from surveillance activities reinforced.

Activity 3.1: Procurement and distribution of equipment and software.

Funds have been allocated and technical specifications have been prepared to purchase necessary equipment to install TADInfo in four countries and strengthen information management capacities in the others. In order to avoid the computers to become outdated, they will be purchased as soon as customization of the software is finalized.

Activity 3.3: Promotion and use of other animal health information systems including TADInfo and others.

TADInfo software will be customized for Belize, Honduras, Guatemala and El Salvador. An international workshop to train key staff on installation, use and maintenance of this information system is envisaged for the third quarter of this year.

Output 4: Laboratory diagnostic capacities reinforced and network established between national laboratories and international reference laboratories.

Activity 4.2: Procurement and distribution of laboratory equipment and supplies

More than 100 items for laboratory diagnosis in three countries and sample collection in all beneficiary countries will be procured and distributed in order to enable field surveillance, collection of samples from suspected pigs and laboratory diagnosis.

Activity 4.3: Signature of a LoA with a specialized laboratory.

The letter of agreement with LADIVES, a Panamanian laboratory will be signed. Under this agreement, LADIVES will carry out training at national level on RT-PCR diagnosis and run samples collected in Belize, El Salvador, Honduras, Nicaragua, Panama and Dominican Republic. Guatemala and Costa Rica will diagnose their own samples and will send positive cases to LADIVES for confirmation.

Main Challenges Encountered and Response Provided:

The need for additional support to national officers in sampling design and drafting of surveillance guidelines required celebration of additional specific workshops on this matter in most of the countries.

The unexpected death of the Director of LADIVES in March 2010 has delayed the signature of the letter of agreement with this institution.

Main progress made towards the achievement of project outcomes:

- The ECTAD DCU in Panama has been established in the framework of this project and provides technical support to the national veterinary services in all beneficiary countries, including situations of outbreaks of transboundary animal diseases such as rabies and classical swine fever. Furthermore, the ECTAD DCU in Panama acts as a regional hub for reception and exchange of real-time information of animal health issues, linked to the Global Early Warning and Response System (GLEWS) FAO team.
- Technical backstopping missions have been carried out to all beneficiary countries, especially to support the preparation of surveillance guidelines in the framework of workshops with key staff, and as a first step for carrying out the surveillance and sample collection activities envisaged under the project.
- An agreement with a laboratory in Panama (biosecurity level 3) is being finalized in order to provide RT-PCR diagnosis for samples collected in beneficiary countries. A second agreement is about to be signed with a laboratory in Ames, USA to serve as a reference laboratory and provide training on viral sequencing.
- An international market research for laboratory equipment and supplies, as well as materials for field surveillance and sample collection, has been conducted. Goods will be purchased and delivered to relevant laboratories as soon as offers are available.
- Upon request of four beneficiary countries (Belize, El Salvador, Guatemala and Honduras) arrangements are being made to establish TADInfo as a tailor-made animal health information system in these countries, including customization of the system to countries' needs and training. Related equipment is also being procured and delivered to final users.
- Two documents on good practices for biosecurity in the pig sector and preparation of African Swine

Fever contingency plans (<http://www.fao.org/docrep/012/i1435e/i1435e00.htm>) have been translated into Spanish and adapted to the region for distribution among key staff from the beneficiary countries.

- An agreement with OIRSA has been reached to include the differential diagnosis of other respiratory diseases in swine, in addition to pandemic influenza H1N1/2009, to the diagnostic activities to be carried out under the framework of the project. This will enable the national veterinary services in the beneficiary countries, not only to determine whether the pandemic influenza H1N1/2009 is circulating in the region, but also to determine which other viral and bacterial diseases are more prevalent in swine populations.

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 03

Project title: Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza in Lao PDR

Reporting period: April 2013 to September 2013

Country: Lao People's Democratic Republic (Lao PDR)
Project title: Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza in Lao PDR
Code: OSRO/RAS/604/USA Baby 03
Budget: USD 1 000 000 (Phase I), USD 1 285 000 (Phase II), USD 900 000 (Phase III), USD 800 000 (Phase IV), USD 550 000 (Phase V), USD 372 000 (Phase VI), USD 50 000 (Phase VII) and USD 100 000 (VIII phase)
Total budget: USD 5 057 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2014
Context of the project <p>The project assists the Government in responding to the consequences of a possible poultry disease epidemic related to highly pathogenic avian influenza that could not only cause serious damage to the poultry sector, but also have serious consequences in terms of human health and household livelihoods.</p>
Objectives of the project <p>The specific objectives of the project are to:</p> <ul style="list-style-type: none"> • Strengthen coordination and support of avian influenza control policy development. • Strengthen risk-based surveillance for Highly Pathogenic Avian Influenza (HPAI) in target provinces. • Improve disease response capability.
Planned activities for the reporting period (April 2013 to September 2013) <p>Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses</p> <ul style="list-style-type: none"> • Continue the monthly meetings among project staff. • Continue to participate in technical meetings organized by the National Emerging Infectious Diseases Coordination Office (NEIDCO) to support the multi-sectoral coordination and collaboration in the spirit of One Health. • Regularly communicate and meet with the United States Agency for International Development (USAID) Representative for Lao PDR to keep him/her informed of the project work plan. • Continue to support veterinary epidemiology training at regional and country levels, including the Field Epidemiology Training Programme for Veterinarians (FETPV). • Continue to participate in the development of joint activities with other partners related to the implementation of the 2011-2015 National Work Plan for Emerging Infectious Diseases and Public Health in Emergencies. • Participation of the National Project Director in USAID partners' meetings. <p>Output 2: Risk assessment and management along the poultry supply chain strengthened</p> <ul style="list-style-type: none"> • Recruit an international consultant on veterinary epidemiology for one month to provide recommendations to conduct the training course on field epidemiology in action.

- Conduct the longitudinal risk-based surveillance in four target provinces.
- Provide necessary equipment and supplies for surveillance and response.
- Establish a team and network consisting of field staff trained in epidemiology (including the FETPV and Field Epidemiology Training [FET] graduates/trainees) and laboratory experts from the Department of Livestock and Fisheries to develop and link epidemiological and virological information for risk assessment and management.

Output 3: Strengthen laboratory capacity

- Under the Emerging Pandemic Threats (EPT) IDENTIFY regional project:
 - Recruit an international consultant to evaluate the current laboratory operations and management system as well as implement standard operating procedures (SOPs) and provide in-country training.

Activities undertaken during the reporting period (April to September 2013)

Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses

- The project's monthly meetings with staff to discuss technical and operational issues have continued.
- The National Project Director participated in the quarterly meeting of USAID-funded EPT programme to update the work activities for FAO IDENTIFY on strengthening laboratory diagnosis. The meeting was organized by the National Animal Health Laboratory (NAHL).
- The National Project Director attended several preparatory meetings with NEIDCO, the World Health Organization (WHO), Ministry of Health and Ministry of Agriculture and Forestry for organizing the One Health Symposium. The Symposium, organized by the Ministry of Health and the Ministry of Agriculture and Forestry in collaboration with WHO and FAO, was held from 5 to 6 September 2013.
- The National Project Director attended the Avian Influenza and Emerging Pandemic Threats Programme Discussions organized in Bangkok, Thailand on 26 June 2013. The meeting brought the team leaders from FAO's Emergency Centre for Transboundary Animal Diseases (ECTAD) Country Programme to review and discuss on reprogramming the regional projects to address the current situation of HPAI.
- The National Project Director attended the Technical and Policy Discussion on the Prevention and Control of Avian Influenza A(H7N9) in Asia which was jointly hosted by USAID and the Royal Thai Government in Bangkok, Thailand from 24 to 25 June 2013. The objectives of the meeting were to: (i) share the lessons learned from actions undertaken by the Government of China in preventing and managing the situation of H7N9 influenza infections in poultry and humans as well as monitoring H7N9 influenza viral evolution; (ii) discuss specific unresolved issues related to viral transmission, surveillance, risk assessment and management as well as appropriate and practical interventions for H7N9 influenza infection based on capacity developed from H5N1 crisis; (iii) discuss risks and scenarios of the H7N9 situation in the region and the possible mitigation measures in the short, medium and long term; and (iv) identify the opportunities for synergies of the human health, animal health and other sectors among the countries in the region and between the countries and the relevant international organizations.
- The National Project Director participated in the inception workshop of the two regional emergency Technical Cooperation Projects for Surveillance and Response to H7N9 which was organized in Bangkok from 18 to 20 September 2013.

Output 2: Risk assessment and management along the poultry supply chain strengthened

- The ECTAD team in Lao PDR followed up on the implementation of the longitudinal risk

based surveillance in the target provinces, which was completed in August 2013.

- In collaboration with the ECTAD-RAP (FAO Regional Office for Asia and the Pacific) team, the ECTAD team in Lao PDR supported the Department of Livestock and Fisheries to conduct emergency surveillance for H7N9 in the districts of the three provinces, Luangnamtha, Phongsaly and Oudomxay, bordering and have poultry value chain connected to China. This included the organization of the planning and wrap-up workshops in addition to field sample collection.

Output 3: Strengthen laboratory capacity

- The procurement of reagents and supplies for NAHL to test the samples collected from the longitudinal surveillance was finalized.
- Under the EPT IDENTIFY regional project, the National Project Director facilitated the participation of NAHL staff to the following regional trainings/workshops:
 - Regional Workshop on Laboratory-Epidemiology Linkage, 20-31 May 2013, Bangkok, Thailand.
 - Regional Laboratory Network Workshop on Diagnosis Characterization of Influenza A(H7N9) and Pig Diseases (African swine fever, classical swine fever and porcine reproductive and respiratory syndrome), 29 July – 9 August 2013, Ho Chi Minh City, Viet Nam.
 - Regional Workshop on Applied Veterinary Bioinformatics, 26 June – 1 July 2013, Bangkok, Thailand.
 - Regional Laboratory Network Training on Diagnosis of Rabies and Newcastle Disease, 26 August – 6 September 2013, Bangkok, Thailand.
- The National Project Director provided her coordination roles for the letter of agreement issued by ECTAD-RAP to the Mahidol-Oxford Research Unit (MORU) to strengthen the capacity of the NAHL and Department of Livestock and Fisheries on laboratory management, biosafety and bio-security. The letter of agreement is effective from June – November 2013. The following events were conducted at NAHL and attended and facilitated by the National Project Director during the reporting period:
 - Orientation Workshop for the letter of agreement, 12 June 2013;
 - Gap Analysis Workshop, 26-27 June 2013; and
 - On-the-job training on laboratory quality management, 12-13 August 2013.

Planned activities for the next six-month period (October 2013 to March 2014)

Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses

- Request approval from the Government of Lao PDR for Phase VIII of the project.
- Recruit project staff.
- Organize an inception workshop to formally start the activities of the next phase (Phase VIII) of the project.
- Consult with the national government in planning for A(H7N9) in three high risk provinces noted previously.
- Conduct FETPV training at the provincial level in collaboration with animal health and public health partners.
- Continue regular monthly meetings among the HPAI project staff.
- Regularly communicate and meet with the USAID Representative of Lao PDR to keep him/her informed of the project work plan.
- Continue to support veterinary epidemiology training at regional and country levels including FETPV.

- Provide inputs to the technical meetings organized by the NEIDCO to develop joint activities with other partners related to the implementation of the 2011–2015 National Work Plan for Emerging Infectious Diseases and Public Health in Emergencies; and
- Ensure the participation of the National Project Director in USAID partners' meetings.

Output 2: Risk assessment and management along the poultry supply chain strengthened

- Organize the planning workshop to support the longitudinal risk-based surveillance which includes H5N1 and H7N9 in four target provinces.
- Conduct the longitudinal risk-based surveillance in Luangnamtha, Oudomxay, Vientiane province and Vientiane Capital.
- Provide necessary equipments and supplies for surveillance and response.
- Establish a team and network consisting of field staff trained in epidemiology (including the FETPV and FET graduates/trainees) and laboratory experts from the Department of Livestock and Fisheries to develop and link epidemiological and virological information for risk assessment and management.

Output 3: Strengthen laboratory capacity

- Under the EPT IDENTIFY regional project:
 - Continue to provide coordination between the Department of Livestock and Fisheries and MORU to ensure smooth implementation.

Main challenges encountered and response provided

- As H7N9 emerged in China, the ECTAD team in Lao PDR had to provide support to the Department of Livestock and Fisheries to ensure that the incursion of H7N9 can be detected and responded to in a timely manner. The ECTAD team in Lao PDR was responsible for adjusting the HPAI project to accommodate this need.
- Due to an upsurge in activities related to preparedness for A(H7N9), the plan to organize Field Epidemiology Training for Veterinarians and Animal Health Personnel is postponed to the next reporting period.

Main progress made towards the achievement of project outcomes

Output 1: Planning, coordination and policy support

- The project continued to emphasize the control of HPAI and the broadened scope of prevention, control and laboratory diagnosis of low pathogenic avian influenza (LPAI) A(H7N9) and other high-impact diseases through the National Mid-Term Priority Plan (NMTPP) for Animal Health for Lao PDR.
- The project is strengthening multi-sectoral cooperation for the prevention and control of five priority zoonoses in Lao PDR through the National Work Plan for Emerging Infectious Diseases and Public Health in Emergencies.

Output 2: Risk assessment and management along the poultry supply chain strengthened

- The provincial and district staff's capability in conducting field surveillance and the cold chain for sample submission to the central laboratory were further improved.
- The laboratory facility of the National Animal Diagnostic Centre is currently functioning.
- The implementation of longitudinal surveillance and more targeting will describe the epidemiological status as well as risks of both LPAI A(H7N9) and HPAI H5N1 at the target sites, which can be utilized for planning management of HPAI prevention and control in the future.

Output 3: Strengthen laboratory capacity

- The staff at the national laboratory was trained on operations management as well as on implementation of laboratory diagnostic tests and related measures.
- The NAHL will be enhancing quality laboratory management and services.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 03**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **October 2010 – March 2011**

Country: Lao People's Democratic Republic
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 03
Budget: USD 1 000 000 (Phase I), USD 1 284 990 (Phase II), USD 900 000 (Phase III), USD 800 000 (Phase IV), 550 000 (Phase V)
Total budget: USD 4 534 990
Effective starting date: 1 August 2006
Planned end date: 30 September 2011
Context of the project The project assists the Government in responding to the consequences of a possible poultry disease epidemic that could not only cause serious damage to the poultry sector, but also cause serious consequences to human health and household livelihoods.
Objectives of the project The specific objectives of the project are to: <ul style="list-style-type: none"> • strengthen coordination of and support avian influenza (AI) control policy development; • strengthen risk-based surveillance for Highly Pathogenic Avian Influenza (HPAI) in target provinces; • improve disease response capability; and • strengthen risk management measures, including biosecurity measures and cross-border movement.
Planned activities Output 1: Coordinated project implementation and policy support <ul style="list-style-type: none"> • continue the weekly meetings among the HPAI project staff • extend the contracts of the project staff until 30 September 2011 • support the bilateral meeting between Lao People's Democratic Republic (PDR) and People's Republic of China • support the development of the National Five Year Plan (2011-2015) on communicable diseases organized and coordinated by the National Emerging Infectious Disease Coordination Office (NEIDCO) • support the United States Agency for International Development (USAID) Partners' meeting from 3 to 5 November 2010 in Luang Prabang province Output 2: Strengthened surveillance and response <ul style="list-style-type: none"> • continue to conduct the fourth round of active surveillance in nine provinces from 29 November to 12 December 2010 • conduct training for laboratory staff to improve HPAI and other basic diagnostic capacity in Champasak province in November 2010 • Standard Operating Procedures (SOPs) and sublaws/decrees approved by the Government, printed and disseminated

Output 4: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- construction of the stall at the live bird market (LBM) as part of the pilot implementation on biosecurity improvement in Oudomxay province to start in October 2010
- monitor pilot activities by project staff together with the Provincial Agriculture and Forestry Office (PAFO) and District Agriculture and Forestry Office (DAFO) staff to follow up on the progress of the biosecurity improvement at LBM in Oudomxay province

Output 5: Strengthening capabilities to manage cross-border trade

- international consultant on cross-border activities together with the national Project Director will undertake two visits to Boten, Luang Namtha province and to Kaysone, Savannakhet province to meet and liaise with PAFO/DAFO and the check point staff
- organize training for staff at border check points

Activities undertaken during the reporting period

Output 1: Coordinated project implementation and policy support

- The International Operations Officer concluded his backstopping mission to assist in daily operation of the project from 20 October 2010 to 16 January 2011.
- Continued conducting of the AI weekly meetings staff to discuss technical, as well as operational issues.
- All contracts of national consultant and other project staff were extended until 30 September 2011.
- The Government of Lao PDR's approval for the Phase V of the project was received on 11 November 2010.
- An inception workshop to evaluate the activities implemented during Phase IV and to plan the activities to be implemented during Phase V of the project was organized on 9 and 10 December 2010.
- The project team revised the 2011 work plan, based on the inputs during the inception workshop.
- The Team Leader attended the Ecohealth Emerging Infectious Diseases Research Proposal Development workshop in Siem Reap, Cambodia, from 18 to 22 October 2010, supported and organized by the Canada's International Development Research Centre (IDRC).
- The Team Leader and the National Project Coordinator participated at the Tripartite Review Mission meeting organized by the Food and Agriculture Organization of the United Nations (FAO) Environmental Animal Health Initiative Management for Enhanced Smallholder Production (EAHMI) project on 25 October 2010.
- The Team Leader and the National Project Coordinator were in Bangkok on 29 and 30 November 2010 to attend:
 - inception workshop for the Regional Cooperation Programme on Highly Pathogenic and Emerging Diseases (HPED) in Southeast Asia on 29 November 2010; and
 - closing workshop on Technical Cooperation Project (TCP) on Emergency assistance for Surveillance of Novel Influenza A Subtype H1N1 Viruses in Pig and Poultry Production Sectors in High Risk Southeast Asian Countries on 30 November 2010.
- The Team Leader delivered a lecture on the application of the One Health approach to control zoonoses at the Study Conference for One Health Master programme at Massey University, New Zealand, on 14 December 2010. This visit was sponsored by Massey University.
- The Team Leader (sponsored by IDRC and the International Livestock Research Institute [ILRI]) and the National Project Coordinator (sponsored by the European Union)

participated at the One Health Congress 2011 in Melbourne, Australia, from 14 to 16 February 2011.

- The Team Leader attended the 5th Annual Regional Emergency Centre for Transboundary Animal Diseases (ECTAD) meeting for Asia and the Pacific in Bangkok from 22 to 24 February 2011 and participated in the PEMS training on 25 February 2011.
- The Team Leader and the National Project Coordinator attended the Preparation Meeting Emerging Pandemic Threats (EPT) Program coordinated by NEIDCO in collaboration with USAID in Vientiane on 28 February 2011.
- The Team Leader and the National Project Coordinator participated in several discussion meetings for the development of Zoonosis Collaboration Mechanism (ZCM) concept as part of the National 5-Year Work Plan for the emerging infectious diseases (EID) and Public Health Emergency Preparedness and Response during February to March 2011.

Output 2: Strengthened surveillance and response

- A Field Veterinary Epidemiology in Action course in collaboration with the Faculty of Veterinary Medicine Khon Kaen University (KKU) Thailand was organized for ten provincial officers from 4 to 22 October 2010.
- Training for Animal Disease Diagnosis to improve the capabilities of 12 staff from provincial animal disease diagnostic laboratories of Champasak and Savannakhet was organized in Champasak from 22 to 26 November 2010.
- The fourth sampling of active surveillance in nine provinces (Vientiane Capital, Vientiane, Savannakhet, Champasak, Luang Prabang, Luang Namtha, Xiengkhouang, Oudomxay and Phongsaly) was conducted from 29 November to 12 December 2010.
- The Team Leader and the Director of NAHC attended the Regional workshop on Surveillance Network Analysis Tool (SNAT) organized by the Agricultural Research for Development Centre (CIRAD) in Hanoi, Vietnam, on 4 to 5 October 2010.
- A Zoonosis Risk Assessment workshop was organized jointly by the World Health Organization (WHO) and FAO in Vientiane province from 27 to 29 October 2010.
- The project supported five follow-up outbreak investigations carried out by PAFO as part of the passive surveillance to Xiengkhouang (19 October 2010 and 29 and 30 November 2010); Xayabouly (from 13 to 16 December 2010); Phongsaly (14 December 2010); and Luang Namtha (10 January 2011).
- The Regional Project Coordinator carried out two missions to assist in data management and analysis of the active surveillance; the first mission was on 30 and 31 August 2010 and the second mission from 20 to 24 December 2010.
- Under the TCP project on H1N1, the National Animal Health Center (HC) staff conducted training and cross-sectional studies in pig population in four provinces (Vientiane Capital, Luang Prabang, Savannakhet and Champasak) between 28 September and 19 October 2010. Also bi-weekly visits and disease investigations to monitor suspected cases of swine influenza conducted in two provinces (Bolikhamxay and Khammouane) between 20 September and 22 November 2010.
- Under the IDENTIFY regional project, two biosafety experts from Asia-Pacific Biosafety Association (APBA) conducted two missions to the NAHC laboratory to demonstrate the correct use of biosafety equipments and supplies; the first mission was on 13 and 14 December 2010 and the second mission on 26 to 28 January 2011.
- One Department of Livestock and Fisheries (DLF) staff member was supported to attend a short training course on 'Veterinary Epidemiology in Action' under the Field Epidemiology Training Programme for Veterinarians (FETPV) from 17 January to 11 February 2011.

- The Evaluation and Planning workshop for HPAI surveillance to better understand the active surveillance plan, improve data and sample collection and improve coordination at all levels was organized from 3 to 5 February 2011 and attended by 45 participants.
- A field simulation exercise for HPAI rapid response team was conducted in Xiengkhouang province from 7 to 10 March 2011 with a total of 48 participants. The risk communication activity in this simulation exercise carried out in collaboration with the Academy for Educational Development (AED).
- The first round of active surveillance in ten provinces (previous nine provinces in phase IV plus Xayabouly province) was conducted from 22 March to 2 April 2011.
- Four missions were conducted by the national consultants to monitor the implementation of data and sampling collection process by PAFOs and DAFOs during the active surveillance activities in ten provinces from 22 March to 2 April 2011.

Output 3: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry population

- The construction of the stall at LBM Nongleng as part of the pilot implementation on biosecurity improvement in Oudomxay province was completed by 29 November 2010.
- Two project staff together with PAFO/DAFO staff monitored the progress of the pilot implementation of the biosecurity improvement and inspected the new stall construction at LBM Nongleng in Oudomxay province from 2 to 5 December 2010.

Output 4: Strengthening capabilities to manage cross-border trade

- The International Consultant for Cross-border Activities completed a two-month mission from 27 September to 26 November 2010 and submitted his recommendations for improvement of cross-border capacity.
- The International Consultant for Cross-border Activities carried out visit to Boten, Luang Namtha province from 9 to 15 October 2010 and to Kaysone, Savannakhet province from 17 to 20 October 2010 to meet and liaise with PAFO/DAFO and the check point staff.
- Training workshop for 28 staff at the International and National Border Check-point was organized in Vientiane province from 9 to 11 November 2010.

Planned activities for the next six-month period

Output 1: Coordinated project implementation and policy support

- continue the weekly meetings of the HPAI project staff
- conduct two backstopping missions, first for a month in April 2011 and then for three months, from July to September 2011
- support bilateral meetings with Thailand and Viet Nam
- continue to participate in the discussion meetings coordinated by NEIDCO for the development of ZCM concept
- participate at the NEIDCO final wrap-up meeting of the National 5-Year Work Plan for EID and the Public Health Emergency Preparedness and Response on 21 April 2011
- participate in the USAID EPT programme for Lao PDR on 26 April 2011
- recruit an International Consultant on Veterinary Legislation for one month in June-July 2011 to assist DLF in completion of the veterinary legislation framework based on the gap analysis carried out in Phase IV
- organize final wrap-up meeting at the end of the project
- develop and produce an HPAI booklet on the achievement of the project from Phase I to V

Output 2: Strengthened surveillance and response

- participate in the Surveillance Working Group (SWG) meeting for sharing surveillance data and updating surveillance issues with other partners on 5 April 2011
- continue to conduct the second round of active surveillance in ten provinces for Phase V, from 20 June to 1 July 2011
- recruit an International Consultant on Veterinary Epidemiology for one month in May 2011 to provide recommendations on surveillance activities and data management
- conduct two training courses for outbreak investigation for PAFO and DAFO staff in the provinces of Xayabouly and Bolikhamxay in May 2011
- continue to support the Field Veterinary Epidemiology in Action training in Khon Kaen University of Thailand in June 2011
- provide laboratory diagnostic training in Phongsaly province for laboratory staff from northern provinces in August 2011
- support two NAHC laboratory staffs to learn the laboratory management and operational strategy of BSL3 facility at the Virology Research Institute (VRI) in Pakchong, Thailand on June-July 2011
- provide necessary equipment and supplies for surveillance and rapid response

Output 3: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry population

- conduct the workshop to review the pilot implementation of biosecurity improvement at LBM in Oudomxay province in April 2011
- start the activities relating to the pilot implementation of biosecurity improvement in Luang Namtha province in May 2011 by conducting:
 - training on biosecurity for PAFO and DAFO officers in May 2011;
 - training for market managers, vendors and cullers/slaughterers in May 2011;
 - construction of stall at selected LBM as a prototype for biosecurity improvement in June 2011;
 - monitor progress of pilot activities in July 2011
- organize training for LBM authorities and traders associations about biosecurity
- organize training workshop for the public and private sectors on poultry production and biosecurity measures in Vientiane Capital and Savannakhet

Output 4: Strengthening capabilities to manage cross-border trade

- organize a scoping workshop in Vientiane Capital in April 2011 to map out the domestic poultry value chain to link with the cross-border trade for HPAI risk assessment
- continue to support a study to be conducted in Vientiane Capital to link the Thai cross-border poultry trade to in-country poultry production profile and its market chain
- recruit an International Consultant for Cross-border Activities for one month in July 2011 to prepare and supervise cross-border activities
- organize training to improve capabilities of border check points staff in July 2011
- organize evaluation workshop to discuss the effectiveness of measures introduced to and currently implemented at the border check points in July 2011
- provide equipment and supplies for border check points

Main challenges encountered and response provided

- Limited early reports on HPAI outbreak and insufficient outbreak investigation still need to be overcome in order to improve the capacity to respond to HPAI outbreaks and other

TADs.

- The limited availability of national veterinary human resources is a constraint to the absorption capacity of the governmental services in the country. The activities carried out under Output 2 in Phase III, IV and V of this project have addressed some of the capacity building needed.
- Gaps in knowledge have been identified regarding the process by which the H5N1 virus enters Lao PDR and how it remains and spreads within the country, owing to insufficient outbreak investigation. More evidence is being gathered through active surveillance, but this needs to be reinforced by the specific socio-economic studies planned on cross-border movements and value chains.
- There is a very limited local capacity to manage and analyse data. The absence of an effective epidemiology unit at the central level and the heavy workload of the technical staff at the provincial level have exacerbated the problem. Phase IV and V of the project should help to address this issue.
- Legislative support to animal health control still remains a challenge, although progress is being made in this area.

Main progress made towards the achievement of project outcomes

Output 1: Coordinated project implementation and policy support

- The project team revised the work plan for 2010 and reached an agreement with the Government on the schedule of implementation of the work plan.
- The draft of sublaws/decrees under the new legislation Law on Livestock and Animal Health Matters was developed and finalized.
- The National Animal Health Roadmap (NAHR) for Lao PDR was drafted based on the inputs from the veterinary services staff.
- The HPAI Prevention and Control Programme is incorporated into Strategy 1 of the National Avian Influenza Control and Pandemic Preparedness Plan 2006-2010 and will be further developed and expanded for the next five years.

Output 2: Strengthened surveillance and response

- LoAs for two rounds of active surveillance during phase V were signed between the project and the ten provinces.
- The improved risk-based active surveillance design, which incorporated the spatial and temporal distribution of HPAI and focused on duck species and LBM, was implemented and produced significant results.
- The global positioning system (GPS) tools provided by the project were utilized for recording the geo-coordinates of the active surveillance sites.
- The central and provincial staff capabilities in animal virus influenza diagnosis were improved.
- SOPs were completed and are ready to be used for control zones, culling, disease investigation in backyard poultry and commercial poultry farms and sample collection.

Output 3: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- Practical biosecurity guidelines for LBMs, slaughter point and duck farms were developed with regard to the local situation. This was used as operational guidance for pilot implementation in Oudomxay province.

- A prototype stall model for biosecurity improvement was constructed and operated in one LBM in Oudomxay province.

Output 4: Strengthening capabilities to manage cross-border trade

- Cross-border trade flows and their links to domestic poultry value chain were mapped and documented for selected borders, such as with China (Luang Namtha and Oudomxay) and with Thailand and Viet Nam (Savannakhet). In Phase V, similar activity will be carried out in Vientiane Capital.
- Legislative support and technical inputs provided to revise the current decree on inspection of animal, animal products and other related products imported to and in transit through Lao PDR.

I Quarter 2010**Project Monitoring Sheet: OSRO/RAS/604/USA Baby 03**

Project title: Immediate technical assistance to strengthen emergency preparedness for highly pathogenic avian influenza (HPAI)

Reporting period: January – March 2010

Country: Lao People's Democratic Republic
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 03
Budget: USD 1 000 000 (Phase I), 1 284 990 (Phase II), 900 000 (Phase III), 800 000 (Phase IV)
Total budget: USD 3 984 990
Effective starting date: 1 August 2006
Planned end date: 30 October 2010
<p>Context of the project</p> <p>The project assists the government in responding to the consequences of a possible poultry disease epidemic that could not only cause serious damage to the poultry sector, but also cause serious consequences to human health and household livelihoods.</p>
<p>Objectives of the project</p> <p>The specific objectives of the project are to:</p> <ul style="list-style-type: none"> • strengthen coordination and support avian influenza (AI) control policy development; • strengthen risk-based surveillance for Highly Pathogenic Avian Influenza (HPAI) in target provinces; • improve disease response capability; • strengthen risk management measures, including biosecurity measures and cross border movement.
<p>Planned activities</p> <p>Output 1: Coordinated project implementation and policy support</p> <ul style="list-style-type: none"> • Organize an inception workshop to formally start the activities of the next phase (Phase IV) of the project. • Organize information, education and communication (IEC) flipcharts training and distribution at the beginning of the year. <p>Output 2: Strengthened surveillance</p> <ul style="list-style-type: none"> • Procure laboratory supplies as per recommendations of the short-term Laboratory consultant. • Conduct planning workshop to support active surveillance for high risk areas and targeted population on the first week of February 2010. • Conduct Epidemiology and Global Positioning System (GPS) Training during the second and third week of February 2010. • Carry out active surveillance through letters of agreement (LoAs) between the project and

the Provincial Agriculture and Forestry Offices (PAFOs) in Luang Prabang, Champasack, Savannakhet, Vientiane, Vientiane province, Luang Namtha, Oudomxay and Phongsaly in March 2010.

- Provide support to the Department of Livestock and Forestry (DLF) Epidemiology Unit in the computerization of the epidemiological data. The project will also support the nominated person on the start-up of the new practice starting from February 2010.
- Start data and sample collection training on passive surveillance in February 2010. This training will be a continuous activity.
- With an installation of the new TADinfo desktop, data entry is expected to start analyzing the disease information reports provided by the system.

Output 3: Strengthened emergency response

Print and disseminate the standard operating procedures (SOPs).

Output 4: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- Organize workshop to review the existing guidelines on biosecurity improvement at live bird markets and slaughter points on the last week of March 2010.
- Plan the start of pilot introduction on biosecurity measure improvements in a duck farm in high risk area in March 2010.

Output 5: Strengthening capabilities to manage cross-border trade

Recruitment of an International Coordinator for cross-border activities to prepare and supervise all cross-border activities planned for the coming year.

Activities undertaken during the reporting period

Output 1: Coordinated project implementation and policy support

- An inception workshop to evaluate the activities implemented during Phase III and to plan the activities to be implemented during Phase IV of the project was organized from 4 to 6 February 2010.
- The training and distribution of the IEC manuals and flipcharts are being organized in conjunction with the implementation of Village Veterinary Service (VVS) training of the World Bank project.
- The Implementation Review Support of the National Avian Influenza Control and Pandemic Control and Pandemic Preparedness Plan 2006-2010 led by the World Bank was undertaken from 6 to 22 January 2010. The Food and Agriculture Organization of the United Nations (FAO) was assigned as the leading agency for the review of Strategy 1 on Animal Health. The Team Leader and National Project Director attended the progress implementation meeting with other collaborating partners.
- The National Medium Term Priority Plan (NMTPP) for Animal Health was carried out from 22 to 31 March 2010. A national stakeholder workshop was organized to develop the next five year plan for Lao Peoples Democratic Republic (Lao PDR).
- Continued conducting of the AI weekly meetings to discuss technical as well as operational issues.
- The government of Lao PDR approval for Phase IV of the project was received on 10 February 2010.
- A new administrative assistant was recruited in mid February 2010.
- The revised draft of decrees resulted from the last year workshop has been translated into

English, while currently waiting for the approval from the Minister of Agriculture and Forestry (MAF).

- The Team Leader attended the 4th Regional Annual Emergency Centre for Transboundary Animal Diseases (ECTAD) Meeting in Bangkok from 23 to 25 February 2010 and participated in the ECTAD Asia Information System in 26 February 2010 together with the National Consultant on Information Systems.
- The project team revised the 2010 work plan based on the inputs during the inception workshop.
- The project supported the translation of National Veterinary Policy into English.

Output 2: Strengthened surveillance

- One national staff was supported to attend a short training course on 'Veterinary Epidemiology in Action' under the Field Epidemiology Training Programme for Veterinarians (FETPV) from 4 to 29 January 2010 in Bangkok, Thailand.
- The proposal for the procurement of laboratory equipment and supplies for the central laboratory and two provincial laboratories in Luang Prabang and Champasak has been drafted and is waiting for budget revision.
- The Planning Workshop on HPAI Surveillance to better understand the new active surveillance design and the protocol of follow up disease investigation for passive surveillance was organized on 4 and 5 March 2010.
- The GPS training was conducted during the practical session of the Planning Workshop on HPAI surveillance.
- In collaboration with FAO- Regional Office for Asia and the Pacific (RAP), training on animal virus influenza and molecular characterisation for six laboratory staff from Lao PDR was conducted from 8 to 10 March 2010.
- The TADinfo training programs were conducted in Vientiane for central and Vientiane Capital staff from 16 to 19 February 2010, for provincial staff in Champasack from 10 to 13 March 2010, in Savannakhet from 15 to 18 March 2010 and in Luang Prabang from 29 March to April 2010.
- The LoAs for the implementation of active surveillance between the project and PAFOs in Luang Prabang, Champasack, Savannakhet, Vientiane, Vientiane province, Luang Namtha, Oudomxay and Phongsaly were signed and the recipient organizations have carried out the first round of active surveillance from 22 March to 3 April 2010.
- The International Consultant on Veterinary Epidemiology has completed two weeks mission from 15 to 27 March to review the new strategy of active surveillance and/or advise on implementation.
- One outbreak report was received from Luang Namtha province in the first week of March 2010 and an investigation team went to the field from 20 to 24 March 2010. Some samples were positive for Newcastle disease using rapid test kit, but further laboratory test is still ongoing.

Output 3: Strengthened emergency response

The final draft of SOPs was submitted by DLF to MAF for approval.

Output 4: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry population

- The preparation and discussion between the project and PAFO of Oudomxay for the implementation of the pilot introduction on biosecurity improvements in a duck farm in high risk area, selected live bird markets and slaughter points is underway.

- A visit to Phongsaly province was conducted to discuss detail preparation for the implementation of simulation exercise for HPAI response in Phongsaly scheduled from 31 March to 5 April 2010.

Output 5: Strengthening capabilities to manage cross-border trade

The recruitment of an International Consultant for cross border activities is underway.

Planned activities for the next quarter

Output 1: Coordinated project implementation and policy support

- Request for the recruitment of the International Operation Officer as planned.
- Continue the weekly meetings among the HPAI project staff.
- Support the National Project Director to participate at the 7th International Ministerial Conference on Animal and Pandemic Influenza (IMCAPI) from 19 to 21 April 2010 in Hanoi, Viet Nam.
- Participation of the Team Leader and the National Project Director in the United States Agency for International Development (USAID) Partners' Meeting and Regional Workshop on Poultry Value Chain in Bangkok in June 2010.
- The training and distribution of the IEC manuals and flipcharts will be organized in conjunction with the implementation of VVS training of the World Bank project.
- A national workshop on veterinary legislation framework will be conducted in June 2010 in collaboration with the Regional Asian Development Bank Project on HPAI.

Output 2: Strengthened surveillance

- Continue to conduct the second round of active surveillance in nine provinces from 21 June to 3 July 2010.
- The procurement of necessary equipment and supplies for surveillance and laboratory diagnosis has to be finalized for all four rounds of active surveillance.
- Support National Consultant on Laboratory Diagnosis to attend training covering quality assurances, biosafety, biosecurity and phylogenetic analysis in the Australian Animal Health Laboratory in Geelong, Australia from 19 to 30 April 2010.
- In collaboration with FAO RAP, a training workshop on animal influenza surveillance will be conducted for 14 central and provincial staff from Lao PDR in May 2010.

Output 3: Strengthened emergency response

- The SOPs will be printed and disseminated after having been approved by MAF.
- A simulation exercise in Phongsaly will be conducted in April 2010.
- The recruitment of an International Consultant on Incident Command System (ICS) will be finalized.
- Necessary equipment and supplies for outbreak response will be provided.

Output 4: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- A workshop to review the existing guidelines on biosecurity improvement at live bird markets and slaughter points will be organized in May 2010.
- The pilot implementation on biosecurity improvement will start in June 2010.

Output 5: Strengthening capabilities to manage cross-border trade

- Recruitment of an International Coordinator for cross-border activities. The duty of this

consultant will be the organization and supervision of all cross-border activities planned for Phase IV of the project.

- A scoping workshop will be organized with stakeholders in Savannakhet province to discuss and identify HPAI risk in relation with domestic poultry value chain and cross-border trade.
- A study tour across border of Quang Tri-Savannakhet-Mukdahan for representatives from the national and quarantine/border services of the three countries (Thailand, VietNam and Lao PDR) will be carried out in June 2010.
- A Tri-lateral workshop to be hosted by Lao PDR will be conducted in Savannakhet in June 2010.

Main challenges encountered and response provided

- The limited availability of national veterinary human resources is a constraint to the absorption capacity of the government services in the country. The activities carried out under Output 2 of the Phase III of this project have addressed some of the capacity building needed.
- For some time, the project used village chiefs and village veterinary workers as key contacts in conveying messages to poultry keepers. It is therefore essential that their further training be carried out.
- There are gaps in knowledge on the process by which H5N1 virus enters Lao PDR, how it remains and spreads within the country. More evidence is being gathered through active surveillance, but this needs to be reinforced by the specific socio-economic studies planned on cross-border movements and value chains.
- There is a very limited local capacity to manage and analyze data. The absence of an effective epidemiology unit at the central level and the heavy workload of the technical staff at the provincial level have exacerbated the problem. Phase IV of the project should help to address this issue.
- Legislative support to animal health control still remains a challenge - although progress is being made in this area.

Main progress made towards the achievement of project outcomes

Output 1: Coordinated project implementation and policy support

- The project team completed further development of the work plan for 2010 and reached an agreement on the implementation of the work plan with the nine PAFOs during the inception workshop.
- The draft of sub-laws/decrees under the new Law on Livestock and Animal Health Matters has been developed and finalized.
- The National Animal Health Roadmap for Lao PDR has been drafted based on the inputs from the veterinary services staff.

Output 2: Strengthened surveillance

- The LoAs for four rounds of active surveillance during Phase IV were signed between the project and the nine provinces.
- The new design of risk-based active surveillance which took into account the spatial and temporal distribution of HPAI has been finalized and the first round has been conducted in nine provinces.
- GPS tools provided by the project have been utilized for recording the geo-coordinates of

the active surveillance sites.

- The refresher training on TADinfo has supported the active surveillance data management system at central and four pilot provinces.
- The central and provincial laboratories' capabilities in animal virus influenza diagnosis were improved.

Output 3: Strengthened emergency response

Completion of the SOPs ready to be used for control zones, culling method, disease investigation in backyard poultry and commercial poultry farms and sample collection.

Project Monitoring Sheet: **OSRO/MYA/702/USA**

Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: April to September 2013

Country: Myanmar
Project: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/MYA/702/USA
Budget: USD 500 000 (Phase I), USD 750 000 (Phase II), USD 375 000 (Phase III), USD 150 000 (Phase IV), USD 279 000 (Phase V), USD 275 000 (Phase VI)
Total budget: USD 2 329 000
Effective starting date: 1 January 2008
Planned end date: 30 September 2014
<p>Context of the project</p> <p>Myanmar has experienced five waves of Highly Pathogenic Avian Influenza (HPAI) outbreaks in 2006, 2007, 2010, 2011 and 2012. The last outbreaks occurred in February and March 2012 in two townships (Chaung Oo and Taungoo) in Sagaing and Bago regions, and were successfully managed. The country remains at risk from duck populations, in which the virus is endemic as well as migrating wild birds and trade with neighboring countries. The Food and Agriculture Organization of the United Nations (FAO) is implementing an avian influenza control programme funded during the reporting period by the United States Agency for International Development (USAID). The programme is being implemented in collaboration with the Livestock Breeding and Veterinary Department (LBVD) of the Ministry of Livestock, Fisheries and Rural Development (MLFRD). This report describes activities funded by the project from April 2013 to September 2013.</p>
<p>Project impact</p> <p>The impact of the project is to reduce and stop the spread of H5N1 among flocks of poultry in the country, thus reducing the risk of contagion to other mammals and humans, and avoiding the possibility of a pandemic.</p>
<p>Project outcome</p> <p>The project outcome is to continue the improvement of the capacities and capabilities of Myanmar to prevent, prepare for and respond to the outbreaks of HPAI in the animal population effectively so as to limit its impacts and risk of infection to humans.</p>
<p>Planned activities for the reporting period (April 2013 to September 2013)</p> <p>Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses</p> <p>In order to achieve the above output, the following activities were planned:</p> <p>Activity 1.1: Support the Country team to provide inputs for planning and coordination required at the country level.</p> <p>Activity 1.2: Support national and international coordination related to disease control. This includes active participation of the country programme with other projects or programmes, such as the European Union (EU) Highly Pathogenic Emerging Diseases (HPED) project and the Emerging Pandemic Threats (EPT) programme, and exploring collaboration with PREVENT on risk communication.</p>

Activity 1.3: Support the Government of Myanmar to participate in a laboratory quality assurance (QA) and quality control (QC) system for HPAI and regional HPAI laboratory networks.

Activity 1.4: Support LBVD staff in veterinary epidemiology training at the regional and country levels, including the Field Epidemiology Training Programme for Veterinarians (FETPV).

Output 2: Risk assessment and management strengthened along the poultry supply chain at the selected townships of Mandalay region

In order to achieve the above output, the following activities were planned:

Activity 2.1: Establish a team and network. The network will consist of FETPV graduates/trainees from LBVD, laboratory experts from Central Veterinary and Mandalay Laboratories who have been trained previously, public health authorities and community workers, etc. Through consultation with relevant authorities, identify their roles and responsibilities for surveillance and outbreak response.

Activity 2.2: Conduct longitudinal surveillance in high-risk townships and animal populations (such as ducks, wild birds, live bird markets, environment, etc.), based on the risks identified by the previous supply chain studies.

Activity 2.3: Conduct 'active clinical surveillance' during the high-risk period through 'community networks'; and strengthen 'zero reporting' from selected communities and teams.

Activity 2.4: Design and organize simulation training exercises.

Activities undertaken during the reporting period (April 2013 to September 2013)

Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses

Activity 1.1: Support the Country team to provide inputs for planning coordination required at the country level.

- During this period the national project team consisted of the National Project Manager, National Operations Officer and technical consultants. The biosecurity and risk management national consultant completed her appointment on 19 April. Two laboratory experts were engaged from 1 June to 31 August, one in Yangon veterinary diagnostic laboratory and the other in the Mandalay regional laboratory.
- The input of the international Country Team Leader was shared between Myanmar and Nepal. During the six months under review the team leader input to Myanmar was 90 days.

Activity 1.2: Support national and international coordination related to disease control. Interventions in coordination with the regional FAO programme during this period have included:

- The provision of essential laboratory equipment to support HPAI diagnosis including six biosecurity cabinets and three high-speed centrifuges to key laboratories. (Funded through the EU-HPED programme).
- Organizational support for and participation in a joint FAO-World Organisation for Animal Health (OIE) consultative workshop on foot-and-mouth disease control in Myanmar (from 3 to 5 April in NayPyiTaw).
- Interaction with expert groups on zoonoses (including avian influenza) in emerging livestock systems bidding for funding from the United Kingdom for joint implementation with LBVD with FAO participation.
- Working with LBVD on preparedness for influenza A(H7N9) including the conduct of a

USAID supported (OSRO/GLO/302/USA) emergency surveillance programme.

- Coordination has been maintained with the national coordinator for the PREVENT risk communication programme supporting FAO's country team activities. The National Project Manager accompanied the PREVENT risk communication expert and the national coordinator on a pre-formulation mission to NayPyiTaw, Mandalay and Sagaing from 8 to 13 May 2013. The concept document and work plan have been submitted to the LBVD Director-General and has been submitted for cabinet approval.
- The FAO country team has facilitated the participation of LBVD personnel in the following regional training modules:
 - 20–31 May, Bangkok: improving linkages between laboratory and epidemiology units
 - 26 June – 1 July, Bangkok: Bio-informatics
 - 29 July – 9 August, Viet Nam: diagnosis of H7N9 and priority swine diseases
 - 26 August – 6 September, Bangkok: diagnosis of rabies and Newcastle disease

Activity 1.3: Support the Government of Myanmar to participate in a laboratory QA and QC system for HPAI and regional HPAI laboratory networks.

- The FAO country team has continued to work with the Yangon veterinary laboratory on supporting participation in the Association of Southeast Asian Nations (ASEAN) regional laboratory network for proficiency testing in order to ensure that diagnostic capacity for HPAI is maintained.
- The requested panel of test materials has been provided by FAO to the Yangon laboratory.
- Under the regional laboratory capacity building programme LBVD laboratory staff participated in an FAO technical backstopping mission carried out with the cooperation of the National Institute of Animal Health, Thailand, to optimize the primer – probe set-up for H7N9 RT-PCR at the Yangon Veterinary Diagnostic Laboratory.

Activity 1.4: Support LBVD staff in veterinary epidemiology training at the regional and country levels, including the FETPV.

- This programme has been delayed because of the many demands placed on the small epidemiology unit and will not take place during the period under review. The LBVD epidemiology unit has provided the FAO country team with proposals (templates) to take this programme forward in the immediate future.

Output 2: Risk assessment and management strengthened along the poultry supply chain at the selected townships of Mandalay region

Activity 2.1: Establish a team and network.

- Completed in the last semester. (October 2012–March 2013).

Activity 2.2: Conduct longitudinal surveillance in high-risk townships and animal populations based on the risks identified by the previous supply chain studies.

- The field work for this activity was concluded during the last semester (October 2012–March 2013). The data were analysed and the final report prepared during the current period.
- Twenty-two duck farms from three townships in Bago, Yangon and Mandalay regions with a total start-up population of 18 472 ducklings were included in the study.
- The flock-masters were committed to advising the township veterinary officer of any health problems arising and to cooperate in sending carcasses or other material to the diagnostic laboratory. The quantity of material submitted fell well below expectations.
- At the end of the observation period at pullet stage a total of 640 sera were collected and

tested for the presence of H5 antibody using the HI test. No sample showed antibodies at a level meeting the criteria for a positive result.

- Significant losses were recorded for non-infectious causes; mainly a result of heavy floods in the region.

Activity 2.3: Conduct 'active clinical surveillance' during the high-risk period through 'community network'; and strengthen 'zero reporting' from selected communities and teams.

- The community animal health worker (CAHW) programme builds on the networking approach by taking advantage of the daily engagement of CAHWs with poultry farmers and backyard producers and has the objective to increase the two way flow of information between LBVD's township veterinary office and the poultry keepers.
- The programme was conducted in five townships over a four-month period between February and May 2013 and engaged a total of 59 CAHWs responsible for 659 commercial farms and 600 backyard producers. Within the commercial farms broiler farms were more numerous but the total number of birds on layer farms was greater. Quail and duck farms were in lesser number in these townships.
- This pilot exercise showed potential with enthusiastic involvement of most of the CAHWs but to realize the potential more effort and dedication to this programme, with support from PREVENT, is merited.

Activity 2.4: Design and organize simulation-training exercises.

- Two table top exercises on HPAI outbreak response were conducted during the period. There were 19 participants (12 male, 7 female) from LBVD at the Yangon exercise held on 18 July and 29 participants (21 male, 8 female) in the second exercise held on 24 July in Mandalay, where participants represented LBVD, Myanmar Livestock Federation and Mandalay City Development Committee.

Planned activities for the next reporting period (October 2013 to March 2014)

Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses

Activity 1.1: Support the country team to provide inputs for planning coordination required at the country level.

- The project team will continue to provide technical support during the reporting period through periodic meetings with the Director-General of LBVD and interaction with relevant key staff at headquarters, appropriate regional offices and technical units.

Activity 1.2: Support national and international coordination related to disease control.

- At national level, the FAO country team will maintain links and information sharing with other FAO programmes which touch upon livestock health and production as well as with other academic and development partner organizations implementing poultry sector projects and studies. The FAO Animal Health and Production team will also act as a hub for FAO regional programmes, particularly those concerning preparedness for avian influenza A (H7N9).

Activity 1.3: Support the Government of Myanmar to participate in a laboratory QA and QC system for HPAI and regional HPAI laboratory networks.

- This will be implemented through the Southeast Asia regional laboratory network supported by USAID-EPT-IDENTIFY and the EU-IIPED programme and designed to strengthen laboratory capacity, assure the quality of laboratory services, improve biosafety and facilitate networking. The laboratory proficiency-testing scheme has commenced and will continue through the next reporting period for the full range of panel items identified.

Activity 1.4: Support LBVD staff in veterinary epidemiology training at the regional and country levels including the FETPV.

- The FAO Animal Health and Production team is supporting the LBVD epidemiology unit in the planning and implementation of ten-day FETPV courses for township veterinary officers which will commence during the first quarter of the next project year.

Activity 1.5: Support the extension of proven methodologies for surveillance, disease awareness and biosecurity to selected key poultry production areas.

- The FAO Animal Health and Production team will work in close collaboration with LBVD colleagues to extend the reach of key messages on HPAI. Four orientation workshops will be conducted in areas where poultry production is making an increasingly important contribution to livelihoods but which have fallen outside the main thrust of the programme to date.

Output 2: Risk assessment and management strengthened along the poultry supply chain

Activity 2.1: Support the quality and quantity of disease information gathering and dissemination of animal health information.

- The FAO team with support from the PREVENT project will collaborate with LBVD epidemiology section and the township veterinary officers in the five targeted townships, and, through additional training and monitoring, seek to enhance the performance experienced in the earlier pilot exercise.

Activity 2.2: Conduct surveillance for both H5N1 and H7N9 at identified critical points along live bird market chains.

- The FAO Animal Health and Production team will capitalize on its unique position to bring together a national concern on H5N1 HPAI and the additional threat from the novel Chinese H7N9 virus, surveillance for which is being tackled through a regional FAO Technical Cooperation project. A dual-purpose surveillance methodology will be developed and implemented, given the fact that Myanmar is considered to be at high risk for A(H7N9) due to its shared border with China and history of informal and informal trade of poultry and poultry products.

Activity 2.3: Conduct awareness and advisory campaigns in selected areas taking advantage of market chain information.

- Recognizing that poultry disease transmission is closely linked to the live bird market trade the FAO Animal Health and Production team, in cooperation with PREVENT, will use updated market chain information to guide targeting of five one day training workshops to enhance owner awareness of the zoonotic and livelihood risks from avian influenza and the measures to manage those risks.

Activity 2.4: Strengthen biosecurity and management practices in poultry production zones.

- The density of poultry within a poultry production zone (PPZ) is such that should the biosecurity barrier be breached the potential for disaster is high calling for the highest standards in management practices within the PPZ. The national consultant for disease control will undertake two missions to key PPZs during this period to ensure best practice compliance and comprehensive understanding of the threats posed.

Main challenges encountered and response provided

In the general context, recent political changes are likely to bring additional resources and missions into Myanmar, and this is challenging given the absorptive and coordination capacity of the LBVD.

The physical separation of the project base in Yangon from the decision makers at the Ministry and LBVD headquarters in NayPyiTaw is inconvenient. Project management contrives face-to-face meetings as and when possible.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

1. Strengthened planning and cross-sectoral coordination

Good relations with the Government are established. The coordination between the animal-human sectors has further improved with additional meetings, but further work needs to be done.

2. Strengthened laboratory capacity

The laboratory system is operating well, with recent outbreaks rapidly diagnosed and samples from field surveys being processed effectively. The laboratory information system has been developed and regularly updated to store data of samples, diagnostic results as well as laboratory inventory. Past and future participation in regional and international proficiency testing programmes is maintaining the quality of the laboratory service.

3. Strengthened disease control management capacity

There is now a much better understanding of the concepts of risk, supply chains, and of epidemiology of HPAI based on the national duck survey and national surveillance programmes, both of which were major achievements. The national commercial farm database proved to be an invaluable tool in responding to the outbreaks and identifying high-risk areas.

Project Monitoring Sheet: **OSRO/RAS/605/USA Baby 03**Project Title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**Reporting period: **October 2010 – March 2011**

Country: Nepal
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/605/USA Baby 03
Budget: USD 965 000 (Phases I-IV) and USD 250 000 (Phase V)
Total budget: USD 1 215 000
Effective Starting Date: 1 October 2006
Planned End Date: 30 September 2011
Context of the Project <p>The project is addressing the short- and medium-term actions of the Government of the Federal Democratic Republic of Nepal required to strengthen its capacity in preventing the introduction of Highly Pathogenic Avian Influenza (HPAI) and minimize its spread in the event of its occurrence. During the first quarter of 2009, the first outbreaks in Nepal were recorded. After a disease-free period of ten months, multiple outbreaks occurred during the period of January to March 2010. In contrast to the previous year, the 2010 outbreaks were attributed to clade 2.3.2 of the H5N1 virus, previously unrecorded in South Asia, suggesting an introduction through infected migrating wildfowl, rather than a cross-border one. In October 2010, the clade 2.3.2 virus reappeared in a previously infected district, indicating its persistence in reservoir species. The Government's resources, including those provided by international donors, have been severely stretched. The project has provided essential capacity building for preparedness and response. However, the scenario of declining international support for HPAI control is alarming, coupled with an increasing danger of the disease becoming endemic in Nepal, with negative consequences for the livelihoods of smallholder farmers and the control efforts of neighbouring countries.</p>
Objectives of the Project <p>The project has assisted the Ministry of Agriculture and Cooperatives (MOAC) in the implementation of the National Contingency Plan for HPAI. The main objective of the project is to contribute to rural development in the country by preventing and controlling the detrimental consequences of HPAI and raising awareness of other emerging infectious diseases in poultry. The expected outcome of the project is to create an effective mechanism for planning and coordination across sectors and key stakeholders involved in HPAI control activities, particularly with the United States Agency for International Development (USAID)-supported projects in Nepal and the South and Southeast Asia region.</p>
Planned activities for October 2010 – March 2011 <p>Output 1: Monitor the avian influenza (AI) situation in the country and update the national strategy and plans.</p> <p><i>Activity 1.1. Provide working groups on Animal Health with appropriate guidance and technical assistance.</i></p> <p><i>Activity 1.2. Conduct workshops and training exercises in each region to explain surveillance modalities and facilitate planning of field work.</i></p>

Activity 1.3. Conduct outbreak response simulation exercises – at least one in each of the regions.

Activity 1.4. Support Emergency Disease Investigation Teams (EDIT) through material and logistical support.

Activity 1.5. Conduct a review of live bird markets (LBMs) and poultry value chain and establish model facilities.

Activity 1.6. Design and construct a new post-mortem facility at the central veterinary laboratory (CVL).

Activity 1.7. Develop an enhanced surveillance programme for high-risk districts.

Output 2: Improve communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

Activity 2.1. Strengthen functional linkages between projects funded by USAID and other key stakeholders.

Activity 2.2. Assist the Government in the improvement of the dissemination of information (i.e. bulletins, reports and updates).

Activities undertaken during the reporting period (October 2010 – March 2011)

Output 1: Monitor the AI situation in the country and update the national strategy and plans.

Activity 1.1. Provide working groups on Animal Health with appropriate guidance and technical assistance.

- The technical working group met regularly at the Directorate of Animal Health (DAH) to discuss and guide the project's implementation, focusing on the issue of reappearance of clade 2.3.2 virus in Tanahu district.
- The laboratory working group held two meetings dedicated to the topic of CVL's diagnostic capability.

Activity 1.2. Conduct workshops and training exercises in each region to explain new surveillance modalities and facilitate planning of field work.

- Rapid response team (RRT) training modules (culling, disposal, decontamination, sampling and surveillance) were conducted in Nepalgunj, Biratnagar and Bhairahawa for field technicians from Doti, Pyuthan, Salyan, Dailekh, Banke, Surkhet, Taplejung, Sankhuwasba, Bhojpur, Teratjhum, Gulmi, Sindhuli and Arghakhachi districts. Among the total of 173 trainees were ten female technicians.

Activity 1.3. Conduct simulation exercises – at least one in each of the regions.

- Jointly with the Department of Livestock Services (DLS), the first of the two planned AI outbreak simulation exercises was carried out in Dhankuta district in the Eastern Region over a five day period in March and involved some 85 participants from technical offices and stakeholder groups from the Eastern Region districts.

Activity 1.4. Support EDIT through material and logistical support.

- The central EDIT investigated suspect outbreaks in Chitwan (confirmed) and Kaski/Tanahu. Material collected by the EDIT from the two adjoining properties in Chitwan was forwarded to an international reference centre (VLA-UK), and both H5N1 and H9 AI viruses were isolated. Furthermore, material submitted from a commercial unit in Tanahu with 80 percent mortality was negative for Newcastle Disease but positive for H5 virus on rapid test and conventional polymerase chain reaction (PCR). However,

the reference lab only isolated the H9 virus.

Activity 1.5. Conduct a review of LBM and establish model facilities.

- The project organized a workshop to examine the outcomes of the poultry value chain study completed by the SEEPOR consultancy and its implications for the risk management of the disease spread.
- Progress with the Kathmandu Municipality on construction of a market stall facility for the safe marketing of live and freshly slaughtered birds was slow. An alternative site had to be selected, and a contract was awarded for the necessary civil works. Several meetings with the concerned officers of the Municipality were necessary, and a final decision will be made by 31 March 2011.

Activity 1.6. Design and construct a new post-mortem facility at the CVL.

- The construction of a new post-mortem facility and incinerator room at the CVL to allow safe and efficient handling of potentially infected poultry carcasses is in its final stage, and the handover to the Department is being planned by 31 March 2011.

Activity 1.7. Develop an enhanced surveillance programme for high-risk districts.

- The enhanced surveillance programme covering 12 high-risk districts has been active since November 2010 and will run during the period of a perceived high risk from HPAI until the end of April 2011.
- In each participating high-risk district, eight surveillance sites were set up, each consisting of four to six contact points. Because of the number of sites, an additional monitoring layer was interposed, and district office-based focal officers and technicians provided immediate supervision.
- National consultants provided orientation and overall supervision to 150 field staff involved in the programme.

Output 2: Improve communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

Activity 2.1. Strengthen functional linkages between projects funded by USAID and other key stakeholders.

- In addition to the routine interactions maintained within the MOAC/DLS/DAH, the project benefited from the following opportunities to gather and share information:
 - 13-14 October 2010: CTA attended the Global Rinderpest Eradication Programme (GREP) meeting held in Rome.
 - 22 November 2010: An inception workshop was organized to update partners and implementing stakeholders on key issues relating to the project implementation.
 - Information sharing with the USAID-funded cross-border project (OSRO/RAS/701/USA) and the EU-funded SAARC regional support unit is maintained.
 - 17 December 2010: CTA participated in a workshop on the progressive control of foot-and-mouth disease (FMD), organized by the Regional Support Unit under the Highly Pathogenic Emerging and Re-Emerging Animal Diseases (HPED) programme.
 - 11 February 2011: A media sensitization workshop offered an opportunity to share information on the project's activities with media representatives.
 - 2-4 March 2011: A regional consultation on laboratory networks facilitated the regional exchange of information with colleagues working on AI control.
 - 10 January 2011: CTA attended a regional workshop on biosecurity and public private partnerships (OSRO 802 and OSRO 805), sharing information on the status of these areas in Nepal with a view to further collaboration.
 - 24-28 January: Interaction with the World Bank implementation support mission to the Avian Influenza Control Project (AICP) and AICP coordination were routinely

maintained.

- 2 February 2011: CTA and national consultant met with a group of commercial poultry producers in Chitwan district to discuss issues of biosecurity in commercial units and possible FAO interventions in this area.
- 22-24 February 2011: CTA attended the fifth annual ECTAD meeting held in Bangkok and shared information and views on AI surveillance programmes.

Activity 2.2. Assist the Government in the improvement of the dissemination of information (i.e. bulletins, reports and updates).

- The training film on simulation exercises was aired on national television on a number of occasions.
- Translation of SOPs into Nepali and of other key documents that are currently in English is forthcoming, and a further edition of the valued AI compendium to include a wider audience is in progress. A workshop was held on 3 February 2011 to collate and share the information gathered under three overseas observation tours of border controls and quarantine service operations.

Planned activities for the next six-month period

Output 1: Support DLS in planning, coordinating and managing strategies to prevent, control and eliminate outbreaks of HPAI.

Activity 1.1. Conduct regular meetings with DLS and MOAC.

- Continue close collaboration with DLS and its relevant directorates. Changing epidemiological status of HPAI in Nepal may have an impact on the currently adopted measures for early detection and rapid response, such that SOPs and the existing legal framework may need to be updated.

Activity 1.2. Maintain and further develop linkages with all AI-related projects operating in Nepal.

- The major funding source for the government interventions in the field of AI control, the World Bank-funded AICP concludes in July of this year. No other AI-specific projects are extant at this time, or envisaged in the mid-term. As the disease is now well entrenched in Nepal, there is a concern over future support to this sector. Some support may become available through programmes dedicated to emerging pandemic threats (EPT), such as the USAID EPT programme, and the HPED project funded by the European Union (EU).

Activity 1.3. Advise and support the DLS in planning and implementing AI-related activities through conferences, meetings and seminars.

- Conduct three workshops in the period June-August to examine the progress made on the prevention of HPAI and other emerging diseases, the gaps remaining and the way ahead as part of the process of project conclusion and handover.

Activity 1.4. Update and distribute relevant AI documentation, bulletins and reports including updated compendium of AI documents.

- Complete the updating and translation of the final edition of the compendium of key AI documents to produce and distribute to the target audience.

Output 2: Strengthen HPAI emergency preparedness and response capacity in Nepal.

Activity 2.1. Review the AI strategy and SOPs to keep up-to-date with the changing disease situation in the country and in the region and lessons learned from previous outbreaks.

- Encourage further debate on this issue through working group meetings and relevant workshops. The re-occurrence of HPAI owing to H5N1 clade 2.3.2 after a gap of seven months suggests that the virus is established in at least some parts of Nepal, most

probably with ducks acting as a reservoir species. Efforts should be made to confirm this situation, and initial results of a duck antibody survey are already lending support to this hypothesis. This has major implications for targeted surveillance and disease risk management.

Activity 2.2. RRT to field staff in high/medium risk districts.

- Organize two further training sessions in order to maintain the outbreak response capacity and assist in the disease detection efforts.

Activity 2.3. Plan, train, conduct and evaluate a further simulation exercise.

- Complete the final AI outbreak simulation exercise during the next semester.

Activity 2.4. Encourage and guide the development of the emergency disease investigation concept.

- Develop a more structured approach with DAH. The Department has been slow in adopting this concept, but now greater emphasis is given to this area.

Output 3: Strengthen disease surveillance.

Activity 3.1. Enhance surveillance in high-risk zones.

- Continue as planned for the remaining month of the high-risk period and evaluate the outcome and performance of the programme. Address the ways in which known weaknesses in the implementation of the programme may be overcome, while at the same time seeking to increase its efficiency by making it more sustainable without losing effectiveness.

Activity 3.2. Surveillance in buffer zones around migratory bird stop-over points, markets and resident duck populations.

- Resources remain insufficient to carry out this element of the surveillance programme in a comprehensive manner. Consideration will be given to targeting key markets and ensuring that the active surveillance programme is working effectively in those districts where the disease has surfaced in the past, prioritizing them where possible.

Output 4: Safe LBM development.

Activity 4.1 Expand model market concept.

- Complete this first initiative together with the training of market stall operators and inspectors. The slow progress of this programme in association with the Kathmandu municipality was not an encouraging approach in the Kathmandu valley.
- Continue to build on preliminary proposals to address the issue of inspection and certification and onward transportation of live birds, particularly backyard raised birds, from the high-risk district of Jhapa in Eastern Nepal. This will be coordinated with the no-cost extension phase of the OSRO INT 805 project.

Main challenges encountered and response provided

- Cross-border trading practices continue to present a major risk for Nepal, as HPAI is entrenched in Bangladesh and parts of neighbouring India. However, the introduction of the 2.3.2 clade of the virus last year and its apparent persistence in at least some parts of Nepal complicates the simplistic approach of having a high-risk belt of districts along the Indian border. The approach to risk management including targeted surveillance has to be revisited in the light of current information. The ability to manage outbreak situations has been strengthened through a programme of outbreak simulation exercises and training of field technicians in rapid response activities.

- The likely role of wild birds in the transmission of the 2010 HPAI epidemic posed an added challenge for the animal health authorities. While it may be impossible to prevent such transmission of HPAI to Nepal in the future, there is a need for the system to improve its capacity for detecting cases at the earliest instance and to take measures which prevent or limit further spread of HPAI.
- A complete understanding of the poultry market chain is essential in refining control measures. At the same time, the control measures adopted must be as efficient and cost effective as possible in order to be sustainable by the Government, and the role and participation of the private sector in developing and funding these controls addressed.
- During the 2010 epidemic, the major failings were the inability to prevent internal spread of the disease coupled with inadequate and tardy material and financial support to the affected districts (excepting Pokhara). These issues have been voiced in a lessons-learned workshop, and it is now critical that measures be taken to ensure that these issues are more effectively addressed in the future.
- Efforts to expand the knowledge base in veterinary epidemiology have so far only scratched the surface and need to be given further impetus.

Main progress made towards the achievement of project outcomes

Output 1: Monitor the AI situation in the country and update the national strategy and plans.

- Select project activities, involving capacity building of district staff in relation to disease identification, sampling, use of rapid tests, reporting, biosecurity and surveillance methodology, as well as the support given to the diagnostic services contributed significantly to the early detection of and effective response to the recent outbreaks. Table-top and field simulation exercises in particular strongly contributed to this progress.

Output 2: Improve communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

- Over the period of project's implementation, the number of other projects directly involved with HPAI issues steadily decreased, as for example, the AICP project, which will terminate in less than six months. The focus now is towards wider programmes, such as the HPED and EPT projects and the regional South Asian Association for Regional Cooperation (SAARC) programme, addressing transboundary animal diseases (TADs) as a whole. In light of this, the project management has avoided an insular approach and sought to place HPAI within the wider TADs environment in line with the One Health initiative.

I Quarter 2010**Project Monitoring Sheet: OSRO/RAS/605/USA Baby 03**

Project Title: Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza (HPAI) – Phase IV

Reporting period: January - March 2010

Country: Nepal
Project Title: Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza (HPAI) – Phase IV Code: OSRO/RAS/605/USA
Budget : USD 815 000 (Phase I) and USD 150 000 (Phase II) Total budget: USD 965 000
Effective Starting Date: October 2006
Planned End Date: September 2010
<p>Context of the Project</p> <p>The project is addressing the short- and medium-term actions that are to be undertaken by the Government of Nepal to strengthen its capacity in preventing the introduction of Highly Pathogenic Avian Influenza (HPAI) into the country and minimize its spread in the case of its occurrence. HPAI is presently a serious problem of regional dimensions with continuing outbreaks in Bangladesh and West Bengal, India. After a period of ten months free of clinical disease, new outbreaks were recorded and multiple ones occurred during the first quarter. The government's resources, including those provided by international donors, have been severely stretched. Under these circumstances, the project has provided an invaluable lifeline for preparedness and response. However, the scenario of declining international support for HPAI control coupled with the increasing challenge (eight districts affected in this quarter compared with a single district in the same quarter of 2009) is alarming and threatens to let Nepal slip into an endemic situation with negative consequences for the livelihoods of small farmers as well as undermining the control efforts of neighboring countries.</p>
<p>Objectives of the Project</p> <p>The execution of this project ensures assistance to the Ministry of Agriculture and Cooperatives (MOAC) to implement the National Contingency Plan for HPAI. This contributes to rural development in the country by preventing and controlling the detrimental consequences of HPAI and other emerging infectious diseases in poultry.</p> <p>The outcome will be an effective mechanism for planning and coordination across sectors and key stakeholders involved in HPAI control activities, particularly with the United States Agency for International Development (USAID) supported projects in Nepal.</p>
<p>Planned Activities</p> <p>Output 1: The AI situation in the country is monitored and the national strategy and plans are updated <i>Activity 1.1. Working groups on Animal Health provided with appropriate guidance and</i></p>

technical assistance.

Activity 1.2. Workshops and training exercises conducted in each region to explain new surveillance modalities and facilitate planning of field work.

Activity 1.3. Simulation exercises conducted – one in each of the regions.

Activity 1.4. Emergency Disease Investigation Teams (EDIT) supported through material and logistical support.

Activity 1.5. Review of live bird markets conducted and model facilities established.

Output 2: Improved communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI

Activity 2.1. Functional linkages strengthened between projects funded by USAID and other key stakeholders

Activity 2.2. Assist the Government in the improvement of the dissemination of information (i.e. bulletins, reports, updates)

Activities Undertaken during the Reporting Period

Output 1: The AI situation in the country is monitored and the national strategy and plans are updated

Activity 1.1. Working groups on Animal Health provided with appropriate guidance and technical assistance

The Animal Health Directorate's Bird Flu Monitoring Cell receives regular reports from the programmed village monitoring programme. The value of this exercise is doubtful as it has so far failed to identify any suspect outbreaks. On the other hand, the enhanced surveillance programme has played a major role in detecting outbreaks. The programme expanded in November 2009 to 12 districts funded through this project with the remaining 14 high risk districts funded through the Government's Avian Influenza Control Project (AICP), has played a major role in detecting outbreaks. Although not every district is functioning optimally as yet, the information and material submitted to the regional laboratories from the enhanced field technician-poultry keeper contact is encouraging. This programme was teased out of the existing National Surveillance Plan, which was failing due to inadequate monitoring and guidance and a consequent lack of understanding by the district and livestock service sub-centre staff. It is critical that monitoring by the district/regional and central Directorate of Animal Health (DAH) officers is adequate and that the operators at the sub-centre level are adequately and promptly compensated for their visit costs. Inevitably, there are questions of sustainability. Targeted surveillance in the field may be an effective tool but it is costly and unlikely to be prioritized by the government once donors support lapses.

Activity 1.2. Workshops and training exercises conducted in each region to explain new surveillance modalities and facilitate planning of field work

The project supported a Department of Livestock Support Services (DLS) cross-border workshop held in Jhapa on 10 January 2010 at which the Chief Technical Adviser (CTA) presented a summary of the Food and Agriculture Organization of the United Nations (FAO)

support to HPAI prevention and control in Nepal. A consultative meeting was organized in Janakpur on 13 January 2010 followed by a workshop in Jaleswor, Mahottari district in preparation for an outbreak response simulation exercise planned from 15 to 19 April 2010. The project team briefed the USAID country director and his staff on the current HPAI situation at the American Embassy on 3 March 2010.

Training on the operation of the Real Time PCR equipment supplied by FAO was given by consultants fielded by the suppliers on 6 and 7 January 2010 to nine trainees and further hands on training using field samples to six trainees from 23 to 25 March 2010. Training was given on ELISA testing to three participants in Pokhara Regional Vet Lab from 11 to 14 March 2010 and on PCR testing at the National Avian Diseases Lab at Chitwan to three participants from 16 to 18 March 2010.

Rapid Response Team training modules (culling, disposal, decontamination, sampling, surveillance) were conducted in Dhangadhi (for Baitadi, Dadeldhura, Darchula) and Nepalgunj (for Surkhet and Rukum districts).

Activity 1.3. Simulation exercises conducted – one in each of the regions

No simulation exercises were conducted during the quarter owing to the demands of the HPAI epidemic affecting the country but preparatory visits were made in advance of the planned exercise at Mahottari district.

Activity 1.4. Emergency Disease Investigation Teams (EDIT) supported through material and logistical support

The Emergency Disease Investigation Teams (EDIT) have been active in responding to HPAI outbreaks in Pokhara, Tanahu, Banke, Dang, Chitwan, Rupandehi, Newalparasi and Kailali.

Activity 1.5 Review of live bird markets conducted and model facilities established

The poultry market chain study is underway and the project team met with the contracted consultancy group to review progress and emphasize priorities in the light of current outbreaks.

An international consultant on poultry markets made his first mission to Nepal and, accompanied by the national consultant, examined and assessed the risk situation at live bird markets and other marketing channels in the Kathmandu and Pokhara areas.

Discussions were held with representatives of Kathmandu municipality and with officers of the Marketing and Promotion Directorate of DLS. This work will continue during the next quarter.

Output 2: Improved communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI

Activity 2.1. Functional linkages strengthened between projects funded by USAID and other key stakeholders

- Coordination meetings with the AICP and DAH take place routinely.
- Coordination meetings with AICP project management and with the STOP AI team leader have also been held frequently.
- Field missions to Kaski, Janakpur, Mahottari, Chitwan, Rupandehi and Banke districts have allowed close interaction with District Livestock Service Office staff and the CTA.
- Meetings were also held with the Chief District Officers of Rupandehi and Mahottari.
- Meetings have been held with donors (actual and potential) including the head of the USAID mission in Nepal and the attaché at the European Union Office in Kathmandu.

- Meetings have been maintained with the MOAC Secretary and Joint Secretary-Planning.
- Within the United Nations (UN) organization contacts have been maintained with relevant staff from the United Nations Children's Fund (UNICEF) and World Health Organization (WHO) and frequent information sharing takes place with team members of OSRO/RAS701/USA project and the FAO Representative.
- The CTA attended a meeting of the Technical Sub Committee for Avian Influenza (TSCAI) under the chairmanship of the Secretary, Ministry of Health and Population, on the declaration of the Pokhara outbreak.

Activity 2.2. Assist the Government in the improvement of the dissemination of information (i.e. bulletins, reports, updates)

The production of training films on simulation exercises using material gathered during the Kaski simulation with some additional footage is in progress.

Planned Activities for the Next Quarter

Output 1: The AI situation in the country is monitored and the national strategy and plans are updated

Activity 1.1. The epidemic of HPAI is continuing but it is anticipated that the incidence of new cases will drop off to a low level during the coming quarter. However the situation requires strict monitoring and continuing efforts to identify and remove obstacles to early detection and swift response. Further refinements to the current legislative framework and SOPs will be necessary and the project will assist in guiding this process forward.

Activity 1.2. Rapid response team training will continue with three training sessions covering ten districts as planned.

Activity 1.3. The field AI simulations which were postponed through the demands of the HPAI epidemic will be conducted with a joint exercise (with AICP) in Mahottari and a further simulation originally planned for Rupandehi, but now subject to re-location, to be carried out during this period.

Activity 1.4. The mobile lab will be delivered during the next quarter and will be a valuable addition to the capability of the central EDIT.

Activity 1.5. The project management will monitor the progress of the poultry market study group with regular interchanges and feedback. The short term expert on poultry market bio-security and safety will complete his mission during the upcoming quarter. The focus of this input is to agree on a way forward to develop a structured and organized market for live poultry and particularly native birds from backyard producers that operates under improved hygiene and safe practices. This will involve working closely with the Department's marketing division and the Kathmandu Municipality.

Activity 1.6. The civil engineer contracted by the World Bank funded project will complete the design and cost estimate for the post mortem room at the Central Veterinary Laboratory and the tender will be launched by mid April. Subject to an acceptable bid, the contract should be signed in May and the construction completed in the final quarter.

Activity 1.7. The monitoring and analysis of the expanded enhanced surveillance programme in the twelve districts now under the project's responsibility will continue through to end April and may be extended if the epidemic has not been brought under control by that time.

Output 2: Improved communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI

Activity 2.1. The meetings held under the chairmanship of the Director General, DLS in coordination with STOP AI will continue as before and act as a forum for USAID funded projects in Nepal. The project management is also invited to attend the joint Ministry of Agriculture and Ministry of Health TSCAI.

Activity 2.2. The production of a training video utilizing the material captured during the Kaski district simulation exercise has been contracted under the terms of Letter of Agreement (LOA). Some additional materials may be required and will be captured during the planning and implementation of the Janakpur exercise.

Activity 2.3. The project will organize a number of meetings and workshops over the coming period. This will include a workshop to examine the events relating to the 2010 epidemic and the conclusions of the Crisis Management Centre (CMC) mission in order to adjust the preparedness activities in advance of the next winter season. A workshop will examine the outcome of the poultry market chain study and a further meeting will examine the progress of the project and propose interventions for the following year (Phase V).

Activity 2.4. The Compendium of Avian Influenza documents produced earlier was in high demand that it is proposed to update this product and distribute to relevant offices.

Activity 2.5. The updated and revised Standard Operating Procedures (SOPs) for HPAI stamping out has been approved by MOAC. Unfortunately, this is a continuing process and further revision may be judged necessary. Once finalized, the project will assist in producing the translation into Nepali.

Main Challenges Encountered and Response Provided

- The national strategy remains focused on early detection and effective response based on culling of poultry in affected properties. The culling zone is restricted to the immediate area and drawn up using natural barriers where possible. Compensation is paid and the level of compensation has recently been raised although still well below market value. Secondary outbreaks detected through surveillance around outbreaks are similarly culled although the cull is further restricted, often to the affected household/farm. The SOPs are under constant scrutiny. Presently, the Department is shackled by the need to declare outbreaks in newly affected districts through cabinet decision in order to activate the emergency procedures for resource provision to affected districts. Secondary outbreaks in the same district do not present this obstacle and are referred to as "hotspots". The major problem is lack of adequate financial resources to properly implement the SOPs and this leads to a reluctance to declare outbreaks because of the financial implications, leaving district offices to struggle with control actions with limited district resources.

- High risk behaviours by the communities living close to the border who continue to purchase cheaper poultry products from close-by Indian markets and by traders who make their living in part or in whole from cross border activities maintain the threat level for Nepal. The challenge, therefore, is to maintain awareness of the disadvantages of allowing the disease to enter and become established in Nepal and encourage a change in behaviour patterns that reduces that risk. Coupled with this, it is vital that the country's surveillance mechanisms are efficient in the early detection of suspect outbreaks. Current arrangements for district surveillance are deficient and do not give the level of confidence demanded. The project has developed a pilot programme for the frontline districts and is gradually extending this to other high risk districts. The ability to deal with outbreaks is being fine tuned through a programme of outbreak simulation exercises and training of field technicians in rapid response activities.
- The likely role of wild birds in the transmission of the current HPAI epidemic poses an added dimension for the animal health authorities. It may be impossible to prevent such transmission of HPAI to Nepal in the future but the system must be better able to detect cases at the earliest opportunity and to take measures which prevent or limit further spread.
- The outcome of the poultry market study may be important in refining control measures. At the same time the control measures adopted must be as efficient and cost effective as possible in order to be sustainable by government and the role and participation of the private sector in developing and funding these controls addressed.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

Output 1: The AI situation in the country is monitored and the national strategy and plans are updated

The project programme, involving capacity building of district staff in relation to disease identification, sampling, use of rapid tests, reporting, biosecurity and surveillance methodology as well as the support given to the diagnostic services, has significantly contributed to the early detection and effective response to the recent outbreaks. Table top and particularly field simulation exercises have strongly contributed to this progress.

Output 2: Improved communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI

The project has established effective links with all the bodies concerned with delivering HPAI prevention and control programmes and is assisting the government in the management and dissemination of information relating to avian influenza.

Project Monitoring Sheet: **OSRO/RAS/605/USA Baby 03**

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza

Reporting period: April to September 2013

Country: Nepal
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza
Code: OSRO/RAS/605/USA Baby 03
Budget: USD 1 594 000 (Phases I-VII) for period ending September 2013. The budget is being increased USD 150 000 for the period from October 2013 to September 2014. Total budget: USD 1 744 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2014
Context of the project <p>The project supports the Government of the Federal Democratic Republic of Nepal in strengthening its capacity to detect and contain Highly Pathogenic Avian Influenza (HPAI). The first detected outbreaks of HPAI in Nepal occurred in the eastern region in early 2009 and sporadic outbreaks have occurred in every subsequent year during the cooler months. In 2009, the virus of clade 2.2 was clearly a cross border introduction, whereas the 2010 outbreaks were most probably introduced through infected migrating birds as this was the first detection of clade 2.3.2. in South Asia. Clade 2.3.2 has evolved in subsequent years and the virus now in circulation in Nepal has been classified as 2.3.2.1a. Outbreaks have occurred in all major poultry production centres in the country which are linked by poultry market chains. During the current year the pattern of HPAI in Nepal has changed with a massive increase in the incidence of cases which commenced in the usual winter period but which have intensified through the year irrespective of climate. It has been noted that commercial units have borne the brunt of infections in 2013, unlike previous years when the focus was on backyard producers. The concerned government authorities have shown a high degree of competence in dealing with sporadic outbreaks but have been completely overwhelmed by events during the current year. FAO, with support from USAID and others, through this project, now in its seventh year, continues to provide high quality technical assistance to the government of Nepal in confronting the serious challenges posed by HPAI.</p>
Objectives of the project <p>The overall objective of the project is for HPAI and other emerging infectious diseases to be effectively prevented and controlled on a national scale, thereby minimizing risks to human health, food security and livelihoods. The anticipated outcome is that the Department of Livestock Services (DLS) is enabled for early detection, prompt and accurate diagnosis, and effective response to HPAI at the national level.</p>
Activities planned for the reporting period (April to September 2013) Output 1: Planning and cross-sectoral coordination at national level strengthened Activity 1.1: Support the Government in planning and coordinating inputs at national level. In order to achieve the above output, the following activities were planned: The project team will work closely with the DLS and particularly with the Directorate of Animal Health (DAH), Central Veterinary Laboratory (CVL) and Veterinary Epidemiology Centre (VEC) to address concerns relating to the HPAI diagnostic capability at the CVL and related Regional

Veterinary Laboratories (RVLs). Together with FAO colleagues from the Kathmandu-based Regional Support Unit (RSU) of the FAO-EU-SAARC regional programme, the project team will facilitate the collection of data to assist in decision making on the question of vaccination against the H9N2 sub-type virus prevalent in Nepal and consider the findings in relation to the effects on poultry production and possible interference with H5N1 detection.

Activity 1.2: Support regional and international coordination related to disease control.

The project team will continue the coordination with FAO Emergency Centre for Transboundary Diseases (ECTAD) – Regional Office for Asia and the Pacific (RAP) to provide an emergency expert mission to examine and investigate variations in the laboratory findings between the CVL and reference laboratories to identify possible causes and to make recommendations for improvement. International support for the completion of the post-mortem room facilities and the adoption of satisfactory Standard Operating Procedures (SOPs) to reduce possible cross contamination in that unit will be sought. The country team leader will continue interaction with relevant FAO-ECTAD-RAP experts to provide necessary tools to analyse the need for action, including possible vaccination, to control H9N2 infection. The project team will coordinate with the USAID country office to ensure the latter is kept informed of developments and FAO's analysis of the situation and needed responses.

Output 2: Surveillance methodologies assimilated and integrated into DLS' regular programmes

In order to achieve the above output, the following activities were planned:

Activity 2.1: Conduct assessment and planning stakeholder workshops at development region level with inclusion of animal health, human health and civil authorities.

During the period, the project will organize three workshops, one each in the central, eastern and western development regions in advance of the next risk period. The focus will be on those districts currently deemed to be most at risk of appearance or re-appearance of HPAI and will benefit from the inclusion of local stakeholders and development partners to ensure that available resources are effectively applied to implement national strategies and SOPs.

Activity 2.2: Provide technical guidance to the VEC in designing, setting up, implementing and monitoring disease surveillance activities.

The project team will extend the gains already achieved in the handover of avian influenza surveillance activities to the VEC through technical collaboration with the Programme Director – Animal Health (PD-AH) and joint fieldwork with the VEC.

Activity 2.3: Provide technical orientation to the concerned field staff at district and regional level on the effective implementation of targeted active surveillance for HPAI.

The process of incorporation of surveillance activities into the district and regional programmes is advancing but the methodology is less well understood in some districts that have not benefited from direct FAO surveillance management in the past. The VEC will be supported in monitoring the implementation in those districts deemed deficient and training of surveillance site community contact persons will be conducted in two eastern region locations during this period.

Activity 2.4: In coordination with DAH, conduct six-monthly reviews and adjust programmes as necessary.

The reappearance of H5N1 HPAI during the risk period of October to March appears to be well established. While the disease favours poultry-dense districts, it has shown the ability to appear over a wide area of the country from the far east to the far west. The department is tasked with maintaining stakeholder alertness and ensuring that the Government services are efficient in confirming infection and responding accordingly. The project will coordinate with the DAH in conducting six-monthly lessons learned review workshops.

Output 3: VEC achieves a comprehensive and evidence-based knowledge on the endemicity of HPAI in Nepal

In order to achieve the above output, the following activities were planned:

Activity 3.1: Support and facilitate epidemiology working groups to analyse available data (national and international) and make recommendations.

Earlier work has indicated that Nepal faces three significant risks for introduction of HPAI. Cross border introduction through informal trading patterns and introduction by infected migratory birds add to the possible resurgence from virus maintained in domestic duck populations. Value chain studies have given an understanding of the movement patterns that facilitate spread. The project team will assist the department in building on this basic knowledge with the additional information obtained through analysing the outbreak pattern from each new wave of outbreak and to interpret this data to identify required adjustments to the controls in place.

Activity 3.2: Provide technical guidance to field studies with particular emphasis on market chains and live bird markets in southeastern districts with reference to cross-border chains and Gangetic plain association.

The project team has acquired a considerable database of information and extensive field based knowledge of the factors concerned in the maintenance of H5N1 infection in Nepal and is ready to share and discuss this information with colleagues within the department in order to contribute to efforts that throw light on issues that demand further study.

Activities undertaken during the reporting period (April to September 2013)

Output 1: Planning and cross-sectoral coordination at national level strengthened

Activity 1.1: Support the Government in planning and coordinating inputs at national level.

The project team, in coordination with FAO-ECTAD-RAP, was able to facilitate a backstopping mission in May from an FAO virologist. The mission reviewed the operation of avian influenza diagnosis at the CVL facilitating the reinstatement of the real time RT-PCR test for H5N1. The project team has worked closely with the Programme Director-Animal Health and his technical officers to assist in confronting the dramatic upsurge in H5N1 outbreaks occurring in Nepal during this reporting period. This has included provision of rapid antigen detection kits and Virkon S disinfectant. In addition significant quantities of primers, probes, DNA extraction kits and other diagnostic materials required for PCR testing has been procured through the project and supplied to DAH.

Activity 1.2: Support regional and international coordination related to disease control.

The team leader has interacted regularly with the WHO office in Kathmandu with regard to the zoonotic aspects of H5N1 outbreaks occurring in the country and also with the Department of Health in considering the need for awareness and preparation for any extension of the H7N9 outbreaks affecting eastern China. ECTAD-Nepal has worked closely with department colleagues in designing and implementing emergency surveillance to ascertain the status of H7N9 in Nepal. ECTAD-Nepal has also maintained continuous interaction with the United States of America Embassy and USAID-Nepal officers to interpret the current situation and consider measures to support the response of the Government of Nepal.

Output 2: Surveillance methodologies assimilated and integrated into DLS' regular programmes

Activity 2.1: Conduct assessment and planning stakeholder workshops at development region level with inclusion of animal health, human health and civil authorities.

The project organized three workshops, one each in the western, eastern and central development

regions as a follow up to the emergency surveillance for avian influenza A(H7N9) carried out in these areas which were judged at high risk for both H7N9 virus and the currently circulating H5N1 sub-type. These workshops provided training for 71 stakeholders representing government and the private sector and enhanced awareness of the risks posed by the novel virus and the critical differences from H5N1 which demand additions to the existing SOPs.

Activity 2.2: Provide technical guidance to the VEC in designing, setting up, implementing and monitoring disease surveillance activities.

A surveillance orientation workshop conducted in April benefited 36 technical staff from three high-risk Kathmandu valley districts and two adjoining districts judged medium risk for HPAI. Surveillance programme monitoring missions were made in collaboration with the VEC to five district offices and six high risk service centres

Activity 2.3: Provide technical orientation to the concerned field staff at district and regional level on the effective implementation of targeted active surveillance for HPAI.

Training for community based surveillance contact persons from Bhaktapur and Makwanpur districts benefited a total of 106 contact persons.

Activity 2.4: In coordination with DAH conduct six-monthly reviews and adjust programmes as necessary.

This element of the planned programme could not be completed as the demands placed on key department officials by the unprecedented number of HPAI outbreaks precluded attention to this important facet of understanding the disease processes in the country. However, project management participated frequently in technical group discussions at the DAH on the developing situation and a coordinated response.

Output 3: VEC achieves a comprehensive and evidence-based knowledge on the endemicity of HPAI in Nepal

Activity 3.1: Support and facilitate epidemiology working groups to analyse available data (national and international) and make recommendations.

Unfortunately Nepal is still very much in the dark in respect of an understanding of the detailed mechanisms of HPAI transmission as the number of outbreaks, sometimes ten per day, have not allowed anything other than the most superficial outbreak investigation to take place. Consequently, there is a lack of understanding as to why the pattern of outbreaks in 2013 should be so different from the largely sporadic outbreaks of previous years. The multiple and rapid spread of the H5N1 virus is all the more difficult to understand when the majority of outbreaks are said to occur in commercial units with some degree of biosecurity in place which should reduce outward spread as well an inward incursion. Few outbreaks are said to have occurred in backyard units although this may be a result of detection and reporting deficiencies.

The ECTAD team, while appreciating the constraints limiting the possibility of a detailed epidemiological investigation in parallel with immediate response efforts, has convinced the programme director-animal health and his technical team that such investigation must be prioritised as soon as the resource situation permits. It is agreed that this investigation will be supported through the country programme in the coming phase, utilising FAO-RAP expertise and building on data acquired through earlier work carried out by the Regional Support Unit for HPEDs in SAARC countries.

Activity 3.2: Provide technical guidance to field studies with particular emphasis on market chains and live bird markets in southeastern districts with reference to cross-border chains and Gangetic plain association.

The project team was able to use the outputs of the market chain studies conducted under this project in earlier years to identify live bird markets and collecting yards for risk based targeted surveillance directed at H7N9 but of benefit also in surveillance for H5N1 and H9N2 viruses.

Planned activities for the next six-month period (October 2013 to March 2014)

Output 1: Cross-sectoral coordination at country and international levels strengthened

Activity 1.1: Support the ECTAD country team to provide inputs for planning and coordination at the national level.

The FAO avian influenza project national project director will continue to spearhead FAO's support to the DLS' efforts to limit the damage inflicted by HPAI on the country's poultry production sector and, taking advantage of extensive local knowledge combined with engagement with this programme from inception, will engage with key department officers to capture an in depth perception of the department's priorities and vision with regard to the events on the ground, including the private sector and political contexts. This activity will also support necessary updating and adjustment of SOPs and/or legislation through working groups.

Activity 1.2: Support national, regional and international coordination related to disease control through regular meetings.

The national project director, supported by the ECTAD sub-regional manager, will build upon the close working relationship with the DLS and heads of the DAI technical units established over preceding project phases to ensure that the resources available through FAO, including those resulting from FAO's links with relevant international agencies and organizations, are given due consideration. This may encompass technical, advisory and financial support to the government of Nepal's efforts to prevent, contain and eliminate avian influenza incursion and spread. Within this context, FAO will also address issues relating to outbreak risk communication, including the role of mass media.

Output 2: The existing mechanisms available to DLS to monitor avian influenza viruses in circulation strengthened and their relative economic and zoonotic importance assessed

Activity 2.1: Enhance surveillance at live bird markets and collecting yards.

The project will advise and support surveillance at live bird markets through three regional orientation workshops and monitoring activities conducted in coordination with VEC and DAI as these locations have been identified in other countries of the region as having a higher risk of harbouring avian influenza viruses. This will be undertaken in coordination with a TCP-funded programme to monitor for the presence of the influenza A(H7N9) virus.

Activity 2.2: Support the technical capacity of regional veterinary laboratories for avian influenza virus diagnosis

In cooperation with the central veterinary laboratory, and under the guidance of an FAO laboratory expert, the project will support the upgrading of technical capacity in selected regional laboratories, including the national avian laboratory at Chitwan and the regional laboratory at Pokhara. This would enable the national avian laboratory to conduct rapid and sensitive screening of suspect samples using M-gene PCR and, when competency is assured, H5 PCR for positives, which would take a lot of pressure off the CVL.

Activity 2.3: Support the central veterinary laboratory in maintaining comprehensive diagnostic capacity for all avian influenza sub-types that pose a threat to human and poultry health in Nepal.

FAO has been able to reinstate the real time RT-PCR for H5N1 and H7N9. To maintain and further strengthen this aspect of HPAI detection and control short-term periodic missions from FAO

laboratory experts are indicated. The project management will coordinate with DAH and VEC to identify the precise requirements and timing for this activity.

Activity 2.4: Encourage links with avian influenza reference laboratories for proficiency testing.

It is necessary to support quality assurance through sustainable engagement with proficiency testing programmes managed by international laboratory networks. The project will continue to advocate for this approach and facilitate the set-up of such a programme for avian influenza and other transboundary animal diseases of zoonotic and livelihoods importance as well as assist in upgrading technologies and capabilities where shortcomings are indicated. This will be addressed through regional laboratory network collaboration.

Output 3: Appropriate response to mitigate avian influenza virus spread during epizootics and future internal dissemination developed

Activity 3.1: Support the VEC and DAH in gathering and analysing data from the 2013 outbreaks.

To date, 2013 has seen a massive increase in the number of H5N1 outbreaks detected which have been concentrated in a small number of poultry producing zones. A major concern has been the inability to contain the outbreaks and prevent spread. This has been combined with a lack of in depth investigation into possible sources and outward flow of potentially infected birds. With guidance from expert missions from FAO-RAP, the project management will support DAH and VEC in strengthening the skill base of field veterinarians, particularly those that have been exposed to field epidemiology training through FAO, for case investigation and the VEC analysis of data gathered with a view to providing an evidence base for interventions to limit the disastrous spread of avian influenza virus presently being experienced. FAO will also provide technical assistance to combine these studies with an impact assessment on the livelihoods of those affected by the recent surge of outbreaks.

Activity 3.2: Support advocacy to influence producers and traders to adopt stronger biosecurity measures.

The adoption and maintenance of strict biosecurity measures has been shown to be at least as effective as vaccination and more economic to implement. Although this project and others have conducted training on biosecurity for farmers and their veterinary advisers and assisted in producing biosecurity guidelines appropriate for Nepal producers, it is clear from the number of outbreaks detected this year that implementation of such measures is inadequate. Further engagement with producers in key areas including live bird markets utilizing data and conclusions from activity 3.1 will be conducted with support and guidance on message elaboration and targeted delivery provided during this period through FAO.

Main challenges encountered and response provided

- Private sector cooperation with government policies and strategies for HPAI control and elimination is paramount. Such cooperation is only possible if: (i) the measures imposed on the producers can be seen by them as reasonable in relation to the degree of threat; (ii) the compensation offered is adequate; and (iii) the assistance given in re-establishing production in commercial units is sympathetic to the economics of production.
- Critical to the Government's strategy of early detection and rapid response is the capability to provide a rapid and accurate mechanism for confirming the presence of the H5N1 avian influenza virus. The project has responded by arranging for short-term training missions by FAO experts but in the long term there is a need for CVL participation in regional or international proficiency testing programmes to maintain confidence.

Main progress made towards the achievement of project outcomes**1: Planning and cross-sectoral coordination at national level strengthened**

The project management's close working relationship has ensured fruitful collaboration with DLS and the technical units of DAH, while FAO's standing in the forefront of global HPAI control strategy development and its leading position in adopting a One Health approach has contributed to maintaining an overarching and effective communication with development partners and national stakeholders.

2: Aspects of disease surveillance related to outbreak investigation strengthened

In close collaboration with the VEC, the project developed a comprehensive HPAI surveillance programme, including country-wide passive surveillance supported by active surveillance targeting districts categorized as high risk. Combined with support to the veterinary diagnostic laboratories, this has provided a basis for monitoring the avian influenza situation. The results from this programme have guided continued evaluation of national strategy and the mechanisms for its implementation.

Project Monitoring Sheet: **OSRO/BGD/101/USA**

Project title: **Strengthening Emergency Preparedness and Response for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh**

Reporting period: **October 2012 to March 2013**

Country: Bangladesh
Project title: Strengthening Emergency Preparedness and Response for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh
Code: OSRO/BGD/101/USA
Budget: USD 2.5 million
Effective starting date: 1 October 2011
Planned end date: 30 September 2013
<p>Context of the project</p> <p>Bangladesh is one of the five high risk countries where Highly Pathogenic Avian Influenza (HPAI) H5N1 is still considered endemic. Since March 2007, Bangladesh has reported a total of 555 outbreaks (498 commercial and 57 backyard farms). Some 52 out of 64 districts and 179 out of 492 Upazilas (sub-districts) have been affected so far. This resulted in the culling of over 2.7 million birds and the destruction of over 3.5 million eggs. Following the peak of HPAI H5N1 incidence in 2008, there were around 30 outbreaks in 2009 and 2010. Outbreaks again peaked in 2011, with 171 farms affected. However, in 2012, 23 outbreaks were reported and as of 31 March 2013, three outbreaks were confirmed for the year. While new clades 2.3, 2.1 and 2.3.4 were reported in addition to clade 2.2, only clade 2.3.2.1 remained in 2012. No fatal human cases of H5N1 virus have been reported in Bangladesh. In total, six people have been infected since 2008, of whom three were found to be clustered around a live bird market (LBM) in Dhaka in 2011. In December 2012, the Government started implementing an experimental vaccination programme in two districts (Gazipur and Kishorgonj) targeting the commercial poultry sector, which might complicate the surveillance system for HPAI. The project was extended to the end of September 2013 to enable full utilization of funds. The active surveillance system, already transferred to the Department of Livestock Services (DLS) under the World Bank (WB)-funded Avian Influenza Preparedness and Response Project (AIPRP), which was terminated on 31 December 2012, faced the risk of complete collapse. The Food and Agriculture Organization of the United Nations (FAO) provided interim support for two months (January to February 2013) until the Government secures funding.</p>
<p>Objectives of the project</p> <p>The primary objective of the project is to strengthen the emergency preparedness to prevent and control HPAI in Bangladesh. The immediate objective is to improve the HPAI surveillance capacity of the Government of Bangladesh to respond more effectively to HPAI outbreaks and thereby reduce economic losses and the global human pandemic threat. Specifically, the project aimed to achieve the following:</p> <ul style="list-style-type: none"> ▪ increased capacity of the DLS to manage the surveillance programme; ▪ early reporting of poultry diseases and early HPAI detection; ▪ increased public awareness; ▪ improved biosecurity and hygiene in poultry farms and live bird markets; and ▪ identification and elimination of the sources of HPAI infection.
<p>Planned activities</p> <p>Output A: Strengthened coordination, planning and policy support for effective management and control of HPAI and other emerging and re-emerging zoonoses</p> <p>Activities:</p> <ul style="list-style-type: none"> ▪ refine standard operating procedures (SOPs) for outbreak investigations and implement SOPs to capture essential data; ▪ revisit/visit all commercial farms and nearby backyard poultry holdings affected during the last four years to assess or monitor the state of biosecurity in relation to the backyards in the vicinity; ▪ actively engage with animal health authorities as appropriate; ▪ conduct regular meetings with DLS, the Ministry of Fisheries and Livestock (MOFL), the

Institute of Epidemiology, Disease Control and Research (IEDCR), the Ministry of Health and the World Health Organization (WHO);

- organize regular coordination meetings with key stakeholders (the Bangladesh Poultry Industries Association [BPIA], the Bangladesh Livestock Research Institute [BLRI] and the Central Disease Investigation Laboratory [CDIL]);
- attend regional meetings and workshops to integrate national project activities;
- undertake an analysis of the key strengths and weaknesses of the current control approach;
- provide technical support to facilitate contact between the Government and donors;
- take concerted action with the Government to ensure full transfer of the active surveillance responsibility to the AIPRP of the WB;
- facilitate participation of officials of national veterinary services and policy makers in regional and international conferences and seminars related to HPAI and other emerging infectious diseases;
- disseminate web-based Livestock Disease Information System (LDIS) to all Upazilas to facilitate early electronic reporting on various diseases through training of all DLS staff; and
- ensure active participation and facilitate coordination of the country programme with the regional European Union (EU)-funded Highly Pathogenic and Emerging and Re-emerging diseases (HPED) project

Output B: Enhanced outbreak response and preemptive measures to prevent the outbreaks of H5N1 in commercial farms

Activities:

- analyse data collected from post outbreak investigations of commercial and neighbouring backyard farms to identify and determine disease transmission dynamics, disseminate the findings and adjust control programme as appropriate;
- visit and seek information on signs of a small-scale mortality among poultry in backyards in areas indicated as high-risk by spatial temporal analysis of outbreaks;
- conduct epidemiological as well as virological investigations whenever crow die-offs occur in order to identify links to poultry in commercial farms as well as backyard poultry;
- study free-ranging ducks longitudinally and in depth in 50 backyards in the vicinity of affected farms for sequence analysis;
- conduct biosecurity checks and ensure good biosecurity is in place before restocking of farms where previous infections have occurred and the disease has been stamped out by culling;
- conduct field studies to identify the causes of the pronounced seasonal pattern of HPAI in Bangladesh;
- continue to collect and test samples from free-ranging duck populations in the vicinity of farms previously affected by H5N1 in order to detect hidden reservoirs;
- ensure biological samples from outbreaks and surveillance to be processed for isolation of Low Pathogenic Avian Influenza (LPAI) and HPAI at BLRI and ship to FAO/OIE Reference Lab for molecular characterization;
- strengthen capacity in DLS for molecular analysis of sequence data derived from H5N1 virus by establishing a sequence database and sequence analysis facility within FAO Avian Influenza (AI) Technical Unit;
- continue to support and strengthen the activities of the Outbreak Response Management Centre through the provision of appropriate human resources and equipment;
- further refine the geospatial mapping programme by including smaller commercial farms; and
- incorporate information on backyard poultry into the existing database.

Output C: Improved biosecurity and hygiene in backyard, commercial poultry sectors and LBMs

Activities:

- regularly assess the biosecurity of small commercial poultry farms adopting assessment tools developed by previous USAID-funded project on public-private partnership (PPP);
- encourage commercial poultry farms to be registered and compliant with regulations as well as biosecurity standards by raising public awareness in collaboration with the United Nations

Children's Fund (UNICEF) and non-governmental organizations (NGOs);

- review registration procedures for poultry farms with DLS;
- provide technical advice to the Government and stakeholders on the renovation and rehabilitation of LBMs in collaboration with AIPRP; and
- train market personnel, including veterinary officers in cleaning and disinfection exercises using power sprayers and pressure washers in collaboration with AIPRP.

Output D: PPP for the Prevention and Control of HPAI and other emerging infectious animal diseases developed and maintained

Activities

- advocate with different city corporations/municipalities and market committees for renovation of LBMs in line with established guidelines; and
- strengthen the dialogue between the public veterinary services and various stakeholders such as BPIA by holding workshops on shared interests such as biosecurity.

Output E: "One Health" initiatives through active collaboration with wildlife and public health sectors promoted

Activities

- actively engage in multi-sectoral collaborations in all areas of animal/zoonotic diseases;
- seek to increase visibility of FAO and USAID to the public in all areas of animal health issues, including important zoonotic diseases (anthrax, rabies, Nipah, H1N1 and other emerging and re-emerging infectious diseases) by actively taking the lead to demonstrate commitment;

Additional activities:

- narrowing down flocks of HPAI-infected ducks without symptoms;
- extending weekly rest day for cleaning and disinfection to the rest of the country;
- further expanding multi-sectoral collaboration with public health, wildlife/environment and universities; and
- ensuring smooth transition of activities to the new USAID project "OSRO/BGD/202/USA".

Activities undertaken during the reporting period (October 2012 to March 2013)

Output A: Strengthened coordination, planning and policy support for effective management and control of HPAI and other emerging and re-emerging zoonoses

- SOPs were reviewed, refined further and complied. They are still pending Government of Bangladesh approval.
- Daily contact was maintained with the Chief Veterinary Officer (CVO) and key DLS staff.
- Meetings (20) held with DLS on HPAI and other diseases, including three monthly meetings. Meetings (17) were also held with key stakeholders such as MOFL, IEDCR, Ministry of Health and Family Welfare (MOHFW), UNICEF and WHO, including five meetings of the National Experts Committee on Vaccination.
- Coordination meetings (5) were held with the International Centre for Diarrhoeal Diseases Research, Bangladesh (icddr,b) and other Emerging Pandemic Threats (EPT) partners (Family Health International [FHI] 360, EPT PREVENT, Eco-Health Alliance, IEDCR), BPIA (2), BLRI (11) and CDIL (12). Four general and ten project-specific BLN (lab network) coordination meetings were facilitated.
- Six regional meetings and five workshops/conferences were organized and/or attended, in order to integrate project activities (Annual Regional ECTAD [Emergency Centre for Transboundary Animal Diseases] Meeting [AREM], tripartite and sub-regional).
- Ongoing analysis of the key strengths and weaknesses of the current control approach was performed. A checklist was developed and used during field visits/outbreak investigations.
- Contact between the Government and donors was facilitated, including four meetings with USAID, four with the United States Department of Agriculture (USDA), two with WB, two with the Embassy of Japan, one with the Japan International Cooperation Agency (JICA) and participated in facilitating two senior missions of the Government of the Netherlands.
- The short message service (SMS) Gateway active HPAI surveillance system was fully transferred to DLS in 2012. The project supported SMS Gateway staff salaries for two months (January-

February 2013) following the completion of the WB-funded AIPRP on 31 December 2012.

- Support was provided to 18 officials and policy makers of the Government who participated in seven regional and international conferences/meetings related to HPAI, other emerging infectious diseases and One Health.
- Training to support a web-based information system (LDIS) to support DLS animal disease surveillance was conducted. As of the end of this reporting period, people in 394 out of 492 Upazilas and 584 DLS staff have been trained.
- HPED national expert attended a regional meeting and training in Sri Lanka, regional training in peste des petits ruminants (PPR) diagnosis conducted in Dhaka, attended by 20 Lab staff from SAARC countries. In addition, the HPED project provided reagents and equipment to PPR lab in BLRI. Of 405 serological samples tested, 193 (47.7 percent) indicated presence of antibodies. The 250 nasal swab and tissue samples tested for virus indicated 182 (72.8 percent) positive.

Output B: Enhanced outbreak response and preemptive measures to prevent the outbreaks of H5N1 in commercial farms

- Based on the report of a study in which 115 farms previously infected with H5N1 virus during the last four years were revisited. Results indicated that no improvement in biosecurity was observed and almost 50 percent of the surveyed farms had either closed or shifted to other livelihood enterprises.
- Biosecurity checks were conducted during investigations using a standard checklist, in joint post-outbreak investigations (3) with DLS and during field visits conducted by project staff. Risks were identified and reports were issued.
- Data collected from post outbreak investigations is being analysed for identifying disease transmission dynamics.
- A letter of agreement (LoA) signed with Chittagong Veterinary and Animal Sciences University (CVASU) and 1 113 samples were collected from resident and migratory birds, including 400 environmental samples from wild and domestic birds, and 84 pooled samples obtained from LBMs in Chittagong. So far, 15 samples were demonstrated to have antibodies against H5. Other tests for presence of H5N1 virus will be performed.
- Samples from free-ranging ducks were collected in 2012 (14 000); testing was performed in BLRI on 12 500 samples (1 250 pools of tens) out of which 10 pools were influenza positive (0.01 percent) and out of those 10, two were HPAI positive.
- Biological samples collected from outbreak and suspected farms continued to be sent to CDIL and BLRI. Positive samples (20) were sent to the OIE/FAO Reference Laboratory for molecular characterization, and 19 were sequenced and confirmed three sub-clades of clade 2.3.2.1.
- To strengthen the capacity in DLS for molecular analysis of sequence data, bioinformatics software was identified and the procurement process was initiated.
- Geospatial mapping database of commercial poultry farms and LBMs is being updated and validated using lists (more than 60 000) of registered farms obtained from DLS of which 15 919 records have been entered. An LoA for developing a comprehensive GIS database was prepared and the process has been initiated.
- A backyard expert was recruited and a plan to conduct a duck survey and sample collection was prepared.

Output C: Improved biosecurity and hygiene in backyard, commercial poultry sectors and LBMs

- Biosecurity of small commercial farms was assessed during outbreak investigations and field visits using biosecurity guidelines and tools developed by FAO. Fifteen draft manuals/SOPs for farm biosecurity were prepared in English and Bangla. Two workshops were organized.
- As a result of project advocacy, MoFL has issued an order for poultry farm registration. Two meetings were held with DLS to initiate farm registration. A study was conducted to assess the knowledge of DLS staff (62) and poultry farmers (329). Findings were presented in a workshop in December 2012.
- A workshop on "Advocacy for poultry farms accreditation and registration" was organized in March 2013, attended by DLS and poultry farmers associations.
- A backyard expert was recruited. Procurement of backyard poultry inputs (sheds, feed and ducks)

was initiated and 185 farmers were identified in three Upazilas in Netrakona in collaboration with DLS.

Output D: PPP for the Prevention and Control of HPAI and other emerging infectious animal diseases developed and maintained

- In collaboration with AIPRP, technical advice was provided to DLS and partners on the renovation of LBMs. A second consultant mission was completed and a report was prepared setting plans for renovating 18 LBMs in 2013 (12 under this project and 6 under OSRO/BDG/202/USA).
- Advocacy by FAO continued to enforce a weekly rest day in 69 LBMs in Dhaka, starting April 2012 for thorough cleaning and disinfection. Three more municipalities (Gazipur, Khulna and Manikanj) started enforcing the same rest days. FAO continues to provide technical support for these operations.
- Seventeen meetings were held with stakeholders to advocate for LBM renovation, decontamination, surveillance and weekly closures. Plans for developing 12 LBMs were prepared.
- Refresher training for 100 people on biosecurity and disinfection were conducted in LBMs renovated under the USAID-funded FAO/DLS project.
- Ten thousand Behaviour Change Communication (BCC) posters on regular decontamination and 5 000 posters on weekly closure were prepared and distributed through DLS to city corporations/municipalities and market committees around the country.

Output E: “One Health” initiatives through active collaboration with wildlife and public health sectors promoted

- in collaboration with key partners, actively participated and took the lead in a workshop that validated strategic framework and action plan;
- organized training of 30 multi-sectoral participants in One Health with a focus on wildlife and ecology;
- presented and participated in the international One Health Prince Mahidol conference in Thailand;
- attended more than 20 coordination meetings involving partners;
- prepared concept note for EU funding;
- signed LoA with NGO (Obhoyaronno - Bangladesh Animal Welfare Society (“O-BAWS”) which implemented rabies control and dog population management programme in Dhaka;
- collaborated with DOH, DLS and other partners for developing national strategic plan for rabies control;
- coordinated project activities with other USAID-funded projects (EPT-IDENTIFY, EPT+ and icddr,b/CDC) to ensure no duplication of efforts; and
- participated in 20 technical meetings and workshops on various diseases (anthrax, HPAI, rabies, foot-and-mouth disease and PPR).

Additional activities:

- Narrowing down flocks of HPAI-infected ducks without symptoms will be achieved with the completion of the nomadic duck surveillance in Netrokona and EPT+ studies.
- Extending weekly the rest day for cleaning and disinfection to the rest of the country has already started with three areas (Gazipur, Khulna and Manikanj).
- Further expanding multi-sectoral collaboration with public health, wildlife/environment and universities has already started with One Health training “Wildlife Investigation in Livestock Diseases and Public Health (“WILD”) and LoAs with universities.
- Smooth transition of activities to project OSRO/BGD/202/USA was ensured through coordinating workplans and two no-cost extensions of the project.

Planned activities for the next three-month period

According to the no-cost extension of the project to 30 September 2013, two main components will be funded: (i) LBM development, advocacy and capacity building; and (ii) serological and virological monitoring of the experimental HPAI vaccination programme implemented by the Government. The

following activities are planned:

- upgrade biosecurity and biosafety in a maximum of 12 additional LBMs – 10 from among the already developed 24 LBMs and two new priority markets;
- intensify advocacy with city corporations/municipalities and market committees to improve biosafety and biosecurity at 12 LBMs;
- conduct regular surveillance of the additional 12 LBMs;
- train LBM personnel, traders, transporters, local government staff and veterinary officers in adopting biosafety and biosecurity measures;
- hold meetings at least once a month with all stakeholders for promoting PPP in sustaining LBM bio-security;
- raise public awareness for ensuring that bio-security is maintained and sustained in LBMs; and
- monitor and characterize presence or absence of viruses in the two districts where the Government conducted experimental vaccination (Gazipur and Kishorgonj).

Main challenges encountered and responses provided

- The Government of Bangladesh started implementing an experimental vaccination of poultry against HPAI in two districts in December 2012. This may compromise the active surveillance by masking the manifestation of symptoms in infected birds. FAO/ECTAD organized a consultative workshop to guide planning and preparation requirements and to allow participants to evaluate their preparedness, and attended technical meetings organized by DLS. Serological and virological monitoring of vaccinated poultry is planned.
- The active surveillance system on HPAI requires continued advocacy and public awareness-raising to remain operational and sustainable within the Government system, especially after the phasing out of WB funding. Advocacy on active surveillance continues.
- Sustaining and extending the LBM rest days and decontamination practices will require continued advocacy with stakeholders and monitoring. City corporations have become engaged in sustaining cleaning and disinfection activities.

Main progress made towards the achievement of project outcomes

- National capacity was built to report and effectively respond to HPAI outbreaks, including surveillance (active and passive) and diagnostic capabilities.
- The “One Health” approach has been accepted by key stakeholders, which allowed multi-sectoral collaboration between livestock, public health and environmental sectors.
- ECTAD Bangladesh has played a pivotal role in developing a national strategy for “One Health” and a five-year action plan.
- The active surveillance system, using SMS Gateway, has been successfully transferred to the Government. Alternative funding options to sustain it are being considered by the Government.
- A novel disease reporting system, LDIS has been developed and is being disseminated. Seventy percent of DLS field staff have been trained in operating the system, which will allow quick reporting of the animal health situation directly from the field to Dhaka.
- Significant technical and logistics support was provided to DLS, BLRI, CDIL, two national universities and national veterinary services in augmenting the capacity in disease surveillance, diagnosis and control/prevention.
- Biosecurity and HPAI awareness have been strengthened through active surveillance, training and dissemination of information.
- A strong partnership was established between DLS and FAO, allowing for a smooth transmission of information and collective action.
- For the improvement of LBMs, a solid partnership was established with key stakeholders, including AIPRP, DLS, local governments, icddr,b and market committees.

Project Monitoring Sheet: **OSRO/BGD/101/USA**

Project title: **Strengthening Emergency Preparedness and Response for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh**

Reporting period: **April to September 2012**

Country: Bangladesh
Project title: Strengthening Emergency Preparedness and Response for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh
Code: OSRO/BGD/101/USA
Budget: USD 2.5 million
Effective starting date: 1 October 2011
Planned end date: 31 December 2012
<p>Context of the project</p> <p>Bangladesh is one of the five high-risk countries that are still considered endemic for Highly Pathogenic Avian Influenza (HPAI) H5N1. Since March 2007, Bangladesh has reported a total of 550 outbreaks (493 commercial and 57 backyard farms). Some 52 out of 64 districts and 179 out of 492 Upazilas (subdistricts) have been affected so far. This resulted in the culling of over 2.5 million birds and destruction of over 3.1 million eggs. Following the peak of HPAI H5N1 incidence in 2008, the number of annual outbreaks remains at around 30 in 2009 and 2010. However, in 2011, the number of outbreaks increased to 171. The situation is compounded by the occurrence of new clades of H5N1 HPAI viruses, clade 2.3.2.1 and 2.3.4. While no fatal cases have been reported in Bangladesh, three new non-fatal human infection with H5N1 virus was reported between February and March 2012. The last three human infections were found to be a cluster in a live bird market (LBM) in Dhaka.</p>
<p>Objectives of the project</p> <p>The primary objective of the project is to strengthen the emergency preparedness to prevent and control HPAI in Bangladesh. The immediate objective is to improve the HPAI surveillance capacity of the Government of Bangladesh to respond more effectively to HPAI outbreaks and thereby reduce economic losses and the global human pandemic threat. Specifically, the project aimed to achieve the following:</p> <ul style="list-style-type: none"> • increased capacity of the Department of Livestock Services (DLS) to manage the surveillance programme; • early reporting of poultry diseases and early HPAI detection; • increased public awareness; • improved biosecurity and hygiene in poultry farms and live bird markets; and • identification and elimination of the sources of HPAI infection.
<p>Planned activities</p> <p>Output A: Strengthened coordination, planning and policy support for effective management and control of HPAI and other emerging and re-emerging zoonoses</p> <p>Activities:</p> <ul style="list-style-type: none"> • Refine Standard Operating Procedures (SOPs) for outbreak investigations and implement SOPs to capture essential data. • Revisit/visit all commercial farms and nearby backyard poultry holdings affected during the last four years to assess or monitor the state of biosecurity in relation to the backyards in the vicinity. • Actively engage with animal health authorities as appropriate. • Conduct regular meetings with DLS, the Ministry of Fisheries and Livestock (MOFL), the Institute of Epidemiology, Disease Control and Research (IEDCR), the Ministry of Health and Family Welfare (MOHFW) and the World Health Organization (WHO).

- Organize regular coordination meeting with key stakeholders (the Bangladesh Poultry Industries Association [BPIA], the Bangladesh Livestock Research Institute [BLRI], the Central Disease Investigation Laboratory [CDIL]).
- Attend regional meetings and workshops to integrate national project activities.
- Undertake an analysis of the key strengths and weaknesses of the current control approach.
- Provide technical support to facilitate contact between the Government and donors.
- Take concerted action with the Government to ensure full transfer of the active surveillance responsibility to the Avian Influenza Preparedness and Response Project (AIPRP) of the World Bank in DLS.
- Facilitate participation of officials of national veterinary services and policy makers in regional and international conferences and seminars related to HPAI and other emerging infectious diseases.
- Disseminate web-based Livestock Disease Information System (LDIS) to all Upazilas to facilitate early electronic reporting on various diseases through training of all Upazila Livestock Officers/Veterinary Surgeons.
- Ensure active participation and facilitate coordination of the country programme with the regional European Union (EU)-funded Highly Pathogenic and Emerging and Re-emerging diseases (HPED) project.

Output B: Enhanced outbreak response and preemptive measures to prevent the outbreaks of H5N1 in commercial farms

Activities:

- Analyse data collected from post outbreak investigations of commercial as well as the neighbouring backyard farms to identify and determine disease transmission dynamics, disseminate the findings and adjust control programme as appropriate.
- Visit and seek for information on signs of a small number of mortality among poultry in backyards in areas indicated as high-risk areas by spacial temporal analysis of outbreaks.
- Carry out monthly investigations of 100 villages by veterinary surgeons in Upazila Livestock Offices in frequently affected Upazilas throughout the year.
- Conduct epidemiological as well as virological investigations whenever crow die-offs occur in order to identify links to poultry in commercial farms as well as backyard poultry.
- Study free-ranging ducks longitudinally and in depth in 50 backyards in the vicinity of affected farms for sequence analysis.
- Conduct biosecurity checks and ensure good biosecurity is in place before restocking of commercial farms where previous infections have occurred and the disease has been stamped out by culling.
- Conduct field studies to identify the causes of the pronounced seasonal pattern of HPAI in Bangladesh.
- Continue to collect and test samples from free-ranging duck populations in the vicinity of farms previously affected by H5N1 in order to detect hidden reservoirs.
- Ensure biological samples from outbreak investigation and active surveillance to be processed for isolation of Low Pathogenic Avian Influenza and HPAI at BLRI and ship to FAO/ the World Organization for Animal Health (OIE) Reference Laboratory for molecular characterization.
- Strengthen capacity in DLS for molecular analysis of sequence data derived from H5N1 virus isolated in Bangladesh by establishing a sequence database and sequence analysis facility within the Food and Agriculture Organization of the United Nations

(FAO)Avian Influenza Technical Unit/Emergency Centre for Transboundary Animal Diseases (ECTAD) in collaboration with OIE/FAO Network of Expertise on Animal Influenza (OFFLU) and OIE/FAO Reference Laboratory for Avian Influenza and Newcastle Disease, Padova, Italy.

- Continue to support and strengthen the activities of the Outbreak Response Management Centre through the provision of appropriate human resources and equipment.
- Further refine the geospatial mapping programme by including smaller commercial farms.
- Incorporate information on backyard poultry into the existing database.

Output C: Improved biosecurity and hygiene in backyard, commercial poultry sectors and LBMs

Activities:

- Assess regularly the biosecurity of small commercial poultry farms adopting assessment tools developed under the previous United States Agency for International Development (USAID)-funded project on public-private partnership (PPP).
- Encourage commercial poultry farms to be registered to be compliant with regulations as well as biosecurity standards by raising public awareness in collaboration with other organizations (e.g. the United Nations Children's Fund [UNICEF], and national and international non-governmental organizations [NGOs]).
- Review registration procedures for poultry farms with DLS.
- Provide technical advice to the Government and stakeholders on the renovation and rehabilitation of LBMs in collaboration with AIPRP.
- Train market personnel, including veterinary officers in cleaning and disinfection exercises using power sprayers and pressure washers in collaboration with AIPRP.

Output D: PPP for the Prevention and Control of HPAI and other emerging infectious animal diseases developed and maintained

Activities

- Advocate with different city corporations/municipalities and market committees for renovation of LBMs in line with established guidelines.
- Strengthen the dialogue between the public veterinary services and various stakeholders such as BPIA by holding workshops on shared interests such as biosecurity.

Output E: "One Health" initiatives through active collaboration with wildlife and public health sectors promoted

Activities

- Actively engage in multi-sectoral collaborations in all areas of animal/zoonotic diseases.
- Seek to increase visibility of FAO and USAID to the public in all areas of animal health issues, including important zoonotic diseases, such as anthrax, rabies, Nipah, pandemic influenza H1N1 and other emerging and re-emerging infectious diseases by actively taking the lead to demonstrate commitment.

Activities undertaken during the reporting period (April 2012 to September 2012)

Output A: Strengthened coordination, planning and policy support for effective management and control of HPAI and other emerging and re-emerging zoonoses

- SOPs were reviewed, refined further and complied. They are currently pending Government of Bangladesh approval.
- Daily contact was maintained with the Chief Veterinary Officer (CVO) and key DLS staff.

- More than 20 meetings with DLS on HPAI and other diseases. Meetings were also held regularly with key stakeholders such as MOFL, IEDCR, MOHFW, UNICEF and WHO, including the National Vaccination Advisory Committee meeting at the MOFL on 3 June.
- Coordination meetings were held with BPIA (one), BLRI (10) and CDIL (10). Two BLN coordination meetings were facilitated.
- Four regional meetings and workshops were organized and/or attended to integrate national project activities.
- Ongoing analysis of the key strengths and weaknesses of the current control approach was performed.
- Contact between the Government and donors was facilitated during the visits of USAID, USDA, and JICA.
- Support was provided to 18 officials and policy makers of the Government who participated in six regional and international conferences/meetings related to HPAI and other emerging infectious diseases.
- A recently developed web-based information system (LDIS) was disseminated to 394 out of 492 Upazilas in the country and 584 Upazila Livestock Officers and Veterinary Surgeons were trained.
- Support was provided to the regional EU-funded HPED project through recruitment and facilitation of technical aspects of the project.

Output B: Enhanced outbreak response and preemptive measures to prevent the outbreaks of H5N1 in commercial farms

- A total of 115 farms previously infected with H5N1 virus during the last four years were revisited to assess biosecurity status. Results indicated that no change in biosecurity was observed and almost 50% of the surveyed farms were either closed or shifted to other livelihood enterprises.
- Biosecurity checks were conducted during investigations, in post-outbreak investigations and during field visits conducted by project staff.
- Data collected from post outbreak investigations is being analyzed for identifying disease transmission dynamics.
- Samples from free-ranging ducks collected during 2011 are currently being tested. Preliminary results using pooled samples confirmed the presence of H5N1 in apparently healthy flocks.
- Biological samples collected from outbreak and suspected farms continued to be sent to CDIL and BLRI. Positive samples were sent to the OIE Reference Laboratory for molecular characterization.
- Preparations were initiated to strengthen capacity in DLS for molecular analysis of sequence data through provision of required bioinformatics software.
- Support continued to be provided to the Outbreak Response Management Centre (Control Room in DLS).
- Geospatial mapping database is being updated with poultry farm lists obtained from district and sub-district levels.

Output C: Improved biosecurity and hygiene in backyard, commercial poultry sectors and LBMs

- After continued lobbying by FAO, a weekly rest day in LBMs in Dhaka commenced in April 2012 for thorough cleaning and disinfection. FAO continues to provide technical support for these operations. To monitor the effectiveness of the process, 24 veterinarians were recruited and actively participated in technical supervision.

- The biosecurity of small commercial farms was assessed during outbreak investigations and field visits using biosecurity guidelines developed by FAO under the USAID-funded project.
- Commercial poultry farmers were encouraged to register with DLS to be compliant with national regulations as well as biosecurity standards by raising public awareness and collaborating with other organizations.
- A survey is being conducted investigating farm registration process and awareness. 48 DLS officials and 231 poultry farmers have been interviewed so far.
- In collaboration with AIPRP, technical advice was provided to DLS and partners on the renovation of LBMs.
- Refresher training for 100 people on biosecurity and disinfection were conducted in five LBMs renovated through the USAID-funded FAO/DLS project.
- An assessment was conducted to assess the renovation of 24 LBMs and to build on the success in further intervening in other LBMs. Recommendations were used to formulate the next phase of optimizing biosecurity in selected LBMs.
- Technical expert was recruited in May 2012 and provided additional technical support to the LBM operations.

Output D: PPP for the Prevention and Control of HPAI and other emerging infectious animal diseases developed and maintained

- Advocacy continued with key stakeholders, including corporations/municipalities and market committees, for renovation of LBMs in line with established guidelines. The LBM Assessment was also used as an advocacy opportunity for promoting cost sharing.
- Meetings were held between FAO/ECTAD and the market committee (New Market, Dhaka) advocating for cost sharing related to the improvement of biosecurity in LBMs.
- Dialogue between the DLS and various stakeholders such as BPIA was strengthened during field visits conducted by project staff.
- Poultry farm managers (230) were trained on “Farm biosecurity and decontamination for poultry farm managers in HPAI affected areas.

Output E: “One Health” initiatives through active collaboration with wildlife and public health sectors promoted

- In collaboration with key partners a workshop was held to validate the One Health Strategic Framework and develop an Action Plan for the next five years.
- Took the lead supporting DLS, DoH and other partners in developing national strategic plans for rabies control.
- Coordinated project activities with other USAID funded projects to ensure no duplication of effort (EPT – IDENTIFY, EPT+ and icddr,b/CDC).
- Wildlife Investigation, Livestock and Public Health - Introductory Training course in One Health was held in September.

Planned activities for the next three-month period

In addition to maintaining the activities mentioned above in Output A-E, the following activities are planned:

- narrowing down flocks of HPAI-infected ducks without symptoms;
- extending weekly rest day for cleaning and disinfection to the rest of the country;
- further expanding multi-sectoral collaboration with public health, wildlife/environment and universities; and
- ensuring smooth transition of activities to the new USAID project “OSRO/BGD/202/USA”.

Main challenges encountered and responses provided

- The government of Bangladesh made a decision to initiate an experimental vaccination of poultry against HPAI in two districts. FAO ECTAD organized a consultative workshop to guide planning and preparation requirements and to allow participants to evaluate their preparedness.
- The active surveillance system on HPAI requires continued advocacy and public awareness-raising to remain sustainable within the government system. Advocacy continues.
- Vaccination of poultry against HPAI might compromise the active surveillance by masking manifestation of symptoms in infected birds. Sero-surveillance of vaccinated poultry is planned.
- Collaboration with wildlife/environmental as well as public health sectors was needed to strengthen surveillance. Multisectoral collaboration was strengthened under One Health initiative.
- Decontamination practices at LBMs by trained market cleaners are irregular: cleaners should be stably employed by the market committee. The City Corporation has actively become engaged in sustaining cleaning and disinfection activities.
- Weekly rest day of LBMs needs to be continued and extended to the whole country to minimize a risk of HPAI virus circulation in LBMs. Advocacy and raising public awareness are continuing.

Main progress made towards the achievement of project outcomes

- A successful active surveillance system on HPAI H5N1 using SMS Gateway has been developed.
- The active surveillance system using SMS Gateway has been successfully incorporated in the Government system except for the central server and the database.
- The established active surveillance system on HPAI using SMS Gateway was acclaimed as the “best practice” among the countries in the regions (Southeast Asia and South Asia) at the 6th Regional ECTAD Meeting, held from 20 to 22 February 2012 in Bangkok.
- A novel disease reporting system, LDIS has been developed and is being disseminated throughout the country to allow quick reporting of animal health situation directly from the field to the headquarters.
- The “One Health” concept has been accepted by the general public to the level of allowing multi-sectoral collaboration possible between livestock, public health and environment sectors in Bangladesh.
- ECTAD Bangladesh has played a pivotal role in developing a national strategy for the “One Health” approach.
- A 5-year action plan on One Health has been developed.
- The ECTAD Unit provided significant technical and logistic support to DLS, BLRI, CDIL and national veterinary services in augmenting the capacity in disease surveillance, diagnosis and control/prevention.
- Biosecurity and HPAI awareness are strengthened through active surveillance, training and dissemination of information.
- FAO contributed to the development of the second national AIPRP in Bangladesh (2011–2016).
- Strong partnership was established between DLS and FAO, allowing for smooth transmission of information and collective action.
- For the improvement of LBMs, a solid collaboration was established with AIPRP and DLS.

Project Monitoring Sheet: **OSRO/BGD/202/USA**

Project title: Strengthening national capacity to respond to Highly Pathogenic Avian Influenza (HPAI) and emerging and re-emerging diseases in Bangladesh.

Reporting period: October 2012 to March 2013

Country: Bangladesh
Project title: Strengthening national capacity to respond to Highly Pathogenic Avian Influenza (HPAI) and emerging and re-emerging diseases in Bangladesh
Code: OSRO/BGD/202/USA
Budget: USD 2 million
Effective starting date: 1 October 2012
Planned end date: 30 September 2013
<p>Context of the project</p> <p>The Food and Agriculture Organization of the United Nations (FAO) and its Emergency Centre for Transboundary Animal Diseases (ECTAD) continues to support the Government of Bangladesh in controlling Highly Pathogenic Avian Influenza (HPAI) H5N1 outbreaks and in building national veterinary service capacity to report and respond to outbreaks. These efforts were initiated in 2007 after which successive projects were designed and implemented to assist the Government. However, Bangladesh remains one of five countries in which HPAI is still considered endemic. Since March 2007, there have been a reported total of 555 outbreaks (498 commercial and 57 backyard farms) in Bangladesh. Some 52 out of 64 districts and 179 out of 492 Upazilas (sub-districts) have been affected so far. This resulted in the culling of over 2.7 million birds and the destruction of over 3.5 million eggs. Following the peak of HPAI H5N1 incidence in 2008, the number of annual outbreaks remains at approximately 30 in 2009 and 2010. Another peak was reported 2011, when the number of outbreaks reached 171. However, in 2012, a total of 23 outbreaks were reported. In 2013, and as of March 31, three outbreaks were confirmed. While new clades 2.3, 2.1 and 2.3.4 were reported in addition to clade 2.2, only clade 2.3.2.1 remained in 2012. No fatal human cases of H5N1 virus have been reported in Bangladesh. In total, six people were infected since 2008, out of whom three were found to be clustered near a live bird market (LBM) in Dhaka in 2011. In December 2012, the Government started implementing an experimental vaccination programme in two districts (Gazipur and Kishorgonj) targeting the commercial poultry sector, which might complicate the surveillance system for HPAI. The project was extended until the end of September 2013 to enable full utilization of funds. The active surveillance system, already transferred to the Department of Livestock Services (DLS) under the World Bank (WB) funded Avian Influenza Preparedness and Response Project (AIPRP), which was terminated on 31 December 2012, faced the risk of complete collapse. FAO provided interim support for two months (January to February 2013) until the Government was able to secure its funding. Moreover, Bangladesh also faces the risks of other emerging disease threats, which broadened the scope of the ECTAD mandate to address these issues through the <i>One Health</i> approach.</p>
<p>Project Impact</p> <p>The project will contribute to the improvement of livelihoods of vulnerable populations in Bangladesh by safeguarding human and animal health, and improving food security and safety.</p>
<p>Outcome of the project</p> <p>The outcome of the project is a decreased spread of H5N1 HPAI and other emerging and re-emerging diseases of significant public health and economic impact in the country. This will be achieved through enhanced coordination, multi-sectoral approach, outbreak management, disease surveillance systems and biosafety and bio-security at farm and LBM levels.</p>
<p>Planned activities</p> <p>Output 1: Coordination, planning and policy support for effective management and control of HPAI and other emerging and re-emerging diseases strengthened.</p> <p><i>Activities:</i></p> <p>1.1 Support the Country Team Leader and the Team to provide inputs for planning coordination required at the country level.</p> <p>1.2 Actively engage with animal health authorities as appropriate.</p>

1.3 Conduct regular meetings with DLS, the Ministry of Fisheries and Livestock (MOFL), Institute of Epidemiology, Disease Control and Research (IECDR), Ministry of Health and Family Welfare (MOHFW), International Centre for Diarrheal Diseases Research, Bangladesh (Icddr,b) and the World Health Organization (WHO) to promote *One Health* coordination using avian influenza (AI) as a model.

1.4 Organize regular coordination meetings with DLS and MOFL, and liaise with relevant stakeholders in the public and private sectors.

1.5 Attend regional meetings and workshops to integrate national project activities and to facilitate coordination of the country programme with national, regional and global projects (AIPRP, the European Union (EU) Highly Pathogenic Emerging Diseases (HPED) programme, the United States Agency for International Development (USAID) Emerging Pandemic Threats (EPT), EPT Plus, etc.).

1.6 Undertake an analysis of the key strengths and weaknesses of the current control approach including the HPAI vaccination policy and provide the policy advice and necessary support to the Government, including post-vaccination serological and virological monitoring.

1.7 Provide technical support to facilitate contact between the Government, FAO and donors.

1.8 Facilitate the participation of officials of national veterinary services and policy makers in regional and international conferences and seminars related to HPAI and other emerging infectious diseases.

1.9 Ensure the active participation, as appropriate, and facilitate the coordination of the country programme with other projects or programmes (including EU-HPED, AIPRP, EPT and EPT Plus) and explore collaboration with PREVENT on risk communication and prevention at the LBMs.

1.10 Advocate with poultry farmers and associations to adopt biosecurity measures at the farm level.

1.11 Advocate with DLS and poultry associations to encourage commercial poultry farmers to register their farms in compliance with regulations, including biosecurity guidelines.

Output 2: Veterinary services capacity in HPAI surveillance and control enhanced.

Activities:

2.1 Review and refine standard operating procedures (SOPs) already developed by the ECTAD-Bangladesh Team for controlling HPAI and other zoonotic diseases, to ensure good practice, based on international requirements.

2.2 Ensure full operation and dissemination of web-based Livestock Disease Information System (LDIS) by following up on its implementation for the timely electronic reporting on HPAI and other zoonotic diseases by all Upazila Livestock Offices and Disease Investigation Laboratories, and assist the Epidemiology Unit and Outbreak Response Management Centre of DLS to conduct outbreak investigations and process epidemiological data to identify disease transmission dynamics and adjust control programmes as appropriate.

2.3 Create and operationalize the Bangladesh Laboratory Response Network in collaboration with FAO/USAID's EPT-IDENTIFY project and the DLS, Directorate General of Health and other partners involved in providing laboratory services; ensure coordination with EPT-IDENTIFY.

2.4 Visit and seek information for signs of small-scale mortality among poultry in backyards in areas indicated as high risk by spatial temporal analysis of outbreaks.

2.5 Conduct epidemiological studies, in collaboration with DLS and other relevant stakeholders, to identify the trends and patterns of HPAI in Bangladesh, as well as virological investigations whenever crow and other bird die-offs occur, in order to identify links to poultry in commercial farms and backyards.

2.6 Continue conducting an in-depth longitudinal study that has already been initiated on free-ranging ducks in the vicinity of affected farms for sequence analysis in five selected districts and ensure synergy with the EPT Plus activities.

2.7 Ensure biological samples from outbreak investigations and active surveillance to be processed for isolation of low pathogenic avian influenza (LPAI) and HPAI in Central Disease Investigation Laboratory (CDIL) and Bangladesh Livestock Research Institute (BLRI) and shipped to the FAO/World Organisation for Animal Health (OIE) Reference Laboratory for molecular characterization.

2.8 Strengthen the capacity of DLS and BLRI for molecular analysis of sequence data derived from the H5N1 virus isolated in Bangladesh.

2.9 In collaboration with the environmental/forestry sector, monitor wild birds and cases of unusual death to effectively roll out preventive measures such as carcass disposal before being scavenged by crows or other animals to contain the virus and to have samples collected.

2.10 Further refine the geospatial mapping programme by including smaller commercial farms.

- 2.11 In collaboration with DLS, regularly assess the biosecurity of commercial poultry farms adopting assessment tools developed under a previous USAID-funded project on public private partnership (PPP).
- 2.12 Support the participation of national epidemiologists from DLS to the Regional Field Epidemiology Training Programme for Veterinarians (RFETPV).

Output 3: Bio-security of Live Bird Markets improved through targeted renovation.

Activities

- 3.1 Select and upgrade biosecurity in up to six LBMs out of the already developed 24 LBMs.
- 3.2 Intensify advocacy with city corporations/municipalities and market committees to improve biosafety at LBMs.
- 3.3 Conduct regular surveillance of the 24 LBMs.
- 3.4 Train LBM personnel, traders, and veterinary officers in adopting biosafety and biosecurity measures and conduct refresher training of LBM cleaners and traders in cleaning and disinfection exercises following SOPs in collaboration with DLS and city corporations/municipalities/development authorities and AIPRP.
- 3.5 Hold meetings at least once a month with market committees for promoting PPP in sustaining the bio-security in LBMs, and continue to provide technical advice to the Government and stakeholders on the renovation and rehabilitation of LBMs in collaboration with the AIPRP of the WB.
- 3.6 Raise public awareness for ensuring that bio-security is maintained in LBMs and poultry farms and distribute communication materials on biosafety and biosecurity in collaboration with stakeholders, including DLS, AIPRP, city corporations/municipalities, school teachers, religious leaders and the United Nations Children's Fund (UNICEF).

Output 4: A model for HPAI safety developed through health certification.

Activities:

- 4.1 Hold meetings with the DLS Services to adopt a short message service (SMS) gateway system and geospatial maps of commercial farms for monitoring the movement of poultry from production to live bird markets.
- 4.2 Initiate a pilot study for monitoring poultry movement and its biosecurity practices using the SMS system by selecting one major live bird market in Dhaka.

Sub-activities include:

- 4.2.1 Support DLS in establishing checking posts for monitoring the movement on the routes of poultry transportation into Dhaka.
- 4.2.2 Assess the feasibility of the monitoring used the system.
- 4.2.3 Expand the system to the remaining LBMs in Dhaka.

Activities undertaken during the reporting period (October 2012 to March 2013)

Output 1: Coordination, planning and policy support for effective management and control of HPAI and other emerging and re-emerging diseases strengthened.

- Several funding proposals, concept notes and two progress reports were prepared.
- Daily contact was maintained with the Chief Veterinary Officer (CVO) and key DLS staff.
- More than 20 meetings with DLS on HPAI and other diseases, including three monthly meetings. Seventeen meetings were also held with key stakeholders such as MOFL, IEDCR, MOHFW, UNICEF and WHO, including five meetings of the National Experts Committee on Vaccination.
- Coordination meetings (5) were held with icddr,b and other EPT partners (Family Health International [FHI] 360, EPT PREVENT, Eco-Health Alliance, IEDCR), BPIA (two), BLRI (11) and CDIL (12) to promote a *One Health* approach. There were more than coordination meetings in total.
- Six regional meetings and five workshops/conferences were organized and/or attended to integrate project activities (Annual Regional ECTAD Meeting [AREM], tripartite and sub-regional).
- Ongoing analysis of the key strengths and weaknesses of the current control approach was performed. A checklist developed and used during field visits/outbreak investigations.
- Contact between the Government and donors was facilitated, including four meetings with

USAID, four with the United States Department of Agriculture (USDA), two with WB, two with Japan Embassy, one with the Japan International Cooperation Agency (JICA) and participated in facilitating two senior missions by the Government of the Netherlands.

- Support was provided to 18 officials and policy makers of the Government who participated in seven regional and international conferences/meetings related to HPAI, other emerging infectious diseases and *One Health*. ECTAD presented and participated actively in the international One Health Prince Mahidol conference held in Thailand in January 2013, Kunming, China in August 2012 and Bali, Indonesia in September 2012.
- A concept note was prepared for EU funding for a regional *One Health* project.
- A letter of agreement (LoA) was implemented with a non-governmental organization (NGO) (Obhoyarouno - Bangladesh Animal Welfare Society ("O-BAWS")) which implemented rabies control and dog population management programmes.
- Took the lead in supporting DLS, Department of Health (DoH) and other partners in developing national strategic plans for rabies control.
- ECTAD took the lead in coordinating EPT partners in Bangladesh – four coordination meetings held. Three meetings with FHI 360 PREVENT were held to explore collaboration in Khulna slaughterhouse.
- ECTAD and icddr,b collaborated in LBM duck and pig surveillance and sharing of information. icddr,b animal health laboratory will conduct sample testing for EPT+ samples.
- Project activities were coordinated with other USAID funded projects to ensure no duplication of efforts (EPT-IDENTIFY, EPT+ and icddr,b/Center for Disease Control and Prevention [CDC] Atlanta).
- An LoA with Chittagong Veterinary And Animal Sciences University (CVASU) was signed, data was collected, analysis is ongoing to detect incursion of new influenza viruses in migratory birds in five districts. A total of 657 samples were collected and tested.
- Project staff participated in twenty technical meetings and workshops on various diseases (anthrax, HPAI, rabies, foot-and-mouth disease and *peste des petits ruminants* [PPR]).
- An HPED national expert attended a regional meeting and training in Sri Lanka. The regional training in PPR diagnosis, conducted in Dhaka, was attended by 20 laboratory staff from the South Asian Association for Regional Cooperation (SAARC) countries. Reagents and equipment were provided to the PPR in BLRI. Of the 405 serological samples tested, 193 (47.7 percent) indicated presence of antibodies, and the 250 nasal swab and tissue samples tested for virus indicated 182 (72.8 percent) positive.
- The biosecurity of small commercial farms was assessed during outbreak investigations and field visits using biosecurity guidelines and tools developed by FAO. Fifteen draft manuals/SOPs for farm biosecurity were prepared in English and Bangla. Two workshops were organized.
- As a result of project advocacy, MoFL has issued an order for poultry farm registration. Two meetings were held with DLS to initiate poultry farm registration. A study was conducted to assess the knowledge of DLS staff and poultry farmers. Sixty-two DLS staff and 329 farmers were interviewed and the findings were presented in a workshop attended by DLS senior staff in December 2012. A workshop on "Advocacy for poultry farms accreditation and registration" was organized in March 2013, and was attended by DLS and poultry farmers associations. Thirty percent of poultry farms are registered as a result of project advocacy.

Output 2: Veterinary services capacity in HPAI surveillance and control enhanced.

- SOPs were reviewed, refined further and complied. They are still pending Government of Bangladesh approval.
- LDIS – a web-based information system to support DLS animal disease surveillance – was disseminated to 394 out of 492 Upazilas in the country: 584 DLS staffs were trained.
- Biosecurity checks were conducted during investigations using a standard checklist, in three joint post-outbreak investigations with DLS and during field visits conducted by project staff. Risks were identified and reports were issued.
- The Bangladesh Laboratory Response Network (BLRN), which was established in 2011 with key players (DLS, BLRI, icddr,b, Bang Agric and Chittagong Universities) was represented. Four

general and 10 project-specific meetings were held; activities were coordinated and resources were shared.

- Data collected from post outbreak investigations is being analyzed for identifying disease transmission dynamics.
- A backyard expert was recruited and plans to conduct a duck survey and sample collection has been prepared.
- An LoA has been signed with CVASU. Sample were collected (600 serum and 657 cloacal swabs) from 657 resident and migratory birds, from April to December 2012. The total number of samples collected as of the end of February 2013 is 1 113. An additional 400 environmental samples were collected from wild and domestic birds, and 84 pooled samples were obtained from LBMs in Chittagong. Laboratory testing is ongoing. So far, 15 samples were demonstrated to have antibodies against H5. Other tests for the presence of H5N1 virus will be performed.
- Samples from free-ranging ducks were collected in 2012 (14 000). Testing was performed in BLRI on 12 500 samples (1 250 pools of tens) out of which 12 pools were HPAI positive (0.96 percent).
- An additional 3 500 duck samples were collected through the EPT+ programme and are still continuing.
- Biological samples that were collected from outbreak and suspected farms continued to be sent to CDIL and BLRI. Twenty positive samples were sent to the OIE/FAO Reference Laboratory for molecular characterization, out of which 19 were sequenced and confirmed for various sub-types of clade 2.3.2.1.
- To strengthen capacity in DLS for molecular analysis of sequence data, bioinformatics software was identified and the procurement process initiated.
- A One Health training “Wildlife Investigation in Livestock Diseases and Public Health (“WILD”) was conducted, focusing on forests and ecology and was attended by 30 participants with focus on environmental and forest issues.
- Geospatial mapping database, which includes commercial poultry farms and LBMs, is being updated and validated using lists (more than 60 000) of registered farms obtained from DLS district and sub-district levels, out of which 15 919 records have been entered. An LoA for developing a comprehensive GIS-based database was prepared and the process was initiated.
- Four DLS participants could not attend the SAARC FETPV training in Nepal in November 2012 owing to delayed release process. They are expected to attend in September 2013.

Output 3: Bio-security of Live Bird Markets improved through targeted renovation.

- A second consultant mission was completed and the report was prepared, setting plans for renovating 18 LBMs in 2013 (six under this project and 12 under OSRO/BDG/101/USA). An architect has been recruited and has already prepared drawings and bill of quantity (BOQ).
- Lobbying by FAO continued to enforce a weekly rest day in LBMs in 69 markets in Dhaka, which commenced in April 2012 for thorough cleaning and disinfection. Other parts of the country (Gazipur, Khulna and Manikganj) started enforcing similar policies. FAO continues to provide technical support for these operations through the presence of veterinarians at the LBM level.
- Seventeen meetings were held with stakeholders to advocate for LBM renovation, decontamination, surveillance and weekly closures. Plans for developing six LBMs have been prepared.
- Refresher training for 100 people on biosecurity and disinfection were conducted in LBMs renovated through the USAID-funded FAO/DLS project.
- Ten thousand Behaviour Change Communication (BCC) posters on regular decontamination and 5 000 posters on weekly closure were prepared and distributed through DLS to city corporations/municipalities and market committees around the country.
- A protocol has been developed for LBM surveillance; 19 LBMs have been covered by surveillance; 2 590 samples have been collected; and 50 (2 percent) positive cases were detected.

Output 4: A model for HPAI safety developed through health certification.

- Twelve posts were established by DLS around Dhaka to monitor poultry movement and to look for signs of HPAI
- The model will be developed in the next quarter.

Additional activities performed:

- The project supported SMS gateway staff salaries for two months (January to February 2013) following the completion of the WB-funded AIPRP on 31 December 2012. The Government is currently looking for an alternative funding mechanism.

Planned activities for the next three-month period

In addition to maintaining the activities mentioned above in Outputs 1-4, the following activities are planned:

- use findings of duck surveillance to narrow down flocks of HPAI-infected ducks without symptoms;
- extend weekly rest day for cleaning and disinfection to the rest of the country;
- post-vaccination serological and virological monitoring;
- develop a model for HPAI safety through health certification;
- hold meetings with the DLS to adopt SMS gateway system and geospatial maps of commercial farms for monitoring the movement of poultry from the production to live bird markets;
- initiate a pilot study for monitoring poultry movement and its biosecurity practices using the SMS system by selecting one major LBM in Dhaka;
- assess the feasibility of the monitoring by using the SMS system; expand the SMS system to the remaining LBMs in Dhaka.

Main challenges encountered and responses provided

- The Government of Bangladesh started implementing an experimental vaccination of poultry against HPAI in two districts in December 2012, which might compromise the active surveillance by masking manifestation of symptoms in infected birds. FAO ECTAD organized a consultative workshop to guide planning and preparation requirements and to allow participants to evaluate their preparedness, and attended technical meetings organized by DLS. Serological and virological monitoring of vaccinated poultry is planned.
- The active surveillance system on HPAI requires continued advocacy and public awareness-raising to remain operational and sustainable within the government system, especially after the phasing out of WB funding on 31 December 2012. FAO/ECTAD, through the project, supported the salaries of field surveillance staff for two months (January-February 2013) and the Government is currently looking for alternative funding options.
- Sustaining and extending the LBM rest days and decontamination practices will require continuous advocacy with stakeholders and monitoring. City Corporations have become engaged in sustaining cleaning and disinfection activities.
- The institutionalization of *One Health* remains a priority. Funding and coordination efforts must continue.

Main progress made towards the achievement of project outcomes

- National capacity was strengthened to report and effectively respond to HPAI outbreaks, including surveillance (active and passive) and diagnostic capabilities.
- Significant technical and logistic support was provided to DLS, BLRI, CDIL, two national universities and national veterinary services in augmenting the capacity in disease surveillance, diagnosis and control/prevention.
- The project sustained and guaranteed smooth continuity of activities initiated by preceding USAID-funded projects, and facilitated coordination with other projects and partners (EPT, EPT Plus, Food Safety and F111 360 EPT PREVENT, Eco-Health Alliance and icddr,b/CDC).
- The focus of the *One Health* approach has shifted from conceptual acceptance by key stakeholders to the adoption of strategies through which it can be practically implemented (in

terms of funding and institutions), especially in integrating the food safety sector, which will allow Bangladesh to achieve significant progress in the near future. ECTAD Bangladesh will continue to play a pivotal role in this evolutionary process.

- A novel disease reporting system, LDIS, has been developed and is being disseminated. Seventy percent of DLS field staff have been trained in operating the system, which will allow quick reporting of animal health situation directly from the field to the Dhaka.
- Biosecurity and HPAI awareness have been strengthened through active surveillance, training and dissemination of information.
- A strong partnership has been established between DLS and FAO, allowing for the smooth transmission of information and collective action.
- For the improvement of LBMs, a solid partnership was established with key stakeholders, including AIPRP, DLS, local governments, icddr,b and market committees.

Quarter II 2010

Project Monitoring Sheet: **OSRO/BGD/902/USA**

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance

Reporting period: April to June 2010

Country: Bangladesh
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Bangladesh, including active surveillance
Code: OSRO/BGD/902/USA + OSRO/RAS/605/USA Baby01
Effective starting date: October 2009
Planned end date: September 2010
Budget OSRO/BGD/902/USA: USD 3 082 800 (Phase I) Total budget: USD 3 082 800
Budget OSRO/RAS/605/USA Baby 01: USD 515 000 (Phase I), USD 1 365 000 (Phase II), USD 1 225 000 (Phase III) Total budget: USD 3 105 000
Effective starting date: July 2006
Planned end date: September 2010
<p>Context of the project</p> <p>Bangladesh is a high-risk country with respect to Highly Pathogenic Avian Influenza (HPAI) H5N1, experiencing its first outbreak in March 2007. As of 30 June 2010, a total of 358 (304 commercial and 54 backyard) outbreaks have been recorded in 49 out of 64 districts and in 156 out of 492 Upazilas/Thanas (sub-districts), resulting in the culling of over 1.8 million birds.</p>
<p>Objectives of the project</p> <p>The primary objective of the project is to improve control of infectious diseases by enhancing outbreak responses for preventing poultry diseases and developing awareness of HPAI in Bangladesh.</p> <p>Specific immediate objective is to improve the HPAI surveillance capacity of the Government of Bangladesh to respond more effectively to HPAI outbreaks and thereby reduce economic losses and a global human pandemic threat. Specifically, the project aimed to achieve the following:</p> <ul style="list-style-type: none"> • increasing the capacity of the Department of Livestock Services (DLS) to manage the Surveillance programme without technical or operational help from the Food and Agriculture Organization of the United Nations (FAO); • early reporting of poultry diseases by door-to-door surveillance; • early HPAI detection by diagnostic specimen collection and testing to ensure a rapid

- and effective disease response to control HPAI;
- increasing awareness among the surveyed farmers and villagers to strengthen passive surveillance; and
- monitoring minimum biosecurity standards in commercial farms.

Planned activities :

Output 1: Improved coordination and management for disease detection, diagnosis, control and prevention

- strengthen the national capacity for disease detection, diagnosis, control and prevention through coordinated efforts of all stakeholders;
- have international and national experts provide continuous assistance to the Government of Bangladesh to facilitate contacts between the Government and donors and coordinate projects and regional activities; and
- have the FAO country team take lead role in the coordination and technical backstopping to cover activities funded by the World Bank (WB) and the Swiss Government.

Output 2: Enhanced outbreak response by effective Outbreak Response Management Centre

- strengthen capacity of the Outbreak Response Management Centre within DLS through the provision of appropriate human resources and equipment;
- improve DLS' capacity for communicating with field operators, facilitating logistics, collection and analysis of data;
- have national and international experts in disease surveillance provide control and epidemiology technical inputs to assist the Government of Bangladesh in animal disease management.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the target areas

- implement biosecurity campaign across the country as much as possible in targeted large-, medium- and small-scale poultry farmers in poultry-dense areas in every district;
- develop educational materials to train trainers by technical experts in epidemiology, response management and advocacy; and
- organize the campaign on biosecurity to reach at least 20 percent of the entire poultry farmer population in the planned areas.

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza & Human Pandemic Influenza Preparedness plan

- assist the Government of Bangladesh in the implementation of the national Avian Influenza & Human Pandemic Influenza Preparedness Plan for 2009-2011, which was elaborated in collaboration with FAO; and
- have FAO assist in surveillance, disease response and diagnostics and provide further technical inputs.

Output 5: Active Surveillance on HPAI

- conduct door-to-door active surveillance to collect information on sickness and unusual deaths in poultry of 260 Upazilas, of which 150 have been already under surveillance since 1 October 2008;

- send reports through coded message to web-based SMS gateway system;
- have sites of potential outbreak investigated by Upazila livestock officers (ULOs) and/or additional veterinary surgeons (AVSs) supported by the project; and
- have specimens collected for diagnosis in suspected cases by ULOs or AVSs and shipped to laboratories.

Activities undertaken during the reporting period

Output 1: Improved Coordination and Management for disease detection, diagnosis, control and prevention.

- International and national experts continued to provide expertise to the Government of Bangladesh, facilitated contacts between the Government and donors and coordinated projects and regional activities.
- FAO country team continued its coordination role to cover those activities funded from WB, Government of Switzerland and United States Agency for International Development (USAID).
- FAO continued to facilitate the Laboratory Working Group meetings attended by Bangladesh Livestock Research Institute (BLRI), Central Disease Investigation Laboratory (CDIL) and Field Disease Investigation Laboratory (FDIL), World Health Organization (WHO), USAID and Japan International Cooperation Agency (JICA) to provide advice on laboratory design and procurement.
- Team leader and a national consultant participated in the assessment of national capability arranged jointly by National Influenza Centre (IEDCR) and Centers for Disease Control and Prevention (CDC) Atlanta.
- On request from the Asian Development Bank (ADB), one national consultant facilitated a session in the inception meeting for launching a project on food security including control of transboundary diseases.
- Members from FAO avian influenza (AI) team participated in the meeting on AI coordination.
- Members had a discussion with Mr Vinod Ahuja, Policy officer of FAO–Regional Office for Asia and the Pacific (RAP). The team leader, an international consultant for epidemiology and a national expert joined him in a meeting with the Secretary.
- The FAO AI Unit member actively contributed in the formulation of a draft of the National Midterm Priority Plan by a Mission from FAO headquarters.
- Expert from the team participated in the further revision and editing of the Bangladesh animal slaughter and meat quality control law waiting to be vetted by Ministry of Law and Parliamentary Affairs.
- FAO actively participated in the One Health conference and workshop with participants from CDC Atlanta, Wildlife Trust, International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) and WHO.
- The FAO AI Unit actively contributed in the review of knowledge, attitude and practices (KAP) study on AI, sponsored by the United Nations Children's Fund (UNICEF).
- FAO communication consultant critically reviewed the Communication Strategy of National Agricultural technology project.
- Samples collected from free-ranging ducks around farms affected with HPAI have been collected and submitted to the National Reference Laboratory for Avian Influenza of BLRI in Savar for virus propagation and identification.

Output 2: Enhanced Outbreak Response by effective Outbreak Response Management Centre

- FAO has been providing training on post-outbreak management to DLS field officials.
- Chief Technical Advisor (CTA) and other members of the team have been monitoring the outbreak management system by visiting the vicinity of affected farms after occurrence of outbreaks.
- International consultant on epidemiology and national experts have been carrying out epidemiological investigation regularly after outbreak. During investigation, local staff members have been nominated for improving post-outbreak response.
- As part of the post-outbreak investigation, samples have been collected from free-ranging ducks in backyards for monitoring.
- Samples have been brought to BLRI to be inoculated into embryonated eggs for isolation of viruses.

Output 3: Improved biosecurity status in poultry sectors through biosecurity campaigns in the targeted areas

- The biosecurity campaign continued across the country's targeted large-, medium- and small-scale poultry farmers through AVSs/Community Animal Health Workers (CAHWs).
- AVSs/CAHWs have been provided with written instructions on biosecurity by visiting individual commercial farms.
- The project supported and contributed to the Public-Private-Partnership (PPP) project, also supported by USAID, in delivering biosecurity training for poultry industry suppliers.
- The project manager of Geospatial Farm Mapping and data loggers for collecting data and other basic information have been recruited. Information on 45 percent of the estimated farms has already been collected.
- National consultants are monitoring and quality checking the data through a field visit.

Output 4: Provision of assistance to the Government of Bangladesh to implement the National Avian Influenza and Human Pandemic Influenza Preparedness plan

- FAO has signed an agreement with Government of Bangladesh to provide technical assistance to Avian Influenza Preparedness and Response Plan in implementing the national plan.
- In addition to AI plan, FAO has submitted a draft strategy on foot-and-mouth disease (FMD) control drafted by the animal health officer with support from technical unit.
- One of the national consultant is participating in the development of strategy on rabies control

Output 5: Active Surveillance on Highly Pathogenic Avian Influenza

- The Active Surveillance programme is continuing in 260 Upazilas with 780 CAHWs and 88 AVSs.
- The newly recruited CAHWs and the ULOs of newly added Upazilas were trained on active surveillance.
- The veterinary officers (VOs) working under "Strengthening of Support Service for Combating Avian Influenza (SSCAIB) in Bangladesh" were trained to be involved in active surveillance.
- A four-member team from Nepal was trained on SMS gateway system.
- The national consultant and programme coordinator/representative from the Government monitored activities of AVSs and CAHWs.

Planned activities for the next quarter

Output 1: Improved Coordination and Management for disease detection, diagnosis, control and prevention.

- International and national experts will continue to provide expertise to the Government of Bangladesh, facilitate contacts between the Government and donors and coordinate projects and regional activities.
- FAO country team will increase its coordination role to cover activities funded by WB, ADB and USAID.
- FAO country team will support geospatial farm mapping project.

Output 2: Enhanced Outbreak Response by effective Outbreak Response Management Centre

- National and international Consultant will support the Government in conducting outbreak investigation on AI.
- Post-outbreak investigation will be intensified by collecting samples from free-ranging ducks in backyards in the vicinity of affected farms. Samples are to be inoculated to isolate viruses, if any.
- The FAO AI Unit, consisting of one international, six national consultants, one web page manager, one operation officer, one logistics and procurement assistant and one secretary. financially supported by the project, will be ready to support the Government on any disease response and control efforts.

Output 3: Improved bio-security status in poultry sectors through bio-security campaigns in the target areas

- Biosecurity campaign will be conducted across the country targeting the large-, medium- and small-scale poultry farmers through AVSs/CAHWs, expanding from 150 to up to 300 Upazilas.
- Continuous assistance will be provided to PPP and cleaning and disinfection (C&D) of live bird market (LBM) projects.

Output 4: Provision of assistance to the Government of Bangladesh in implementing the National Avian Influenza and Human Pandemic Influenza Preparedness plan

- The team will continuously support the Government in the execution of National Avian Influenza and Human Pandemic Influenza Preparedness Plan.

Output 5: Active Surveillance on Highly Pathogenic Avian Influenza

- The active surveillance programme will be extended to 300 Upazilas.

Main challenges encountered and response provided

The post outbreak decontamination and improvement of biosecurity are two main challenges to achieving the objectives of the project.

Main progress made towards the achievement of project outcomes

- FAO Technical Unit has been established at DLS comprising a team of international and national experts and support staff.
- The office for the Technical Unit at DLS has been refurbished including the provision of standby power supply. The Unit is fully computerized with high-speed reliable internet services.
- AI Technical Unit is technically and logistically supporting the DLS. The AI Unit's technical support enhances DLS staff capacity.
- Biosecurity and awareness of HPAI are reinforced and strengthened by: active surveillance programme, teachers' training and dissemination of 50 000 leaflets, posters and stickers to schools and at various national and regional meetings.
- Door-to-door/farm-to-farm surveillance has been initiated using a network of 780 CAHWs. The CAHWs and respective 260 supervising ULOs, 32 veterinary officers of SSCAIB project have received the necessary training. As a result, disease surveillance has enhanced disease reporting. Better surveillance combined with increased awareness and constant reinforcing of biosecurity messages have helped to reduce the number of HPAI outbreaks.
- All 780 recruited CAHWs were given training and then refresher training by FAO consultants on basic communication skills, specifically on those related to HPAI and SMS gateway.
- Various laboratory supplies including polymerase chain reaction (PCR) kits, RNA extraction kits, primers and other consumables have been provided to BLRI laboratory to support the increase in diagnostic workload.
- Standard operating procedures (SOPs) for laboratory tests for AI diagnosis have been drafted and submitted to the Government.
- SOPs for outbreak response, disease investigation, culling, C&D have been drafted and are being reviewed.
- FAO team facilitated the Laboratory Working Group meetings attended by BLRI, CDIL and FDIL to provide advice on laboratory design and procurement.
- Technical officers of eight leading farms and selected government veterinarians have received training on biosecurity and routine disinfection for poultry raising establishments.
- Two hundred government veterinarians received training on post-outbreak decontamination.
- FAO contributed to the development of the Second Communication Strategy for Avian and Pandemic Influenza.
- Web-based SMS gateway has improved the early reporting system.

Quarter II 2010**Project monitoring sheet: OSRO/EGY/701/USA****Project title: Strengthening Avian Influenza Detection and Response (SAIDR) in Egypt****Reporting period: April – June 2010**

Country: Egypt Title: Strengthening Avian Influenza Detection and Response (SAIDR) in Egypt Code: OSRO/EGY/701/USA Budget: USD 3 000 000 (Phase I), USD 3 000 000 (Phase II), USD 3 000 000 (Phase III) Total budget: USD 9 000 000
Effective starting date: October 2007
Planned end date: September 2010
Context of the Project <p>Outbreaks of Highly Pathogenic Avian Influenza (HPAI) spread in Egypt since February 2006, and the disease has become endemic. The Food and Agriculture Organization of the United Nations (FAO) has been providing technical assistance to the Ministry of Agriculture and Land Reclamation (MoALR) through the implementation of the animal health component of the “Strengthening Avian Influenza Detection and Response (SAIDR) in Egypt” project funded by the United States Agency for International Development (USAID).</p>
Objectives of the project <p>The overall objective of the project is to minimize the human health risks and reduce the livelihood impacts posed by HPAI through its effective prevention and control. The specific objectives of the project are to ensure and facilitate:</p> <ol style="list-style-type: none"> 1. Regular updating of the national HPAI control/response plan; 2. Improvement of biosecurity measures to reduce virus circulation in poultry populations and bird-to-human transmission; 3. Improvement of surveillance activities of H5N1 in poultry and wild bird populations; 4. Improvement of HPAI outbreak investigation and response measures in poultry populations.
Planned outputs and activities <ul style="list-style-type: none"> • Prepare a draft active and passive HPAI surveillance plan based on identified critical control points, covering all poultry production sectors and in accordance with the integrated national plan. • Organize a technical workshop, involving relevant stakeholders and partners, for gathering of inputs and the enrichment of the draft HPAI surveillance plan. • Follow up on the proper implementation of the various Letters of Agreement (LoAs) by national and international partners. • Re-assess the implementation of the current LoA with the International Livestock Research Institute (ILRI) and enter into a second agreement with the same for the implementation of the remaining project activities. • Conduct an introductory community-based animal health and outreach (CAHO) course (ten

days) for 20 new practitioners.

- Conduct a refresher workshop (five-days) for the 20 new CAHO practitioners who will receive the introductory course mentioned above.
- Conduct a training of trainers (ToT) course (six-days) for 12 CAHO practitioners.
- Organize and conduct two consultative workshops on principles and management of CAHO program in Egypt involving veterinary directors and other decision-makers at governorate level.
- Finalize the procurement process for the remaining items to be delivered to the General Organizations for Veterinary Services (GOVS) and National Laboratory for Veterinary Quality Control on Poultry Production (NLQP) on time.
- Operationalize the HPAI hotline system established within GOVS premises.

Activities undertaken during the reporting period (April – June 2010)

Objective 1: Ensure the regular updating of the national HPAI control/response plan

- The English and Arabic version of the revised “HPAI Animal Health and Livelihood Sustainability Strategy” has been officially approved on 31 May 2010 by H.E. Amine Abaza, Minister of Agriculture and Land Reclamation (MoALR). The Minister also advised the GOVS to move into the implementation of the revised strategy with immediate effect and to work in close partnership with all relevant counterparts.
- GOVS, NLQP and FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) have continued to publish the “Monthly HPAI News Review” and distribute hard and electronic copies to the stakeholders both in Egypt and abroad. This monthly publication provides relevant information on HPAI and related project activities in Egypt.
- The process for the refurbishment of 120 decentralized epidemiology units is initiated through the assessment of the local needs and identification of appropriate contactors. In terms of the procurements required for these decentralised Epidemiology Units (Epi-Units), the status is as follows:
 - Some 50 desktop computers received and delivered to GOVS for distribution to various Epi-units across the country;
 - Some 120 Air conditioners received and distributed to 21 veterinary governorates;
 - Extra procurements were conducted to facilitate data transfer from district to governorate level (500 flash memory drives (4 GB), 250 electrical connectors, 400 DVDs and one hard disk) and to assist GOVS in establishment of a network in district Epi-Unit.
 - The procurement of 50 UPSs, 50 printers, 120 computer tables and 240 chairs is still in process.

Objective 2: Improvement of biosecurity measures to reduce virus circulation in poultry population and bird-to-human transmission

- Nine out of the 14 governorate Veterinary Services (namely Behaira, Dakahlia, Fayoum, Gharbia, Helwan, Kafr El-Sheikh, Minya, Qena and Six October governorates) have properly and timely implemented field activities as per agreed terms of LoAs signed with FAO. They have also delivered completed questionnaires with checklists and progress reports for the period from February to May 2010. Three governorate Veterinary Services (namely Souhag, Sharqia and Menofia) were lagging behind as a result of some internal limitations and were required to make extra preparations. These veterinary directorates started implementation of LoA activities only in May 2010. As a result, an intensive follow up was organized in order to ensure the proper implementation and timely reporting as per the terms of the LoAs. The remaining two governorates (namely Assuit and Banisuef) had some internal constraints that

hindered them in implementing the agreed LOA activities.

- In order to enhance existing technical capacity in application of biosecurity measures, from 12 May to 29 June 2010, ECTAD-FAO conducted eight training sessions on practical biosecurity in 11 veterinary governorates for a total of 157 trainees drawn from 119 districts. The purpose of the training was to assist GOVS in forming district-level biosecurity teams in the high risks governorates.
- Preparation of biosecurity guidelines for the different poultry production sectors and farming types is underway and handled by other FAO-implemented projects.

Objective 3: Improvement of surveillance activities of H5N1 in poultry and wild birds

- ILRI submitted the final technical report of the second year activities. The report described all participatory epidemiology (PE) activities conducted in the past year to strengthen animal disease surveillance and control of HPAI H5N1.
- From 19 April to 22 April 2010, two workshops on “Principles and Management of CAHO Program in Egypt” were conducted with the aim of setting up standard management plan for CAHO program at both central and local levels, explaining technical issues related to CAHO field activities, discussing problems and challenges faced and suggesting solutions. A total of 67 CAHO practitioners and decision-makers took part in these workshops.
- From 1 May to 5 May 2010, ILRI, in collaboration with ECTAD, conducted a six-day ToT session on CAHO, involving 12 skilled CAHO practitioners drawn from six governorates. In addition, a ten-day training course was organized involving 22 new CAHO practitioners from five governorates (namely Qena, Assuit, Sohage, Dameitta and Sixth October).
- From 27 June to 1 July 2010, ILRI and FAO jointly conducted a five-day refresher training for previously recruited CAHO team (22 participants from five governorates). Apart from refreshing their PE skills, the training allowed for the reviewing of CAHO field experiences and identified key constraints and lessons learned.
- In March 2010, a LoA was signed with ILRI in order to support the expansion of the CAHO approach through tailored short-term group training program in both previously selected and new governorates.
- The 32 CAHO teams continue to operate in 15 governorates and have visited 176 villages during the reporting period. As a result, the CAHO teams detected 15 suspected HPAI outbreaks, of which 11 were confirmed positive by the reverse transcriptase polymerase chain reaction (RT-PCR) test. During the reporting period, 58 percent of HPAI confirmed outbreaks from the household poultry sector were reported through CAHO program.
- Procurement of the following items is in process:
 - Consumables/plastic ware for real-time reverse transcriptase polymerase chain reaction (RRT-PCR) for NLQP to meet its requirements for routine HPAI diagnosis in poultry
 - Sampling kits and transport media as required by GOVS

Objective 4: Improvement of HPAI outbreak investigation and response measures in poultry populations

- Of the 22 Veterinary Directorates that signed LoA for HPAI outbreak response with FAO, 21 (namely Alexandria, Assuit, Aswan, Banisuef, Beheira, Dakahlia, Damietta, Fayoum, Gharbia, Giza, Helwan, Ismailia, Kafr El-Sheikh, Matrouh, Minya, Monufia, Qena, Sharqia, Six October, Souhag and Suez) are properly and timely implementing field activities per the agreed LoA terms. They have also submitted all required reports (technical, comprehensive individual case and monthly progress reports) for the period from February to May 2010. Five of 21 governorates (Assuit, Banisuef, Ismailia, Matrouh and Souhag governorates) did not report any confirmed HPAI outbreaks during the reporting period. The Veterinary Directorate

in Luxor governorate had a delay in the identification and assignment of district rapid response team (RRT) members. To date, no report has been received from this governorate. They have recently indicated that they have started implementing LoA activities as of May 2010. A national consultant handling field outbreak investigation and reporting is closely following the matter with the Director of Veterinary Services in Luxor in an attempt to enhance the delivery on the agreed LoA terms.

- From 8 April to 29 April 2010, ECTAD conducted four training sessions involving 70 veterinarians from 16 governorates and 86 districts. The main purpose of the training was to assist GOVS in forming district-level RRTs and enhance their performance in responding to HPAI outbreaks.
- The following items required outbreak investigation, and responses were procured and delivered to GOVS:
 - 100 000 pieces of disposable aprons
 - 100 000 pieces of disposable plastic shoe covers
 - 50 000 sterile rayon swabs, and
 - 5 000 boxes of sterilized latex powder

The procurement of disinfectant (Omnacid 2.5 ton) is still in process.

Project management issues:

- After a long delay, the renovation of office space for the establishment of HPAI hotline system within GOVS premises is completed. GOVS has nominated 37 staff members for the hotline system, who are currently receiving practical training. Upon successful completion of the training and the attainment of the skills on the HPAI hotline system, the most outstanding candidates will be selected to make the system operational. FAO contracted SANCO PLC Company to provide the above specified specialized training.

Planned Activities for the Next Quarter:

- Follow up on the proper implementation of the various LoAs by national and international partners.
- Organize and implement two introductory CAHO training courses for core national trainees from ten governorates. Each training session will last ten days and will be carried out jointly by FAO and ILRI.
- Carry out two field monitoring missions, each lasting ten days, to assess the performances of the newly trained CAHO practitioners.
- Provide, in collaboration with ILRI, two refresher workshops (five days each) on CAHO approach for recently trained CAHO practitioners.
- Continue supporting GOVS in forming district-level biosecurity teams in the identified high risk governorates (14) through the provision of five biosecurity training courses.
- Finalize procurements in process and deliver the items to GOVS and NLQP.
- Operationalize the HPAI hotline system.
- Provide administrative and technical assistance to SAIDR- Project Management Unit (PMU) in GOVS and support them in completing planned project activities.

Main challenges encountered and solutions:

- Delay in the approval of the revised HPAI strategy forced Mr Abdessalam OuldAhmed, the FAO-Representative in Egypt and Deputy Regional Representative (DRR) of the Regional Office for the Near East and North Africa (RNE), to write an official letter to H.E. Amine Abaza, MoALR. The ECTAD Team Leader held series of meetings with the Chief Veterinary

Officer (CVO) and the Coordinator of the Animal Health Institute (AHI) Supreme Council and explained the need for a formal approval of the revised strategy in order to solicit support from development partners and make subsequent preparations for its implementation. Thanks to the support from all parties approached, the revised strategy was officially approved on 31 May 2010 by H.E. Amine Abaza, MoALR.

- It is apparent that some governorate veterinary services lack the capacity to implement activities and to timely report according to the terms specified in the various LoAs signed with FAO. ECTAD-EGY extended all rounded support and regularly followed up on the implementation and reporting status of these governorates. As a result, a considerable improvement has been achieved in both activity implementation and timely submission of reports. However, there is no encouraging improvement from three of the governorates (namely Assuit, Luxor and Benisuif) due mainly to internal constraints beyond the scope of this project. A decision was made by the Project Coordinator and ECTAD Team Leader not to disburse the remaining LoA instalments until a convincing delivery is made.

Main progress made towards the achievement of project outcomes

- FAO has implemented, analysed and compiled numerous field-level studies on livelihoods, poultry value chains and disease control constraints for use by GOVS. Project outputs have strengthened institutional capacities (manpower, infrastructure, etc.) of veterinary services at both central and governorate levels.
- The assessment study conducted in the framework of the SAIDR project on AI vaccination of poultry in Egypt indicated that vaccination coverage and flock immunity level was low. The organization of vaccination campaigns is poorly managed. The study suggested that vaccination should be seen as the only one of the many efforts required to make significant improvements to HPAI control and prevention in the country. FAO has developed and handed over to GOVS a risk-based, targeted vaccination scheme for the different production sectors as well as an operational plan and exit strategy.
- The strategic HPAI review meeting held in June 2009, jointly organized by USAID, GOVS, MoALR and FAO, urged stakeholders to refocus their efforts in the future. As a result, the SAIDR project is focusing its efforts on the following key areas: (i) sustainable and cost-effective biosecurity in all production sectors; (ii) risk-based targeted surveillance; and (iii) improved outbreak investigation and disease management capacities.
- In close consultation with the primary stakeholders, FAO continually evaluated its project implementation. Government counterparts operating at various levels and private sector players appreciated FAO's approach and demonstrated high levels of confidence. In close consultation with relevant partners, FAO has completed the process of reviewing the animal health component of the integrated national plan that needs to reflect the endemicity of the disease and is needed for longer term risk reduction measures. The revised "HPAI Animal Health and Livelihood Sustainability Strategy," has been officially approved on 31 May 2010 by H.E. Amine Abaza, MoALR. This will thus form the basis for HPAI control efforts in the next five years.

Quarter III 2010

Project monitoring sheet: **OSRO/EGY/701/USA**Project title: **Strengthening Avian Influenza Detection and Response in Egypt**Reporting period: **July – September 2010**

Country: Egypt
Title: Strengthening Avian Influenza Detection and Response in Egypt
Code: OSRO/EGY/701/USA
Budget: USD 3 000 000
Effective starting date: 1 October 2009
Planned end date: 30 September 2011
Context of the project <p>Outbreaks of Highly Pathogenic Avian Influenza (HPAI) spread in Egypt since February 2006 and the disease has become endemic. The Food and Agriculture Organization of the United Nations (FAO) has been providing technical assistance to the Ministry of Agriculture (MALR) through the implementation of the animal health component of the Strengthening Avian Influenza Detection and Response (SAIDR) project funded by the United States Agency for International Development (USAID).</p>
Objectives of the project <p>The overall objective of the project is to minimize the human health risks and reduce the livelihood impacts posed by HPAI through its effective prevention and control. The specific objectives of the project are to facilitate:</p> <ol style="list-style-type: none"> 1. Ensure the regular updating of the national HPAI control/response plan. 2. Improvement of biosecurity measures to reduce virus circulation in poultry population and bird-to-human transmission. 3. Improvement of surveillance activities of H5N1 in poultry and wild birds. 4. Improvement of HPAI outbreak investigation and response measures in poultry populations.
Planned outputs and activities <ul style="list-style-type: none"> • Follow up on the implementation of the various letters of agreement (LOA) by national and international partners. • Organize two introductory community-based animal health outreach (CAHO) training courses for core national trainees from ten governorates. Each ten-day training session will be carried out jointly by FAO and the International Livestock Research Institute (ILRI). • Carry out two field monitoring ten-day missions to assess the performances of the newly trained CAHO practitioners. • Provide, in collaborating with ILRI, two refresher five-day workshops on CAHO approach, to recently trained CAHO practitioners. • Continue supporting the General Organization for Veterinary Services (GOVS) in forming district-level biosecurity teams in the identified high-risk governorates (14) through the provision of five biosecurity training courses. • Finalize procurements under process and deliver the items to the GOVS and the National Laboratory for Quality Control and Poultry Production (NLQP). • Operationalize the HPAI hotlines system.

- Provide administrative and technical assistance to the SAIDR project management units in GOVS and provide ongoing support for the completion of planned project activities.

Activities undertaken during the reporting period (July – September 2010)

Objective 1: Ensure the regular updating of the national HPAI control/response plan

- Based on the revised and approved HPAI control strategy, the following activities were undertaken:
 - GOVS, with the assistance of FAO, has developed a three-year action plan for the control of HPAI in Egypt. The action plan focuses on biosecurity, market chain management and enhanced disease reporting through appropriate outbreak response and better determination of epidemiological parameters of the disease. FAO has organized a stakeholders meeting on 23 September 2010 (including GOVS, NLQP, USAID, the United Nations Children's Fund and the World Health Organization) to discuss the approved action plan as well as the new USAID-funded FAO project.
 - A new national Animal Health Technical Committee (AHTC) for HPAI has been established by a Ministerial decree and under the direct leadership of GOVS. The committee is composed of representatives of several national and international organizations with FAO serving as a secretariat. The main role of the AHTC is to provide science-based technical advice to the Ministry of Agriculture and Land Reclamation (MoALR) and the National Avian and Human Influenza Supreme Council.
- The process for the refurbishment of 120 decentralized epidemiology units is still ongoing. The local needs were assessed, specifications prepared and contractors identified. The office equipment for the decentralized epidemiology units have delivered to GOVS for distribution to the units across the country.

Objective 2: Improvement of biosecurity measures to reduce virus circulation in poultry population and bird-to-human transmission

- Thirteen out of the 14 Governorate Veterinary Services (namely Assuit, Behaira, Dakahlia, Fayoum, Gharbia, Helwan, Kafr El-Sheikh, Minya, Menofia, Qena Souhag, Sharqia and Six October governorates) that signed LOA with FAO, have properly and timely implemented field activities as per agreed terms. They have also completed questionnaires with checklists and delivered progress reports. FAO is following up to ensure the proper implementation and timely reporting. It was, however, noted that the Banisuef Governorate Veterinary Services has some internal constraints that hindered the implementation of the activities agreed in the LOA.
- FAO, in collaboration with GOVS, conducted five training sessions on biosecurity practices for a total of 90 trainees drawn from 73 districts in 12 governorates. The purpose of the training was to assist GOVS in forming district-level biosecurity teams in HPAI high-risk governorates.
- Preparation of a simplified minimum biosecurity guideline for the different commercial poultry production sectors and farming types was completed.

Objective 3: Improvement of surveillance activities of A/H5N1 in poultry and wild birds

- An amendment was made to the LOA signed between FAO and ILRI in order to facilitate the production of a CAHO manual for practitioners and its translation into Arabic.
- ILRI, in collaboration with FAO, conducted a ten-day introductory CAHO training course Followed by a five-day refresher course. These capacity building activities aim to support the plan of the government to expand CAHO activities to additional districts. Three governorates (Gharbia, Menoufia and Dakahlia) were trained in July and September 2010, seven other governorates (Kafr Elshiekh, Menoufia, Minya, Bani Swif, Dakahlia, Kalubia and Fayoum) were trained in August and September 2010.

- Two ten-day field monitoring missions were conducted by FAO, ILRI and GOVS to assess the performances of the newly trained CAHO practitioners in eight governorates (July – August 2010).
- The 108 CAHO qualified practitioners continue to operate in 15 governorates (Gharbia, Sharkia, Beheira Dakahleya, Dameitta, Six October, Baniswief, Fayoum, Qena, Minya, Assuit, kafr Elshiekh, Kalubia and Sohage governorates). The practitioners visited 460 villages during the reporting period and detected 29 suspected cases matched with HPAI clinical case definition, of which nine were RT-PCR confirmed HPAI positive outbreaks. During the reporting period, 24 percent of the confirmed HPAI outbreaks from the household poultry sector were reported through the CAHO programme.
- A web-based CAHO database has been prepared to enable the decentralized data entry by CAHO teams as well as facilitate rapid consolidation and analysis of data by the GOVS epidemiology unit.

Objective 4: Improvement of HPAI outbreak investigation and response measures in poultry populations

- Of the 22 Directorates of Veterinary Services that signed an LOA with FAO for HPAI outbreak response, 20 are properly and timely implementing field activities per the agreed terms (namely in Alexandria, Assuit, Aswan, Beheira, Dakahlia, Damietta, Fayoum, Gharbia, Giza, Helwan, Ismailia, Kafr El-Sheikh, Matrouh, Minya, Monufia, Qena, Sharqia, Six October, Souhag, and Suez). They have successfully fulfilled their reporting obligations.. Four governorates (Assuit, Ismailia, Matrouh and Souhag) did not experience HPAI outbreak and did not use the LOA money. Two LOA related to Baniswif and Luxor governorates were cancelled due to internal administrative.
- FAO, in collaboration with GOVS, conducted a training session for district-level rapid response teams for enhanced HPAI outbreak response. Twenty-two veterinarians drawn from 16 districts in nine governorates have benefited from this training.
- Two and half tonnes of disinfectant (Omnacid) was purchased and delivered to GOVS for further distribution in high-risk governorates.

Planned activities for the next six-month period

- Continue the process of refurbishment of 120 decentralized epidemiology units and distribution of purchased items.
- Finalize the various LOA signed with national and international partners.
- Follow up on procurements under process and deliver the items to the concerned beneficiary organization.
- Finalize SAIDR Year IV project activities and follow up on the clearance process from FAO and USAID.

Main challenges encountered and solutions

- The support to the CAHO programme ended on 30 September 2010 (end of SAIDR III project). The main challenge now is how to ensure the sustainability of this vital surveillance system. A series of meetings were held with the national veterinary authority including the Chief Veterinary Officer. Agreement was reached to integrate the CAHO programme into the existing government structure. FAO provided critical technical support to GOVS which facilitated the transfer of the CAHO programme to GOVS.
- It seems to appear that some governorate veterinary services lack the capacity to implement the activities and to timely report on them, as per the terms of the LOA. FAO extended its support and regularly followed up on the implementation and reporting status. As a result, a considerable improvement has been achieved in both activity implementation and timely reporting.

Main progress made towards the achievement of project outcomes

- FAO has implemented, analysed and compiled numerous field-level studies on livelihoods, poultry value chains and disease control constraints for use by GOVS. Project outputs have strengthened institutional capacities (manpower, infrastructure, etc.) of veterinary services at both central and governorate levels.
- The assessment study conducted in the framework of the SAIDR project on avian influenza vaccination of poultry in Egypt indicated that vaccination coverage and flock immunity level is low. The organization of vaccination campaigns is poorly managed. The study suggested that vaccination should be seen as only one of the many efforts required to make significant improvements to HPAI control and prevention in the country. FAO has developed and handed over to GOVS a risk-based, targeted vaccination scheme for the different production sectors, as well as an operational plan and exit strategy.
- The strategic HPAI review meeting held in June 2009, jointly organized by USAID, GOVS, Ministry of Health and FAO, urged stakeholders to refocus efforts for the future. As a result, the SAIDR project is focusing its efforts on the following key areas: (i) sustainable and cost-effective biosecurity in all production sectors; (ii) risk-based targeted surveillance; and (iii) improved outbreak investigation and disease management capacities.
- In close consultation with the primary stakeholders, FAO continually evaluated its project implementation. Government counterparts operating at various levels and private sector player appreciated FAO's approach and demonstrated high-level confidence. FAO has also completed the process of reviewing the animal health component of the integrated national plan that needs to reflect the endemicity of the disease and the needed for longer-term risk reduction measures. The revised 'HPAI Animal Health and Livelihood Sustainability Strategy', has been officially approved on 31 May 2010 by H.E. Amine Abaza, Minister, MoALR. This will thus form the basis for HPAI control efforts for the next five years.
- A three-year elaborated action plan was prepared and finalized with direct support from FAO.
- As a recommendation of the revised strategy and United Nations joint mission report, an Avian Influenza Unit has been established in GOVS. The unit is fully engaged in all HPAI control measures and in the implementation of coordinated activities with GOVS and other key partners. FAO provided technical advice and played a facilitative role in the establishment of this unit.

Quarter II 2010Project monitoring sheet: **OSRO/EGY/801/USA**Project title: **Avian Influenza Vaccine Efficacy Project (AIVEP) in Egypt**Reporting period: **April – June 2010**

Country: Egypt
Title: Avian Influenza Vaccine Efficacy Project (AIVEP) in Egypt
Code: OSRO/EGY/801/USA
Budget: USD 2 416 500
Effective Starting Date: July 2008
Planned End Date: September 2010
<p>Context of the Project</p> <p>Outbreaks of Highly Pathogenic Avian Influenza (HPAI) spread in 18 governorates in Egypt within less than three months after the disease was originally diagnosed in three governorates on 17 February 2006. The Government attempted to control the outbreak through a stamping out procedure, which included culling of all poultry within a 1 km radius of the confirmed diagnosis. By the end of 2006, nearly 30 million birds had been culled. Outbreaks continue to be reported in 23 of the 29 governorates in the country, and the disease has become endemic.</p> <p>In response to the continued threat of HPAI to Egypt, the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) have been providing technical assistance through the joint OIE/FAO Influenza Network (OFFLU) and other initiatives. Specifically, FAO has been providing the Ministry of Agriculture and Land Reclamation (MALR) with major technical assistance through the implementation of the Avian Influenza Vaccine Efficacy Project (AIVEP) and the Strengthening Avian Influenza Detection and Response (SAIDR) project, both funded by the United States Agency for International Development (USAID).</p> <p>In collaboration with the Government of the Arab Republic of Egypt (GoE), FAO, OFFLU and USAID are working together to conduct virus characterization and mapping of Egyptian antigenic variants with intensified HPAI field isolate collection and analyses. Through antigenic mapping, challenge testing and transmission studies, this project has identified strategic recommendations for Egypt, including the development of clear criteria for the selection of vaccinal strains.</p> <p>FAO is providing key technical support through the AIVEP, as vaccination is considered part of the overall efforts to reduce the HPAI infections and the spread of the virus in Egypt with the potential to benefit other countries in the region and worldwide.</p>

Objectives of the Project

The overall project objective is to assist the GoE in its efforts to control HPAI in the domestic poultry population and to avoid the risks of human infection.

The specific project objectives are to conduct:

1. screening and evaluation of genetic and antigenic variants among existing H5N1 HPAI field strains previously collected from 2006 until early 2008;
2. intensified collection of H5N1 HPAI field isolates from newly confirmed outbreaks (since mid-2008);
3. challenge testing of antigenic variants in specific pathogen free (SPF) birds and currently used avian influenza (AI) vaccines in Egypt; and
4. controlled transmission trials in the laboratory on birds raised and vaccinated in commercial poultry farms.

Planned Activities

Output 1.1: Screening and evaluation of genetic and antigenic variants among existing field strains previously collected from 2006 until early 2008.

- Activity 1.a: Screening and evaluation of genetic and antigenic variants among existing field strains (2006 – early 2008 collections).
- Activity 1.b: Carry out sequencing and phylogenetic analysis.
- Activity 1.c: Conduct antigenic profiling.
- Activity 1.d: Perform antigenic cartography.
- Activity 1.e: Selection of variants for challenge studies as specified under Output 1.3 below.
- Activity 1.f: Assessment of biosecurity and biosafety of the National Laboratory for Veterinary Quality Control on Poultry Production (NLQP) and laboratory operations.
- Activity 1.g: Capacity building (i.e. training of Egyptian scientists).

Output 1.2: Intensified collection of H5N1 HPAI field isolates from newly confirmed outbreaks (since mid-2008).

- Activity 2.a: Intensified HPAI field isolate collection.
- Activity 2.b: Conduct reverse transcription - polymerase chain reaction (RT-PCR) analysis (support for laboratory consumables provided through SAIDR project).
- Activity 2.c: Identify all H5N1 HPAI isolates collected since mid 2008 to 2009.
- Activity 2.d: Conduct sequencing and analysis of 100 isolates at NLQP under the supervision of and assessment by the Southeast Poultry Research Laboratory (SEPRL).
- Activity 2.e: Perform antigenic profiling and cartography.

Output 1.3: Challenge testing of antigenic variants in SPF birds and currently used AI vaccines in Egypt.

- Activity 3.a: Safety, purity and potency testing of currently used AI vaccines in Egypt conducted at the Central Laboratory for Evaluation of Veterinary Biologics (CLEVB).
- Activity 3.b: Selection and testing of vaccinal seed strains for challenge testing (planned to test six vaccinal seed strains against four challenge viruses [requiring a total of 24 isolation units] carried out at SEPRL [USA]).
- Activity 3.c: Second-year challenge testing carried out at NLQP (Egypt).
- Activity 3.d: Capacity building (refurbishing one of the existing NLQP units to biosafety level 2 [BSL2] animal facility).

Output 1.4: Controlled transmission trials in the laboratory on birds raised and vaccinated

<p>in commercial poultry farms.</p> <p>Activity 4.a: Organize and provide support through training and workshop (during the last quarter of the project) to enhance skills of NLQP staff in transmission trials.</p>
<p>Activities Undertaken during the reporting period</p> <p>Output 1.2: Intensified collection of H5N1 HPAI field isolates from newly confirmed HPAI outbreaks (since mid-2008).</p> <p>Activity 2.a: Intensified HPAI field isolate collection.</p> <ul style="list-style-type: none"> From April to June 2010, NLQP, in close collaboration with the SAIDR project staff, has collected 178 370 samples from 3 396 cases. Of these, 84 cases tested positive for HPAI by real-time reverse transcription - polymerase chain reaction (RRT-PCR). <p>Activity 2.b: Conduct reverse transcription - polymerase chain reaction (RT-PCR) analysis (support for laboratory consumables provided through SAIDR project).</p> <p>Results of RRT-PCR tests undertaken from April to June 2010 include:</p> <ul style="list-style-type: none"> All collected samples from 3 396 cases were tested for a common gene by RT-PCR, and 84 of the cases were found positive for AI. All the above-indicated positive cases for a common gene of AI also tested positive for H5 gene and negative for H7 gene. The database of the new avian-influenza-positive samples has been regularly updated. <p>Activity 2.c: Identify all H5N1 HPAI isolates collected since mid 2008 to 2009.</p> <ul style="list-style-type: none"> Compilation of the list of positive samples and isolates from 2008 and 2009 is completed, and the process for the collection of positive samples from 2010 is underway. Isolation of the 68 positive tested cases with RRT-PCR was started during the reporting period and is still underway. Virus propagation and reactivation of 48 positive samples was carried out at NLQP. Isolated samples were titrated using haemagglutination (HA) test and kept at -80 degrees centigrade, and the database was regularly updated. NLQP finalized the sequencing of H5 gene for five isolates and N1 gene for nine isolates from 2010 collections. <p>Activity 2.e: Perform antigenic profiling and cartography.</p> <ul style="list-style-type: none"> NLQP prepared and standardized all reagents and equipment needed. NLQP arranged the work plan according to the isolates' list database and in close collaboration with SEPRL. A sequence phylogenetic tree has been completed for the new isolates. In addition, ten new isolates were selected to be added into the isolates' list used for cartography. The haemagglutination inhibition (HI) test required for cartography is under construction for 20 samples from 2009 and 2010. Results of HI test will be ready during the first week of July 2010. Data will be shared with other partners (SEPRL, Erasmus University and OFFLU experts). <p>Output 1.3: Challenge testing of antigenic variants in SPF birds and currently used AI vaccines in Egypt.</p> <p>Activity 3.a: Safety, purity and potency testing of currently used AI vaccines in Egypt</p>

conducted at the Central Laboratory for Evaluation of Veterinary Biologies (CLEVB).

- Scientists from SEPRL (Drs David Swayne, David L. Suarez and Cary Rue) were on a mission to Egypt from 4 to 15 April 2010 (the mission was previously delayed twice) to assess the implementation of training in “Vaccine Efficacy and Potency Regulatory Testing” at CLEVB. Dr Swayne visited CLEVB to follow up on the implementation of training skills received at SEPRL and to assess the currently used/licensed vaccines against international standards.

Second year testing

NLQP, SEPRL and Erasmus University examine antigenic, genetic, potency, efficacy and make recommendations to GOE

- Results of the HI test needed for cartography data analysis will be shared with other partners during the first week of July. Based on the output of the analysis, which will be conducted at Erasmus University, the challenge virus(s) will be selected in collaboration with SEPRL and will be used for the second challenge test to be carried out at NLQP.

Non-intermediate results (IRs) Activities

- Two workshops were held in Alexandria and Port Said involving staff from NLQP and Satellite laboratories with the aim of strengthening the coordination between them and of discussing technical and administrative challenges and ways to address them.
- At request of SEPRL, and in close consultation with all concerned parties, a six-month no-cost extension with budget revision was approved. The project will, thus, be completed in February 2011.

Planned activities for the next quarter

Output 1.4: Controlled transmission trials in the laboratory on birds raised and vaccinated in commercial poultry farms.

to be dealt with separately - training

Other:

- Developing the BSL3 capacity at NLQP through the technical assistance of the United States Naval Medical Research Unit 3 (NAMRU3).
- Following up on the process of the upgrading of the animal facility to BSL3 to enable the conducting of the planned challenge test.

Main challenges encountered and solutions

- Because of the need to re-do some of the challenge test groups conducted at SEPRL, the activities were rescheduled for August 2010. As this delay has affected the time plan of the project, a no-cost extension was requested by SEPRL and FAO and granted by USAID.
- Difficulties were faced in finding a local company specialized in design, construction and follow-up on the delivery of BSL3 labs and air ventilation systems. This has led to the delay in finalizing reconstruction of the animal facility area to reach BSL3 quality, an aspect essential for conducting challenge tests in order to determine the efficacies of the vaccines. An international bid has been prepared and four companies were invited to deliver offers (one local and three foreign companies). However, all the three foreign companies declined to tender. This has raised a concern, as a minimum of three companies is required to continue with the bidding process. There is an urgent need to search for new companies that are willing to participate in the bidding and that are able to complete the reconstruction of the animal facility on time.

Quarter III 2010Project monitoring sheet: **OSRO/EGY/801/USA**Project title: **Avian Influenza Vaccine Efficacy Project in Egypt**Reporting period: **July – September 2010**

Country: Egypt
Title: Avian Influenza Vaccine Efficacy Project in Egypt
Code: OSRO/EGY/801/USA
Budget: USD 2 416 500
Effective starting date: 9 June 2008
Planned end date: 28 February 2011
<p>Context of the project</p> <p>Outbreaks of Highly Pathogenic Avian Influenza (HPAI) spread in 18 governorates in Egypt within less than three months after the disease was originally diagnosed in three governorates on 17 February 2006. The Government attempted to control the outbreak through a stamping out procedure, which included culling of all poultry within a 1 km radius of the confirmed diagnosis. By the end of 2006, nearly 30 million birds had been culled. Outbreaks continue to be reported in 23 of the 29 governorates in the country and the disease has become endemic.</p> <p>In response to the continued threat of HPAI to Egypt, the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) have been providing technical assistance through the joint OIE/FAO Influenza Network (OFFLU) and other initiatives. Specifically, FAO has been providing the Ministry of Agriculture and Land Reclamation (MoALR) technical assistance through the implementation of the Avian Influenza Vaccine Efficacy Project (AIVEP) and the Strengthening Avian Influenza Detection and Response (SAIDR) project. Both projects are funded by the United States Agency for International Development (USAID).</p> <p>Working in collaboration with the Government of the Arab Republic of Egypt, FAO, OFFLU and USAID are working together to conduct virus characterization and mapping of Egyptian antigenic variants with intensified HPAI field isolate collection and analyses. Through antigenic mapping, challenge testing and transmission studies, this project has developed strategic recommendations for Egypt, including on the development of clear criteria for the selection of vaccinal strains.</p> <p>FAO is providing key technical support through the AIVEP. Vaccination is considered as part of overall efforts to reduce HPAI infections and spread of the virus in Egypt, with the potential to benefit other countries in the region and worldwide.</p>

Objectives of the project

The overall project objective is to assist the Government of the Arab Republic of Egypt in its efforts to control HPAI in the domestic poultry population and avoid the risks of human infection.

The specific project objectives are to conduct:

1. Screening and evaluation of genetic and antigenic variants among existing H5N1 HPAI field strains previously collected from 2006 until early 2008;
2. Intensified collection of H5N1 HPAI field isolates from newly confirmed outbreaks (since mid-2008);
3. Challenge testing of antigenic variants in specific pathogen-free birds and currently used avian influenza vaccines in Egypt; and
4. Controlled transmission trials in the laboratory on birds raised and vaccinated in commercial poultry farms.

Planned activities

Output 1.1:	Screening and evaluation of genetic and antigenic variants among existing field strains previously collected from 2006 until early 2008
Activity 1.a:	Screening and evaluation of genetic and antigenic variants among existing field strains (2006 – early 2008 collections)
Activity 1.b:	Carry out sequencing and phylogenetic analysis
Activity 1.c:	Conduct antigenic profiling
Activity 1.d:	Perform antigenic cartography
Activity 1.e:	Selection of variants for challenge studies as specified under Output 1.3 below
Activity 1.f:	Assessment of biosecurity and biosafety of the National Laboratory for Veterinary Quality Control on Poultry Production (NLQP) and laboratory operations
Activity 1.g:	Capacity building (i.e. training of Egyptian scientists)
Output 1.2:	Intensified collection of H5N1 HPAI field isolates from newly confirmed outbreaks (since mid-2008)
Activity 2.a:	Intensified HPAI field isolate collection
Activity 2.b:	Conduct real-time polymerase chain reaction (RT-PCR) analysis (support for laboratory consumables provided through SAIDR project)
Activity 2.c:	Identify all H5N1 HPAI isolates collected since mid 2008 to 2009
Activity 2.d:	NLQP conduct sequencing and analysis of 100 isolates under the supervision of and assessment by the Southeast Poultry Research Laboratory (SEPRL)
Activity 2.e:	Perform antigenic profiling and cartography
Output 1.3:	Challenge testing of antigenic variants in specific pathogen-free birds and currently used avian influenza vaccines in Egypt
Activity 3.a:	Safety, purity and potency testing of currently used avian influenza vaccines in Egypt conducted at the Central Laboratory for Evaluation of Veterinary Biologics (CLEVB)
Activity 3.b:	Selection and testing of vaccinal seed strains for challenge testing (planned to test six vaccinal seed strains against four challenge viruses (requiring a total of 24 isolation units) carried out at SEPRL (United States of America)
Activity 3.c:	Second year challenge testing carried out at NLQP (Egypt)
Activity 3d:	Capacity building (refurbishing one of existing NLQP units to BSL2 + animal facility)

Output 1.4: Controlled transmission trials in the laboratory on birds raised and vaccinated in commercial poultry farms

Activities: FAO to organize and provide support through training and workshop (during the last quarter of the project) to enhance skills of NLQP staff in transmission trials.

Activities undertaken during the reporting period

Antigenic profiling and cartography

- NLQP prepared and standardized all reagents and equipment needed.
- NLQP revised the work plan according to the isolates list database and in close collaboration with SEPRL sequence phylogenetic tree has been finished for the new isolates and sent to SEPRL and 25 new isolates (including three reference isolates, one isolate from 2006, two isolates from 2007, five isolates from 2008, eight isolates from 2009 and six isolates from 2010) have been selected to be added to the list to be used for the cartography work.
- Human influenza test, which is required for cartography, was conducted on the 25 isolates. In July 2010, the results of the human influenza test have been shared with SEPRL, Erasmus and OFFLU for data analysis.
- In consultation with the technical officers in SEPRL and FAO, further human influenza test for cartography has been rescheduled for end January 2011, when new antisera and reference strain required to complete the human influenza test will be prepared and shipped by SEPRL to NLQP. NLQP has contacted Centers for Disease Control and Prevention (CDC) in Atlanta to obtain the two missing reference isolates for the human influenza test.

Challenge testing of antigenic variants and existing vaccines

- The first year challenge test was carried out at SEPRL using three selected isolates from year 2006, 2007 and 2008 isolates against four vaccines. Repeated testing in some experimental groups was necessary. This repeated testing was originally scheduled to take place in September 2010 concurring with an NLQP expert visit to SEPRL. The challenge test did not take place due to the renovation of the Biosafety Laboratory Level 3 (BSL3) at SEPRL. The NLQP expert used the opportunity to hold discussions with SEPRL scientists on the preparation of antigen and anti-sera for the challenge test.

Testing of isolates from the second year (September 2009-10)

- In July 2010, the result of human influenza test required for cartography data analysis were shared with other partners and submitted by SEPRL to Erasmus. The selection of the challenge virus(es) has been rescheduled to take place in February 2011.

Non-intermediate results activities:

- Two workshops were organized and took place in Fayoum and Luxor Governorates. The purpose was to strengthen the coordination between the central (NLQP) and satellite (provincial) laboratories. In addition, the technical and administrative problems faced by the satellite laboratories were discussed and the way to overcome them recommended. A total of 87 laboratory personnel drawn from five satellite laboratories participated in these workshops.
- USAID approved the reallocation of the budget to upgrade the animal testing facility to procure five chicken isolators instead. The procurement process has been initiated.
- The upgrade of animal testing facility normally includes both construction and installation of a ventilation system, due to the limitations in local contractor to undertake the upgrading work as one package; this activity is no longer valid under the current project. Instead, NLQP wanted that this activity to be supported by the Egyptian Government.

Planned activities for the next six-month period:

- Challenge testing: follow-up with SEPRL.
- Conduction of transmission trial: will be discussed with all partners if needed.
- The project will continue developing the BSL3 capacity at NLQP through the technical assistance of NAMRU3.

Main Challenges Encountered and Response Provided

- The fact that the challenge test to be undertaken by SEPRL has been delay up to November 2010 (initially planned for August-September 2010) will have serious implication on related activities.
- The need for additional reference strains and antisera resulted in delaying the human influenza testing for cartography analysis. Direct contact between NLQP and SEPRL was established which should provide the missing reference isolate by January 2011. Another contact between NLQP and CDC was established to obtain two more reference strains. As a result some project activities will be delayed until February 2011 namely the selection of the new challenge strain (from years 2009 and 2010 isolates) and challenge testing (for vaccine evaluation in the second year of the project).
- Difficulties in identifying an experienced and specialized company for the design, construction and delivery of BSL3 laboratories and air ventilation systems hindered the achievement of this activity. NLQP agreed to cover all related costs.

I Quarter 2010

Project Monitoring Sheet: **OSRO/GLO/802/USA**

Project Title: **Improved biosecurity and hygiene at production, collection points and live bird markets (LBM), including decontamination**

Reporting period: **January 2010 – March 2010**

Countries: Bangladesh, Egypt and Indonesia
Project Title: Improved biosecurity and hygiene at production, collection points and live bird markets (LBM), including decontamination
Code: OSRO/GLO/802/USA
Total budget: USD 2 500 000 ²
Effective Starting Date: 15 January 2009
Planned End Date: 31 July 2010
<p>Context of the project</p> <p>In many infected countries, live bird markets (LBM) and points of concentration for eventual commercial distribution are considered an important element in the maintenance and spread of the Highly Pathogenic Avian Influenza (HPAI) virus. Reducing the spread of HPAI from collection points within LBMs (bio-exclusion containment) and improved inspection and prevention through improved cleaning and disinfection (C&D) measures will contribute to the reduction in the overall secondary spread. Biosecurity measures are designed to reduce the amount of agent (HPAI virus, in this case) that is moved from place to place. Cleaning and disinfection of LBMs and transport vehicles can contribute to the goal of decreasing the amount of infective agent available to spread the disease from markets to farms and to humans.</p>
<p>Objectives of the project</p> <p>The objective of this project is to develop and implement an integrated C&D programme in selected LBMs and other collection points in Bangladesh, Egypt and Indonesia. This would minimize the risk for human health and reduce transmission and spread of HPAI virus.</p> <p>Liaison with national project managers has been carried out on a continuous, "as needed" basis and through planned missions to the projects. Field visits have been made by the international co-ordinator and technical advisor to Indonesia and Bangladesh to assist with briefing of project staff, offering technical advice for the project activities and undertaking visits to collector yards, wholesale markets, LBMs and selected checkpoints on the perimeter of the capital cities.</p>

² (The amount of USD 2 500 000 is the total contribution that includes the allocation per country. The project budget has been divided into four main project components which are: Global Cross-country Coordination. (budget allocation amounts to USD 775 000), the Arab Republic of Egypt, (budget allocation amounts to USD 575 000), the People's Republic of Bangladesh (budget allocation amounts to USD 575 000) and the Republic of Indonesia (budget allocation amounts to USD 575 000).

Planned activities**BANGLADESH****Output 1. Target LBMs and points of concentration or production identified and prioritized in Bangladesh**

Activity 1.1 Mapping and characterizing of LBMs and points of concentration in the targeted areas and selection of those where the number of avian species in and out (either as a live bird or as meat) is greatest.

Activity 1.2 Scheduling of visits to market managers, butchers, and stands sellers to establish a participatory process for C&D mechanisms for improved hygiene of LBMs.

Output 2. LBMs cleaning and disinfection guidelines and protocols developed and agreed and approved by the Government of Bangladesh, with input from veterinary officials, local authorities and LBM managers

Activity 2.1 Reviewing of existing legislation for LBMs, transport or collection point operations and requirements.

Activity 2.2 Collating risk behaviours and participatory methods for their reduction.

Activity 2.3 Developing C&D protocols for LBMs and fomites (cages, egg flats, etc.).

Activity 2.4 Establishing procedures for implementing disinfection of trucks and vehicles in LBMs.

Output 3. Sufficient staff and workers adequately trained in cleaning and disinfection of LBMs, live bird stands and materials and means of transport

Activity 3.1 Training of relevant staff and animal health workers in LBM C&D operations.

Activity 3.2 Communication and awareness workshops for all involved.

Output 4. Cleaning and disinfection operations implemented and monitored at target LBMs or collection points

Activity 4.1 Provision of inputs: decontamination kits including cleaning/disinfection supplies, Personal Protective Equipment (PPE), disinfectants and disinfection equipment (high pressure sprayers), printed material, storage facilities, water equipment/basin, holding cages, transport crates.

Activity 4.2 Equipping selected LBMs with reusable tools and subsidised products with the anticipation that improved hygiene locally (stand) would be more acceptable to consumers.

Activity 4.3 Refurbishing selected LBMs (installation of basic infrastructure for hygiene measures).

Activity 4.4 Implementing C&D operations as per agreed protocols.

Activity 4.5 Monitoring the process of hygiene measures adopted.

EGYPT**Output 1. Target commercial poultry farms identified and prioritized**

Activity 1.1 Collect Baseline data on commercial poultry farms and concentration facilities.

Activity 1.2 Complete mapping and characterizing of commercial poultry farms and points of concentration for the targeted project areas.

Activity 1.3 Prepare lists and detailed accounts of priority key sites, C&D strategy and work plan.

Activity 1.4 Prepare list and procure required input supplies.

Activity 1.5 Prepare schedules for regular visits/meetings to stakeholders.

Output 2. Cleaning and/or disinfection guidelines and protocols developed and agreed up on

Activity 2.1 Prepare implementation guidelines and concise protocols for cleaning and/or disinfection.

Activity 2.2 Conduct a consultative workshop to discuss and enrich the guidelines and protocols as well as to create awareness amongst key implementing partners.

Activity 2.3 Consultant review and identify key regulatory/policy gaps in existing legislation of poultry farms management, bird transport and requirements for concentration points.

Activity 2.4 Organize consultative meetings with key decision-makers to discuss and agree on key regulatory policy changes and their enforcement.

Activity 2.5 Collect and collating data on risk behaviours and participatory methods for their reduction; develop guidelines and protocols and agree with local authorities.

Activity 2.6 Review and update cleaning and/or disinfection protocols for the various project sites.

Output 3. Sufficient staff/workers adequately trained and implement cleaning and/or disinfection operations

Activity 3.1 Sign contractual agreements with veterinary directorates in the selected Governorates.

Activity 3.2 Conduct Training for Trainers (ToT) courses for governorate-level veterinary personnel.

Activity 3.3 Carry out tailor-made training for those involved in cleaning and/or disinfection operations.

Activity 3.4 Prepare and implement clear communication messages addressing the different categories of stakeholders and implement effective awareness functions.

Output 4. Cleaning and disinfection operations implemented and monitored at commercial poultry farms or collection points

Activity 4.1 Deliver inputs (expendable and non-expendable) required for project operation.

Activity 4.2 Implement cleaning and decontamination operations as per agreed protocols.

Activity 4.3 Review the practical field level constraints and updated procedures.

Activity 4.4 Prepare checklists for qualitative assessment of hygienic improvements in targeted areas.

Activity 4.5 Develop and implement a comprehensive monitoring and evaluation mechanism for the project.

INDONESIA

Output 1. Engage with high-risk collector yards in the greater Jakarta area (JABODETABEK) and develop and implement procedures to immediately improve biosecurity at these locations (Phase I)

Activity 1.1 Selecting 12 collector yards in JABODETABEK with high volume sales or trading in poultry species/breeds at high-risk for spreading HPAI (i.e. spent layers, backyard poultry, mixed species).

Activity 1.2 Developing Phase I standard operating procedures (SOPs) for C&D of items in the collector yard contaminated with poultry waste (i.e. vehicles and transport crates).

Activity 1.3 Training collector yard owners/workers and relevant local government officials on SOPs and use of equipment for C&D of vehicles and crates.

Activity 1.4 Equipping selected collector yards for implementation of C&D of vehicles and crates and upgrade infrastructure to meet the needs of the programme.

Activity 1.5 Designing a monitoring programme and training local government officials to monitor implementation.

Activity 1.6 Implementing and monitoring of C&D of vehicles and crates in 12 collector yards in JABODETABEK.

Output 2. Collector yards and transport links to farms selected for improvement in biosecurity as a means of reducing spread of HPAI within the live poultry market chain and between farms

Activity 2.1 Mapping and characterizing collector yards and improve understanding of transport links between collector yards and farms. Select those dealing with the high volume and high-risk species/breeds.

Activity 2.2 Visiting and discussing with collector yard owners and key informants involved in transport of live poultry, using a participatory process, to determine feasible C&D mechanisms for improved biosecurity in the live bird market chain.

Output 3. Poultry market chain cleaning and disinfection guidelines and protocols developed and agreed upon with local veterinary officials and collector yard owners, with inputs from key players involved in transport of live birds

Activity 3.1 Reviewing existing legislation and regulations for transport of live poultry and poultry collector yards.

Activity 3.2 Collating risk behaviours and participatory methods for their reduction.

Activity 3.3 Comparing technology options for cleaning which are both effective and sustainable.

Activity 3.4 Developing Phase II C&D protocols for collector yard holding areas and fomites (cages, egg flats) involved in transport of live poultry and poultry products.

Activity 3.5 Improving procedures for C&D of vehicles and crates based on Phase I monitoring and comparison of cleaning technology.

Output 4. Sufficient staff and workers adequately trained in cleaning and disinfection of poultry market chain; cleaning and disinfection guidelines and protocols developed

Activity 4.1 Phase II training of collector yard owners/workers and local government officials in C&D guidelines and protocols.

Activity 4.2 Communication and awareness workshops for all those involved.

Output 5. Cleaning and disinfection operations implemented and monitored in target collector yards and transport links

Activity 5.1 Provision of inputs: decontamination kits including cleaning/disinfection supplies, PPE, detergents, disinfectants and equipment (high pressure sprayers), sampling materials, printed material, water equipment/basin, holding cages / transport crates, etc.

Activity 5.2 Equipping selected collector yards and key players involved in live bird transport with reusable C&D tools and products.

Activity 5.3 Refurbishing selected collector yards and C&D sites (installation of basic infrastructure for hygiene measures).

Activity 5.4 Implementing C&D operations as per agreed protocols.

Activity 5.5 Develop a monitoring program for measurement of impact and implementation of C&D protocols.

Activity 5.6 Monitoring the implementation and impact.

Activities undertaken during the reporting period :

BANGLADESH

Output 1. Target LBMs and points of concentration or production identified and prioritized in Bangladesh

- Plans for the Cleaning and Disinfection Project and implementation have been updated from June 2009 to July 2010.
- Live Bird Markets were surveyed and characterized for C&D operations.
- On the basis of the above survey results, 18 LBMs were selected of which eight LBMs (including STOP AI handed over two LBMs to FAO in September 2009) were in Dhaka city region and ten LBMs in other five divisions in the country. FAO will concentrate its resources on these LBMs.

- The names of eight LBMs in Dhaka city region are as follows:

- 1) South Jattrabari Whole Sale Market
- 2) South Jattrabari Wet Market
- 3) Gulshan -1 DCC Market
- 4) Kawran Bazar
- 5) New Market
- 6) Kaptan Bazar
- 7) Mohammadpur Town Hall Market and
- 8) Mohammadpur New Market

- Other ten LBMs outside Dhaka

In Chittagong division :

- 1) CDA Karnaphuly Market, Chittagong
- 2) Karnaphuly Complex Market, Chittagong

In Sylhet division :

- 1) Ambarkhana Bazar, Sylhet
- 2) Khan Bazar Madina Market, Sylhet

In Rajshahi division :

- 1) Shaheb Bazar, Rajshahi
- 2) Fateh Ali Market (Bogra)

In Khulna division :

- 1) Sandha Bazar, Khulna
- 2) Galfamari Majghat

In Barisal division :

- 1) Bangla Bazar Alekanda, Barisal
- 2) Chowmatha Bazar

- Out of 18 LBMs five markets have been upgraded in the Dhaka city region, the rest of the markets are expected to be upgraded by June 2010.

Output 2. LBMs cleaning and disinfection guidelines and protocols developed and agreed and approved by the GOB, with input from veterinary officials, local authorities and LBM Managers

- C&D Guidelines and Protocols were developed for LBMs during second quarter reporting period.
- Memorandum of Understanding (MOUs) between FAO and 18 market committees have been signed.
- The MOUs relate to C&D, upgrading of LBMs (floor, drainage facility, slaughter house, poultry transport cleaning area, electric and water supply etc.), training of existing cleaners of 18 selected LBMs in the country.
- Checklist developed for use by Veterinary officers to check the C&D activities in the renovated LBM's.

Output 3. Sufficient staff and workers adequately trained in cleaning and disinfection of LBMs, live bird stands and materials and means of transport

- Training materials and training programme have been developed.

- Training courses for cleaning staff are planned to be offered within one week of the upgrade completion of the respective market upgrade.
- A day long training session was conducted for Karcher job aid and other sprayers for 12 veterinarians in Dhaka city region and ten veterinarians in other five divisions of district H.Q.
- Two-day long training session for three LBMs comprising 14 cleaners were conducted.

Output 4. Cleaning and disinfection operations implemented at LBMs or collection points

- Some LBMs at COX's Bazaar will be surveyed and two LBMs will be selected finally for C&D operation.
- Work order for two LBMs in Dhaka city is under process.
- Upgrading mainly electric and water supply points, drainage facility, poultry stall, slaughter house and poultry transport cleaning area will be carried out.
- Decontamination kits including C&D supplies, PPE, detergents, disinfectants, high pressure sprayers and poultry holding cages will be supplied to LBMs after completion of upgrading work.

EGYPT

Output 1. Target commercial poultry farms identified and prioritized

Activity 1.4 Prepare list and procure required input supplies.

The procurement of 4 tons citric acid, 2 000 pairs of gloves, 2 000 pairs of boots, 4 000 long-handle brushes, 4 000 banister brushes and 4 000 overalls is in process.

Output 2. Cleaning and/or disinfection guidelines and protocols developed and agreed upon

Activity 2.1 Prepare implementation guidelines and concise protocols for C&D.

- The final draft of a self-assessment guide reflecting essential operational biosecurity practices in commercial poultry farms (for use by farm owners and/or supervisors) were distributed for final review and comments.
- A poster guide reflecting some of risky biosecurity practices and behaviours in sectors 2 and 3 poultry farms in the country is drafted and distributed for review and comments.

Activity 2.5 Collect and collate data on risk behaviours and participatory methods for their reduction; develop guidelines and protocols and confirm with local authorities.

- Comprehensive data covering the prevailing risk behaviours associated with the use of 'external injectors' (vaccinators) and bird catchers by 405 farms (262 long- 143 short-cycle farms) located in Dakahlia (152), Qalyubia (147) and Sharqia (106) governorates, covering a total of 191 villages in 17 districts was collected and collated. Information was gathered through number of focus group discussions and interviews of poultry farm workers/owners. Measures to be taken in addressing the identified risk behaviours are identified and used in the experience sharing and training activities.

Output 3. Sufficient staff/workers adequately trained and implement cleaning and/or disinfection operations.

Activity 3.1 Sign contractual agreements with veterinary directorates in the selected Governorates.

- An addendum for the extension of contractual agreements to amend the Letter of Agreement (LoA) end dates to read as 31 May 2010 was signed. The amendment was done at the request of the Recipient Organization. The request for no-cost extension of the project was also approved.

Activity 3.3 Carry out tailor-made training for those involved in cleaning and/or disinfection operations.

- A one day consultative workshop for experience and good practice sharing between producers from moderately improved and weak biosecurity poultry farms was conducted. A total of 54 poultry farm owners and external injector have participated in the pilot session as opposed to a maximum of 35 expected. A post-training workshop held in ECTAD country office underscored that the lessons learned from the pilot session be considered in the subsequent similar sessions and the number of participants per session limited to a maximum of 35.

Output 4. Cleaning and disinfection operations implemented and monitored at commercial poultry farms or collection points

Activity 4.2 Implementation of cleaning and decontamination operations as per agreed protocols.

- District veterinarians (48), who were previously trained under the current project, have visited 809 different poultry farms. Each farm was visited on three occasions. During the farm visits, the veterinarians provided hands-on training on proper cleaning, dilution, application and safe use of disinfectants. They also monitored the implementation of C&D activities in farms where such training were previously provided. Monitoring data were collected through interviews using pretested questionnaire developed for this purpose. Analysis of the collected data from randomly sampled farms revealed that about 60 percent of the farms showed moderate biosecurity improvement while the remaining 40 percent remained with poor/weak biosecurity practices.

INDONESIA

Output 1. Engaging with high-risk collector yards in the greater Jakarta area (JABODETABEK) and developing and implementing procedures to immediately improve biosecurity at these locations (Phase I)

Activity 1.1 Selecting 12 collector yards in JABODETABEK engaged in high volume sales or trading in poultry species/breeds which are at high-risk of spreading HPAI (i.e. spent layers, backyard poultry, mixed species).

Completed.

Activity 1.2 Developing Phase I SOPs for C&D of items in the collector yard contaminated with poultry waste (i.e., vehicles and transport crates).

SOP development. Completed.

Activity 1.3 Training collector yard owners/workers and relevant local government officials on SOPs and use of equipment for C&D of vehicles and crates.

Completed for the nominated 12 collector yards in JABODETABEK in 2009 and ten collector yards in BODETABEK in 2010.

Activity 1.4 Equipping selected collector yards for implementation of C&D of vehicles and crates and upgrading infrastructure to meet the needs of the programme.

Completed equipment allocation as previously reported.

Activity 1.5 Designing a monitoring programme and training local government officials to monitor implementation.

Completed designing of monitoring form and training for Dinas staff.

Activity 1.6: Implementing and monitoring C&D of vehicles and crates in 12 collector yards in JABODETABEK.

- Local government monitoring of C&D at collector yards is ongoing since last quarter.

Output 2. Collector yards and transport links to farms selected for improvement in biosecurity as a means of reducing spread of HPAI within the live poultry market chain and between farms

Activity 2.1 Mapping and characterizing collector yards and improve understanding of transport links between collector yards and farms. Select those dealing with high volume and high-risk species/breeds.

- A comprehensive poultry movement study has been completed by ECTAD Indonesia as previously reported. In addition, surveys have been conducted of poultry transport and traffic pathways in order to get a better understanding of poultry transport patterns. For Phase II implementation by end of 2009, 10 single-holder collector yards have been selected, trained and equipped with a gasoline-powered high pressure washer: two from Bogor district, two from Tangerang city, two from Tangerang District, two from Bekasi city and two from Depok city. Market surveillance programme is ongoing in Jabodetabek areas and the collector yard surveillance programme has been conducted from 20 January to 21 February 2010 in two districts, East Jakarta and Tangerang City.

Activity 2.2 Visiting and discussing with collector yard owners and key informants involved in transport of live poultry, using a participatory process, to determine feasible C&D mechanisms for improved biosecurity in the live bird market chain.

- Completed all visits and discussions with collector yard owners, poultry transport operators, government checkpoint officers and poultry brokers. These discussions have contributed to implementation of C&D for poultry transport vehicles and crates.

Output 3. Poultry market chain cleaning and disinfection guidelines and protocols developed and agreed upon with local veterinary officials and collector yard owners, with inputs from key players involved in transport of live birds

Activity 3.1 Reviewing existing legislation and regulations for transport of live poultry and poultry collector yards.

Completed as part of ECTAD Indonesia's support of DKI Jakarta market restructuring.

Activity 3.2 Collating risk behaviours and utilizing participatory methods to determine how risky behaviours can be reduced.

Completed as reported last quarter.

Activity 3.3 Comparing technology options for cleaning which are both effective and sustainable.

- Completed the comparison of alternative electric-powered and gasoline-powered pressure washers. Locally-available alternative disinfectant and detergent have been procured.

Activity 3.4: Developing Phase II C&D protocols for collector yard holding areas and fomites (cages, egg flats) involved in transport of live poultry and poultry products.

- SOPs have been prepared as reported last quarter.

Activity 3.5 Improving procedures for C&D of vehicles and crates based on Phase I monitoring and comparison of cleaning technology.

Completed updating of C&D SOPs this quarter.

Output 4. Sufficient staff and workers adequately trained in cleaning and disinfection of poultry market chain cleaning and disinfection guidelines and protocols

Activity 4.1 Phase II training of collector yard owners/workers and local government officials in C&D guidelines and protocols.

- Training for Phase II C&D station workers in Pulo Gadung and local government officers in Jakarta Timur has been carried out. This is an ongoing activity.

Activity 4.2 Communication and awareness workshops for all involved.

- All training workshops have included a communications and awareness component. Awareness raising will be included in all future trainings as well.

Output 5: Cleaning and disinfection operations implemented and monitored in target collector yards and transport links

Activity 5.1 Provision of inputs: decontamination kits including cleaning/disinfection supplies, PPE, detergents, disinfectants and equipment (high pressure sprayers), sampling materials, printed material, water equipment/basin, holding cages/transport crates, etc.

- Provision of decontamination equipment such as Karcher electric pressure washer machine and gasoline-powered pressure washer, disinfectant, detergent, crates, dipping tubs, and PPE has been completed for Phase I. Procurement of cleaning equipment, disinfectant, detergent, dipping tubs, PPE and additional alternative pressure washers has been completed for Phase II.

Activity 5.2 Equipping selected collector yards and key players involved in live bird transport with reusable C&D tools and products.

- This activity is now completed. The C&D tools and materials have been allocated to 12 selected Collector Yards for Phase I and ten selected collector yards for Phase II.

Activity 5.3 Refurbishing selected collector yards and C&D sites (installation of basic infrastructure for hygiene measures).

- Electrical upgrades have been completed at 11 collector yard sites as well as the C&D station in Pulo Gadung. Refurbishments required for Phase II have been planned and will be initiated next quarter at Rawa Kepiting, Cakung and Petukangan collector yard/slaughterhouses.

Activity 5.4 Implementing C&D operations as per agreed protocols.

- This has been carried out by trained collector yard workers since project initiation and is ongoing.

Activity 5.5 Developing a monitoring programme for measurement of impact and implementation of C&D protocols.

- The updated monitoring form has been developed. Monitoring is being conducted by *dinas* officers and reports are being submitted to FAO for collation and comment and this continues to be implemented.

Activity 5.6 Monitoring the implementation and impact.

- Monitoring of project implementation has been ongoing. Impact on HPAI contamination and transmission may be assessed indirectly via the market and collector yard surveillance programme, although direct assessment of impact on HPAI viral spread is not possible at this time.

Planned activities for the next quarter:**BANGLADESH****Output 1. Target LBMs and points of concentration or production identified and prioritized in Bangladesh**

- Some LBMs at COX's Bazaar will be surveyed and two LBMs will be selected finally for C&D operation.
- Work order for two LBMs in Dhaka city is under process.
- Upgrading mainly electric and water supply points, drainage facility, poultry stall, slaughter house and poultry transport cleaning area will be carried out.
- Decontamination kits including C&D supplies, PPE, detergents, disinfectants, high pressure sprayers and poultry holding cages will be supplied to LBMs after completion of upgrading work.

Out put 2. LBMs cleaning and disinfection guidelines and protocols developed and agreed and approved by the Government of Bangladesh, with input from veterinary officials, local authorities and LBM managers

- C&D guidelines have been developed before.

Output 3. Sufficient staff and workers adequately trained in cleaning and disinfection of LBMs, live bird stands and materials and means of transport

- Two-day long training courses for LBMs cleaning staff are planned to be offered after completion of the respective LBM upgrade.
- Communication and awareness workshops for stake holders will be organized.

Out put 4. Cleaning and disinfection operations implemented and monitored at target LBMs or collection points

- C&D operations will be implemented.
- Supervision and monitoring of C&D activities of LBMs will be adopted.

EGYPT**Output 2. Cleaning and/or disinfection guidelines and protocols developed and agreed upon**

Activity 2. Consultant review and identify key regulatory/policy gaps in existing legislation of poultry farms management, bird transport and requirements for concentration points.

Activity 2.4 Organize consultative meetings with key decision-makers to discuss and agree on key regulatory policy changes and their enforcement.

Output 3. Sufficient staff/workers adequately trained and implement cleaning and/or disinfection operations

Activity 3.3 Carry out tailor-made training for farms on C&D operations and biosecurity practices.

- Conduct training workshops on biosecurity application including composting, decontamination and sprayers calibration by an international expert for commercial farm owners in the selected 7 governorates.

Output 4. Cleaning and disinfection operations implemented and monitored at commercial poultry farms or collection points

Activity 4.1 Deliver inputs (expendable and non-expendable) required for project operation.

Activity 4.2 Implementation of cleaning and decontamination operations as per agreed protocols.

- Conduct workshops on sharing of experience and best practices between poultry producers from category A farms (those who responded well to the practical training of C&D) and others from (Category B farms) and Category C farms, those responded with minor or no changes) in the selected governorates.

INDONESIA

Output 1. Engaging with high-risk collector yards in the greater Jakarta area (JABODETABEK) and developing and implementing procedures to immediately improve biosecurity at these locations (Phase I)

Activity 1.1 Selecting 12 collector yards in JABODETABEK with high volume sales or trading in poultry species/breeds which are at high-risk for spreading HPAI (i.e. spent layers, backyard poultry, mixed species).

Completed.

Activity 1.2 Developing Phase I standard operating procedures for C&D of items in the collector yard contaminated with poultry wastes (i.e. vehicles and transport crates).

Completed.

Activity 1.3 Training collector yard owners/workers and relevant local government officials on standard operating procedures and use of equipment for C&D of vehicles and crates.

Completed.

Activity 1.4 Equipping selected collector yards for implementation of C&D of vehicles and crates and upgrading of infrastructure to meet the needs of the programme.

Completed.

Activity 1.5 Designing a monitoring programme and training local government officials to monitor implementation.

Completed.

Activity 1.6 Implementing and monitoring C&D of vehicles and crates in 12 collector yards in JABODETABEK.

Completed.

Output 2. Collector yards and transport links to farms selected for improvement in biosecurity as a means of reducing spread of HPAI within the live poultry market chain and between farms

Activity 2.1 Mapping and characterizing collector yards with improved understanding of transport links between collector yards and farms. Select those dealing with the high volume and high-risk species/breeds.

- In addition to the poultry movement profiling which addressed this activity, ECTAD Indonesia will continue to engage with poultry transport drivers and owners to learn about the transport system of poultry and the requirements for cleaning of trucks.

Activity 2.2 Visiting and discussing with collector yard owners and key informants involved in transport of live poultry to determine feasible C&D mechanisms for improved biosecurity in the live bird market chain using a participatory process.

- Ongoing discussions are being held with poultry brokers and transport operators at Petukangan, Cakung and Rawa Kepiting to discuss C&D station establishment and completion of small-scale slaughterhouses. Lessons learned are being used to improve C&D station design at other collector yards.

Output 3. Poultry market chain cleaning and disinfection guidelines and protocols developed and agreed upon with local veterinary officials and collector yard owners, with inputs from key players involved in transport of live birds

Activity 3.1 Reviewing existing legislation and regulations of transport of live poultry and poultry collector yards.

Completed.

Activity 3.2 Collating risk behaviours and participatory methods for risk reduction.

- Further discussions with stakeholders to identify novel approaches to risk reduction are ongoing.

Activity 3.3 Comparing technology options for cleaning which is both effective and sustainable

Completed.

Activity 3.4 Developing Phase II C&D protocols for collector yard holding areas and fomites (cages, egg flats) involved in transport of live poultry and poultry products.

Completed.

Activity 3.5 Improving procedures for C&D of vehicles and crates based on Phase I monitoring and comparison of cleaning technology.

Completed.

Output 4. Sufficient staff and workers adequately trained in cleaning and disinfection of poultry market chain cleaning and disinfection guidelines and protocols

Activity 4.1 Phase II training of collector yard owners/workers and local government officials in C&D guidelines and protocols.

- Training on Phase II C&D SOPs has been conducted for all stakeholders.
- ToT courses for selected C&D workers is planned for next quarter.

Activity 4.2 Communication and awareness workshops for all involved.

- This activity is addressed within all training and planning workshops with stakeholders.

Output 5: Cleaning and disinfection operations implemented and monitored in target collector yards and transport links

Activity 5.1 Provision of inputs: decontamination kits including cleaning/disinfection supplies, PPE, detergents, disinfectants and equipments (high pressure sprayers), sampling materials, printed material, water equipment/basin, refrigeration equipment, holding/transport cages, etc.

Completed.

Activity 5.2 Equipping selected collector yards and key players involved in live bird transport with reusable C&D tools and products.

Completed.

Activity 5.3 Refurbishing selected collector yards and C&D sites (installation of basic infrastructure for hygiene measures).

- This activity is continuing in Rawa Kepiting, Cakung and Petukangan collector yards/slaughterhouses.

Activity 5.4 Implementing C&D operations as per agreed protocols.

- Implementation of Phase II decontamination activities is underway.

Activity 5.5 Develop a monitoring programme for measurement of impact and implementation of C&D protocols.

Completed.

Activity 5.6 Monitoring the implementation and impact.

- Impact on HPAI contamination and transmission is being assessed indirectly via the market and collector yard surveillance programme. Direct assessments of project activity impact on cleanliness of poultry transport are being considered as part of Phase II.

Main challenges encountered and response provided

Each country has had issues related to the C&D of LBMs and collector yards and therefore have approached the project with different target areas to clean. Each country has developed an effective strategy to answer those difficulties:

1. Bangladesh is focusing on major LBM's to upgrade power, water, flooring, drainage and the supply of relevant C&D equipment and supplies.
2. Indonesia has completed C&D activities on major collector yards and is focusing on cleaning the large poultry transport vehicles after they have been unloaded and before they return to poultry farms by establishing specific cleaning stations at the five slaughter house sites that have been allocated in Jakarta. These sites will be supported by FAO through the construction of cleaning stations to disinfect all vehicles leaving the premises.
3. Egypt has officially banned the selling of live birds at markets. The C&D emphasis is now placed on private and public sector people's training who are directly related to the poultry industry and in particular connected with farm gate biosecurity.

BANGLADESH

- Preparation of drawing, specification, quotation, tender and work order procedure and upgrading work took longer than expected.
- Five LBMs have been upgraded until now and twelve LBMs will be expected to be completed between May and June 2010.

To respond to these challenges, the project manager was instructed to bring forward visits to each of the regional markets with a consultant architect to develop plans for each of the proposed markets.

EGYPT

Project management issues

The second LoA instalments to support the running costs for field level project operations in all seven governorates are effected.

ECTAD Team Leader (TL) discussed with the project team the need to adhere to the objective of workshops/training/experience sharing sessions and to deal with manageable number of participants. In addition, the TL emphasized the need to inform the team members about all unexpected events happening at field level. Team members were also notified of the decision to include the M&E Expert in most of the training and focus group discussion sessions in the future.

Because of the persistent project coordination problems particularly affecting field level operations, the ECTAD Team Leader assigned Dr AbdelHakin Ali to become the National Project coordinator.

INDONESIA

The challenges faced this quarter were primarily administrative; construction activities require a high-level of coordination among FAO, government, the private sector, and FAO subcontractors.

Main progress made towards the achievement of project outcomes (from the start of the project activities).

BANGLADESH

Output 1. Target LBMs and points of concentration or production identified and prioritized in Bangladesh

- National Project Manager and National Poultry Market Supervision Consultants were appointed.
- DLS, DCC, USAID and other partners were informed of objectives and purposes.
- Permission from city corporation/city authorities for upgrading of LBMs was approved and received.
- LBMs C&D project plan had been updated.
- LBMs C&D activities of STOP AI had been handed over to FAO on 30 September 2009.
- About 30 live bird markets have been surveyed and finally 18 LBMs have been selected.
- Upgrading of five LBMs have been completed in Dhaka city region.
- Work order for ten LBMs upgrading has been issued and other work order for two LBMs will be issued within middle of April 2010.
- Work order for 350 poultry cages has been issued and already 100 poultry cages have been supplied to New Market and Kawran Bazar LBMs in Dhaka.

Output 2. LBMs cleaning and disinfection guidelines and protocols developed and agreed and approved by the Government of Bangladesh, with input from veterinary officials, local authorities and LBM managers

- C&D guidelines and protocols were developed.
- Signing of MOUs between FAO and 18 market committees has been completed.
- Checklist developed for use by veterinary officers to check the C&D activities in the renovated LBMs.

Output 3. Sufficient staff and workers adequately trained in cleaning and disinfection of LBMs, live bird stands and materials and means of transport

- Two-day long training sessions for five LBMs for 28 cleaners and one-day long training session for 12+10=22 DLS veterinarians have been conducted.
- Training materials and training programme have been developed and printed.
- Training courses for cleaning staff are planned to be offered within one week of the completion of the respective LBM upgrade.

Output 4. Cleaning and disinfection operations implemented and monitored at target LBMs or collection points

- C&D commodities have been purchased and delivered to respective LBMs and concerned DLOs.
- 10+15 =25 drums@ 185 litres. Detergent, 150 kg Virkon-s disinfectant, ten Karcher sprayers for Dhaka city region and ten Karcher sprayers for other five divisions had been allocated and distributed by DLS.
- C&D operations have been running at upgraded five LBMs in Dhaka city region.
- C&D operations have been running at six LBMs in Dhaka city region.
- C&D operations have been monitored.

EGYPT

Output 1. Target production points identified and prioritized

- Baseline data on commercial (1 392) layers/breeders and (1 340) broiler poultry farms are developed.
- Mapping and characterizing of long and short cycle farms are completed.
- List of required input supplies are prepared and procured.

Output 2. Cleaning and/or disinfection guidelines and protocols developed and agreed upon

- Implementation guidelines for C&D on farm gate customized to Egyptian context were developed, reviewed updated and finalized.
- Data base on risk behaviours and prevailing practices in (1 392) layers/breeders and (1 340) broiler poultry is developed.
- A database on risk behaviours associated with use of external injector and bird catchers in 405 poultry farms (long and short cycles) in three high risk governorates is developed.
- A guide for self-assessment for the essential biosecurity practices for use by farm owners and /or supervisors is developed.
- A poster guide for risky biosecurity practices and behaviours by some poultry farms is developed.

Output 3. Sufficient staff/workers adequately trained and implement cleaning and/or disinfection operations

- Sign contractual agreements with veterinary directorates in the selected governorates.
- Seven contractual agreements with veterinary directorates in the selected governorates on extension of LoAs to be terminated at 31 May 2010.
- ToT C&D courses for governorate-level veterinary personnel conducted.
- Sufficient farm workers (3 007) involved in C&D operations trained.
- Core communication messages addressing the different categories of stakeholders and implement effective awareness functions developed.
- Comprehensive data base covering district, village, farm code, trainees and trainers contact information, number of farms served, date of training and receiving biosecurity equipment were developed.

Output 4. Cleaning and disinfection operations implemented and monitored at commercial poultry farms

- Inputs (expendable and non-expendable) required for project operation delivered.
- C&D operations implemented as per agreed protocols in 2 732 commercial poultry farms.
- A preparation checklist for qualitative assessment of hygienic improvements in targeted areas is developed.
- Comprehensive assessment of operational biosecurity improvements for 809 farms (long and short cycles) after three visit for each farm is performed.
- A workshop on sharing experience and transfer of best practices between poultry producers with good and bad biosecurity practices and other service providers ('External injectors').

INDONESIA

Output 1. Engaging with high-risk collector yards in the greater Jakarta area (JABODETABEK) and developing and implementing procedures to immediately improve biosecurity at these locations (Phase I)

- Output and lessons learned from Phase I achieved.
- Implementation of Phase II has started in selected collector yards in Jakarta.

- The local *dinas* are monitoring the collector yards for compliance with use of the equipment and cleaning of the crates and vehicles. Monthly reports are prepared and sent to FAO for collation.

Output 2. Collector yards and transport links to farms selected for improvement in biosecurity as a means of reducing spread of HPAI within the live poultry market chain and between farms

Progress has been made in engaging with farmers, brokers, and other key stakeholders involved in the transport of live poultry into JABODETABEK. Pulo Gadung, Rawa Kepiting, Cakung and Petukangan collector yards have been selected as locations for permanent C&D stations for poultry transport vehicles.

Output 3. Poultry market chain cleaning and disinfection guidelines and protocols developed and agreed upon with local veterinary officials and collector yard owners, with inputs from key players involved in transport of live birds

SOPs for C&D are being updated and alternative technologies are being explored. A cleaning station design for designated collector yards in DKI Jakarta has been developed and approved by government. All key stakeholders from both public and private sectors have been involved in the selection of sites for cleaning stations.

Output 4. Sufficient staff and workers adequately trained in cleaning and disinfection of poultry market chain; cleaning and disinfection guidelines and protocols developed

Staff and workers successfully trained and equipped in 12 collector yards with electric-powered high pressure washers and ten collector yards with gasoline-powered high pressure washers for Phase I of the C&D programme. Phase 2 trainings conducted thus far in Pulo Gadung have been successful.

Output 5. Cleaning and disinfection operations implemented and monitored in target collector yards and transport links

Phase I C&D activities being carried out by trained staff and workers using equipment provided by ECTAD Indonesia.

Phase II C&D activities being carried out by the establishment of C&D stations in selected large collector yards in DKI Jakarta.

Project Monitoring Sheet: **OSRO/IND/802/USA**

Project Title: “Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza (HPAI) to India”

Reporting period: October 2012 - March 2013

Country: India
Project title: Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza (HPAI) to India
Code: OSRO/IND/802/USA
Total budget: USD 2 220 000 of which USD 51 866 for Year 3
Effective starting date: 28 June 2010
Planned end date: 30 September 2013
<p>Context of the project</p> <p>This project focuses on capacity building of animal health personnel especially in the field of surveillance, epidemiology and in-depth outbreak investigations. Porous, long land borders between neighbouring countries with minimal control points and quarantine facilities and diffused low biosecurity poultry production and marketing chains continue to pose a risk for the spread of Highly Pathogenic Avian Influenza (HPAI) in India. It is necessary to develop an understanding of the dynamic structure of poultry production systems, supply chains and marketing of poultry and poultry products within India and internationally. There is also a lack of capacity in terms of skilled human resources and facilities to develop sensitive surveillance systems and to conduct effective epidemiological studies for the better management of HPAI. Although there is an existing Preparedness, Control & Containment Plan for Avian Influenza, it is expected that, with the support of this project, the Government of India will be able to draft a long-term national strategy in consultation with various stakeholders to deal with the longer-term issues to control and prevent HPAI.</p>
<p>Objectives of the project</p> <p>The main aim of the project is to (i) detect, reduce and control HPAI in poultry; (ii) improve livelihoods and promote food security of large vulnerable population, thereby reducing poverty, in addition to contributing to rural economic development and to improve the gross domestic product of India. The objective of the project, inter-alia, is to build capacity to improve surveillance and epidemiological analysis and reporting within the central and state veterinary services and at local levels using a community-based approach by improving the understanding of the epidemiology of HPAI, and so identifying priorities to reduce the risk of poultry outbreaks and consequent human cases. The overall objective of the programme is to reduce and then to eliminate the threat posed by HPAI H5N1 in the country. The country will then cease to be at risk for the development of human pandemic influenza from the H5N1 influenza virus.</p>
<p>Planned activities</p> <p>Output 1: Establishment of a Department of Animal Husbandry Dairying and Fisheries (DADF) Veterinary Epidemiology Unit in India.</p> <p>Output 2: Improved epidemiological capacity within the veterinary workforce in India.</p> <p>Output 3: Establishment of a risk-based surveillance programme.</p>

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of HPAI.

Output 1: Establishment of a DADF Veterinary Epidemiology Unit in India

In order to achieve the above output, the following activities will be implemented:

- establishment of a DADF Veterinary Epidemiology Unit at the Animal Quarantine and Certification Station (AQCS) at Kapashera, New Delhi;
- coordination of country programme;
- management and operations support; and
- capacity building in project/programme management.

Output 2: Improved epidemiological capacity within the DADF, Ministry of Agriculture (MoA) of India

In order to achieve the above output, the following activities will be implemented:

- conduct Field Veterinary Epidemiology Training Programme (FETPV);
- conduct outbreak investigation courses for Field/District Veterinary Officers; and
- conduct trainings for grassroots level disease detection and reporting (e.g. community-based animal health workers [CAHWs]);

Output 3: Establishment of a risk-based surveillance programme

In order to achieve the above output, the following activities will be implemented:

- develop a grassroots level surveillance programme;
- conduct disease outbreak investigation in the event of an HPAI outbreak in collaboration with DADF;
- undertake structured virus isolation and characterization; and
- establish a disease information system dedicated to HPAI.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

In order to achieve the above output, the following activities will be implemented:

- value chain and risk assessment and mapping;
- phylogenetic and phylodynamic analysis of HPAI H5N1 isolates; and
- structured virus isolation and characterization followed by monitoring virus evolution in different species to assess spatial and temporal spread of the virus in the country and region.

Activities undertaken during the reporting period (October 2012 – March 2013)

Output 1: Establishment of a DADF Veterinary Epidemiology Unit in India

The DADF Epidemiology Unit, already established at the Animal Quarantine and Certification station at Kapashera, New Delhi was maintained, and landscaping of the premises for lawns and garden developed.

Current staff: The third year of the project started with the national staff being comprised of a Team Leader cum National Project Coordinator, one National Consultant–Epidemiology and one Operations Officer. As the International Consultants/Experts had to leave the project owing to

financial resource constraints, one more National Consultant–Epidemiology was appointed in November 2012 to bridge the gap.

FAO staff from Regional Sub Unit (RSU) in Kathmandu, Nepal supported the Epidemiology Unit of the FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) India in various training programmes.

All the project activities were implemented with the active support of the DADF and the Directors of the State Animal Husbandry Departments. The DADF was regularly updated on the progress of the project through the submission of reports and conducting meetings.

In order to oversee the project activities, a Steering Committee was constituted in DADF. A meeting under the chairmanship of the Secretary, DADF was held on 11 February 2013 and the progress of the project was reviewed.

The project advocated for consistency between the national strategy for HPAI control with regional and global frameworks. This was carried out by interacting with national partners (MoA), regional partners – the South Asian Association for Regional Cooperation (SAARC) and the FAO sub-regional and regional support units, and globally with FAO headquarters and the World Organisation for Animal Health (OIE).

The FAO-ECTAD India continued to support the engagement of the Government of India in international meetings and training sessions and facilitated the Quarantine Officer from the northern region to attend the “Regional Workshop on Risk Analysis and Risk Management for Animals and Animal Products” held in Kathmandu, Nepal from 7 to 11 January 2013 and two officers from the Government of India to attend the Joint Prince Mahidol Award Conference 2013, the first Global Conference on Regional Disease Surveillance Networks, the second International One Health Congress, and the Centennial Commemoration of the Rockefeller Foundation held from 28 January to 2 February 2013 in Bangkok.

One National Consultant-Epidemiology was trained in spatial modelling of HPAI disease data for predictive risk mapping at *Université Libre de Bruxelles* (LUBIES), Brussels, Belgium. Two FAO-ECTAD staff members participated in “Regional Workshop on Risk Analysis and Risk Management for Animals and Animal Products” in Kathmandu, Nepal from 7 to 11 January 2013. The Team Leader attended the Joint Prince Mahidol Award Conference 2013, the first Global Conference on Regional Disease Surveillance Networks, the second International One Health Congress, and the Centennial Commemoration of the Rockefeller Foundation held from 28 January to 2 February 2013 in Bangkok, Thailand. All project staff attended the training on “Good Emergency Management Practices (GEMP)” in Bangkok, Thailand on 26 February 2013.

The DADF Epi-Unit of FAO- ECTAD India made a presentation on the HPAI situation and risk mapping of HPAI in India at the Annual Regional ECTAD Meeting at Bangkok held from 27 February to 1 March 2013.

Discussions were held with DADF staff on managing the national disease surveillance and control programme, as well as the logistics and management requirements.

Output 2: Improved epidemiological capacity within DADF, MoA of India

Conduct Field Veterinary Epidemiology Training Programme (FETPV): The capacity of selected field veterinarians from high risks states in epidemiological analysis of disease outbreaks was enhanced. Five delegates from India participated in a three-week FETPV conducted by the SAARC RSU in Nepal. One National Consultant-Epidemiology participated in the Regional FETPV for the SAARC countries held in Kathmandu, Nepal from 25 November to 15 December 2012 as a

resource person.

Outbreak investigation courses for Field/District Veterinary Officers: In order to build capacity of field veterinarians, two training for trainers (ToT) workshops for Outbreak Investigation, comprised of 15 participants from HPAI-vulnerable states and critical areas (12-15 Feb 2013 in Guwahati and 12-15 March 2013 at Bhubaneswar) were conducted and evaluated.

EpiNet network established: A list server for EpiNet was developed to sustain interest and commitment for trainees and other interested parties. It provided current information on HPAI (and other significant disease issues) and further mentoring on disease surveillance activities with updates on control programmes.

Output 3: Establishment of a risk-based surveillance programme

Develop a grassroots level surveillance programme: A surveillance programme developed at the grassroots level to increase advocacy. Training materials were developed in collaboration with the Society for Management of Information, Learning and Extension (SMILE), Bhubaneswar which includes a training manual, flipchart, a video and other materials on an external storage device for aiding the trainers in imparting training to grassroot-level workers. One ToT workshop (30 participants) for grassroots level CAHWs on disease detection and reporting was also conducted on 11 March 2013 in Bhubaneswar.

Undertake structured virus isolation and characterization: Collaborative projects were developed among the DADF Epidemiology Unit, High Security Animal Disease Laboratory (HSADL) and Duke-NUS Graduate Medical School, to investigate the epidemiology of HPAI in India using molecular epidemiology techniques and with *Université Libre de Bruxelles* (LUBIES), Belgium on Risk Mapping of HPAI epidemiology in India.

A joint molecular epidemiology study was carried out between FAO-India, HSADL and Duke-NUS Graduate Medical School. HPAI sequence data and spatial and temporal data from HPAI outbreaks from 2006 to 2012 was characterized using the latest phylogenetic and phylogeographic analysis. Sequence data from neighbouring countries was also included in the analysis for improved understanding of HPAI virus evolution in the sub-region.

An Outbreak Investigation on Highly Pathogenic Avian Influenza (H5N1) was conducted in the Central Poultry Development Organisation and Training Institute (CPDO-TI) in Bangalore in November 2012. The investigation characterized the HPAI H5N1 virus and probable source of the virus' introduction in collaboration with HSADL Bhopal and FAO Vietnam and prepared the Epidemiology Report. The report was submitted to the DADF.

The National Animal Disease Recording System (NADRS) is being implemented. The project team had access to NADRS. Standard operating procedures (SOPs) for outbreak investigation were developed and submitted to DADF for review and implementation across the country for standardizing outbreak investigation procedures for HPAI.

A fortnightly EpiNet list server newsletter, dedicated to HPAI epidemiology and other important emerging diseases, is being circulated across the country to create awareness regarding surveillance and epidemiology. Information on HPAI outbreaks across the world is being updated regularly.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of HPAI

Mapping of outbreak data from 2006 onwards was done. Identification of risk factors associated with HPAI outbreaks in the HPAI-vulnerable states of West Bengal, Assam and Tripura was completed. Using this data predictive risk maps of HPAI for the three states have been prepared at the sub-district level. These maps will now be used to target HPAI surveillance in high-risk areas.

A joint study between HSADL, Duke-NUS Graduate Medical School and FAO India was completed and has yielded useful insights into virus evolution over time and space. In order to understand the infection and transmission dynamics and critical points for focused interventions/response, farming poultry sectors and the socio-economic background of poultry raisers were mapped. Phylogenetic and phylodynamic analysis of HPAI H5N1 isolates from various outbreaks in the country was done and virus clades in various geo-locations were mapped. In order to assess the spatial and temporal spread of the virus in the country and region, a sustained collaboration was established between HSADL Bhopal and Duke-NUS Graduate Medical School, for monitoring the virus' evolution in different species (crow and other wild birds).

Risk factors for control of HPAI were identified and recommendations for targeted and risk-based surveillance were provided for the states of West Bengal, Assam and Tripura.

Planned activities for the next six-month period (1 April 2013 to 30 September 2013)

Output 1: Establishment of a DADF Veterinary Epidemiology Unit in India

The Epidemiology Unit at Kapashera, New Delhi, along with its facilities, will be maintained. The project will continue to be backstopped by RSU Nepal and FAO international staff.

Output 2: Improved epidemiological capacity within the DADF, MoA of India

FETPV: The project will continue to mentor previous FETPV students through direct support and an EpiNet list server. There is strong support from the states and specialist institutes for further access to FETPV courses. Therefore, additional funding sources will be explored for conducting at least one more FETPV course for the northern states.

Two training workshops for Farm Managers of the State/Government of India/Indian Council of Agricultural Research (ICAR) poultry farms on biosecurity, surveillance and epidemiology of poultry diseases, with special reference to HPAI will be conducted in collaboration with HSADL, Bhopal.

One advocacy workshop for senior policy makers will be conducted to address the need for improved disease surveillance systems and to advocate for policy change in DADF and state governments so that epidemiology is recognized as a core discipline for animal and veterinary public health which is a vital component of all disease control programmes.

Output 3: Establishment of a risk-based surveillance programme

Four ToT workshops on disease detection and reporting at the grassroots level have been scheduled.

Further training to grassroots level workers (para-veterinarians and CAHWs) by master trainers will be coordinated with the states so that district-level trainings can be organized. Staff of the project

will be present at these trainings as observers.

Sixteen veterinarians/scientists from DADF, states, Regional Disease Diagnostic Labs (RDDDLs), Project Directorate on Animal Disease Management and Surveillance (PD-ADMAS), Bangalore, HSADL, Bhopal and FAO-ECTAD India will be trained on improved risk assessment to enable the development of a risk-based surveillance programme in India under the aegis of the FAO RSU in Nepal.

Collaboration will be strengthened between DADF Epidemiology Unit, HSADL and Duke-NUS Graduate Medical School to further investigate the epidemiology of HPAI in India using molecular epidemiology techniques. Virus isolation and molecular characterization with probable source(s) of virus introduction, including virus evolution, will continue.

Guidelines for the preparation of risk-based state HPAI surveillance plans will be developed. These will include both active and passive surveillance. SOPs on biosecurity in backyard poultry, live bird markets and commercial poultry will be developed and submitted to the DADF.

The final project report will be prepared and submitted upon completion of the project.

Project Monitoring Sheet: **OSRO/IND/802/USA**

Project Title: Immediate technical assistance to strengthen preparedness to combat highly pathogenic emerging diseases and transboundary animal diseases in India

Reporting period: April to September 2012

Country: India
Project title: Immediate technical assistance to strengthen preparedness to combat highly pathogenic emerging diseases and transboundary animal diseases in India
Code: OSRO/IND/802/USA
Budget: USD 1 220 000, USD 948 134 and USD 831 866 (Phases I and II)
Total budget: USD 2 120 000
Effective starting date: 28 June 2010
Planned end date: 30 September 2013
Context of the project This project will focus on capacity building of animal health personnel especially in the field of surveillance, epidemiology and in-depth disease field investigations. Porous, long land borders between neighbouring countries with minimal control points and quarantine facilities and diffuse low biosecurity, poultry production and marketing chains continue to pose a risk for the spread of Highly Pathogenic Avian Influenza (HPAI) and other transboundary animal diseases (TADs) in India. It is necessary to develop an understanding of the dynamic structure of the animal (poultry) production systems, value/supply chains and marketing in animals (especially poultry and poultry products) within India and internationally. There is also a lack of capacity of skilled human resources and facilities to develop sensitive surveillance systems and to conduct effective epidemiological studies for the better management of HPAI. Although there is an existing Avian Influenza Control Plan (AICP), it is expected that, as a result of this project, India will be able to draft a long-term national strategy in consultation with various stakeholders to deal with the longer term issues to control and prevent HPAI.
Objectives of the project The project aims to detect, reduce and control disease in animals, particularly poultry, to improve livelihoods, promote the food security and livelihoods of the large vulnerable population, thereby reducing poverty and contributing to rural economic development and to improve the Gross Domestic Product (GDP) of India. The project will strengthen the capacity of the Department of Animal Husbandry, Dairying and Fisheries (DADF) by improving understanding of the epidemiology of HPAI, and so identifying priorities to reduce the risk of poultry outbreaks and consequent human cases. The project aims to build capacity to improve surveillance and epidemiological analysis and reporting within the central and state veterinary services and at local levels using a community-based approach. The overall objective of the programme is to contribute to the elimination of the threat posed by HPAI by controlling the disease in poultry, such that India no longer poses a risk for the development of human pandemic influenza from the H5N1 virus.
Planned activities for the reporting period (April to September 2012) Output 1: Establishment of a DADF Veterinary Epidemiology Unit in India Output 2: Improved epidemiological capacity within the DADF and Indian Council of Agricultural Research (ICAR) of the Ministry of Agriculture (MoA) of India Output 3: Establishment of a risk-based surveillance programme Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of these diseases

Output 1: Establishment of a DADF Veterinary Epidemiology Unit in India

In order to achieve the above output, the following activities will be implemented:

- establishment of a DADF Veterinary Epidemiology Unit at the Animal Quarantine and Certification station at Kapashera, New Delhi;
- coordination of country programme;
- management and operations support; and
- capacity building in project/programme management.

Output 2: Improved epidemiological capacity within the DADF, MoA of India

In order to achieve the above output, the following activities will be implemented:

- conduct Field Veterinary Epidemiology Training Programme for Veterinarians (FETPV), including field outbreak investigation courses for district/state veterinary officers;
- country visits for technical staff of DADF to study best practices for disease surveillance and control (in Thailand for X-ray surveillance, in Indonesia for the participatory disease surveillance and response [PDSR], and in Viet Nam for HPAI vaccination programmes); and
- provide overseas training in advanced epidemiology and surveillance to the technical staff of DADF.

Output 3: Establishment of a risk-based surveillance programme

In order to achieve the above output, the following activities will be implemented:

- develop a grassroots level surveillance programme;
- undertake structured virus isolation and characterization; and
- establish a disease information system dedicated to HPAI.

Output 4: Improved understanding of epidemiology of TADs (including HPAI) and zoonotic diseases in India for rational and targeted control of these diseases

In order to achieve the above output, the following activities will be implemented:

- study the livestock and poultry value chains including wet markets and slaughter facilities;
- map the farming sectors and socio-economic background along the market and value chains;
- conduct data analysis for mapping disease outbreaks and distribution of virus strains and clades as appropriate;
- define infection and transmission dynamics in the context of the various farming systems and socio-economic background; and
- identify critical points for intervention to control TADs and zoonotic diseases.

Activities undertaken during the reporting period (April to September 2012)**Output 1: Establishment of a DADF Veterinary Epidemiology Unit in India**

Establishment of an Epidemiology Unit: The DADF Centre had already been established at the Animal Quarantine and Certification station at Kapashera, New Delhi. Final refurbishments were completed, and some additional equipment was provided.

Current staff: International - Chief Technical Adviser/Team Leader, Geographic Information System (GIS) Specialist, Operations Officer, National - Project Coordinator, Consultant - Epidemiology, Operations Officer. The position of National Consultant - Surveillance was dropped from the project.

Coordination of country programme: The Joint Secretary of DADF was regularly updated on the progress of the project with monthly meetings and regular submission of project reports and papers. Meetings were held with the Donor. The project advocated for consistency between the national strategy for HPAI control with regional and global frameworks. This was carried out by interacting with local partners (MoA), regional partners – the South Asian Association for Regional Cooperation (SAARC) and the FAO subregional and regional support units, and globally with the FAO in Rome and the World Organisation for Animal Health (OIE) under the Global Framework for

Transboundary Animal Diseases (GF-TADs). There has been ongoing collaboration and information sharing with partners - the Centre for Disease Control (CDC), the World Health Organization (WHO) and the International Livestock Research Institute (ILRI).

Management and operations support: The operations team continued to support the engagement of India in international meetings and training sessions with variable success. Two staff from DADF attended the global foot-and-mouth disease (FMD) conference in Bangkok. No staff from India participated in SAARC consultation working groups on communications nor in FAO training on disease notification.

Capacity building in project/programme management: Ongoing discussions with DADF staff on managing a national disease surveillance and control programme, the logistics and management requirements. Meetings were scheduled with the National Informatics Centre on information systems development and management.

Output 2: Improved epidemiological capacity within DADF, MoA of India

FETPV: A further three-week FETPV course including field outbreak investigations was held in Odisha in July 2012 in collaboration with the local department in Bhubaneswar and with support from the regional offices of FAO and Colorado State University. A total of 22 district/state veterinary officers attended the course.

Output 3: Establishment of a risk-based surveillance programme

Develop a grassroots-level surveillance programme: In the reporting period, five short outbreak investigation/surveillance courses (250 participants) were undertaken for all the remaining states of India for district/state veterinarians (total now trained: 450). The surveillance course focused on outbreak investigation, sample collection and diagnosis, data capture/analysis and reporting, and designing and implementing effective disease surveillance.

Undertake structured virus isolation and characterization: Formal recommendations on improving surveillance with increased isolation of viruses were delivered. A joint molecular epidemiology study proposal was developed between FAO-India, High Security Animal Disease Laboratory (HSADL) and Duke University, Singapore. The proposal was endorsed by ICAR and is awaiting approval by DADF. A protocol for the investigation of crow die-offs with virus isolation and characterization was presented.

Establish a disease information system dedicated to HPAI: General information on current systems of surveillance and data handling was collected. The National Animal Disease Recording System (NADRS) is being implemented. The project team had access to NADRS. This system should be the basis for collecting HPAI data in addition to that from other diseases.

Output 4: Improved understanding of epidemiology of TADs (including HPAI) and zoonotic diseases in India for rational and targeted control of these diseases

Study the livestock and poultry value chains including wet markets and slaughter facilities: A value chain study was completed in Jalpaiguri (West Bengal) and Dhubri (Assam) districts; these districts are a focus of poultry movement between 'mainland' India and the northeastern states, and also across international borders with Bangladesh, Nepal and Bhutan. The study has demonstrated the complexity of the poultry production marketing and distribution system in this area, and has identified key targets to mitigate disease risk.

Map the farming sectors and socio-economic background along the market and value chains: Poultry chain studies have developed maps of production centres and distribution hubs against other activities in the study districts.

Conduct data analysis for mapping disease outbreaks and distribution of virus strains and clades as appropriate: Initial analysis of international and state-level risk factors was completed. Field investigations have identified local risk factors. Crow die-off investigations were undertaken and a protocol delivered on strengthening these investigations. A joint proposal was prepared (see above) that will look at virus evolution over time and space.

Define infection and transmission dynamics in the context of the various farming systems and socio-economic background: Poultry value chain studies have undertaken a risk assessment; this baseline data on risk and demographics will be used with virus characterisation to map likely reservoirs and transmission routes.

Identify critical points for intervention to control HPAI: Poultry value chain studies have mapped the production and marketing system in two districts identifying key hubs of activities and critical control points for risk reduction.

Planned activities for the next six-month period (October 2012 to March 2013)

Output 1: Establishment of a DADF Veterinary Epidemiology Unit in India

Establishment of an Epidemiology Centre: Maintain the facility at Kapashera.

Recruitment of staff: The project team will be reduced, as funding is limited. The project will be backstopped by FAO international staff.

Output 2: Improved epidemiological capacity within the DADF, MoA of India

FETPV: There are insufficient funds to run further FETPV courses. Five Indian nationals will be trained in a SAARC regional course (Nov/Dec 2012). The project will mentor previous FETPV students through a list server and direct support. Additional funding sources will be explored so that additional FETPV courses can be held. There is very strong support from the states and specialist institutes for further access to FETPV courses.

Output 3: Establishment of a risk-based surveillance programme

Develop a grassroots-level surveillance programme: Develop and implement a Training-of-Trainers course for district veterinarians to train community level staff/private veterinarians. This course will need to be developed using an agency with specialist skills in adult learning.

Undertake structured virus isolation and characterization: Review the system for information management of virus data. Promote surveillance activities to increase virus isolation rate.

Establish a disease information system dedicated to HPAI: NADRS is being implemented for all animal health events; it needs critical review to ensure it meets the demands of an effective disease information system, providing for robust epidemiological analysis – the project will review of NADRS in the next project phase.

Output 4: Improved understanding of epidemiology HPAI in India for rational and targeted control of this disease

Study the livestock and poultry value chains including wet markets and slaughter facilities: No further activity was planned in this period owing to limited funding.

Map the farming sectors and socio-economic background along the market and value chains: Limited mapping will be undertaken by the National Consultant – Epidemiology using the poultry value chain data and data layers recently sourced.

Conduct data analysis for mapping disease outbreaks and distribution of virus strains and clades as appropriate: Simple mapping of outbreaks will be provided; cluster analysis of previous outbreaks will be undertaken.

Identify critical points for intervention to control TADs and zoonotic diseases: Formal documentation of risk factors identified in the poultry value chain studies will be developed into a formal paper recommending priorities for risk mitigation.

Main challenges encountered and response provided

Initially, there was a misunderstanding with DADF of project expectations and major concerns over project staff recruitment. The continuity of the good relationship with the counterpart was strengthened by ensuring the regular delivery of hard copies of data analyses, reports, discussion and position papers to a wide group of staff in DADF.

Though there has been a lack of access in obtaining quality data on outbreaks, information on virus characterization and spatial layers. The project managed to analyse and report on the data provided. Additional spatial data has recently been provided from other sources, and further analysis is now being undertaken.

The poor quality of surveillance data and the limiting ability to assess the epidemiology of HPAI in India was a great challenge. A report was delivered on the epidemiology of HPAI in the northeastern states; the gaps in the surveillance programme were identified and recommendations made. A supposed agreement for a project revision extending the project to include TADs was rejected by the Government – this was non-negotiable, and the project proceeded to focus on HPAI issues, recognizing that epidemiology skills developed are generally applicable to other diseases.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

Output 1: Establishment of a DADF Veterinary Epidemiology Unit in India – established.

Output 2: Improved epidemiological capacity within the DADF, MoA of India – some 500 veterinary staff trained to various levels; further training scheduled.

Output 3: Establishment of a risk-based surveillance programme – field investigations undertaken; surveillance systems analysis conducted, and recommendations made on necessary improvements.

Output 4: Improved understanding of epidemiology of HPAI in India – reduced culling zone/limitations of sero-surveillance of poultry. A number of papers delivered including outbreak and crow mortality investigations, state-level spatial risk factors, considerations for vaccination and poultry value chain risk assessments.

Quarter II 2010

Project Monitoring Sheet: **OSRO/IND/802/USA**

Project Title: **Immediate technical Assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India**

Reporting period: **April – June 2010**

Country: India
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India
Code: OSRO/IND/802/USA
Budget: USD 1 220 000 (Phase I)
Total budget: USD 3 000 000 ¹
Effective starting date: July 2009
Planned end date: June 2012
<p>Context of the project</p> <p>This project will focus on the eastern Indian states of Assam and West Bengal in the short term with a longer term capacity building of animal health personnel, especially in the field of surveillance, epidemiological analysis and in-depth disease investigation. The project focuses on understanding the dynamic patterns of the poultry production systems, value/supply chains and trade in poultry and poultry products within India.</p> <p>The project is expected to provide information on infection and transmission dynamics of the virus in the local environment where the virus persists and to consolidate the capacity to establish and conduct risk-based surveillance programmes. The aim of building capacity to strengthen surveillance and epidemiological analysis will lead to an improved tracking of the virus movement, greater virus isolations and better molecular information on the virus evolution. Such information is critical for rational and targeted control of the disease. With the strategic inputs in the project, the country would be better placed to take a leadership role in supporting regional efforts to control HPAI.</p>
<p>Objectives of the project</p> <p>The project aims to build capacity to improve surveillance and epidemiological analysis in both domestic and wild birds. The overall objective of the programme is to contribute to the elimination of the threat posed by HPAI by controlling the disease in poultry such that India no longer presents a risk for the development of human pandemic influenza from the H5N1 virus.</p>
<p>Planned activities</p> <p>Output 1: Establishment of a HPAI (Epidemiology) Unit in India Activity 1.1 Establishment of an HPAI (Epidemiology) Unit.</p>

¹ This project has a three-year duration. Total budget is USD 3 000 000 subdivided as follows: USD 1 220 000 for year I, USD 948 134 for year II and USD 831 866 for year III. Funds have been committed for year I only; activities planned for years II and III will be implemented based on project performance and fund availability.

Activity 1.2 Coordination of the country programme.

Activity 1.3 Management and operations support.

Activity 1.4 Capacity building in project/programme management.

Output 2: Improved epidemiological capacity within the Department of Animal Husbandry, Dairying and Fisheries (DAF), Ministry of Agriculture (MoA) of India

Activity 2.1 Conduct Field Epidemiology Training Programme for Veterinarians (FETPV).

Activity 2.2 Conduct outbreak investigation courses for Field/District Veterinary Officers.

Activity 2.3 Country visits to study best practices for surveillance (in Thailand for X-ray surveillance, in Indonesia for participatory disease surveillance and response (PDSR), and Viet Nam for grass-roots level surveillance).

Activity 2.4 Conduct trainings for grass roots level disease detection and reporting (e.g. community based animal health workers).

Activity 2.5 Provide overseas training in advanced epidemiology and surveillance to the technical staff of DAF.

Output 3: Establishment of a risk-based surveillance programme

Activity 3.1 Develop a grassroots level surveillance programme.

Activity 3.2 Undertake structured virus isolation and characterization.

Activity 3.3 Establish a disease information system dedicated to HPAI.

Output 4: Improved understanding of epidemiology of HPAI in India for rational and targeted control of the disease

Activity 4.1 Study the poultry value chains to include wet markets.

Activity 4.2 Map the farming sectors and socio-economic background along the market and value chains.

Activity 4.3 Conduct data analysis for mapping disease outbreaks and distribution of virus clades.

Activity 4.4 Define infection and transmission dynamics in the context of the various poultry farming systems and socio-economic background.

Activity 4.5 Identify critical points for intervention to control HPAI.

Activities undertaken during the reporting period

As a result of internal official formalities/clearances, there was a considerable delay in the process of obtaining official agreement from the Government of India (GoI) to implement the project. However, several pre-inception workshop activities were undertaken.

Output 1: Establishment of an HPAI (Epidemiology) Unit in India

Activity 1.1: Establishment of an HPAI (Epidemiology) Unit.

- *Pre-inception workshop activities*

The schedule for the official launching of the project was discussed and coordinated with the Department of Animal Husbandry, Dairying and Fisheries (DADF). It was initially agreed with DADF to hold the inception workshop on 7 April and 8 April 2010. However, owing to the busy schedule of the Secretary, the workshop was finally scheduled on 10 and 11 May 2010.

The agenda/programme, invitees and venue for the workshop was finalized through a consultation process with DADF and the United States Agency for International Development (USAID) - India officials. The list of participants included the Secretaries of Bangladesh, Bhutan and Nepal, as the project had relevance in the regional context. The neighbouring countries needed to be aware of the ongoing activities in India. In consultation with various stakeholders during the period of this project, GoI will be able to draft a longer term national strategy to address the issues relevant to the avian influenza (AI) control programme. India should also take on a leadership role in facilitating better coordination among the countries in the region and achieving the primary objective of the project.

- *Organization of the inception workshop and preparation of inception workshop report.*

An inception workshop was organized to address the shortcomings in the control and containment of HPAI through the project OSRO/IND/802/USA –“Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India” held at New Delhi, India on 10 and 11 May 2010. The key role of this project was to improve the capacity building efforts of the country to rapidly control and avoid possible future incursions of the disease over the next several years through an increased emphasis on epidemiological analysis and disease tracking.

The workshop was inaugurated by the Secretary, DADF, Animal Husbandry Commissioner. It was attended by (i) the Joint Secretary (Livestock Health) and several officials of DADF; (ii) the Director General, Indian Council of Agricultural Research (ICAR), the Deputy Director General (Animal Sciences) and scientists of ICAR; (iii) the Director, Indian Veterinary Research Institute (IVRI), the Directors of veterinary services of various state governments, scientists from Regional Disease Diagnosis Laboratories (RDDLs) and High Security Animal Disease Laboratory (HSADL-OIE Reference Laboratory); (iv) USAID officials, representatives from the World Health Organization (WHO) and other international organizations; and (v) the FAO officials from headquarters, Emergency Centre for Transboundary Animal Diseases - Regional office for Asia and the Pacific (ECTAD-RAP) and ECTAD – Subregional Office based in Kathmandu, Nepal. In addition, the workshop was attended by the Secretaries of Ministries of Agriculture/Fisheries and Livestock from Bangladesh, Bhutan and Nepal.

An inception workshop report was prepared and has been circulated for technical clearance.

- *Implementation of the project*

- Recruitment of national and international staff

- Suitable candidates have been identified to fill the position of Chief Technical Advisor (CTA) Team Leader/international Epidemiology Expert and international Geographic Information System (GIS) Expert. The MoA will soon nominate a candidate for the position of a national Project Coordinator who will work closely with the CTA.
- Three national staff positions (HPAI Epidemiology, HPAI Surveillance and national Operations Officer) were advertised in leading websites and widely circulated to various state governments and universities in the country. Based on the prescribed selection criteria, two national veterinarians were identified for recruitment for the positions of national consultant (HPAI epidemiology) and national consultant (HPAI surveillance). The Selection Committee recommended cancellation of the vacancy announcement (VA) for the operations position. In place of the national Operations Officer's position, a decision was made to create and appoint two new positions for a finance/administration assistant and an operations assistant with revised TORs. This is expected to give more flexibility in field operations of the project. Discussions are in progress with the two selected candidates for the technical positions with respect to remuneration, date of entry, etc.

- Renovation of the project site

- The architect to prepare the layout plans for the renovation and refurbishment of the selected project site in the animal Quarantine station in Delhi was identified through a competitive process.
- The layout plans prepared by the selected architect were circulated to senior officials of FAO for suggestions and modifications. These layout plans were finalized based on FAO's internal consultation.
- Based on the architect's report, layout plans and bill of quantity, the contractor to undertake the renovation work is being identified by a competitive process.
- Budget revision, i.e. shifting of funds from general operating expenses to contracts budget line, has been requested from USAID India. Renovation work will commence as soon as an approval to the request is received from USAID India.

- Meetings with Government of India Officials

- The Sub-regional Manager, ECTAD-SAARC, FAO Nepal had a meeting on 1 April 2010 with the Joint Commissioner (Livestock Health), DADF to pursue and discuss various issues pertaining to launching and implementation of the project. The outcomes of the discussions were the following:
 - (i) Signing of project document (OSRO/IND/802/USA) – The Joint Commissioner (LH) informed that the DADF is waiting for the response from the Joint Secretary (IC), MOA.
 - (ii) Letter regarding refurbishing/repairs at Quarantine Station – The Joint Commissioner (LH) promised to send a mail to FAO concurring with the proposal.
- The national project consultant had a meeting with Joint Secretary (LH) on 23 April 2010 regarding the invitations to be extended to the participants of the inception workshop and finalization of the workshop agenda. The list of invitees, letters of

invitation, agenda for the workshop, banners and other logistics for the workshop were finalized in consultation with the Joint Secretary (LH).

- The FAO delegation had a side meeting with GoI (Joint Secretary LH, DADF, MoA) during inception workshop to discuss urgent matters regarding implementation of the project. As a result of this side meeting, the Joint Secretary (LH) provided the agreement of GoI to initiate project activities, proceed with recruitment of national and international personnel for the project and initiate renovation works at the building that has been allocated to the USAID Epidemiological Unit project in the premises of the Quarantine Office. The Joint Secretary (LH) has acknowledged the need to ensure minimum operating security standards (MOSS) compliance of the premises and the setting up of necessary functionalities without significantly deviating from Quarantine Office's standards.

- *Meetings with USAID - India Officials*

A side meeting with USAID India officials was held during the inception workshop to discuss the status of the Government's approval of the project along with some operational matters related to the implementation of the project. USAID was also updated on the status of the rehabilitation of the premises assigned to the project in the quarantine station and the need for a budget revision to accommodate the costs of rehabilitation and refurbishing. USAID has agreed to the rehabilitation work and allocation of necessary funds within the project budget, to which FAO has agreed to send a written request for confirmation. The meeting also discussed ways of ensuring closer coordination between FAO and USAID on project implementation, regular updating on project achievements, and fiscal year (FY) 2010 financial allocations for the India and cross-border projects (OSRO/IND/802/USA and OSRO/RAS/701/USA, respectively). USAID confirmed a possible reduction of the overall USAID contribution to the ECTAD HPAI programme and the fact that projects with a significant budget balance will not receive additional funding for FY 2010. This approach will apply to this project, which is in the process of starting project activities.

Planned activities for the next quarter

Output 1: Establishment of a HPAI (Epidemiology) Unit in India

Activity 1.1: Establishment of an HPAI (Epidemiology) Unit

- Implementation of the project including recruitment of national and international staff, renovation of the project site as per the approved work plan during the inception workshop.

Activity 1.2: Coordination of country programme

Activity 1.3: Management and operations support

Activity 1.4: Capacity building in project/programme management

Output 2: Improved epidemiological capacity within the DADF, MoA of India

Activity 2.3: Country visits to study best practices for surveillance (in Thailand for X-ray surveillance, in Indonesia for PDSR and Viet Nam for grassroots level surveillance).

Main challenges encountered and response provided

Obtaining the formal acceptance and signing of the project document by the Indian Ministry of Agriculture was the main challenge encountered, which was resolved through continuous follow-up with the concerned officials of the DADF.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

Output 1: Establishment of an HPAI (Epidemiology) Unit in India

Although an officially signed project document has not been received, an agreement with GoI was obtained to initiate project activities, proceed with recruitment of national and international project personnel and to commence renovation work at the building that has been assigned to the USAID Epidemiological Unit project in the premises of the Quarantine Office.

**Project Title: Enhancing the capacity of the
Government of Indonesia and partners to control highly pathogenic
avian influenza (HPAI)**

Period: October 2012 - March 2013

Country: Indonesia
Project title: Enhancing the capacity of the Government of Indonesia and partners to control Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/INS/103/USA
Budget: USD 5.2 million
Effective starting date: 1 October 2012
Planned end date: 30 September 2013
Context of the project The purpose of the project is to contribute to the control of Highly Pathogenic Avian Influenza (HPAI) in poultry in Indonesia, thus safeguarding the health and livelihoods of the Indonesian population. The expected outcome of the project is that the capacity and ability of the Government of Indonesia and partners to control HPAI is enhanced.
Objectives of the project Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined Participatory Disease Surveillance and Response (PDSR) system. Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders. Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders. Output D: Improved biosecurity practices in backyard and commercial duck-raising. Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines, as appropriate, based on local antigens and new strains monitored. Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders.
Planned Activities Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system <i>A.1 Distribute and use communication materials to support HPAI prevention and control activities.</i> <i>A.2 Revise and streamline PDSR system to incorporate more community-based decision-making for improved HPAI prevention and control.</i> <i>A.3 Ensure operational budget allocations for Local Disease Control Center (LDCC)/PDSR by local governments.</i> <i>A.4 Extend PDSR database system to district level for improved local disease control management.</i> Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders <i>B.1 Establish effective communication and coordination between Government and commercial</i>

poultry industry in order to build trust among the stakeholders.

B.2 Establish a confidential database of outbreak information from commercial farms.

B.3 Increase competency in commercial poultry health in both public and private sectors.

B.4 Advocate for best practices for commercial poultry health.

B.5 Conduct trials on private sector-funded compensation system.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders

C.1 Improve the surveillance system along the post-production market chain and make it more cost-effective.

C.2 Improve biosecurity along post-production market chain.

C.3 Increase demand for healthy poultry end-product.

Output D: Improved biosecurity practices in backyard and commercial duck-raising

D.1 Advocate for best practices in duck health.

D.2 Implement duck epidemiological data analysis in low incidence areas in Indonesia to improve understanding of the reservoir role of ducks.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines, as appropriate, based on local antigens and new strains monitored

E.1 Promote use of effective vaccine by farmers.

E.2 Establish partnership between commercial poultry industry and the Government for sharing of influenza virus data and isolates.

E.3 Establish sustainable laboratory system for influenza virus monitoring - funded under the IDENTIFY project.

Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders

F.1 Pilot National Veterinary Services (NVS) in three provinces for selected priority diseases.

F.2 Ensure effective programme management with respect to finance, administration, technical inputs, and partner relations (donor and Government of Indonesia).

F.3 Ensure appropriate support to programme components and management to maximize stakeholder participation and build capacity of animal health services.

F.4 Conduct epidemiological studies to better inform disease control and support the Government's strategic planning.

F.5 Provide technical support to the Department of Animal Health (DAH) for HPAI policy development.

F.6 Contribute to the Komnas Zoonosis One Health communication and advocacy strategy.

Activities undertaken during the reporting period

Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system

A.1 Distribute and use communication materials to support HPAI prevention and control activities

- gathered photo and video documentation from NVS Level 2 training in Padang, West Sumatra and PDSR Level 3 mentoring in Pekanbaru, Riau Province;
- provided training for 50 PDSR and Commercial Poultry Veterinarian Programme (PVUK) Master Trainers (MTs) to improve skills in public speaking and

presentation techniques;

- produced video footage of the biosecurity practices employed during the management of sentinel bird farm in Surakarta, Central Java for the collector yard surveillance study;
- gathered video documentation of feeder and drinking cleaning practices on Commercial Poultry Health (CPH) layer farms; and
- captured and produced a video and audio speech in both English and Indonesian for a training package used by the translation team to improve translation skills.

A.2 Revise and streamline PDSR system to incorporate more community-based decision-making for improved HPAI prevention and control

- By the time of report preparation, 1 445 PDSR (37 percent female and 63 percent male) had been trained in PDSR V3 and 8 LDCCs are now using the PDSR V3 information system.
- Eight mentoring visits covering 21 districts and 92 PDSR officers were conducted to backstop the PDSR V3 training.
- Using local government funds, 36 new PDSR officers (20 female and 16 male) were trained and 15 PDSR (8 female and 7 male) were provided with continuing education training.
- Held a Training of Master Trainers (TOMT) on presentation skills and the newly-introduced clade 2.3.2.1 H5N1 virus for 48 MTs (including the 12 PVUK MTs). MTs were provided with updated information required to train PDSR, local government staff, and the community on the control and prevention of clade 2.3.2.1 outbreaks. Follow-up plans on further dissemination of clade 2.3.2.1 were agreed upon for this training.
- As clade 2.3.2.1 affects ducks, it was necessary to develop humane methods for culling ducks when controlling an outbreak. Standard operating procedures (SOPs) for two methods of humane duck culling using dry ice and neck dislocation were developed and tested.

A.3 Ensure operational budget allocations for LDCC/PDSR by local governments

- held meetings with the Rapid Response Unit (*Unit Respons Cepat* [URC, formerly CMU]) and the Planning Division of DAH to determine strategies for local government advocacy activities to ensure the continuation of PDSR, PVUK, *Petugas Surveilans Pasar* (Market Surveillance Official), and LDCC activities in 2013;
- conducted individual provincial-level advocacy meetings with provincial government leaders of Lampung, Central Java, East Java, Banten, West Java, Yogyakarta, DKI Jakarta and North Sumatra;
- conducted a meeting with URC and DAH Planning Division to evaluate the results of advocacy meetings that have already been implemented in eight provinces;
- conducted monitoring and follow-up meetings with provincial governments to follow-up on the agreement/commitment made during the advocacy meetings; and
- participated in Local Government Budgeting and Planning Training conducted by the Australian Department of Agriculture, Fisheries and Forestry (DAFF) Emerging Infectious Diseases (EID) programme in Makassar, South Sulawesi.

A.4 Extend PDSR database system to district level for improved local disease control management

- held PDSR V3 Data Encoder (DE) Training at the province level for 25 provincial

DEs in 24 provinces;

- assisted nine LDCCs in transitioning to the PDSR V3 information system;
- completed the survey of provincial DEs on the status and use of the 355 district computers;
- provided specialized training to DAH staff members on database management, design, and programming in preparation of PDSR V3 transition and to enable further handover of PDSR management responsibility to DAH; and
- completed revision of the PDSR officer Travel Report module for the PDSR V3 information system.

Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders

B.1 Establish effective communication and coordination between the Government and commercial poultry industry in order to build trust among the stakeholders

- Six stakeholder meetings were held in the PVUK expansion areas of West Java, Central Java, East Java, and Lampung, to increase awareness of the benefits of the PVUK programme for improving local poultry production.
- Held meetings with URC to identify opportunities and strategies for engaging the National Poultry Health Committee (KKUN) in order to enable FAO to facilitate the continuation of KKUN activities.
- A coordination meeting was held between URC/DAH, KKUN and FAO in which collaborative initiatives with KKUN were discussed.
- FAO staff followed-up on the recommendations produced in the URC/DAH, KKUN and FAO meeting to identify activities on which FAO and KKUN will collaborate together.

B.2 Establish a confidential database of outbreak information from commercial farms

- As reported previously, this activity has been incorporated into the private sector-funded compensation pilot and PVUK programmes (Activities B.3 and B.5).

B.3 Increase competency in commercial poultry health in both public and private sectors

- The PVUK pilot phase was completed. The 50 trained PVUK officers from the pilot areas developed their skills and confidence in working with commercial poultry farmers in their areas.
- The PVUK expansion for this project phase was completed with the Level 3 training of 23 PVUK veterinarians from the four expansion districts, bringing the total trained PVUK to 62. To date, 58 PVUK (27 male and 31 female) are active in the field.
- Five technical documents have been posted and discussed by PVUK on the e-forum, which was designed to provide technical support to PVUK veterinarians in the field.
- In conjunction with the PDSR MTs, the 12 PVUK MTs (6 male and 6 female) joined the TOMT on presentation skills and control of clade 2.3.2.1 H5N1 virus.
- A Continuing Education I training for 52 PVUK participants was held, covering clade 2.3.2.1, the CPII recommendations for cleaning feeders and drinkers, and group formation for biosecurity planning.
- In the expansion areas, poultry farm profiling training was held for PVUK and a number of PDSR officers to assist PVUK. Data from 4 000 commercial farms have been recorded.
- Thirteen mentoring visits were conducted to support the PVUK in farmer training

and assist with stakeholder meetings. All districts have been mentored at least once.

B.4 Advocate for best practices for commercial poultry health

- trained 59 PVUK officers in feeder and drinker cleaning procedures and are able to pass on the skills to commercial poultry farmers in their area;
- completed Phase 1 of the layer farm biosecurity cost-effectiveness study in Central Java, which improved and harmonized farm production management practices including proper vaccination strategy, feeder and drinker cleaning procedures;
- conducted farmers' feedback meeting in Solo with all participating farmers to evaluate the implementation of Phase 1 and its benefits for the farmers as well as to prepare the biosecurity-based management plan to be implemented during Phase 2;
- initiated Phase 2 of the biosecurity cost-effectiveness study based on the evaluation of results and agreement with farmers on the specific biosecurity interventions to be implemented on each farm;
- conducted weekly farm visits and monthly feedback meetings with participating farmers to provide technical support and monitor for proper implementation of the agreed biosecurity interventions; and
- continued weekly data collection and analysis of economic and production data from all layer farms participating in the biosecurity study – FAO Regional Economist conducted mission to Indonesia to assist with analysis of Phase 1 and preparation of findings within a Phase 1 report.

B.5 Conduct trials on private sector-funded compensation system

- Following further evaluation, the location of the trial was moved from Yogyakarta to Bogor, West Java in order to increase the feasibility of implementation. Two farmer groups, the Association of the National Chicken Farmer Organizations (GOPAN) and the Indonesian Poultry Market Information Centre (PINSAR)/Kurnia, have been identified as potential partners for implementing a private sector-funded compensation system.
- Individual meetings were conducted with the decision makers/influencers of each farmers group to present the private sector-funded compensation plan. Each meeting produced plans to identify participating broiler farms.
- To support the humane and efficient culling operations, which must be conducted before compensation can be provided following an outbreak, a short seminar was hosted on humane culling of poultry for disease control by Dr Rastislav Kolesar from the World Organisation for Animal Health (OIE) as the expert speaker.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders

C.1 Improve the surveillance system along the post-production market chain and make it more cost-effective

- provided operational and technical support for quarterly environmental surveillance of live bird market (LBMs) in the greater Jakarta area;
- conducted preliminary meetings with East Java and North Sumatra Province Livestock Services to plan establishment of LBM surveillance in these areas;
- conducted training in profiling and LBM surveillance techniques for local government officers in Surabaya and Medan;
- held market surveillance officer coordination meeting to facilitate the reinstatement of monthly LBM sampling by the local government in greater Jakarta;

- provided feedback to Surakarta Livestock Services based on the results of the Semanggi collector yard surveillance study; and
- coordinated with and delivered samples to Disease Investigation Centre (DIC) Subang for virus isolation from positive samples from LBM surveillance in greater Jakarta in 2011.

C.2 Improve biosecurity along post-production market chain

- conducted joint assessments and follow-up meetings with local livestock services in the greater Jakarta area at 15 potential markets for the next round of planned market rehabilitation and conducted follow-up meetings with poultry traders and market managers of selected markets to be rehabilitated in collaboration with local livestock services;
- completed finalization of cleaning and disinfection (C&D) training materials for submission to the K4Health website via the SAFE project;
- held a closing meeting and handover of the SOPs on slaughtering processes, healthy chicken meat production and handling, biosecurity and management at slaughterhouses in addition to the activity reports for the Market Restructuring Programme to the DKI Jakarta government;
- conducted field assessments and provided technical support for 22 LBMs in the greater Jakarta area in order to strengthen the implementation of C&D activities in collaboration with local authorities;
- completed the bidding process for the construction of a C&D station at a high-risk native chicken collector yard in Surakarta, Central Java;
- conducted C&D refresher trainings and cleaning day events at five LBMs in Tangerang, five LBMs in Bekasi, five LBMs in Bogor, two LBMs in Depok, and two LBMs in Jakarta in order to strengthen the implementation of the market C&D activities; and
- Conducted introductory C&D training for cleaning workers and market managers, in addition to training of trainers (ToT) sessions for local livestock services, in Semarang city, Central Java Province funded by central budget from the DAH.

C.3 Increase demand for healthy poultry end-product

- No further activities are planned. Activities were completed during Phase 1.

Output D: Improved biosecurity practices in backyard and commercial duck-raising

D.1 Advocate for best practices in duck health management

- No further activities are planned. Activities were completed during Phase 1.

D.2 Implement duck epidemiological data analysis in low incidence areas in Indonesia to improve understanding of the reservoir role of ducks

- Samples from the Lombok (in Nusa Tenggara Barat NTB province) duck study were tested at DIC Denpasar.
- Data from the Lombok study were analysed and the draft report was prepared.
- Results from the Lombok duck study were presented in March to the NTB local government in Mataram, Lombok. Results support the conclusion reached elsewhere in Indonesia that ducks do not play an important role in the endemicity of H5N1 (clade 2.1.3) in the area.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored

E.1 Promote use of effective vaccine by farmers

- initiated the development of new training modules for training of farmers in recommended avian influenza vaccination methods, including vaccine selection, scheduling, and vaccination technique;
- provided continuing technical advice and support to ensure the continuing use of local strain H5N1 vaccines in the flocks of layer farms participating in the CPH biosecurity cost-effectiveness study;
- participated and presented “The Result of IndoCPH Vaccination Study in Central Java Poultry Layer Farms” at the Vaccination Intensification National Coordination Meeting in Semarang, Central Java; and
- prepared training and implementation plan for DAH cold chain MTs to train farmers on effective vaccination practices.

E.2 Establish partnership between commercial poultry industry and Government for sharing of influenza virus data and isolates

- initiated partnership with PINSAR Solo layer farmers to enable sampling and testing of members’ farms in the event of a significant disease event;
- facilitated communication between the Directorate General of Livestock and Animal Health Services (DGLAHS) and poultry vaccine production laboratories on the development and use of a vaccine to prevent clade 2.3.2.1 virus outbreaks;
- participated in the USDA workshop on “Strengthening Poultry Diagnostic Laboratories in Java” at the DIC Subang in November 2012; and
- continued facilitation to enable receipt, testing and production of candidate reverse genetics vaccine strains from the United States Department of Agriculture (USDA) Southeast Poultry Research Laboratory (SEPR) under cooperative agreement between Pusvetma and Bogor Agricultural Institute (IPB) Shigeta.

E.3 Establish sustainable laboratory system for influenza virus monitoring - funded under the OSRO/INT/902/USA IDENTIFY project.

- A two-day national influenza virus monitoring (IVM) network meeting was conducted in November 2012 in Yogyakarta. The meeting was attended by 23 participants consisting of one virologist and one serologist from each DIC, one molecular biologist from each of the sequencing partners (Pusvetma, DIC Bukittinggi and Bbalitvet), two virologists from BBPMSOH, two virologists from the Ministry of Health (MOH) and four international experts (three from the Australian Animal Health Laboratory [AAHL] and one from FAO’s Animal Production and Health division [AGAH]). This was the first IVM network meeting involving participants from MOH (National Institute of Health Research and Development [NIHRD] and the Vector Research Centre, Salatiga) in order to strengthen technical collaboration between the Ministry of Agriculture (MOA) and MOH.
- A collaboration framework was prepared with AAHL to develop user friendly tools for characterization, visualization and analysis of H5N1 antigenic data; to be included in the 4th FAO-AAHL letter of agreement (LoA) 2013. The proposal was presented to the DAH in mid-February and received approval.
- A biosafety risk assessments was conducted to improve quality assurance (QA) practices in 10 DGLAHS laboratories (eight DICs, Pusvetma, and the National Veterinary Drug Assay Laboratory [NVDAL]) between October and December 2012. The assessment was performed by two international biosafety professionals contracted through the FAO Regional Biosafety Programme.

Assessment reports, including recommendations and follow-up action, have been provided to the Director of Animal Health.

- Each partner laboratory using FAO's Lab Mapping tools was assured for QA.
- The laboratories' timely reporting of IDENTIFY targeted diseases to national authorities was enabled by supporting and facilitating the genetic characterization of duck isolates done by Pusvetma and DIC Bukittinggi. Initial recommendations to the Director of Animal Health on the containment of the new H5 avian influenza strain identified in Central Java, Yogyakarta and East Java provinces have been delivered.
- A list of pre-screening and screening reagents to be procured for IVM participant laboratories under the IDENTIFY project was prepared in consultation with AAHL.
- Technical clearance of the 4th FAO-AAHL LoA to be funded by the IDENTIFY Indonesia project was drafted and secured.

Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders

F.1 Pilot NVS in three provinces for selected priority diseases

- A simplified format for disease control SOPs (also called: "keep it simple standard operating procedure" [KISSOP]) was developed agreed upon. The SOPs are used as the basis for technical training modules.
- An NVS level 1 training was held in Klungkung, Bali for 12 participants (11 male and 1 female), with the training expenses cost-shared by DAH and FAO. This training focused on developing participatory skills and improved ways to communicate with the community.
- An NVS level 2 training for all 47 NVS trainees and supervisors was held in all three pilot districts of Klungkung, Dumai and Agam, with the training expenses cost-shared by DAH and FAO. A Level 2 training covered HPAI and rabies control and introduced the NVS staff to syndromic surveillance of other diseases. Joint training for Integrated Bite Case Management (IBCM) with representatives from local government human health (e.g. hospitals and Puskesmas) and animal health services (e.g. Puskesmas) was also included, with a total of 73 participants from both animal health and human health services.
- A TOMT NVS Level-2 (13 MTs) and an NVS Data Encoder training (with 13 participants from provincial and district level) were conducted in Jakarta in November 2012.
- Advocacy on the establishment of a Veterinary Authority, a review of the implementation of NVS in the field, and a discussion on animal disease surveillance and response funding support for 2013 and 2014 with livestock services of West Sumatra Province and Agam District were conducted in December 2012.
- Mentoring of NVS officers in order to support and advise on the implementation of NVS in the field was conducted in Dumai and Agam in January. Mentoring was conducted by staff from DAH, province livestock services, local MTs, and FAO. These visits also enabled discussions on the veterinary authority and its implications in the pilot districts.

F.2 Ensure effective programme management with respect to finance, administration, technical inputs, and partner relations (Donor and Government of Indonesia)

- Project staff actively participated in all monthly USAID Chief of Party (COP) meetings, as well as coordination meetings with other partners, including SAFE, DAFF, and the World Health Organization (WHO).

- During the reporting period, FAO's Emergency Centre for Transboundary Animal Diseases (ECTAD) Indonesia facilitated weekly coordination meetings with both URC and the Director of Animal Health. These meetings enabled both FAO and project counterparts to remain synchronized regarding project priorities and challenges, despite various delays in project implementation.
- Project progress reports were prepared in accordance with the project document and local agreement with USAID Indonesia.
- An effective workplan and budget monitoring system has been in place since October 2012. Periodic reviews have been conducted in order to adjust programme requirements with budget availability.
- All operational activities were conducted in a timely manner in order to ensure the timely delivery of project inputs for successful implementation of project activities.
- During the period October-December 2012, LoAs were signed with the LDCCs to support their operations. The support to LDCCs finished as of January 2013 and their continuing operational support will be provided by Government's funding sources.

F.3 Ensure appropriate support to programme components and management to maximize stakeholder participation and build capacity of animal health services

- Ongoing technical support and management supervision was provided on a regular basis to the various components of the ECTAD Indonesia programme, with emphasis placed on timeliness and efficiency due to the increased workload imposed by the significant reduction in project human resources.
- All administrative issues were dealt with in a timely fashion, such as travel arrangements, recruitment, procurement and service contracts to allow for the smooth implementation of project activities.
- Financial transactions, such as budget authorizations and petty cash for trainings, were dealt with in a timely manner, which allowed the smooth implementation of project activities.
- Provisional budgets were prepared for all the project components to improve resource allocation and monitoring and revised periodically in order to assure appropriate availability of resources for the implementation of activities.
- Facilitation of the vehicle registration and tax exemption processes continued.

F.4 Conduct epidemiological studies to better inform disease control and support Government strategic planning

- In light of the introduction of the new clade 2.3.2.1 H5N1 in Indonesia, targeted research activities were reassigned to quickly design and implement a field study to evaluate the use of the influenza A rapid test for the field diagnosis of clade 2.3.2.1 virus infection in ducks. A concept note was prepared and discussions were held with DIC Wates, which will be the laboratory providing support for the implementation of the field study and testing of samples.

F.5 Provide technical support to DAH for HPAI policy development

- Technical support was provided to URC and DAH to review and address gaps found in DAH and local government FY2013 budgets in relation to the HPAI control priorities identified during the strategy review process.
- Discussions were initiated with DAH on the progress made in HPAI control during 2012, the reasons for the improvement observed, and how to continue improving control in light of decreased donor support.

F.6 Contribute to the Komnas Zoonosis One Health communication and advocacy strategy

- No further activities are planned. Activities were completed during Phase 1.

Planned activities for the next six-month period

Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system

A.1 Distribute and use communication materials to support HPAI prevention and control activities

- produce and print 200 printed copies of the FAO ECTAD Annual Report 2012 in both English and Bahasa Indonesia for distribution in electronic format to the Government and other partners;
- design booth and materials for the Indolivestock Exhibition 2013 and the follow-on Poultry Farmers' National Seminar;
- design and distribute topic-based posters and factsheets to motivate sector 3 layer farmers to conduct more effective vaccination programmes; and
- capture and produce a video and audio speech and training session package both in English and Bahasa Indonesia for practice purposes of the translator team.

A.2 Revise and streamline PDSR system to incorporate more community-based decision-making for improved HPAI prevention and control

- The remaining PDSR officers (approximately 200) will be trained in PDSR V3. All LDCCs will start using the PDSR V3 information system.
- Mentoring visits will be conducted to back-stop all LDCCs on PDSR V3 and to introduce the SOPs on humane culling methods for ducks.
- New PDSR officers will be trained in provinces/districts that have allocated local government funds for the training and operational support of additional PDSR officers.
- The MTs and PDSR officers will continue to inform their constituent communities about clade 2.3.2.1 H5N1 virus as part of their continuing efforts to control and prevent HPAI in village poultry.

A.3 Ensure operational budget allocations for LDCC/PDSR by local governments

- continue provincial-level advocacy meetings with provincial government leaders of West Sumatra, Riau, South Sulawesi and Bali provinces in order to verify allocation of sufficient operational funding for PDSR activities in FY2013 and FY2014 local government budgets;
- engage with Komnas Zoonosis to advocate for greater local government funding of animal health surveillance and response activities;
- continue monitoring and follow-up meetings with local government leaders already committed to sustain HPAI control programmes previously funded by FAO in order to ensure the fulfilment of their funding commitments made during advocacy meetings;
- hold final evaluation meeting with URC and the planning division of DAH on the results of advocacy meetings held with local governments; and
- hold a national workshop on finalization of central and local government funding commitments for FY2014 to sustain animal local government-based disease control activities previously funded by FAO.

A.4 Extend PDSR database system to district level for improved local disease control management

- continue PDSR V3 data encoder training for remaining eight provincial level LDCCs data encoders;
- continue assisting remaining 23 LDCCs to transition from PDSR V2 to the PDSR V3 information system;
- further develop PDSR V3 standard reports;
- conduct ToT activities for 34 provincial data encoders on the PDSR V3 information system in order to enable subsequent training of district-level data encoders;
- provide technical support for training conducted by provincial data encoders on the PDSR V3 database system for up to 355 district data encoders;
- support the installation of the PDSR V3 database at district level by trained district data encoders; and
- provide ongoing technical and operational support and monitoring of the PDSR V3 information system throughout Indonesia.

Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders

B.1 Establish effective communication and coordination between the Government and commercial poultry industry in order to build trust among the stakeholders

- support PVUK officers to continue working with farmer groups for biosecurity planning, evaluation visits, and reporting of HPAI outbreaks;
- conduct agreed upon public private partnership (PPP) activities in collaboration with KKUN once agreement is reached among URC, KKUN, and FAO; and
- collaborate with commercial poultry industry partners and KKUN on conducting the National Poultry Farmers' Seminar for sharing best practices on profitable biosecurity for independent layer farmers.

B.2 Establish a confidential database of outbreak information from commercial farms

- As reported previously, this activity has been incorporated into the private sector-funded compensation pilot and PVUK programmes (Activities B.3 and B.5).

B.3 Increase competency in commercial poultry health in both public and private sectors

- PVUK Continuing Education II will be held for 58 PVUK officers with a focus on improving reporting of HPAI, supporting biosecurity planning for farmer groups, and ToT activities on improved vaccination skills.
- Farmers will be supported to report HPAI outbreaks through the provision of supplies and payment of transport and testing costs via the PVUK programme.
- Mentoring visits will continue to back-stop the training and support PVUK officers in their work with the poultry farmers in their areas.
- A meeting will be held to evaluate the implementation of the PVUK programme and lessons learnt documented for further expansion if required.

B.4 Advocate for best practices for commercial poultry health

- PVUK will continue to include cleaning (of feeders and drinkers) best practices in

their on-farm trainings.

- CPH training for commercial layer chicken farmers in egg production centres of Central Java will be conducted.
- The provide technical support will continue for implementation of Phase 2 of the biosecurity cost-effectiveness study with participating layer farmers in Central Java.
- The 2013 National Poultry Farmers' Seminar in Nusa Dua, Bali will be hosted to present findings to independent layer farmers on the most profitable biosecurity interventions identified during the biosecurity cost-effectiveness study as well as provide the latest information on preventing clade 2.3.2.1 virus outbreaks.
- Weekly farm visits and monthly farmers' meetings will continue, so as to ensure the successful implementation of Phase 2 management plans, including any construction activities required to improve biosecurity infrastructure.
- The Phase 1 report from the biosecurity cost-effectiveness study will be finalized.

B.5 Conduct trials on private sector-funded compensation system

- assess and identify 20 broiler farms from each farmers' group in cooperation with GOPAN and PINSAR/Kurnia farmers' group managers to participate in the compensation pilot;
- conduct a design and inception workshop for finalizing the private sector-funded compensation system and take the required first steps in implementation, including determining levy collection and compensation distribution mechanisms by each participating farmers' group; and
- monitor the implementation of the levy collection process to ensure the establishment of the compensation fund.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders

C.1 Improve the surveillance system along the post-production market chain and make it more cost-effective

- provide operational and technical support for transition from quarterly to monthly environmental surveillance of LBMs in the greater Jakarta area, with funding support to additional testing and characterization to be provided via WHO;
- provide operational support for the completion of LBM profiling in Surabaya and Medan, and conduct analysis of profiling data collected; and
- provide technical support for initiation of quarterly environmental LBM surveillance by local government staff in Surabaya and Medan, with diagnostic testing by Airlangga University and characterization by DIC Wates for Surabaya samples, and by DIC Medan for North Sumatra.

C.2 Improve biosecurity along post-production market chain

- conduct C&D refresher trainings and cleaning day events at two LBMs in the Jakarta area in order to strengthen the implementation of the market C&D activities;
- conduct quarterly monitoring and evaluation of the implementation of C&D at 22 LBMs in the greater Jakarta area;
- complete the construction of a C&D station at the high-risk native chicken collector yard in Surakarta, Central Java;
- complete the rehabilitation of two selected LBMs in the greater Jakarta area;
- hold an evaluation meeting with all rehabilitated markets in the greater Jakarta area to identify lessons learnt and encourage the continuation of C&D activities in those

markets;

- conduct introductory C&D training for cleaning workers, market managers, and local livestock services at newly rehabilitated markets and at the newly constructed C&D station in Central Java; and
- conduct introductory C&D training for cleaning workers and market managers, in addition to ToT activities for local livestock services in Surabaya with funding provided by central government budget under Directorate of Animal Health, Ministry of Agriculture.

C.3 Increase demand for healthy poultry end

- No further activities are planned. Activities were completed during Phase 1.

Output D: Improved biosecurity practices in backyard and commercial duck-raising

D.1 Advocate for best practices in duck health management

- No further activities are planned. Activities were completed during Phase 1.

D.2 Implement duck epidemiological data analysis in low incidence areas in Indonesia to improve understanding of the reservoir role of ducks

- Lombok duck study has been completed. The final report is to be presented to central and local government partners. No further activities are planned during next reporting period.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines, as appropriate, based on local antigens and new strains monitored

E.1 Promote use of effective vaccine by farmers

- conduct ToT activities for 59 PVUK officers to assist commercial farmers to improve vaccination methods who will then train poultry farmers in their areas;
- complete duck vaccination training module and introduce within PVUK and CPH programmes;
- develop modules for training on best practices in vaccination for commercial layer chicken farms for use in PVUK and CPH programmes;
- conduct ToT activities for DAH cold chain MTs on effective poultry vaccination and provide support for subsequent trainings in which the cold chain MTs will train poultry farmers in East Java and West Java on the same topic;
- conduct training for commercial layer farmers in Sukorejo and Solo on effective poultry vaccination and biosecurity practices;
- share information and field experience on effective vaccination practices at the 2013 Indolivestock Expo and via the National Poultry Farmers Seminar which will be held immediately following the Expo; and
- conduct a seminar on avian influenza vaccination strategies for technical services and vaccinators of local poultry vaccine manufacturer.

E.2 Establish partnership between commercial poultry industry and Government for sharing of influenza virus data and isolates

- maintain readiness of CPH team to investigate potential disease events within the PINSAR Solo layer farmers group;

- facilitate meetings between DGLAHS and poultry vaccine producers to share data and reach agreement on the best vaccination approach to prevent HPAI outbreaks due to clade 2.3.2.1 H5N1 virus;
- facilitate sharing of advice and experience from influenza vaccination experts with DGLAHS in order to ensure vaccination policies remain in-line with international standards;
- facilitate communication pathways to strengthen linkages between industry, local government, and DIC monitoring efforts through coordination meetings between DGLAHS and the commercial poultry industry;
- facilitate development of formal cooperative agreement between DGLAHS and the commercial poultry industry for sharing of virus isolates and influenza data; and
- facilitate testing and production of candidate RG vaccine strains from USDA SEPRL, under cooperative agreement between PUSVETMA and IPB Shigeta.

E.3 Establish sustainable laboratory system for influenza virus monitoring - funded under the IDENTIFY project.

- compile subset of H5N1 isolates with complete antigenic and genetic data for advanced bioinformatic analysis (30-50 isolates) and validation of antigenic characterisation tool;
- complete data analysis of antigenic and genetic data to refine analysis tools requirements;
- contribute to training in the use of the Alat Preskrin and Alat Skrin Lengkap (IVM Online) software tools (User Acceptance Testing workshop) combined with the next IVM Meeting;
- conduct launching workshop for antigenic characterization/visualization tool and genetic data analysis in September 2013;
- participate in the review and updating of the FAO Lab mapping tool to be conducted by FAO headquarters;
- procure IVM pre-screening and screening reagents;
- implement 4th FAO-AAHIL LoA 2013; and
- participate in the Regional and Indonesia EPT planning workshops.

Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders

F.1 Pilot NVS in three provinces for selected priority diseases

- hold discussions with the DAFF programme in Sulawesi to review NVS-related training materials;
- develop NVS Level 3 training modules for use in each NVS pilot district;
- conduct NVS Level 3 training to 42 NVS participants in each NVS pilot district;
- continue mentoring and advocacy visits to support NVS staff in the field and to further develop the role of the Veterinary Authority and Puskesmas; and
- hold an evaluation workshop to review the successes and challenges of the pilot and document lessons learnt for future expansion.

F.2 Ensure effective programme management with respect to finance, administration, technical inputs, and partner relations (Donor and Government of Indonesia)

- continue facilitation of weekly coordination meetings with both URC and the Director of Animal Health;
- continue preparation of project progress reports in accordance with the project

document and local agreement with USAID Indonesia;

- continue the active participation at the USAID COP meetings, as well as in coordination meetings with Komnas Zoonosis, WHO, DAFF, and other partner agencies as needed;
- continue updating and monitoring the workplan and budget monitoring system with updated expenditures and work plan revisions submitted by each technical team; and
- continue the implementation of necessary operational actions to ensure the timely delivery of project inputs for successful implementation of agreed activities.

F.3 Ensure appropriate support to programme components and management to maximize stakeholder participation and build capacity of animal health services

- provide support and management supervision on a regular basis to the various components of the ECTAD Indonesia programme;
- continue addressing all administrative issues in a timely fashion, including travel arrangements, personnel recruitment, procurement, and service contracts in order to allow for the timely implementation of project activities;
- ensure the proper and timely dealing of financial transactions, such as budget authorizations and petty cash for trainings, to allow smooth implementation of project activities; and
- prepare provisional budgets for all the project components to improve resource allocation and monitoring and revise periodically in order to assure appropriate availability of resources for the implementation of activities.

F.4 Conduct epidemiological studies to better inform disease control and support government strategic planning

- Influenza A rapid antigen test evaluation study will be implemented in ducks in Central Java and Yogyakarta provinces in collaboration with DIC Wates. PDSR teams will test ducks from suspected HPAI outbreaks using the Anigen[™] influenza A test and collect samples for PCR testing at DIC Wates.
- Once data are available from the study, project staff will analyse and advise DAIH on the results and validate the rapid test.

F.5 Provide technical support to DAH for HPAI policy development

- provide technical support and advice to URC and the Director of Animal Health on the risk of H7N9 introduction to Indonesia and the most effective ways to mitigate the risk;
- develop a surveillance plan for H7N9 and support the DAH to obtain PCR reagents and implement a surveillance programme;
- review available data on vaccine efficacy against the two circulating clades in Indonesia and advise URC and DAH on strain selection and vaccination policy for control of both clades;
- complete consultation process between DGLAIS and FAO ECTAD Indonesia for development of the work plan for the next phase of the project; and
- submit abstracts and prepare presentations for sharing with the global scientific community on the lessons learnt from the Government's efforts to control HPAI in poultry.

F.6 Contribute to the Komnas Zoonosis One Health communication and advocacy strategy

- No further activities are planned. Activities were completed during Phase 1.

Main progress made towards the achievement of project outcomes (from the start of the current project phase)

Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system

- Thus far 1 445 PDSR officers have been trained in PDSR V3, and 9 LDCCs are now implementing the PDSR V3 system. The database has been modified to utilize the new data forms. PDSR officers are now networking with the community, community leaders and village poultry farmers to explain the need for HPAI reporting.
- PDSR has identified outbreaks of HPAI clade 2.3.2.1 H5N1 in duck farms and have been able to explain the new clade to the community and to colleagues in the local government, thereby helping to reduce fear and misunderstandings.
- There is increased capacity of local government staff in 24 LDCCs on the use of the enhanced PDSR V3 information system for data analysis and reporting. Twenty-five provincial DEs from 24 out of 32 LDCCs have been trained using PDSR V3. Currently, nine LDCCs have already moved to PDSR V3 and actively send their database update.
- Central Government and all provincial governments that were targeted in advocacy activities strongly support the sustainability of animal disease control activities by allocating government funds in 2013 and 2014. The level of support varies depending on their financial situation and political commitment.
- Central Government, local governments, and relevant government institutions have raised their level of awareness and coordination concerning proper allocation of budget for animal health issues.

Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders

- Improved understanding of the commercial poultry sector as a result of profiling 4 000 farms in the PVUK expansion areas. Profiling information is available to the district livestock services for decision-making.
- Following the TOMT, MTs had the confidence and skills to communicate clear information on HPAI clade 2.3.2.1. They conducted one interactive radio programme, one TV programme, 11 coordination meetings for 276 local government staff (191 male and 85 female), and 15 farmer and community meetings for 224 participants (183 male and 41 female).
- The PVUK programme has increased trust between local government animal health services and commercial poultry farmers. PVUK officers continue to conduct farmer trainings and farm visits. A noticeable change has been seen in the attitude of poultry farmers who now contact PVUK officers to book trainings, request assistance with farm hygiene and vaccination, and request PVUK to assist with problem solving. Behaviour change has been seen with farmers following good vaccine cold chain management, improved farm biosecurity, including movement control, and improved farm hygiene. PVUK has conducted 612 farm visits, 42 farmer trainings and 272 evaluation visits thus far. During farm visits, 30 percent of farmers agreed to implement the proposed changes, and once a monitoring visit has taken place, over 50 percent of farmers fully comply with the recommendations. PVUK officers have now conducted 68 disease investigations in the field.
- Best practices in poultry vaccination and farm management have been identified via the CPH biosecurity cost-effectiveness study. The biosecurity intervention phase of the study is now underway in order to evaluate the cost-effectiveness of specific biosecurity

practices.

- Layer farmers in high-risk production areas have adopted best practices as identified via the CPH programme, and as disseminated via the PVUK programme and CPH outreach activities.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders

- There has been a significant increase in the understanding of both progress on controlling H5N1 in Indonesia and H5N1 epidemiology in general as a result of using specially-designed market surveillance tools, such as regularly scheduled environmental surveillance of LBMs and targeted surveillance at collector yards.
- There has been increased cleaning and disinfection activities as well as awareness of the importance of maintaining cleanliness in selected markets in the greater Jakarta area as a result of FAO training in collaboration with local governments. This has provided a considerable impact both in terms of the level of cleanliness of the markets' environment and the participation of traders and market managers.
- There has been allocation of central and local government funds for sustaining market cleaning and disinfection activities through support on C&D training for markets that had not received the training previously.

Output D: Improved biosecurity practices in backyard and commercial duck-raising

- There is increased understanding of the relatively limited role played by ducks in the persistence of clade 2.1.3 virus as a result of the successful implementation of the Lombok duck study.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored

- The commercial poultry farming community was provided with examples of commercial layer farms that are successfully using local strain HPAI vaccines with a specific vaccination regime that yields excellent protection for the flock against H5N1.
- There has been a marked reduction in H5N1 virus detection since 2009, correlated with an increase in use of local strain vaccines as supported by laboratory-based vaccine research, evaluated on the farm by the CPH programme, and advocated to farmers via the PVUK and CPH outreach programmes.

Output F: Strengthened veterinary services at central, provincial, and district levels with increased commitment from related stakeholders

- The importance of human health and livestock health sectors working together has been recognized at local government level as a result of the NVS pilot programme. Following the establishment of NVS in two districts of Sumatra, NVS-trained government officers have conducted 1 279 passive surveillance activities, 192 rapid responses to bite cases, and 172 disease investigations, resulting in the detection of 10 cases of canine rabies from 14 suspected samples submitted. Emergency vaccination was conducted around the positive cases in order to reduce further spread. Response to bite cases and the subsequent detection of canine rabies in dogs was directly attributable to improved communication between human health and animal health counterparts.
- The NVS information system, including database designed for district-level data entry, was successfully deployed in NVS pilot areas.
- There has been a marked and continuing improvement in HPAI control in poultry in Indonesia.

- There is more effective detection and identification via the field rapid response and laboratory networks of the clade 2.3.2.1 H5N1 virus, newly introduced into Indonesia in mid-2012.

Project Monitoring Sheet: **OSRO/INS/103/USA**

**Project Title: Enhancing the capacity of the
Government of Indonesia and partners to control Highly Pathogenic
Avian Influenza (HPAI)**

Reporting Period: **April 2012 to September 2012**

Country: Indonesia
Project title: Enhancing the capacity of the Government of Indonesia and partners to control Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/INS/103/USA
Budget: USD 8.2 million
Effective starting date: 1 October 2011
Planned end date: 31 December 2012 (note: This report contains planned activities for the first six months of the extension phase of this project until 31 March 2013)
Context of the project The purpose of the project is to contribute to the control of Highly Pathogenic Avian Influenza (HPAI) in poultry in Indonesia, thus safeguarding health and livelihoods of the Indonesian population. The expected outcome of the project is that the capacity and ability of the Government of Indonesia and partners to control HPAI is enhanced.
Objectives of the project for the reporting period (April to September 2012) Output A: <i>Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined Participatory Disease Surveillance and Response (PDSR) system</i> Output B: <i>Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders</i> Output C: <i>Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders</i> Output D: <i>Improved biosecurity practices in backyard and commercial duck-raising</i> Output E: <i>Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored</i> Output F: <i>Strengthened veterinary services at central, provincial and district levels with increased commitment from related stakeholders</i>
Planned activities for the reporting period (April to September 2012) Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system <i>A.1 Distribute and use communication materials to support HPAI prevention and control activities</i> <i>A.2 Revise and streamline PDSR system to incorporate more community-based decision-making for improved HPAI prevention and control</i> <i>A.3 Provide Local Disease Control Centre (LDCC) PDSR operational budget by local government</i> <i>A.4 Extend PDSR database system to district level for improved local disease control management</i> Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders <i>B.1 Establish effective communication and coordination between the Government and commercial poultry industry to build trust among the stakeholders</i> <i>B.2 Establish a confidential database of outbreak information from commercial farms</i> <i>B.3 Increase competency in commercial poultry health (CPH) in both public and private sectors</i>

B.4 Advocate for best practices for CPH

B.5 Conduct trials on private sector-funded compensation system

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders

C.1 Improve the surveillance system along the post-production market chain and make it more cost-effective

C.2 Improve biosecurity along post-production market chain

C.3 Increase demand for healthy poultry end product

Output D: Improved biosecurity practices in backyard and commercial duck raising

D.1 Advocate for best practices in duck health management

D.2 Implement duck epidemiological data analysis in low incidence areas in Indonesia to improve understanding of the reservoir role of ducks

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored

E.1 Promote use of effective vaccine by farmers

E.2 Establish partnership between commercial poultry industry and the Government for sharing of influenza virus data and isolates

E.3 Establish sustainable laboratory system for influenza virus monitoring

Output F: Strengthened veterinary services at central, provincial and district levels with increased commitment from related stakeholders

F.1 Pilot National Veterinary Service (NVS) in three provinces for selected priority diseases

F.2 Ensure effective programme management with respect to finance, administration, technical inputs and partner relations (donor and the Government of Indonesia)

F.3 Ensure appropriate support to programme components and management to maximize stakeholder participation and build capacity of animal health services

F.4 Conduct epidemiological studies to better inform disease control and support government strategic planning

F.5 Provide technical support to the Directorate of Animal Health (DAH) for HPAI policy development

F.6 Contribute to the National Zoonosis Commission (Komnas Zoonosis) One Health communication and advocacy strategy

Activities undertaken during the reporting period (April to September 2012)

Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system

A.1 Distribute and use communication materials to support HPAI prevention and control activities

- Held ten focus group discussions with PDSR officers and communities in high-risk provinces
- Duplicated and distributed 400 animation videos “Let’s Prevent HPAI” in DVD format to Indo-Livestock Expo & Farmers’ Seminar attendees
- Duplicated and distributed 500 “Q&A on HPAI” brochures to Indo-Livestock Expo & Farmers’ Seminar attendees
- Produced the 2011 Emergency Centre for Transboundary Animal Diseases (ECTAD) Indonesia Annual Report
- Produced and distributed 1 200 stickers on “HPAI vaccination” to Indo-Livestock Expo & Farmers’ Seminar attendees
- Produced a video documentation of sentinel farm management for use in demonstrating

how a high level of biosecurity can be practically implemented with limited resources

- Produced a video and photo documentation of cleaning procedures for drinkers and waterers on layer farms in the biosecurity cost-effectiveness study
- Produced a video and photo documentation of laboratory testing of surveillance samples from Semanggi collector yard
- Prepared a PDSR success story for use by the United Nations Information Centre in Jakarta

A.2 Revise and streamline PDSR system to incorporate more community-based decision-making for improved HPAI prevention and control

- The curriculum, modules and materials for PDSR Version 3 (PDSR V3) refresher training were developed and introduced to 27 Master Trainers (MTs) during a training-of-trainers (TOT) workshop held in April 2012. PDSR V3 training was conducted for 423 participants (307 male and 116 female) in West and South Sulawesi, West Kalimantan, Padang and Riau Provinces in Sumatra. All trainings were assisted by the eight national MTs.
- Mentoring and backstopping was conducted for 38 new trainees in six districts of Sulawesi.
- Training for 27 (21 male and 6 female) new PDSR officers in West Kalimantan was conducted in June 2012 with funding from local government budget.
- Continuing Education (CE) training was conducted in Samarinda for 17 PDSR and in Bandung Barat for 20 PDSR using local government funds.
- The eight national MTs were given training and mentoring experience in different aspects of the training programme activities including: training module development and testing, training and field mentoring support for PDSR, NVS, the Commercial Poultry Veterinary Programme (PVUK) and rabies control.

A.3 Provide LDCC PDSR operational budget by local government

- Twenty provinces in Indonesia have committed their local budgets under "Anggaran Pendapatan dan Belanja Daerah" (APBD 1, which literally translates as "Revenue Budget and Local Expenditures" and is commonly translated as Provincial Government Budget) at the provincial level, or APBD II at the district level) to either fully or partly support PDSR and animal health activities in the provinces for 2013–2014.
- A series of work plan meetings were held with CMU and DAH to determine priority activities in HPAI control (2013–2014) and to conduct budget mapping to identify and address gaps in the funding of priority activities.
- A budget proposal for HPAI control activities managed by the Campaign Management Unit (CMU) was sent to the Directorate General of Livestock and Animal Health Services (DGLAHS) and the Secretary General of the Ministry of Agriculture (MoA) to cover gaps in the budgets provided by FAO for implementation of priority activities in control of HPAI in Indonesia.
- Three Local Government Workshops on NVS were conducted in May and June of 2012. The main objectives of these workshops was to advocate to local governments for their support of operational costs of NVS officers, including that of LDCCs in the three NVS pilot project areas: West Sumatra (Agam District), Riau (Dumai District) and Bali (Klungkung District). Participants from the local government included representatives of the Regional Planning Board (BAPPEDA), provincial and district Regional Assistants (local Government function), Livestock Agency and Veterinary Laboratory at the provincial and district levels and the LDCC coordinators. The output of these workshops was a set of recommendations, one of which was on financial support for the NVS pilot project implementation. However, ongoing government support for LDCC activities still remains unclear.

A.4 Extend PDSR database system to district level for improved local disease control management

- Continued monitoring, through LDCC data encoders, of 355 PDSR Version 2 district level installations that were set up in August 2011.
- PDSR V3 forms were field tested in three NVS pilot districts.
- PDSR V3 database and data entry front end were designed, programmed and tested.
- Six LDCC data encoders were trained to operate the PDSR V3 database.

Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders

B.1 Establish effective communication and coordination between the Government and commercial poultry industry to build trust among the stakeholders

- Provided support for 21 farmers' meetings for 661 participants and 32 farmers' trainings for 553 participants during the reporting period.
- Facilitated a workshop with identified local poultry industry and local government stakeholders to brainstorm on establishing mechanisms to increase discussion of issues concerning the poultry industry.
- Prepared a draft plan for trust-building between government and industry based on above workshop.
- Planned a national farmers' meeting for sharing of best practices in collaboration with DAH and the National Poultry Health Committee (KKUN).

B.2 Establish a confidential database of outbreak information from commercial farms

- As reported previously, this activity was incorporated into the private sector-funded compensation pilot and PVUK programmes (Activities B.3 and B.5).

B.3 Increase competency in CPH in both public and private sectors

- A Local Government Workshop for PVUK expansion was held in Yogyakarta in April 2012 to discuss the programme with the four new districts. Key recommendations were that all PVUK districts should start planning for local Government funding of the PVUK programme.
- All modules used in PVUK training levels 1, 2 and 3 were modified to meet the needs of the updated curriculum.
- PVUK Training Level 1 for the four new districts was held in Padang in May 2012. Twenty-four participants (13 male, 11 female) from four new districts of Agam in West Sumatra, Kulon Progo in Yogyakarta, and Tulungagung and Blitar in East Java attended the training. The training provided knowledge on communication, basics of biosecurity and vaccination, important poultry diseases and necropsy techniques. Level 2 training, which introduces participatory approaches and more in-depth training on vaccination and biosecurity, was conducted in Yogyakarta in June 2012 for 23 participants (12 male, 11 female). The concept of biosecurity planning was introduced for the farmers to learn about several levels of disease control.
- To develop sustainability of the PVUK programme, eight (three male and five female) PVUK MTs were selected to assist in the training of the new PVUK districts. Their training skills and understanding of technical issues improved through a TOT for MTs in June 2012 in Tangerang.
- CMU representatives and the Food and Agriculture Organization of the United Nations (FAO) National Technical Advisors conducted six field mentoring visits to the PVUK area to support the teams to work with local farmers. Mentoring visits to Taskimalaya, Boyolali, Kulon Progo, Karanganyar and Klaten assisted the PVUK officers to conduct farmer trainings on biosecurity and cold chain as well as biosecurity audits, problem investigations and farm profiling.

- FAO National Technical Advisors supported the Australian Centre for International Agricultural Research (ACIAR) biosecurity training for farmers in Bogor.
- PVUK veterinarians attended a PINSAR (broiler farmers association) meeting in Solo, followed by on-farm cleaning and disinfection (C&D) training on a layer farm in Central Java with PINSAR.
- A new version of the PVUK web-based forum was developed and FAO National Technical Advisors and PVUK members are joining. Training materials, handouts, technical material of interest, including booklets of the Strategies Against Flu Emergence (SAFE) project, were placed on the forum. A PVUK Facebook page was developed and will be used as a team building platform within PVUK. The page currently has 44 members.
- Profiling of the commercial farms commenced in all four of the expansion area districts, and 376 farms were profiled by the end of August 2012.
- Forms to record PVUK activities were developed and tested in the field, and six PVUK Data Managers were trained in their use. The PVUK database is operational with the data from five PVUK forms being entered at the district level. Output report formats, to show PVUK activity, were designed and sent to the LDCC coordinators for review.
- FAO assisted CMU to develop technical guidelines for PVUK.
- In preparation for the OSRO/INS/103/USA extension phase starting in October 2012, the preparation of curricula for CE I and CE II trainings was completed. The trainings will be conducted in December 2012 and March 2013.

B.4 Advocate for best practices for CPH

- Facilitated avian influenza serology testing to validate the effectiveness of vaccination schedule changes on participating farms as part of the biosecurity cost-effectiveness study. The results provided evidence that vaccination early in the rearing period and vaccination in mid-lay induced increased antibody titres against H5. The analysis of production data before and after vaccinating layers in production provided evidence that vaccination with recommended Indonesian vaccine strains at the recommended dose rate did not result in drops in egg production.
- Assisted the local Government training team with the Level 1 PVUK training in Padang.
- Continued implementing agreed upon management activities for participating farms in the biosecurity cost-effectiveness study.
- The drinker and feeder cleaning Standard Operating Procedures (SOPs) were adopted and implemented on all study farms.
- The positive correlation between drinker and feeder cleanliness and food conversion rate (FCR) is expected to emerge as an additional improvement of production indices at the end of phase 1B of the study.
- Provided technical assistance to the local Government training team for the Level 2 PVUK training in Yogyakarta.
- Conducted and provided technical assistance to the FAO seminar ad hoc technical committee in preparation for the "Putting farmers first: low cost - high impact practices to increase layer farm profit" national seminar held in July 2012.
- Produced outreach materials for use during the Indo-Livestock Expo.
- Completed phase 1B data analysis and finalized the status report on the completion of Phase I of the study.

B.5 Conduct trials on private sector-funded compensation system

- Terms of reference, a concept note and a work plan for the private sector-funded culling compensation pilot were completed.
- Pilot area was selected as Gunung Kidul District of Yogyakarta Province.
- Counterparts were identified, including the Yogyakarta Poultry Farmers Association

(APAYO) as well as the possibility of several poultry contract farming companies (JAPFA, CP and Januputro) and the Gunung Kidul District Livestock Services.

- Meetings with counterparts were conducted, although no direct government-private sector communication was established yet.
- Use of CO/CO₂ gas was selected as the most effective and cost-efficient culling method.
- Possible financial entities that could become an escrow body for the programme are being researched. Bank Rakyat Indonesia and Bank Pembangunan Daerah Daerah Istimewa Yogyakarta are potential candidates.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders

C.1 Improve the surveillance system along the post-production market chain and make it more cost-effective

- Provided technical and operational support to the live bird market (LBM) surveillance activity in the greater Jakarta area.
- Conducted coordination meetings with market surveillance officers and related local livestock services in greater Jakarta to review LBM surveillance design.
- Completed the new LBM surveillance design for greater Jakarta area and the preliminary implementation of surveillance at 86 LBM in August 2012.
- Conducted back-tracing of poultry transportation from Semanggi collector yard Surakarta city to the sources in East Java.
- Conducted evaluation meetings with the Disease Investigation Centre (DIC) Subang on the isolate shipment preparation to the Australian Animal Health Laboratory (AAHL) and virus isolation testing of LBM surveillance samples collected in 2011.
- Developed the Semanggi collector yard surveillance study design, SOPs and training materials.
- Conducted training for selected officers of Surakarta city agricultural and market services for Semanggi collector yard surveillance activity.
- Completed the implementation of the collector yard surveillance at Semanggi collector yard in Surakarta City.

C.2 Improve biosecurity along post-production market chain

- Held an evaluation and planning meeting with related stakeholders from private and government sectors in the greater Jakarta area on the achievement of C&D activities at rehabilitated LBMs.
- Developed the updated C&D Monitoring and Evaluation (M&E) form and database system in collaboration with the M&E team.
- Conducted training for local government officials in greater Jakarta on M&E of the C&D activities implementation and the completion of M&E forms.
- Conducted M&E for C&D activities at several LBMs, slaughterhouses and collection yards in the greater Jakarta area in collaboration with local authorities.
- Developed lessons learned and recommendations on the implementation of C&D activities along the poultry market chain that was conducted since 2009.
- Provided technical assistance to the LBM C&D training funded by the 2012 local Government budget of Bekasi City agricultural service.
- Conducted C&D training for sentinel bird truck drivers and farm workers in the preparation of Semanggi collector yard surveillance.
- Provided technical assistance on the poultry slaughterhouse design for several markets in DKI Jakarta in accordance with veterinary public health standards.
- Developed the truck C&D station design for Semanggi collector yard in Surakarta city.

C.3 Increase demand for healthy poultry end product

- Provided technical support to poultry vendors at several markets in DKI Jakarta to expand market activities of healthy chicken meat (*daging ayam ASUH*) promotion through socialization in collaboration with existing successful healthy chicken meat traders.
- Conducted education and socialization for local women's association (Ibu PKK) in DKI Jakarta in collaboration with local authorities to increase the public awareness on healthy chicken meat (*daging ayam ASUH*) consumption.
- Conducted healthy chicken meat (*daging ayam ASUH*) promotion at the Food and Agro Expo, Food Education Event and the MoA Food Exhibition.
- Improved the training modules on healthy chicken meat (*daging ayam ASUH*) promotion conducted by local authorities.
- Completed review and revision of DKI Jakarta poultry slaughterhouse SOPs and guidelines by international food safety expert.
- Conducted follow-up meetings on the results of DKI Jakarta restructuring evaluation workshop with key stakeholders at the central and local levels.
- Provided technical support to slaughterers who had recently moved to the Type A collecting and slaughtering facility in Rawa Keping slaughterhouse and slaughterers at the newly established Pintu Air slaughterhouse in East Jakarta.
- Provided technical support on the start-up of a small-scale slaughterhouse in Petukangan Utara, South Jakarta.
- Provided technical support on food inspection activity at several markets in DKI Jakarta arranged by local government authorities.
- Provided technical support on the establishment of a new slaughterhouse at Ciracas market as one of the additional relocation centres in DKI Jakarta

Output D: Improved biosecurity practices in backyard and commercial duck raising

D.1 Advocate for best practices in duck health management

- Duck health management best practices were incorporated within the revision of training modules for PDSR V3.

D.2 Implement duck epidemiological data analysis in low incidence areas in Indonesia to improve understanding of the reservoir role of ducks

- Duck, commercial poultry farm and market profiling training was conducted for local government officers in Lombok, West Nusa Tenggara Province. Profiling was implemented by the local Government following the training.
- Profiling data was analysed, and survey design planned with staff of the DIC Denpasar.
- Surveillance training was conducted for Lombok local Government officers.
- Duck and commercial poultry farm survey was conducted and samples were delivered to DIC Denpasar. Samples were tested in DIC Denpasar by polymerase chain reaction (PCR) and serology.
- Data was analysed, and a preliminary report on the findings produced.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored

E.1 Promote use of effective vaccine by farmers

- Advanced characterization and analysis of potential variant isolates collected from the Influenza Virus Monitoring for Animal Health (IVM-AH) activity in 2011–2012 was conducted. Sequencing results showed that H5 from 2011–2012 isolates were similar to the current circulating strains of H5N1 in Indonesia; serological results indicate no significant antigenic variation between the current isolates when tested against the joint World Organisation for Animal Health (OIE)/FAO scientific network for the control of avian influenza (OFFLU) Indonesia H5N1 reference panel.

- Updated the standardized antigen and hyper-immune antiserum from A/chicken/Indonesia/Wates-1/2005 clade 2.1.3 to A/chicken/West Java Sbg/29/2007 clade 2.1.3 which represents the current standard challenge strain.
- Facilitated DAH approval of the update on harmonized antigen and hyper-immune sera, followed by preparation and forwarding of the standard protocol for producing prime and hyper-immune sera to Pusvetma and BBPMSOH (National Veterinary Drugs Assay Laboratory).
- Participants were selected for the Regional Laboratory Network Training on Quality Assurance and Standardization of Diagnostic Reagents from 23 September to 5 October 2012 in Geelong, Australia.
- DGLAHS' current policy on avian influenza vaccines and updated recommendations for vaccination best practices were shared with farmers from throughout Indonesia at the "Putting farmers first: low cost - high impact practices to increase layer farm profit" national seminar held in Jakarta on 7 July 2012. Based on the positive feedback from the participants, ECTAD Indonesia and DGLAHS plan to continue the farmers' seminar as an annual event.
- Updated communication materials were distributed, and presentations were given at the annual Indo-Livestock Expo. The aforementioned farmers' seminar was held immediately following the week-long Indo-Livestock Expo event.

E.2 Establish partnership between commercial poultry industry and government for sharing of influenza virus data and isolates

- Technical assistance was provided for data analysis and interpretation from environmental samples processed via PCR and virus isolation in cooperation with other studies (LBM surveillance and truck cleaning study).
- Prepared and disseminated technical materials on vaccination and participated in discussions with farmers at national farmers' seminar.

E.3 Establish sustainable laboratory system for influenza virus monitoring

- Presented on the IVM-AH network and participated in the 8th International Symposium on Avian Influenza in London from 1 to 4 April 2012, and attended the annual OFFLU meeting in London, United Kingdom, on 4 and 5 April 2012.
- Delivered eleven HPAI H5N1 virus isolates from DIC Wates selected based upon the IVM-AH activities, and 25 isolates/original samples from LBMs and truck studies from DIC Subang to AAHL, Geelong in mid-May 2012.
- Corrected issues with the genetic analysis software (DNASar). Bioinformatics software is now functioning in all sequencing partner laboratories (DIC Bukittinggi, Pusvetma and BBALITVET).
- Molecular reagents procured by FAO successfully delivered to sequencing partner laboratories.
- Conducted review of the "Alat Preskri" software to support the IVM-AH efforts and defined next steps with AAHL.
- Planned activities for next phase of the OSRO/INS/103/USA project and integration with the IDENTIFY project work plan.

Output F: Strengthened veterinary services at central, provincial and district levels with increased commitment from related stakeholders

F.1 Pilot NVS in three provinces for selected priority diseases

- Follow-up meetings to the April NVS development meeting took place in Jakarta and Makassar to define training and workshop needs, data management and workflows.
- Preparation completed for NVS curriculum and modules for Level 1 (Participatory Community Engagement) training of animal health centre (Puskesmas) veterinarians

and non-veterinary staff.

- Thirty-six (22 male and 14 female) NVS staff from Padang (Agam District) and Riau (Dumai District) were given Level 1 training, which focused on communication with the community.
- In collaboration with DGLAHS, NVS-local Government workshops were conducted in Pekanbaru on 29 May 2012, in Padang on 1 June 2012 and in Denpasar on 7 June 2012.
- Facilitated drafting of the technical guidelines for the establishment of the Veterinary Authority and appointment of an authorized veterinarian in provinces and districts (including provincial Chief Veterinary Officers).
- Facilitated regular meetings with DGLAHS NVS Task Force to discuss the NVS work plan.
- Advocacy meetings were held with Province and District local Government livestock services (Dinas) in Riau and West Sumatera to discuss the Veterinary Authority and appointment of an authorized veterinarian, control strategy for rabies and NVS training.
- Draft SOPs for control of anthrax, brucellosis and classical swine fever (hog cholera) were developed.
- Nineteen (15 male and four female) non-veterinary NVS officers from the three pilot districts (Klungkung, Agam and Dumai) were given animal health training at the MoA Cinagara Training Centre (Bogor) from 4 to 9 June 2012.
- Training in PSDR was conducted for 20 (17 male and three female) non-PDSR NVS staff from the three pilot districts in Padang, 28 June to 3 July 2012.
- In preparation for OSRO/INS/103/USA extension activities, the curriculum and flow charts for Level 2 training were developed, and the training modules were prepared for rabies control and syndromic surveillance.
- Advocacy visits were conducted to Padang and Pekanbaru in September 2012 to discuss the NVS approach in the pilot areas and to better understand the rabies situation.

F.2 Ensure effective programme management with respect to finance, administration, technical inputs and partner relations (Donor and the Government of Indonesia)

- ECTAD Indonesia facilitated weekly coordination meetings with both CMU and the Director of DAH. These meetings enabled both FAO and project counterparts to remain synchronized regarding project priorities and challenges, despite various delays in project implementation.
- Six-monthly project progress reports continued to be prepared in accordance with the project document and local agreement with USAID Indonesia. An additional quarterly (April-June 2012) progress report was prepared at the request of the MoA International Cooperation Centre to facilitate discussion on extension of the OSRO/INS/103/USA project.
- The final report of the OSRO/INS/101/AUL project was prepared in August 2012 for submission to the Donor.
- Advisors from the ECTAD Indonesia management team participated in each United States Agency for International Development (USAID) Chief of Party (COP) meeting during the reporting period, as well as in coordination meetings with Komnas Zoonosis, the Strategies Against Flu Emergence (SAFE) project and the World Health Organization (WHO).
- Participated in the technical and policy discussion on Improving the Prevention and Control of H5N1 HPAI in Highly-Affected and Neighbouring Countries in Viet Nam in April 2012.
- Assistance was provided to DGLAHS in the organization of a Technical Briefing Meeting with government and partner agencies on animal health donor coordination in May 2012.
- A lengthy consultation and project planning process was initiated in May 2012 with the Government of Indonesia and USAID for the design of the next project phase. The Amendment document was approved by USAID Washington on 18 September 2012.

and officially submitted to the Government for approval and counter-signature on 26 September 2012.

F.3 Ensure appropriate support to programme components and management to maximize stakeholder participation and build capacity of animal health services

- Ongoing technical support and management supervision was provided on a regular basis to the various components of the ECTAD Indonesia programme; however gaps in technical support were unavoidable owing to the delay in Government of Indonesia project approval in 2011 and subsequent clearance for international advisors to return to Indonesia. Specific emphasis was placed on identifying cost-effective practices and improving sustainability of best practices via capacity building and budget planning assistance.
- All administrative issues were dealt with in a timely fashion, such as travel arrangements, recruitments, procurement and service contracts to allow for the smooth implementation of project activities.
- The financial monitoring system was revised to improve monitoring of project expenses against the main ECTAD programme components and planned activities.
- A budget revision was carried out with the Donor in May 2012 and approved.
- Financial transactions were dealt with in a timely manner, such as budget authorizations and petty cash for trainings, which allowed the smooth implementation of project activities.
- Provisional budgets were prepared for all the project components to improve resource allocation and monitoring.
- Continued vehicle registration and tax exemption processes are being pursued.

F.4 Conduct epidemiological studies to better inform disease control and support government strategic planning

- Please refer to Activities C.1 and D.2 for updates on the studies conducted in Surakarta and Lombok during this reporting period.
- Owing to funding constraints, further work on the HPAI endemicity study was postponed until the next project phase.

F.5 Provide technical support to DAH for HPAI policy development

- Conducted a strategy review with DAH and ECTAD Indonesia to review currently available data on HPAI control and identify high impact control activities and policy gaps.
- Completed a comprehensive consultation process between DGLAHS and ECTAD Indonesia to develop the next phase of the OSRO/INS/103/USA project work plan and ensure integration with DAH fiscal year (FY) 2013 activities and budget for HPAI control.

F.6 Contribute to the Komnas Zoonosis One Health communication and advocacy strategy

- Participated in the establishment of Komnas Zoonosis Communication Working Group.
- A short training on germ theory for communities was developed for use within a One Health setting, and is now being taught in all trainings conducted by the local Government training team.
- Participated in the national Komnas Zoonosis strategy meeting in Bali on 25 and 26 September 2012.

Planned activities for the next six-month period (October 2012 to March 2013)

(Note: The following activities are planned for the first six months of the extension phase of this project)

Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system***A.1 Distribute and use communication materials to support HPAI prevention and control activities***

- Design, compile and electronically distribute copies of the Bahasa Indonesia and English version of the ECTAD Annual Report 2012; and print and distribute a limited number of reports in Bahasa Indonesia and English.
- Train 30 PDSR MTs to improve skills and learn updated methods in adult learning and behaviour change communication, with emphasis on germ theory.
- Design, produce and distribute 12 500 posters on HPAI outbreak reporting and prevention in five high-risk provinces.
- Design, produce and distribute 100 000 brochures on HPAI prevention with emphasis on germ theory (hand washing practice) to all LDCCs and PDSR officers.

A.2 Revise and streamline PDSR system to incorporate more community-based decision-making for improved HPAI prevention and control.

- Complete nationwide PDSR Version 3 refresher training.
- Refresher train 1 300 local government officers in PDSR V3 by FAO NTAs and MTs. All trainings will be followed by mentoring visits to the field sites to observe the new trainees at work. The training will focus on Bali, Sumatra and Kalimantan in the first three months so that there will be regional implementation of PDSR V3.
- Conduct the training of MTs for an additional seven MTs in October 2012 to ensure that there are sufficient MTs to implement the above training and mentoring of PDSR V3.
- Hold one national LDCC coordination meeting.

A.3 Provide LDCC PDSR operational budget by local government

- Conduct advocacy visits to discuss local funding for PDSR, NVS and PVUK activities.
- Finalize the budget proposal for HPAI control activities (under CMU) to DGLAHS and the Secretary General of MoA for implementation of priority activities in control of HPAI in Indonesia.
- Assist LDCC coordinators in budget calculations and determining the budgets and procurement required to implement priority activities to control HPAI in the field.
- Conduct advocacy visits to the NVS pilot project areas to emphasize the urgency for provincial governments to financially and administratively support the LDCC's role in controlling HPAI and other priority animal diseases.
- Establish a new FAO advocacy team specifically focused on engaging with local governments directly to provide sufficient operational funding for animal disease control and management activities previously funded by FAO projects.

A.4 Extend PDSR database system to district level for improved local disease control management

- Utilizing LDCC data encoders, survey the status of the existing stand-alone PDSR V2 district installations in 355 districts.
- Integrate the planned installation of PDSR V3 at district-level with planning for NVS pilot areas.
- Continue training of provincial government data encoders in use of the PDSR V3 database following the local Government training team's PDSR V3 rollout schedule.

Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders

B.1 Establish effective communication and coordination between the Government and commercial poultry industry to build trust among the stakeholders

- Expand on advocacy activities to promote communication and collaborative initiatives between the commercial poultry industry and government during the next project phase. Facilitate regular meetings new partnership initiatives between Komite Kesehatan Unggas Nasional (KKUN), DGLAHS and local governments.
- Initiate planning for monthly meetings and extended collaboration with KKUN during next project phase.
- Continue support for farmers meetings organized by PVUK and farm evaluations in PVUK districts.

B.2 Establish a confidential database of outbreak information from commercial farms

- As reported previously, this activity has been incorporated into the private sector-funded compensation pilot and PVUK programmes (Activities B.3 and B.5).

B.3 Increase competency in CPH in both public and private sectors

- Complete expansion of PVUK with Level 3 training for 24 PVUK officers in October 2012.
- Train 24 PDSR officers to assist the PVUK programme with the profiling of commercial poultry farms.
- Conduct a TOT for the 12 PVUK MTs so that they can assist in the training and mentoring of PVUK staff.
- In December 2012, conduct CE I training for 61 PVUK focused on CPH SOPs and group biosecurity planning.
- In March 2013, conduct CE II for 61 PVUK focused on problem investigation, training skills and public speaking.
- Develop and test farmer training modules for outbreak control, disease risk assessment and vaccination skills.
- In October 2012, train 18 Data Managers from 12 districts in data entry for the PVUK C&D forms.
- Develop key messages for early disease reporting and develop training modules for PVUK.
- Conduct regular field monitoring visits.
- Conduct stakeholder meetings to form groups to encourage outbreak reporting.
- Prepare draft PVUK technical support manual.

B.4 Advocate for best practices for CPH

- Report back to farmers on the phase IB findings of the biosecurity cost-effectiveness study.
- Conduct individual planning meetings with each participating farmer to develop their Phase II (biosecurity phase) management plan.
- Initiate Phase II of biosecurity cost-effectiveness study.
- Develop layer farm best practices SOPs based on findings from non-biosecurity Phase I.
- Disseminate layer farm best practices SOPs in collaboration with DGLAHS and incorporate into PVUK training and farmer advocacy activities.

B.5 Conduct trials on private sector-funded compensation system

- Develop SOPs for the programme that will be in accordance with the Yogyakarta Province and Gunung Kidul District Outbreak Mitigation Plan. Involve all local Government and private sector stakeholders in the development of the SOPs.

- Develop and begin a training programme for all personnel involved in the programme.
- Develop a financial contribution agreement with the poultry farmers and poultry farming companies involved in the programme.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders

C.1 Improve the surveillance system along the post-production market chain and make it more cost-effective

- Finalize the list of markets to be sampled in the greater Jakarta area to be included in the quarterly sampling scheme in collaboration with livestock services from participating districts.
- Continue quarterly sampling of LBMs in greater Jakarta.
- Expand the LBM surveillance to two new major urban areas of Indonesia (Medan and Surabaya).
- Conduct scoping visits to Medan and Surabaya to collect field information and determine logistical needs for establishing LBM surveillance programmes in each location.
- Profile markets in the study areas, analyse the data and prepare the surveillance design.
- Socialize the LBM surveillance with the regional DIC, provincial livestock services, and district livestock and market services. Once the programme is designed and agreed upon with all stakeholders, train government officers in sample collection and laboratory testing protocols.
- Sample selected LBMs in the new areas and analyse the data.

C.2 Improve biosecurity along post-production market chain

- Continue providing technical assistance for establishment of slaughtering facilities in the designated markets and locations agreed by DKI Jakarta Government.
- Establish C&D station at Semanggi collector yard in Surakarta Central Java Province.
- Conduct site assessment of potential LBMs in greater Jakarta for market rehabilitation.
- Conduct meeting with LBM managers, local agriculture offices and local market offices in greater Jakarta as well as selection of two LBMs for market rehabilitation plans.
- In collaboration with market stakeholders, design market rehabilitation plan for the two selected LBMs in greater Jakarta area and initiate rehabilitation plan.
- Conduct C&D refresher training for cleaning workers and market staff at 22 LBMs in greater Jakarta area to strengthen the implementation of market cleaning day activities.
- Conduct C&D introductory training for C&D station workers at Semanggi collector yards and cleaning workers at two additional rehabilitated LBMs in greater Jakarta.
- Conduct meetings with the local agriculture offices in greater Jakarta area to endorse the implementation of sustainable intervention activities along the poultry market chain.
- Continue monitoring and evaluation of C&D activities of collector yards and LBMs in the greater Jakarta area in collaboration with local authorities.
- Produce video documentation of C&D activity along market chain in collaboration with the communication team to facilitate future capacity building activities.

C.3 Increase demand for healthy poultry end product

- No further activities planned during next project phase; activities completed during Phase I.

Output D: Improved biosecurity practices in backyard and commercial duck raising

D.1 Advocate for best practices in duck health management

- No further activities planned during next project phase; activities completed during Phase I.

D.2 Implement duck epidemiological data analysis in low incidence areas in Indonesia to improve understanding of the reservoir role of ducks

- No further activities planned during next project phase; activities completed during Phase I.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored

(Note: Support to the laboratory component of the ECTAD Indonesia programme will be co-funded under the USAID IDENTIFY project as part of the Emerging Pandemic Threats (EPT) programme. Under a programmatic approach, FAO in collaboration with other international organizations supports the Regional Laboratory Network for Southeast Asia. Indonesia is included as one of the eight countries participating in the Regional Southeast Asia FAO IDENTIFY programme).

E.1 Promote use of effective vaccine by farmers

- Facilitate continuous collection of field samples (all sectors) and submit to laboratory for HPAI and LPAI virus isolation, biologic and genetic characterization.
- Advocate for challenge testing and registration of updated vaccines to ensure availability of effective vaccines.
- Coordinate the necessary documentation and schedule delivery of reverse genetic (RG) strains for vaccine candidates from the United States Department of Agriculture (USDA) Southeast Poultry Research Laboratory (SEPRL) to Pusvetma.
- Continue to provide technical recommendations to serve as a foundation upon which a comprehensive national vaccination strategy can be developed.
- Facilitate importation of selected candidate vaccine RG strains.
- Advocate DGLAHS regulations on approved avian influenza vaccines and recommended vaccination practices to private and public sector stakeholders through PVUK, CPH and advocacy programmes.

E.2 Establish partnership between commercial poultry industry and government for sharing of influenza virus data and isolates

- Facilitate communication pathways to strengthen linkages between industry, local Government and DIC monitoring efforts through coordination meetings between DGLAHS and commercial poultry industry.
- Facilitate development of a formal cooperative agreement between DGLAHS and commercial poultry industry for sharing of virus isolates and influenza data.
- Facilitate testing and production of candidate RG vaccine strains from USDA SEPRL under a cooperative agreement between Pusvetma and IPB Shigeta.
- Contribute to USDA Workshop "Strengthening poultry diagnostic laboratories in Java" from 26 to 30 November 2012.

E.3 Establish sustainable laboratory system for influenza virus monitoring

(Note: The activities under this heading are funded under the USAID IDENTIFY project.)

- Provide coordination and support for national IVM-AH network to conduct virus monitoring activities including antigenic pre-screening and biologic and molecular virus characterization of selected viruses.
- Conduct IVM-AH Animal Health meeting on 19 and 20 November 2012.
- Develop user-friendly tools for analysis of antigenic data.
- Support the improvement of animal health laboratory biosafety via a regionally-based activity to conduct biosafety risk assessments and testing/certification of biosafety cabinets from 1 October to 13 December 2012 (activities for Indonesia implemented by DAFF/AAHL [biosafety training; equipment and maintenance training, etc.] and the regional HPED

programme [e.g. biosafety cabinet testing/certification, biorisk assessment]).

- Distribute regional proficiency panels in October 2012 (DIC Wates and DIC Subang for avian influenza; DIC Medan for PRRS, CSF, ASF; DIC Bukittinggi for Rabies; DIC Lampung for ND).
- Launch efforts to ensure access to sample collection and transport supplies in the field with DELIVER through development of a logistics management system in October 2012.
- Support Regional Laboratory Directors Forum in Nha Trang, Viet Nam, on 10 and 11 October 2012.
- In collaboration with WHO, perform assessment mission for the FAO-OIE-WHO four-way linking project to improve the linkage between epidemiology, virology, animal health and human health in December 2012.

Output F: Strengthened veterinary services at central, provincial and district levels with increased commitment from related stakeholders

F.1 Pilot NVS in three provinces for selected priority diseases

- Conduct NVS level 2 training in Padang and Pekanbaru in October 2012.
- Conduct data encoder training in Padang and Pekanbaru.
- Continue advocacy to the local Government in Pekanbaru and Padang on the establishment of the Veterinary Authority and appointment of an authorized veterinarian.
- Continue advocacy to provincial and district livestock services in Riau and West Sumatra on rabies response and control activities for Agam and Dumai districts.
- Monitor the implementation of NVS in the field.
- Complete the NVS disease control SOPs.
- Develop, design and test the training modules for NVS level 2.
- Develop rabies response and control activities for Agam and Dumai districts.
- Finalize and clear the NVS participatory community engagement (PCE) modules.
- Conduct workshop to evaluate the implementation of the NVS pilots.
- Hold a local Government workshop on replication of NVS pilots.

F.2 Ensure effective programme management with respect to finance, administration, technical inputs and partner relations (Donor and the Government of Indonesia)

- Facilitate weekly coordination meetings with both CMU and DAH to ensure continued strong collaboration with DAH and timely discussion of priority issues.
- Prepare project progress reports and monthly COP updates in accordance with the project document and local agreement with USAID Indonesia.
- Participate in each USAID COP meeting, as well as coordination meetings with Komnas Zoonosis, SAFE and WHO.

F.3 Ensure appropriate support to programme components and management to maximize stakeholder participation and build capacity of animal health services

- Provide continual technical support and management supervision to each component of the ECTAD Indonesia programme, with specific emphasis placed on identifying cost-effective practices and improving sustainability of best practices via capacity building and budget planning assistance.
- Continue the operational support to the project to allow the smooth implementation of planned activities. The support will include all administrative, financial and operational aspects, such as budget authorization, travel arrangements, procurement and recruitments.
- The financial monitoring system will be rolled out to monitor closely the expenditures against main programme components and planned activities.
- Vehicle registration and tax exemption will continue throughout the next reporting period.

F.4 Conduct epidemiological studies to better inform disease control and support government strategic planning

- Design a study on endemicity of HPAI in Indonesia and a study to assess factors which caused reduction in HPAI cases in the commercial sector. Identify study areas.
- Socialize the studies with the Government in the study areas.
- Conduct training for government officers who will conduct questionnaires and surveys in the study areas.
- Conduct field studies in the selected areas in collaboration with local governments.

F.5 Provide technical support to DAH for HPAI policy development

- Complete consultation process between DGLAHS and ECTAD Indonesia for development of the work plan for the next phase of the OSRO/INS/103/USA project.
- Provide technical support to CMU and DAH to complete review and address gaps found in DAH and local government FY 2013 budgets in relation to the HPAI control priorities identified during the strategy review process.
- Review progress made in HPAI control during 2012 and consult with CMU expert panel and other relevant stakeholders to better understand reasons for improvement, how to continue improving control, and how to increase surveillance sensitivity in the wake of decreasing donor support.

F.6 Contribute to the Komnas Zoonosis One Health communication and advocacy strategy

- No further activities were planned during next project phase; activities were completed during Phase I.

Main challenges encountered and response provided

A number of budgetary challenges were encountered during this reporting period. In previous years, the ECTAD programme was composed of a number of projects, funded by different donors, all contributing to the achievement of the programme objectives. With the completion of many of those projects, the total programme budget fell dramatically. It has been a challenge to keep up the level of activities and increasing project impact in the face of diminishing donor support for the OSRO/INS/103/USA project Phase II extension. As a result, project management reviewed its expenditure pattern, developed a revised expense tracking system linked to the project work plan, and implemented a number of cost-cutting measures to increase cost efficiency of project activities, including the following:

- Over 50 percent reduction in staffing costs, both national and international, for Phase II.
- Decrease in operational support for PDSR activities to the minimal level.
- Cancellation or postponement until the next project phase of planned project field activities for which contractual or financial commitments were not yet made.
- Reduction in project office space and office-related expenditures.
- Reduction in information technology (IT) costs as a result of revised IT contracts and usage policies.
- Reduction in vehicles rented for day-to-day project activities.
- Reduction of daily subsistence allowance (DSA) for national staff when travelling to locations outside Jakarta

It is fortunate that H5N1 remained under control during this difficult period for the programme. With the changes in place and impending decentralization of budget holder responsibility to the country-level, ECTAD Indonesia is confident that project funds will be used as agreed upon between the Donor, FAO and the Government of Indonesia in the next phase of the project.

Main progress made towards the achievement of project outcomes (from the start of the current project phase)

Output A: Increased empowerment of village residents in biosecurity and HPAI prevention and control through an expansion of a government-funded, streamlined PDSR system

- Updated PDSR programme for improved control of HPAI in village poultry (PDSR V3) successfully developed and field transition initiated. Thus far, 423 government staff are able to implement PDSR V3 in the field and four provinces (West Sumatra, Riau, West Sulawesi and East Kalimantan) are now reporting using the new PDSR V3 forms.
- Continued technical and operational support is being provided to PDSR officers to prevent and control HPAI in village poultry.
- Local budgets for FY 2013 were allocated to support operational costs of PDSR officers in 20 provinces thus far.
- Eight new MTs obtained training to improve their training skills and understanding of programme changes.
- A network of MTs was developed across Indonesia to enable different trainings to be carried out. In total, 28 MTs are able to train in PDSR V3; 26 MTs can train in Community Participatory Engagement; and 14 MTs can train in rabies control.

Output B: Reduced HPAI-infected poultry from commercial farms through improved cooperation among all stakeholders

- Trust was built between the commercial farming sector, private enterprise and the PVUK staff from district governments. Farmers now ask for PVUK veterinarians to assist in vaccination, problem solving and biosecurity training. Farmers are asking the PVUK about different drugs, as they are starting to more critically evaluate the recommendations being provided by the private sector and turning to PVUK as a source of unbiased technical information.
- Sixty-one PVUK staff are now active and working in the commercial poultry sector to control outbreaks of poultry disease, including HPAI. Since the beginning of April 2012, PVUK staff held seven stakeholder meetings and conducted a total of 618 farm visits (246 on-farm meetings, 262 farm evaluation meetings and 110 monitoring visits). PVUK officers report that many farmers change their behaviour following the training. Cold chain management and biosecurity improved through the use of specific slippers for each poultry house.
- Non-biosecurity phases of the cost-effectiveness biosecurity study were successfully completed.
- Evidence-based best practices in HPAI vaccination and layer farm management were identified, including an optimal vaccination schedule, best vaccination practices and drinker/feeder cleaning/management.
- A feedback meeting with the CPH programme study farmers was held in which their farm economics, management and disease status information was discussed.
- There was a marked increase in engagement between poultry farmers and local government livestock services in all locations with PVUK or CPH activities.

Output C: Reduced H5N1 virus at selected critical control points in the market chain through improved biosecurity practices by related stakeholders

- The results of LBM surveillance conducted in 2012 showed a greater than 50 percent decrease in prevalence of H5-positive markets compared to previous years in the greater Jakarta area.
- LBM surveillance system was successfully redesigned to improve cost efficiency.
- Several local governments in the greater Jakarta area allocated their local budget for

implementation of biosecurity activities and market restructuring for FY 2012 and FY 2013.

- The local government adopted some of the FAO methods for market intervention in other areas.
- Poultry business actors showed willingness to perform recommended hygiene and sanitation activities in their respective work places.
- Consumer awareness on the need for healthy chicken meat is increasing, demonstrated by an increasing demand for healthy chicken meat.
- Several actors in the poultry business in Jakarta were willing to do business in relocation centres provided by the DKI Jakarta Government.
- Several poultry businesses in Jakarta are willing to build additional slaughterhouses using their own funds to keep abreast of the Government's SOPs.

Output D: Improved biosecurity practices in backyard and commercial duck-raising

- Duck health management best practices were incorporated within the revision of training modules for PDSR V3.
- HPAI surveillance study in domestic ducks was successfully conducted in collaboration with the local Government in Lombok.

Output E: Reduction of HPAI in poultry farms through widespread use of locally produced vaccines as appropriate based on local antigens and new strains monitored

- Acceptance of the recommendation to update the strain A/chicken/Indonesia/Wates-1/2005 (put forth in November 2009) to A/chicken/West Java Sbg/29/2007, which represents the current standard challenge strain as the standardized antigen for the national sero-surveillance programme.
- Updated national vaccine policy 3345/kpts/LB450/7/2011 was distributed with recent revisions, including challenge testing, registration options for mono- and multivalent vaccines, and other local H5N1 strains found to be effective.
- A sustainable model of "regulation responsiveness" was introduced following expert recommendations, which contributes to cost and resources sharing between the public and private sectors for mutual benefit and reduced time to registration and licensing. Through PPP, manufacturers seeking registration of H5N1 poultry vaccines for avian influenza can request the challenge testing to be performed at the company's own Biosecurity Level 3 (BSL3) facility with oversight from the National Veterinary Drug Assay Laboratory (NVDAL) staff. The actual challenge testing is conducted by NVDAL staff using the challenge virus prepared and titrated by NVDAL. In addition, manufacturers may select between the two government-challenged viruses for use in the challenge trial.
- Isolates selected as candidate vaccine and challenge viruses were distributed to DAH-designated laboratories for onward distribution to national vaccine manufacturers.
- National resources increased for generation of standardized reagents for sero-surveillance in Indonesia.
- In line with OFFLU recommendations, a public-private partnership was established between Pusvetma and IPB Shigeta with plans to test and produce RG vaccines based upon constructs developed at USDA SEPRL.
- The IVM-AH activities are becoming integrated into the routine work of the DICs, and data sharing mechanisms are under development.
- DGLAHS successfully implemented revision to their avian influenza vaccine registration policy. As a result, the majority of avian influenza vaccines sold in Indonesia in 2011 contained local virus strains.

Output F: Strengthened veterinary services at central, provincial and district levels with increased commitment from related stakeholders

- Control skills in relation to the five major livestock diseases of national importance were expanded beyond HPAI to include rabies.
- With more diseases to understand, PDSR officers and their supervisors are improving their skills as veterinarians.
- The concept of NVS is being developed with CMU and DAH. The pilot districts made initial undertakings to incorporate the Veterinary Authority and make provision for local funding of NVS activities. The 20 NVS officers with no previous experience in PDSR will work side by side with the existing PDSR officers to gain experience in HPAI control.
- The One Health approach to zoonosis control was piloted in Bali and found to improve the sensitivity of the surveillance system.
- H5N1 now under control in heavily-endemic areas of Indonesia with cooperation from all levels of Indonesian Government, the commercial poultry industry and poultry-rearing communities.
- Technical and operational capability of the Government veterinary services to improve control of multiple priority animal diseases was simultaneously demonstrated by concurrent success of both the HPAI and rabies disease control programmes in Bali.

Quarter II 2010

Project Monitoring Sheet: **OSRO/INS/604/USA**Project Title: **Expansion of the avian influenza participatory disease surveillance and response program in Indonesia**Extension Title: **Reinforcement and expansion of the avian influenza participatory disease surveillance and response program in Indonesia**Reporting Period: **April - June 2010**

Country: Indonesia
Project title: Reinforcement and expansion of the avian influenza participatory disease surveillance and response program in Indonesia
Code: OSRO/INS/604/USA
Budget: USD 4 million (Phase I), USD 13.7 million (Phase II), USD 7.5 million (Phase III), USD 11 million (Phase IV)
Total budget: USD 36.2 million
Effective starting date: 9 June 2006
Planned end date: 30 September 2010
Context of the project <p>The purpose of the project is to enhance the capacity and ability of the Government of Indonesia and partners to control Highly Pathogenic Avian Influenza (HPAI) in order to help safeguard the health and livelihoods of the Indonesian population by providing broad-based support to the Food and Agriculture Organization of the United Nations (FAO) Indonesia HPAI Control Programme, implemented by the FAO Emergency Centre for Transboundary Animal Disease Operations (ECTAD) in Indonesia.</p>
Objectives of the project <ul style="list-style-type: none"> • sustainable surveillance, prevention, and control of HPAI in village poultry • improved biosecurity and vaccination practices in commercial sectors • improved HPAI surveillance and control along the poultry marketing chain • engagement with duck producers for improved control of HPAI • coordinated and enhanced management of the HPAI control programme
Planned activities <p>Output 1: Sustainable surveillance, prevention and control of HPAI in village poultry</p> <p><i>Activity 1.1 Maintain village surveillance, prevention and outbreak control capacity across endemic areas of Indonesia, prioritized by strategic importance.</i></p> <p><i>Activity 1.2 Assess the potential of the participatory disease surveillance and response system (PDSR) system, structure, and capacities to strengthen the national veterinary service.</i></p> <p><i>Activity 1.3 Facilitate drafting of national veterinary service strategy and work plan.</i></p> <p><i>Activity 1.4 Assist the Campaign Management Unit (CMU) in advocating to local governments for budgetary support for HPAI control, including PDSR and local disease control centres (LDCC) activities.</i></p> <p>Output 2: Improved biosecurity and vaccination practices in commercial sectors</p> <p><i>Activity 2.1 Provide specialized technical support to selected layer producers within high-risk areas</i></p>

of West Java to enhance efficiency and quality of layer vaccination and biosecurity measures.

Activity 2.2 Provide biosecurity training of trainers for commercial producers and relevant government agencies.

Activity 2.3 Assist government and industry in establishing an advisory council modeled on the United States (US) National Poultry Improvement Program to gain more coordinated and broad-based support for partnership between public and private sectors.

Activity 2.4 Evaluate the effectiveness of biosecurity measures implemented by poultry producers.

Activity 2.5 Provide expert technical assessments to Sectors 1 and 2 farms in high-risk locations.

Output 3: Improved HPAI surveillance and control along the poultry marketing chain

Activity 3.1 Conduct longitudinal surveillance for HPAI in live bird markets and collector yards.

Activity 3.2 Implement biosecurity and sanitation interventions in selected live bird markets, collector yards and slaughterhouses.

Activity 3.3 Facilitate DKI (special zone) Jakarta poultry market restructuring.

Output 4: Engagement with duck producers for improved control of HPAI

Activity 4.1 Conduct duck vaccination field trial in selected districts of Java.

Activity 4.2 Expand duck producer profiling and HPAI surveillance to selected districts in Java, Lampung and Bali.

Output 5: Coordinated and enhanced management of the HPAI control programme

Activity 5.1 Integrate and analyse data sets to identify critical control points.

Activity 5.2 Once western Java activities consolidated, extend essential control program elements (e.g. market surveillance, commercial profiling, targeted support for high-risk producers) to other priority regions based on outcomes of western Java intensification activities and lessons learned.

Activity 5.3 Expand the monitoring and evaluation (M&E) system programme-wide with increased integration with government.

Activity 5.4 Improve technical capacity of government human resources.

Activity 5.5 Improve virus strain monitoring, including training, sample submission, collection of field isolates and improved surveillance.

Activity 5.6 Increase capacity of Indonesian laboratories to conduct antigenic and genetic characterization of virus isolates.

Activity 5.7 Provide technical recommendations on vaccination strategy.

Activity 5.8 Conduct vaccination challenge testing and field challenge testing of antigenic variants.

Activities undertaken during the reporting period

Output 1: Sustainable surveillance, prevention and control of HPAI in village poultry

Activity 1.1: Maintain village surveillance, prevention and outbreak control capacity across endemic areas of Indonesia, prioritized by strategic importance.

Epidemiology

- Technical and operational support for PDSR teams and LDCCs throughout Java, Sumatra, Bali and South Sulawesi and West Sulawesi provinces is ongoing.

- Analysis of the PDSR database is also ongoing and provides information on the HPAI status of village poultry throughout the PDSR coverage areas. The village HPAI positive detection rate for this quarter (April to June 2010) was 7.0 percent (171/2448) as compared with the previous quarter's village detection rate of 19.8 percent (713/3601). All but four of the positive cases were a result of passive surveillance (callout report). Owing to the reliance of HPAI detections on passive surveillance, the method of reporting PDSR detection rates in the Monthly Report on Participatory Surveillance and Control was changed this quarter in order to reflect disease incidence more accurately.

Programme Management and Operations

- The second FAO-Department of Health (DAH) - United States Agency for International Development (USAID) project planning workshop was held in Bogor on 13 April 2010. The workshop aimed to gain inputs from the stakeholders on future planning of the OSRO/INS/604/USA project. The workshop's output served as the basis for drafting of the project's outputs and objectives for June 2010 to September 2011.
- An ECTAD Indonesia Work Plan Workshop was held from 18 to 20 May 2010 in Puncak. The workshop was attended by FAO technical and operational staff, in addition to DAH/CMU staff and USAID representatives. The output of this workshop was a work plan, and indicators for ECTAD Indonesia from June 2010 to September 2011 and relevant deliverables and indicators will be included in the next amendment of the OSRO/INS/604/USA project.
- The registration and procurement process for motorcycles and vehicles is still ongoing. A number of provincial governments have sent letters stating they would cover all the costs incurred for the vehicle and motorcycle registration and taxes. Drafts of Memorandum of Understanding (MOU) to be signed by the Team Leader of FAO HPAI Control Programme in Indonesia, Head of the Provincial Livestock Service, Provincial Government, and Director General of Livestock Service (DGLS) have been sent to a number of provinces for inputs after FAO received their letters of confirmation. Procurement for additional motorcycles and vehicles will be carried out once FAO receives signed MOUs from regional government.
- FAO continues to provide operational and technical support for 23 LDCCs on Java, Sumatra, Bali and South Sulawesi and West Sulawesi provinces on Sulawesi Island. In addition, FAO has also been requested by the Government of Indonesia (GOI) to provide support in emergency cases of outbreaks in other areas.

Activity 1.2: Assess potential of PDSR system, structure and capacities to strengthen the national veterinary service.

- Three districts in South and West Sulawesi have been selected for the field trial of a surveillance reporting system that includes HPAI in addition to other animal diseases of national importance. A database is being developed to accommodate data entry in the field.
- Active surveillance has been completed in four districts of Java to compare data from PDSR and field surveys. A total of 6 districts are planned to be surveyed in this manner. Analysis is currently underway to compare the results of structured surveillance to the passive surveillance-based data derived from PDSR activities. This analysis will help determine the cost-effectiveness of PDSR surveillance activities.

Activity 1.3: Facilitate drafting of national veterinary service strategy and work plan.

- ECTAD Indonesia facilitated a GOI National Veterinary Service (NVS) task force workshop to develop a NVS and PDSR transition concept. The NVS task force and representatives of DAH, provincial and district government livestock services participated.
- A PDSR transition to NVS concept note is now being drafted based on the outputs of this workshop.
- A NVS Facilitator began service this quarter and contributed to the workshop.

Activity 1.4: Assist CMU to advocate to local governments for budgetary support for HPAI control, including PDSR and LDCC activities.

- FAO continues to advocate with local government for financial support for HPAI control activities with CMU/DAH's facilitation.
- During this reporting period, one Decision Makers' Meeting (DMM) was held in South Sumatra province to engage the local government in the control activities of HPAI and to advocate for the long-term sustainability of animal disease control services. HPAI is considered the most important animal disease in the province, thus the local government has provided financial support for the sustainability of PDSR and has already included PDSR activities in their 2010 budget plan. In addition, the provincial government has also allocated additional funding for sustainability of PDSR and for HPAI control in general, including funds to cover the costs incurred for handover, registration and taxes on motorcycles and vehicles to support control of HPAI in the field.

Output 2: Improved biosecurity and vaccination practices in commercial sectors

Activity 2.1: Provide specialized technical support to selected layer producers within high-risk areas of West Java to enhance efficiency and quality of layer vaccination and biosecurity measures.

- Planning continued for the initiation of the layer engagement programme in the Solo region of Central Java.
- Visits to layer farms in Cianjur were conducted for comparison to the Central Java farms, a layer farm production assessment tool was developed and an inception meeting held with farmers participating in the pilot phase of the programme.
- Two national technical advisors and one operational programme assistant have been recruited to join the international Technical Advisor (Commercial Poultry Health) on the commercial poultry team.
- The ECTAD Indonesia programme continues to provide technical, logistics, and operational support in collaboration with partners for targeted vaccination of small-scale layer producers in 10 districts in Yogyakarta, Central Java and West Java under the InVak (intensified vaccination) programme.

Activity 2.2: Provide biosecurity training of trainers for commercial producers and relevant government agencies.

- Following up on the progress reported last quarter, a local government inception workshop was held in Jakarta with local government representatives from the pilot districts. Local governments welcomed the programme and provided specific input on programme content and approach. The workshop participants also identified PVUK – Petugas Veteriner Unggas Komersial (Commercial Poultry Veterinary Officers) – as the official title for the local government commercial poultry programme.
- Draft training materials for the PVUK programme were also completed this quarter and training is expected to start next quarter.

Activity 2.3: Assist government and industry to establish an advisory council modeled on the US National Poultry Improvement Program to gain more coordinated and broad-based support for partnership between public and private sectors.

- Support of the activities related to the National Poultry Quality Improvement Program (NPQIP) by ECTAD Indonesia continued this quarter.
- The NPQIP Facilitator completed a series of stakeholder interviews for NPQIP concept development.
- Monthly coordination meetings on NPQIP progress were held between the United States Department of Agriculture (USDA) and ECTAD Indonesia.
- In close collaboration with USDA, a NPQIP working group was established and met twice in

June to develop the next draft of the NPQIP concept in preparation for a national NPQIP workshop in early July.

- An international Poultry Production Industry Advisor was also recruited for a short-term consultancy to review the NPQIP proposal and provide recommendations for its improvement.

Activity 2.4: Evaluate effectiveness of biosecurity measures implemented by poultry producers.

- This activity has been integrated with Activity 2.1 above and will commence concurrently. A draft evaluation method was developed this quarter and will be reviewed and finalized during the mission of the regional socio-economist next quarter.

Activity 2.5: Provide expert technical assessments to Sectors 1 and 2 farms in high-risk locations.

- As reported last quarter, upon further consultation with Sector 1 and 2 industry representatives, this activity will be integrated within activities to be carried out under the NPQIP. With the Technical Advisor (Commercial Poultry Health) now on duty, ECTAD Indonesia is awaiting assessment requests from Sector 1 and 2 farms, in addition to the Sector 2 layer farms already included in the layer engagement programme.

Output 3: Improved HPAI surveillance and control along the poultry marketing chain

Activity 3.1: Conduct longitudinal surveillance for HPAI in live bird markets and collector yards.

- Environmental sampling continued at 231 live bird markets (LBMs) in the Jabodetabek area (Jakarta province and surrounding metropolitan areas).
- Meetings to clarify and improve on sample testing, reporting forms and information flow procedures were held with BKHI DKI Jakarta (special zone agency) animal health laboratory.
- A trial of a sustainable sentinel bird monitoring system by market surveillance officers (PSP) and collector yard managers was successfully implemented at 10 collector yards in Tangerang city. Options were explored for a more sustainable method of providing an ongoing supply of sentinel birds.
- An additional training course for new PSP officers was also conducted.
- Data from the collector yard surveillance study is currently being analysed, and the results will be used to design a long-term market chain surveillance system.

Activity 3.2: Implement biosecurity and sanitation interventions in selected live bird markets, collector yards and slaughterhouses.

- A refresher training course on cleaning and disinfection (C&D) activity was conducted for cleaning workers at ten collector yards in the Bodetabek area (metropolitan area surrounding Jakarta).
- Ten sets of gasoline-powered high pressure washing equipment were distributed to ten collector yards in Bodetabek.
- A locally available alternative disinfectant was procured and distributed to selected collector yards and LBMs in Jabodetabek.
- The C&D station in Pulo Gadung (East Jakarta) was established and equipped with high pressure washer equipment. The cleaning workers have been trained and supported during the initiation of C&D station operations.
- Refurbishment of slaughterhouses in Cakung (East Jakarta) and Petukangan (South Jakarta) was completed this quarter.
- Field assessments were conducted in Tangerang to identify potential LBMs for implementation of market cleaning days.
- Training, equipping and public awareness on market hygiene and sanitation, as well as on usage of high pressure washer machines for LBM stakeholders, was held at Anyar and Bonang markets in Tangerang in order to support market cleaning day implementation.
- The ongoing cleaning days in Kutabumi, Anyar and Bonang markets were monitored and

lessons learned used to revise standard operating procedures (SOPs) for other LBMs and to determine ideal specifications for LBM rehabilitation in Tangerang.

- Numerous meetings were also held with local government livestock services and private sector partner (PD Dharma Jaya) to discuss design of C&D stations in Rawa Keping and Cakung collector yards.

Activity 3.3: Facilitate DKI Jakarta poultry market restructuring.

- The deadline for the relocation of all poultry collectors and slaughterers was postponed from April 2010 to the end of the year.
- The targeted public awareness campaign for promotion of healthy chicken meat was continued with additional press conferences and organized visits to the marketing and slaughter areas in DKI Jakarta. Close liaison with the DKI Governor's office and its administration reinforced the likelihood of success for DKI restructuring.
- ECTAD Indonesia continued to provide technical support for the development of SOPs related to the organization of the five collection yards / slaughterhouses and their management, as well as operational assistance for the start-up of one of the five collection yards (Rawa Keping).
- Support for the promotion of the collection yards with the collectors and slaughterers, in collaboration with the local administration, was also continued.

Output 4: Engagement with duck producers for improved control of HPAI

Activity 4.1: Conduct duck vaccination field trial in selected districts of Java.

- As explained in previous quarterly reports, ECTAD Indonesia further pursued the opportunity to initiate this activity during the current project period; however, the current DGLS vaccination policy does not include ducks. ECTAD is working with DAH and DGLS to determine if the activity can be pursued strictly as a research project and thus be permissible under the current vaccination policy.

Activity 4.2: Expand duck producer profiling and HPAI surveillance to selected districts in Java, Lampung and Bali.

- Implementation of targeted surveillance to determine the prevalence of AI subtype H5 in duck flocks in Banten and West Java has been completed. The study involved sampling ducks within flocks in 6 districts in the study area.

Output 5: Coordinated and enhanced management of the HPAI control programme

Activity 5.1: Integrate and analyze data sets to identify critical control points.

- Work has started on an analysis and review of data on previous market chain surveillance activities by FAO and other organizations. This analysis includes an assessment of poultry type as a risk factor for HPAI entering the poultry market chain, as well as an assessment of the relative risk of districts of origin supplying poultry to the collector yards included in the study. Preliminary analysis and field observations have already identified a collector yard in Surakarta (Central Java) as a critical control point to reduce HPAI risk from village-raised poultry destined for consumption in greater Jakarta.
- Further analysis of the structured village study data, including a comparison to PDSR-derived surveillance data, is also ongoing this quarter.

Activity 5.2: Once western Java activities consolidated, extend essential control program elements (e.g. market surveillance, commercial profiling, targeted support for high-risk producers) to other priority regions based on outcomes of western Java intensification activities and lessons learned.

- This quarter, ECTAD Indonesia initiated the layer engagement pilot programme in Central

Java. This programme will serve as the core of the commercial poultry programme and will be focused on providing evidence-based poultry health and production advice to farmers.

- As described in Activity 2.2 above, the inception workshop for the local government commercial poultry programme (PVUK) was also held this quarter and training in pilot districts in Java and Lampung will begin next quarter.
- During work plan discussions held this quarter, DAH/CMU and FAO have agreed in principle to target activities in high risk locations (such as Surakarta as described in Activity 5.1) during the next phase of the OSRO/INS/604/USA project.

Activity 5.3: Expand M&E system programme-wide with increased integration with government.

- Monitoring and evaluation was expanded to include newly commenced C&D activity in selected collector yards.
- Activity reporting forms were field tested, approved for use and put into use by field personnel. Data from the forms were entered into LDCC databases which are then collated at DCC level. A monthly standard report is produced from the database and distributed to managers of the C&D activity.

Activity 5.4: Improve technical capacity of government human resources.

- Two PDSR introductory training workshops were held in Samarinda.
- One continuing education workshop was held in Banjarbaru, and three continuing education training workshops were also held in Bekasi, Kupang and Bajarbaru. Training members participated and provided technical inputs at seven LDCC monthly meetings in Bandung (combined meeting for Bandung and Bogor LDCCs), Jakarta, Medan, Serang, Bogor, Pekanbaru and Purwokerto.
- Selected master trainers also participated in the Decision Makers' meeting in Palembang. Master Trainers assisted with InVak cold chain monitoring in Purbalinga, Temanggung, Klaten, Gunung Kidul, Bantul, Kulon Progo and Sleman. Master Trainers also provided assistance at two household poultry surveillance training courses in Bali.
- The training team also completed preparation of draft training materials for the PVUK programme as described in Activity 2.2 above.

Activity 5.5: Improve virus strain monitoring, including training, sample submission, collection of field isolates, and improved surveillance.

- Progress on this activity continues to be delayed due to the SOPs for this activity not yet being cleared by DAH. Since sample submission is an integral part of an effective influenza surveillance programme and in-country laboratory capacity to analyse antigenic and genetic characteristics of field isolates is increasing, ECTAD Indonesia hopes that the sample submission programme will be formally approved by DAH in the near future.

Activity 5.6: Increase capacity of Indonesian laboratories to conduct antigenic and genetic characterization of virus isolates.

- On 30 April 2010, a letter was sent from the DAH to all Disease Investigation Centres (DICs) indicating their roles and responsibilities for antigenic cartography and announcing the nomination of genetic sequencing partners – this follows up to the 31 March 2010 letter from FAO –OIE Network of Expertise on Avian Influenza (OFFLU) to the Director General regarding activities for antigenic cartography.
- Six of the seven DICs conducted pre-screening of 276 H5 positive virus isolates from 2008 to 2010 during April and May 2010, and submitted results to DIC Wates who have begun analysis for selection of variants to be forwarded for further characterization. A subset of the isolates from updated pre-screened data is to be sent to the three labs selected for molecular characterization (DIC Bukittinggi, Pusvetma, and Bhalitvet) to conduct parallel generation of genetic data for capacity building purposes. The three sequencing partners are to submit a

proposal on mechanisms necessary to continue these activities.

- Requests for more reagents from the Australian Animal Health Laboratory (AAHL) have been submitted for standard reference materials needed by the DICs and project partners. The FAO OFFLU scientist provided in-country support from 7 June to 11 July 2010 (such as attending the AAHL DIC Laboratory Directors meeting, conducting site visits to DIC Wates to support the antigenic cartography activities, conducting a sequencing workshop for newly nominated sequencing partners and collaborating with workshops on diagnostics and surveillance/epidemiology of animal influenzas in DIC Lampung and Subang to support the transfer of technologies to Indonesia).
- The national OFFLU Technical Facilitator (OTF) began work on 19 April 2010 to assist with the coordination of the OFFLU project in close collaboration with representatives from the DAH/CMU, the seven DICs (particularly DIC Wates) and other relevant public sector structures and private sector stakeholders. She has assisted with the ongoing laboratory reagents procurement, attended technical management meetings, drafted and followed up letters pertaining to OFFLU activities, coordinated and supported data analysis at DIC Wates and identified the needs for the sequencing workshop held in June 2010.
- Following the launch meeting for laboratories nominated for molecular characterization of antigenic variants, a workshop on “Validating the antigenic map with genetic data: sequencing of the HA gene” was conducted from 16 to 18 June 2010 at Pusvetma by AAHL and OFFLU scientists. Sequencing partners were provided with PCR samples to produce sequencing data at their own labs as part of the capacity building exercise.
- Informative presentations on antigenic cartography and the processes being established in the DICs were made in a collaborative effort during workshops on diagnostics and epidemiology of animal influenzas at DICs Lampung and Subang to support the transfer of technologies to Indonesia.
- Procurement of reagents to support molecular characterization efforts was finalized for Pusvetma and is continuing for DIC Bukittinggi and Bbalitvet.
- Site visits to DIC Wates were conducted by the OFFLU scientist and the OTF in coordination with CMU to follow up on antigenic cartography activities and analysis of data generated to date (June 2010).
- Procurement of needed reagents and equipment for antigenic cartography continues for DIC Wates; needs were updated during the June 2010 site visits.

Activity 5.7: Provide technical recommendations on vaccination strategy.

- OFFLU encouraged DGLS to collaborate with vaccine companies, and an approach to including the companies in the antigenic cartography efforts was proposed.
- OFFLU continues to encourage the DAH to support field trials of alternative vaccines and to partner with private companies to pursue vaccine trials using candidate vaccines demonstrated likely to be efficacious, especially against variant viruses in Indonesia.
- Interviews of 155 broiler chicken farmers (average flock size 2 700), and 56 layer chicken farmers (average flock size 2 200) were conducted for the Indonesian Center for Agriculture Socio-Economic and Policy Studies (ICASEPS) field survey “Assessment of farm level financial incentives and willingness to pay for HPAI vaccination in Indonesia” in 13 districts/municipalities in western Java. Data entry and analysis were completed, and the final report is under review.
- Preparation for the consultation to develop recommendations for a comprehensive vaccination strategy in Indonesia, scheduled for July 2010, has been postponed – a new date to be announced in due course.

Activity 5.8: Conduct vaccination challenge testing and field challenge testing of antigenic variants.

- This activity has been suspended for commercial vaccines, since investigations in support of product registration are considered as a “private good” and should be conducted at the expense

of the vaccine company. However, the Material Transfer Agreement (MTA) was signed by AAHL and DGLS and final arrangements are being made to ship characterized candidate vaccine and challenge viruses to Indonesia. According to the MTA, the four candidate vaccine viruses will be shipped to Pusvetma and the two challenge viruses to BPMSOH (the national veterinary drugs assay laboratory). OFFLU has encouraged DGLS to collaborate with vaccine companies and an approach to including the companies in the challenge testing efforts was proposed. On 14 June 2010, the Director of Animal Health verbally indicated that these updated strains would immediately be made available to vaccine production companies.

- Characterization of additional vaccine constructs at the Southeast Poultry Research Laboratory (SEPR) in Athens, Georgia, USA has been completed.
- Cartography reagents from AAHL were received at Erasmus University.

Cross-cutting Activities

Information, Education and Communication (IEC)

Activities this quarter still focused on developing and distributing materials for public awareness, advocacy and PDSR continuing education. Specific activities included the following:

- production and distribution of the animation video communication tool
- continued development of PDSR training video
- finalized production of the DINAS Briefing Package (video)
- gained approval on the English version of the National Communication Strategy on HPAI for the Ministry of Agriculture (MOA)
- held further discussion with MOA on the disease transmission video.
- continued subscription of media monitoring company for related news and coverage
- printed and produced PDSR hotline stickers and calendars
- finalized the promotional video for DKI Jakarta's Market Restructuring project
- produced the 2009 FAO Avian Influenza Programme Annual Report (print, electronic)
- started development of the seventh edition of AI bulletin in cooperation with MOA

Planned activities for the next quarter

Output 1: Sustainable surveillance, prevention and control of HPAI in village poultry

Activity 1.1: Maintain village surveillance, prevention and outbreak control capacity across endemic areas of Indonesia, prioritized by strategic importance.

- analyse and draft reports for Bali port survey, unofficial importation risk assessment, random village surveillance and collector yard description surveys
- plan focused Banyuwangi surveillance for HPAI and risk from unofficial importation of live birds
- conduct national LDCC Coordinator meeting to: (i) evaluate performance of LDCCs and PDSR teams in control of HPAI; (ii) discuss operation, administration and management of FAO-MOA HPAI control programme in Indonesia; and (3) disseminate information on PDSR transition to a sustainable NVS
- design pilot project for implementation of sustainable NVS in eight selected districts from six provinces (West Sumatera, Yogyakarta, Central Java, Lampung, West Java and Bali)
- hold three focus group discussions with field officers (PDSR, Puskesmas) to determine suitable messages and communication methods for them on prevention and control of HPAI and other animal diseases of zoonotic and economic importance

Activity 1.2: Assess potential of PDSR system, structure, and capacities to strengthen the national veterinary service.

- discuss the proposed (reduced) disease surveillance reporting system, which includes HPAI in

- addition to other animal diseases of national importance, with the LDCC Coordinators
- complete design of the basic data entry database module of the disease surveillance reporting system
- initiate the piloting of the new surveillance reporting system in three districts
- complete random village surveillance in Serang (western Java) and Situbondo (East Java) and prepare draft final report

Activity 1.3: Facilitate drafting of national veterinary service strategy and work plan.

- provide support to NVS task force to complete drafting of updated NVS concept note
- in conjunction with plans to improve sustainability of PDSR and to improve control of HPAI, design a pilot project for implementation of sustainable NVS in eight districts

Activity 1.4: Assist CMU to advocate to local governments for budgetary support for HPAI control, including PDSR and LDCC activities.

- conduct two Decision-Makers' meetings in Banten and Yogyakarta provinces during the next quarter
- FAO and DAH/CMU will begin revising the format of the Decision-Makers' meeting to include information on NVS, epidemiology and disease management during the next quarter

Output 2: Improved biosecurity and vaccination practices in commercial sectors

Activity 2.1: Provide specialized technical support to selected layer producers within high-risk areas of West Java to enhance efficiency and quality of layer vaccination and biosecurity measures.

- initiate poultry production and health assessments of pilot phase layer farms
- develop customized production improvement plans for each pilot farm
- provide technical support to each farm to implement their customized production improvement plan

Activity 2.2: Provide biosecurity training of trainers course for commercial producers and relevant government agencies.

- conduct training of trainers for commercial farm profiling in PVUK pilot districts
- commence training of local government veterinary officers for piloting of PVUK next quarter that is planned to be implemented in a total of eight districts in West Java, Central Java, East Java and Lampung provinces
- hold three focus group discussions with the commercial poultry sector to determine suitable communication materials and activities for them to increase disease prevention and promote good farming practices

Activity 2.3: Assist government and industry to establish an advisory council modeled on the US National Poultry Improvement Program to gain more coordinated and broad-based support for partnership between public and private sectors.

- support USDA to hold a national NPQIP workshop to review and discuss the NPQIP concept with relevant stakeholders
- utilize input from the NPQIP workshop to finalize the NPQIP document

Activity 2.4: Evaluate effectiveness of biosecurity measures implemented by poultry producers.

- this activity is being carried out in conjunction with Activity 2.1 above
- review and finalize method for determining cost-effectiveness of biosecurity measures with technical support from the ECTAD regional socio-economist

Activity 2.5: Provide expert technical assessments to Sectors 1 and 2 farms in high-risk locations.

- participate in and hold a poultry health improvement session at the Indonesia Livestock

Exposition

- provide technical advice as requested by Sector 1 and 2 farmers

Output 3: Improved HPAI surveillance and control along the poultry marketing chain

Activity 3.1: Conduct longitudinal surveillance for HPAI in live bird markets and collector yards.

- continue environmental sampling of LBMs in Jabodetabek.
- continue coordination with the BKHI DKI Jakarta animal health laboratory for sample testing, reporting and information flow
- design a long-term (Phase III) market chain surveillance system
- conduct monitoring and evaluation meetings on market chain surveillance implementation with PSP, LDCC and local government livestock and animal health services
- develop a surveillance method specifically for native chicken movement from collector yards in Surakarta to Jabodetabek

Activity 3.2: Implement biosecurity and sanitation interventions in selected live bird markets, collector yards and slaughterhouses.

- construct C&D stations in Rawa Kepiting and Cakung collector yards and conduct training of cleaning workers
- continue to monitor and evaluate market chain C&D activity in the Jabodetabek area
- conduct field assessment of potential LBMs for rehabilitation and expansion of market cleaning days in the Jabodetabek area
- conduct field assessment of potential collector yards and slaughterhouses for expansion of the market chain C&D project in the Jabodetabek area
- conduct field assessment of potential checkpoints in western Java and southern Sumatra in order to strengthen poultry movement control
- conduct a workshop to promote safe poultry waste disposal processes in DKI Jakarta
- initiate rehabilitation of the poultry slaughter site in Bonang market Tangerang district in order to improve market sanitation

Activity 3.3: Facilitate DKI Jakarta poultry market restructuring.

- continue targeted public awareness campaign for promotion of “healthy chicken meat” via press conferences, talk shows and organized visits to the marketing and slaughter areas in DKI Jakarta
- start active promotion campaign for “healthy chicken meat” with consumers and traders in the traditional markets selling poultry meat
- liaise with the DKI Governor’s office and its administration to monitor the relocation of live poultry slaughtering and marketing
- continue support for the development of SOPs related to the organization of the five collection yards and their management and training of collectors and slaughterers in SOP usage
- continue support for the promotion of the collection yards with the collectors and slaughterers in collaboration with the local administration
- collaborate closely with the private sector and the local administration in the restructuring of distribution channels, including cold chain, from the five collection yards/slaughterhouses to the traditional markets
- collaborate closely with the local administration for the strengthening of food safety measures and government structures
- identify alternative income generating activities for poultry stakeholders forced out of the (labor) market and design support programmes accordingly

Output 4: Engagement with duck producers for improved control of HPAI

Activity 4.1: Conduct duck vaccination field trial in selected districts of Java.

- continue to engage with DGLS to determine if a duck vaccination research study can be conducted in Java if a duck vaccination is required in the future to bring HPAI under control in Indonesia

Activity 4.2: Expand duck producer profiling and HPAI surveillance to selected districts in Java, Lampung and Bali.

- complete sampling and laboratory testing
- review final report and conduct further analyses if necessary
- circulate findings to stakeholders

Output 5: Coordinated and enhanced management of the HPAI control programme

Activity 5.1: Integrate and analyze data sets to identify critical control points.

- complete a review of data on previous market chain surveillance activities by FAO and other organizations, and add the current market chain surveillance study
- complete analysis of poultry type and geographic origin as risk factors for HPAI entering collector yards included in the market chain surveillance study
- compare the data from district HPAI active surveillance to equivalent data collected by PDSR
- initiate import risk analysis for poultry and poultry products from Java

Activity 5.2: Once western Java activities consolidated, extend essential control program elements (e.g. market surveillance, commercial profiling, targeted support for high-risk producers) to other priority regions based on outcomes of western Java intensification activities and lessons learned.

- initiate planning of risk reduction activities in Surakarta native chicken collector yards
- conduct field assessment of potential checkpoints in western Java and southern Sumatra in order to strengthen poultry movement control
- commence training of local government veterinary officers for piloting of PVUK next quarter that is planned to be held in a total of eight districts in the West Java, Central Java, East Java and Lampung provinces

Activity 5.3: Expand M&E system programme-wide with increased integration with government.

- continue database development work on the proposed disease surveillance reporting system and revise the database as the results of field testing leads to further revision of the form
- maintain data flows from LDCCs and field operations to DCC
- maintain the production of regular reports derived from the various HPAI activity databases

Activity 5.4: Improve technical capacity of government human resources.

- finalization of local government commercial poultry program design, material, modules, schedule and initiation of activities in eight selected pilot districts
- planning and implementation of different PDSR continuing education training courses at various LDCCs
- initiate review and revision of PDSR training materials

Activity 5.5: Improve virus strain monitoring, including training, sample submission, collection of field isolates and improved surveillance.

- continue to engage and support DAH to clear and issue the Sample Submission SOP

Activity 5.6: Increase capacity of Indonesian laboratories to conduct antigenic and genetic characterization of virus isolates.

- DICs to continue with the pre-screening process, submitting raw data for the hemagglutination inhibition (HI) assay conducted using cartography sera on H5-positive fluids isolated from

ongoing routine diagnostic activities of the DICs

- meet with vaccine companies as proposed by DGLS to invite their participation in the antigenic cartography effort and to develop a mechanism for collaboration
- facilitate production and distribution of antisera panel confirmed for use in antigenic cartography to additional partners named by the DAH using the protocols agreed to by Erasmus Medical Center (MC) and AAHL
- continue to provide support from the OFFLU scientist to the ongoing transfer of technology to Indonesia; the next in-country inputs will be scheduled in September and October 2010
- have the OFFLU Technical Facilitator begin to support laboratories and assist in the transfer of technology; her other tasks will include supporting pre-screening activities at DICs and implementing an OFFLU recommendation to include a standardized reference H5 hyper-immune antiserum and the homologous antigen, based on an updated common Indonesian lineage, for use in DICs and other national laboratories
- follow up on the procurement of reagents to support molecular characterization efforts
- determine antigenic cartography training needs for industry following the meeting proposed by DGLS
- hold a bioinformatics workshop as a follow-up to the "Validating the antigenic map with genetic data: sequencing of the HA gene" workshop held from 16 to 18 June at Pusvetma
- follow up on the shipment of cDNA from isolates, selected using antigenic cartography data produced at DIC Wates, to sequencing partner laboratories as per the outcomes of the "Validating the antigenic map with genetic data: sequencing of the HA gene" workshop held from 16 to 18 June at Pusvetma; parallel generation of genetic data will be conducted with AAHL for capacity building and proficiency testing purposes
- compare data from sequencing partners for PCR samples provided to be conducted in August 2010 as part of the capacity building exercise
- conduct a follow-up workshop on "Serology and virus typing for antigenic cartography"

Activity 5.7: Provide technical recommendations on vaccination strategy.

- facilitate reporting from SEPRL on data from the completed challenge tests using available reverse genetic constructs
- reschedule the consultation to develop recommendations for a comprehensive vaccination strategy in Indonesia
- finalize the report for the ICASEPS field survey "Assessment of farm level financial incentives and willingness to pay for HPAI vaccination in Indonesia" conducted in 13 districts/municipalities in western Java
- prepare for the final OFFLU project technical review meeting scheduled for October 2010

Activity 5.8: Conduct vaccination challenge testing and field challenge testing of antigenic variants.

- Specific field challenge testing of commercial vaccines is no longer being sought by FAO, since investigations in support of product registration are considered as a "private good" and should be conducted at the expense of the vaccine company.
- OFFLU is awaiting a reply to the 7 April 2010 letter from DGLS to DG Agency for Agricultural Research and Development outlining proposed activities at Bbalitvet and following up on the OFFLU visit to Bbalitvet in March 2010.
- OFFLU is awaiting final instruction and clearance to ship reverse genetics (RG) vaccine strains from SEPRL to Bbalitvet. The OTF in coordination with CMU will continue to follow up on letter to DGLS.
- OFFLU to schedule training on the RG strains offered by SEPRL once these strains are delivered to Bbalitvet.
- Meet with vaccine companies, as proposed by DGLS, to invite their participation in the antigenic cartography effort and to inform them that the candidate vaccine and challenge viruses will be made available to them as soon as they are delivered to the receiving

laboratories indicated in the MTA.

Cross-cutting Activities

Information, Education and Communication (IEC)

- finalize, produce and distribute PDSR training video
- produce and distribute Dinas Briefing Package (video)
- continue endorsement to formalize the National Communication Strategy on HPAI for the MOA (Bahasa Indonesia version) and incorporate it into the National Strategic Workplan for HPAI prevention and control
- produce a disease transmission video
- continue monitoring and documenting news coverage related to HPAI and other zoonotic diseases
- distribute PDSR hotline stickers and calendars
- produce and distribute promotional video on DKI Jakarta's Market Restructuring Project
- distribute the 2009 FAO Avian Influenza Programme Annual Report (English and Bahasa Indonesia versions) in both print and electronic format
- hold a media gathering to improve relationships with the media and update them with interesting and important information from the HPAI Control Programme
- repackage media partnership materials for global dissemination
- produce educational comic strips on prevention of HPAI and other diseases through PDSR officers
- initiate support for the re-establishment of the CMU's website by contributing necessary data and relevant information on HPAI prevention and control

Main challenges encountered and response provided

Two main challenges were faced this quarter. The first was the ongoing challenge of recruiting international technical advisors in a timely manner. As reported previously, the GOI review and approval process for international experts can be very long, often resulting in significant delays in the recruitment and initiation of the consultancy missions, and thus contributing to the lengthening of the lead-in period from the time that expertise gaps are identified to the time that they are filled. In response, ECTAD Indonesia has increased efforts to discuss and exchange information with MOA regarding candidates for open consultancies as well as to discuss the need for each specific consultancy. This quarter, the programme was able to successfully recruit two new consultants, one long-term and one short-term. Therefore, it is hoped that the enhanced engagement procedures put in place have improved the programme's ability to fill expertise gaps in a timely manner.

The other major challenge encountered was the programme's need to prepare a detailed work plan until September 2011 for USAID while still in the midst of accelerating implementation of a number of new activities as described in this report. ECTAD Indonesia responded by dividing the planning process into stages over a four-month period. Although this extended the time needed to complete the planning, it allowed programme staff and government counterparts to contribute to the planning of future activities without losing focus on current activities. The planning process culminated with the production of a detailed 16-month work plan, including deliverables and indicators, for the ECTAD Indonesia programme.

Main progress made towards the achievement of project outcomes *(from the start of the current project phase)*

Output 1: Sustainable surveillance, prevention, and control of HPAI in village poultry

- The PDSR programme has strengthened veterinary services capacity to detect and respond to HPAI outbreaks in village poultry throughout HPAI-endemic areas of Indonesia.

- The LDCC system has enabled more effective communication and coordination between central and local governments within the highly decentralized Indonesian governance system.
- As a direct result of advocacy conducted through local government village poultry HPAI control activities (e.g. PDSR), central and local governments are well aware of the need for cost-sharing for the HPAI control program and animal disease control activities in general. In addition, government stakeholders are now more committed to support and advocate for animal health and HPAI disease control as a result of the FAO project.

Output 2: Improved biosecurity and vaccination practices in commercial sectors

- Understanding of the role of commercial poultry production in the maintenance and spread of HPAI has improved.
- Public-private partnership for targeted vaccination of at-risk small-scale poultry producers was initiated.
- Public sector collaboration with commercial poultry producers has been accelerated. In particular, public sector disease controllers and international agencies are both more aware of the complexity of commercial poultry production in Indonesia and more engaged with private sector stakeholders involved in commercial poultry production.

Output 3: Improved HPAI surveillance and control along the poultry marketing chain

- Test results from the DKI Jakarta category B animal health laboratory distributed to all livestock services at district level throughout Jabodetabek to increase local government awareness and responsiveness to market chain contamination and veterinary public health issues.
- Program to test collector yard-based surveillance methods to assess relative risk of poultry production areas and poultry type developed and successfully implemented.
- Improved understanding of poultry market dynamics in DKI Jakarta by the public sector.
- Increased private and public sector C&D capacity and increased implementation of C&D practices along the poultry market chain in greater Jakarta.
- Critical weaknesses in the DKI Jakarta market restructuring preparations identified and corrective measures proposed and subsequently implemented by government.

Output 4: Engagement with duck producers for improved control of HPAI

- The database of duck flocks developed from the study area provides a sample frame for the prevalence study and other future activities to be undertaken in duck populations by animal health authorities; knowledge of locations of high density duck populations is a critical first step to identifying critical control points for targeted interventions to control HPAI.

Output 5: Coordinated and enhanced management of the HPAI control programme

- Improved knowledge of factors associated with outbreaks of HPAI in village poultry to be used to inform and refine surveillance and control strategies.
- Critical control points identified. Data and subsequent analysis leading to identification of further points for disease control efforts to be targeted.
- Significant improvement in technical capacity and management of local government human resources working in the field throughout all known HPAI-endemic areas.
- Development of a safe, efficacious vaccine for use in Indonesia.
- Characterization of AI viruses circulating in Indonesia.
- Increased capacity of Indonesian laboratories to perform antigenic characterization of viruses

and analyse results.

- Improved collaboration between Indonesian private sector and public sector on field virus monitoring.

Quarter II 2010

Project Monitoring Sheet: **OSRO/INS/703/USA**

Project Title: Monitoring AI virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy

Reporting Period: April - June 2010

Country: Indonesia
Project title: Monitoring AI virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy
Project Code: OSRO/INS/703/USA
Budget: USD 830 500 (Phase I), USD 800 000 (Phase II)
Budget total: USD 1 630 500 ¹
Effective starting date: October 2007
Planned end date: 30 September 2010
Context of the Project: Since 2005, Indonesia has become one of the major global hotspots for the Highly Pathogenic Avian Influenza (HPAI) epizootic in both poultry and humans. To help control HPAI in the field, an understanding of the circulating field isolates is needed to both monitor poultry vaccine efficacy and to identify appropriate strains for new vaccine development.
Objectives of the Project: Phase 2 Extension <ul style="list-style-type: none"> • H5N1 HPAI virus field isolate collection for biological and genetic characterization • challenge testing of antigenic variants against newly developed vaccine strain • capacity building • technical recommendations for vaccination strategy
Planned activities Output A-B. HPAI field isolate collection for biologic and genetic characterization <i>Activity AB1. To continue collection of samples.</i> <i>Activity AB2. To Support beta testing of InfoLab-Plus by Peter Durr, Australian Animal Health Laboratory (AAHL) to allow for field entry of standardized sample information, improved data integration and communication between laboratories and to ensure data integrity.</i> <i>Activity AB3. To screen samples by real-time polymerase chain reaction (RT-PCR) in Disease Investigation Centre (DIC), Bbalitvet and new partners where possible.</i> <i>Activity AB4. To provide samples positive for avian influenza (AI) to AAHL for characterization.</i> <i>Activity AB5. To conduct genetic and antigenic characterization of HPAI isolates in Indonesia.</i>

¹ Under the first phase, an additional USD 200 000 was allocated from OSRO/INS/701/AUL in support of project activities. The duration of the project has been extended from 12 months to 24 months.

Output C. Challenge testing of antigenic variants and vaccine strains selection

Activity C1. Perform challenge testing with priority isolates against new vaccine(s) strain.

Output D. Capacity building

Activity D1. Five-month support from the World Organisation for Animal Health (OIE)- Food and Agriculture Organization of the United Nations (FAO) Network of Expertise on Avian Influenza (OFFLU) scientist in close coordination with AAHL.

Activity D2. Molecular and antigenic analysis workshops.

Activity D3. Develop capability to conduct vaccine efficacy tests in Indonesia.

Output E. Technical recommendations for the vaccination strategy

Activity E1. Continue development of reverse genetic vaccine based upon the drift variant identified in Phase 1.

Activity E2. Support field trials with alternative vaccines.

- This activity has been suspended, since investigations in support of product registration are considered as a "private good" and should be conducted at the expense of the vaccine company.

Activity E3. Encourage the Government of Indonesia to streamline registration of efficacious recombinant and reverse genetic vaccines.

Activity E4. Continue the assessment of costs and cost-effectiveness of vaccination strategies in Indonesia.

Activity E5. Prepare updated technical recommendations on a vaccination strategy.

Activity E6. Organize technical review meetings.

Activities undertaken during the reporting period**Output A-B. HPAI field isolate collection for biologic and genetic characterization**

Activity AB1. Continue collection of samples.

- Sample collection and submission are ongoing through the routine surveillance and diagnostic activities of the DICs and through participatory disease surveillance and response (PDSR).

Activity AB2. Support beta testing of InfoLab-Plus by Peter Durr, AAHL to allow for field entry of standardized sample information, improved data integration and communication between laboratories, and to ensure data integrity.

- This activity has been completed; refer to IV Quarter 2009.

Activity AB3. Screen samples by RT-PCR in DICs, Bhalitvet, and new partners where possible.

- Sample collection and submission are ongoing through the normative diagnostic activities of the DICs and through PDSR.

Activity AB4. Provide samples positive for avian influenza to AAHL for characterization.

- Reports from AAHL were submitted to Directorate General of Livestock Services (DGLS) on the characterization of 102 samples (43 from DIC Maros and 59 from DIC Medan); 78 H5N1 viruses were isolated and 76 additional haemagglutinin (HA) gene sequences obtained.

- A second request was made to DGLS for export permit to ship antigenically distinct viruses from industry project partner to AAHL.
- Advocacy for release of virus sequences in the public domain – positive response was received on 24 June 2010 from DGLS to letters from OFFLU in August 2008 and on 15 March 2010 to authorize release of available sequences to a publicly held database.
- Collaboration with AAHL to prepare draft for collaborative manuscripts is in process.

Activity AB5. Conduct genetic and antigenic characterization of HPAI isolates in Indonesia.

- On 30 April 2010, a letter from the Department of Animal Health (DAH) was sent to DICs indicating their roles and responsibilities for antigenic cartography and announcing the nomination of sequencing partners – this follows up the 31 March 2010 letter from OFFLU to DG regarding activities for antigenic cartography.
- Six of the seven DICs conducted pre-screening of 276 H5 positive virus isolates from 2008-2010 during April and May 2010 and submitted results to DIC Wates which have begun analysis for selection of variants to be forwarded for further characterization.
- Requests for more reagents from AAHL have been submitted for standard reference materials needed by the DICs and project partners.

Output C. Challenge testing of antigenic variants and vaccine strains selection

Activity C1. To perform challenge testing with priority isolates against new vaccine(s) strain.

- All challenge tests conducted at SEPRL have been completed; pending final report.

Output D. Capacity building

Activity D1. Five-month support from OFFLU Scientist in close coordination with AAHL.

- The OFFLU scientist from FAO has completed the five-month input for in-country technical assistance to support laboratory capacity building. Her recent inputs (from 7 June to 11 July 2010) include (i) attending the AAHL DIC Laboratory Directors meeting; (ii) making site visits to DIC Wates to support the antigenic cartography activities; (iii) conducting sequencing workshop for newly nominated sequencing partners; and (iv) collaborating with workshops on diagnostics and epidemiology of animal influenzas in DIC Lampung and DIC Subang to support the transfer of technologies to Indonesia.
- The national OFFLU technical facilitator (OTF) began work on 19 April 2010 to assist with the coordination of the OFFLU project in close collaboration with representatives from the DAH/National Campaign Management Unit (CMU), the seven DICs, particularly DIC Wates, and other relevant public sector structures and private sector stakeholders. She has assisted with the ongoing laboratory procurements, attended technical management meetings, drafted and followed up letters pertaining to OFFLU activities, coordinated and supported data analysis at DIC Wates and organized the needs for the sequencing workshop held in June 2010.
- Procurement of reagents to support molecular characterization efforts was finalized for Pusvetma and is continuing for DIC Bukittinggi and Bbalitvet.
- In June 2010, site visits to DIC Wates were conducted by the OFFLU scientist and the OTF in coordination with CMU to follow up on the activities for antigenic cartography and analysis of the data generated to date.
- Procurement of needed reagents and equipment continues for DIC Wates; needs were updated during the June 2010 site visits.

Activity D2. Molecular and antigenic analysis workshops.

- Following the launch meeting for laboratories nominated for molecular characterization of

antigenic variants, a workshop on “Validating the antigenic map with genetic data: sequencing of the HA gene” was conducted from 16 to 18 June 2010 at Pusvetma by AAHL and OFFLU.

- Sequencing partners were provided with PCR samples to produce sequencing data at their own labs as part of the capacity building exercise.
- Informative presentations on antigenic cartography and the processes being established in the DICs were given in a collaborative effort during workshops on diagnostics and epidemiology of animal influenzas at DICs Lampung and Subang to support the transfer of technologies to Indonesia.

Activity D3. Develop capability to conduct vaccine efficacy tests in Indonesia.

- OFFLU awaiting response to letter of October 2009 on recommended tests for vaccine registration.
- The Materials Transfer Agreement (MTA) was signed by AAHL and DGLS and final arrangements are being made to ship characterized candidate vaccine and challenge viruses to Indonesia. According to the MTA, the four candidate vaccine viruses will be shipped to Pusvetma and the two challenge viruses to BPMSOH (the national veterinary drugs assay laboratory).
- On 14 June 2010, DAH verbally indicated that these updated strains would immediately be made available to vaccine production companies.
- On 17 June 2010, the OFFLU scientist conducted the follow up visit to Pusvetma to tour the AI building and ensure facilities were ready to receive viruses.
- Cartography reagents from AAHL have been received at Erasmus.
- On 7 April 2010 a letter was sent from DGLS to DG Research outlining proposed activities at Bbalitvet and following up on the OFFLU visit in March 2010.
- Continued to encourage DAH to partner with private companies to sustain vaccine efficacy testing.

Output E. Technical recommendations for the vaccination strategy

Activity E1. Continued development of reverse genetic vaccine based upon the drift variant identified in Phase 1.

- This activity has been completed; pending final report from USDA Southeast Poultry Research Laboratory (SEPRL).

Activity E2. Support field trials with alternative vaccines.

- This activity has been suspended because investigations in support of product registration are considered as a “private good” and should be conducted at the expense of the vaccine company.

Activity E3. Encourage the Government of Indonesia to streamline registration of efficacious recombinant and reverse genetic vaccines.

- DAH informed OFFLU that the reverse genetics (RG) vaccine strains need to be delivered to Bbalitvet once clearance is received to ship. OFFLU is awaiting final instruction and clearance.
- OFFLU informed DAH that training on the RG strains is offered by SEPRL once these strains are delivered to Bbalitvet.

Activity E4. Continue the assessment of costs and cost-effectiveness of vaccination strategies in Indonesia.

- Interview of 155 broiler chicken farmers (average flock size 2700) and 56 layer chicken farmers (average flock size 2 200) was conducted for the ICASEPS field survey “Assessment of farm

level financial incentives and willingness to pay for HPAI vaccination in Indonesia” in 13 districts/municipalities in western Java.

- Data entry and analysis of production margin and vaccine expenditure data has been completed.
- A final report has been drafted and is under review by FAO.

Activity E5. Prepare updated technical recommendations on a vaccination strategy.

- Preparation for the consultation to develop recommendations for a comprehensive vaccination strategy in Indonesia for July 2010 has been postponed – date to be announced later.

Activity E6. Organize technical review meetings.

- Date for final Technical Review Meeting has been proposed (on 14 and 15 October 2010) and preparations continue.

Planned activities for the next quarter

Output A-B. HPAI field isolate collection for biologic and genetic characterization

Activity AB1. Continue collection of samples.

- sample collection and submission are ongoing through the routine surveillance and diagnostic activities of the DICs and through PDSR
- finalize proposal to supplement the sample collection from DIC Wates to include under-represented geographic areas and poultry production sectors – sampling to be conducted by DIC Wates
- revisit proposal to supplement the sample collection from DIC Wates to include under-represented geographic areas and poultry production sectors – sampling to be conducted by DIC Wates

Activity AB2. Support beta testing of InfoLab-Plus by Peter Durr, AAHL to allow for field entry of standardized sample information, to improve data integration and communication between laboratories, and to ensure data integrity.

- this activity has been completed; refer to IV Quarter 2009

Activity AB3. Screen samples by RT-PCR in DICs, Bbalitvet, and new partners where possible.

- sample collection and submission are ongoing through the routine surveillance and diagnostic activities of the DICs and through PDSR
- continue to pursue collaborative efforts to obtain needed isolates from underrepresented and high risk species and geographical areas

Activity AB4. Provide samples positive for avian influenza to AAHL for characterization.

- have AAHL conduct antigenic cartography on the 78 H5N1 viruses isolated from 102 samples (43 from DIC Maros and 59 from DIC Medan)
- have OTF follow up on export permit needs for the set of 25 to 30 isolates selected from updated pre-screened data to send to AAHL for parallel generation of antigenic and genetic data for capacity building purposes
- have OTF, in coordination with CMU, follow up on DGLS export permit for antigenically distinct viruses from industry project partner to be sent to AAHL
- reply to response to authorize release of available sequences to a publicly held database received on 24 June 2010 from DGLS

Activity AB5. To conduct genetic and antigenic characterization of HPAI isolates in Indonesia.

- have DICs continue with the prescreening process, submitting raw data for the hemagglutination inhibition (HI) assay conducted using cartography sera on H5-positive fluids isolated from ongoing diagnostic activities of the DICs
- have DIC Wates produce full panel antigenic cartography data in parallel with AAHL by end of August 2010
- organize a meeting with vaccine companies proposed by DGLS on 7 July 2010 to invite their participation in the antigenic cartography effort and to develop the mechanism for collaboration
- produce/distribute antisera panel confirmed for use in antigenic cartography to additional partners named by the DAH using the protocols agreed to by Erasmus Medical Center (MC) and AAHL.
- send a subset of the isolates from updated pre-screened data to the three laboratories selected for molecular characterization (DIC Bukittinggi, Pusvetma and Bbalitvet) to conduct parallel generation of genetic data for capacity building purposes
- have the three sequencing partners submit a proposal on the mechanism to be continued

Output C. Challenge testing of antigenic variants and vaccine strains selection

Activity C1. Perform challenge testing with priority isolates against new vaccine(s) strain.

- all challenge tests conducted at SEPRL have been completed; pending final report

Output D. Capacity building

Activity D1. Five-month support from OFFLU scientist in close coordination with AAHL.

- the five-month input is complete; however, the OFFLU Scientist will continue to provide support to the ongoing transfer of technology to Indonesia. The next inputs will be scheduled for September-October 2010.
- support provided by the OTF to the laboratories and OTF's assistance in transfer of technologies and the prescreening activities at DICs to include OFFLU recommendations for a standardized reference H5 hyperimmune antiserum and the homologous antigen based on an updated common Indonesian lineage for use in DICs and other national laboratories
- follow up on the procurement of reagents to support molecular characterization efforts
- determine antigenic cartography training needs for industry following meeting proposed by DGLS

Activity D2. Molecular and antigenic analysis workshops.

- schedule a bioinformatics workshop in September 2010 as a follow up to the "Validating the antigenic map with genetic data: sequencing of the HA gene" workshop held from 16 to 18 June 2010 at Pusvetma
- OTF to follow up shipment of cDNA from isolates, selected using antigenic cartography data produced at DIC Wates, to sequencing partner laboratories as per the outcomes of the "Validating the antigenic map with genetic data: sequencing of the HA gene" workshop held from 16 to 18 June at Pusvetma; parallel generation of genetic data will be conducted with AAHL for capacity building purposes.
- conduct comparison of data from sequencing partners for PCR samples provided in August 2010 as part of the capacity building exercise
- reschedule a follow-up workshop on "Serology and virus typing for antigenic cartography" in September 2010

Activity D3. Develop capability to conduct vaccine efficacy tests in Indonesia.

- awaiting reply to the 7 April 2010 letter from DGLS to DG Research outlining proposed activities at Bbalitvet and following up on the OFFLU visit in March 2010
- meeting with vaccine companies proposed by DGLS on 7 July 2010 to invite their participation in the antigenic cartography effort and to inform them that the candidate vaccine and challenge viruses will be made available to them as soon as they are delivered to the receiving laboratories indicated in the MTA
- continue to encourage DAH to partner with private companies to pursue challenge testing field trials
- awaiting response to the letter of October 2009 on recommended tests for vaccine registration

Output E. Technical recommendations for the vaccination strategy

Activity E1. Continue the development of reverse genetic vaccine.

- this activity has been completed; pending final report from SEPRL

Activity E2. Support field trials with alternative vaccines.

- this activity has been suspended because investigations in support of product registration are considered as a "private good" and should be conducted at the expense of the vaccine company

Activity E3. To encourage the Government of Indonesia to streamline registration of efficacious recombinant and reverse genetic vaccines.

- awaiting final instruction and clearance to ship RG vaccine strains from SEPRL to Bbalitvet and the OTF, in coordination with CMU, is to continue the follow up on the letter to DGLS
- schedule the training on the reverse genetics (RG) strains offered by SEPRL once these strains are delivered to Bbalitvet

Activity E4. To continue the assessment of costs and cost-effectiveness of vaccination strategies in Indonesia.

- finalize the report for the Indonesian Center for Agriculture Socio-Economic Policy Studies (ICASEPS) field survey "Assessment of farm level financial incentives and willingness to pay for HPAI vaccination in Indonesia" conducted in 13 districts/municipalities in western Java

Activity E5. To prepare updated technical recommendations on a vaccination strategy.

- reschedule the consultation to develop recommendations for a comprehensive vaccination strategy in Indonesia

Activity E6. To organize technical review meetings.

- prepare for the final technical review meeting scheduled on 14 and 15 October 2010

Main challenges encountered and response provided

The DGLS have agreed in principle to pursue collaboration with the private vaccine companies; however, there is still much confusion about the status of challenge testing of current influenza vaccines as well as vaccine registration. During the technical review meeting in November 2009, the DGLS indicated 3 items of concern: (1) that challenge testing of existing vaccines was to be conducted at Bbalitvet (no funding sources nor agreement from Bbalitvet received to date); (2) that temporary registrations for all imported and national AI vaccines would expire by May 2010, and it is presently not known which vaccines remain registered; and (3) that in the future, only companies producing vaccines using strains named by the government, would be allowed to submit for registration. While the mechanisms to monitor antigenic variants in the field, being developed at the DICs, should keep pace

with circulating viruses based upon experience to date alone, they are not likely sufficient to provide updated vaccines into the field without significant contribution from the vaccine companies. The meeting proposed by the DGLS with vaccine companies in July 2010 should provide a good opportunity to address these issues.

Main progress made towards the achievement of project outcomes

Output A-B: HPAI field isolate collection for biologic and genetic characterization

- characterization of 244 H5N1 isolates (266 total viruses) from 317 samples representing approximately 90 districts predominantly from backyard chickens
- completion of the UAT Workshop and subsequent activities to launch InfoLabPlus
- selection and production of reference antisera and antigens for Indonesia
- antigenic cartography data from 100 isolates, in addition to biologic and molecular data, was used to select five candidate vaccine strains and six potential challenge strains for further investigation. Viruses have been received at SEPRL for vaccine construct and challenge studies in June 2009
- nomination of DIC Wates as focal point for antigenic cartography; work plan developed 1 July 2009; and capacity building activities for antigenic cartography launched July 2009
- confirmation letter from DAH to DICs indicating their roles and responsibilities for antigenic cartography in Indonesia as an ongoing effort and essential for the transfer of technology
- six of the seven DICs conducted prescreening of 276 H5 positive virus isolates from 2008 to 2010 during April and May 2010 and submitted results to DIC Wates, which have begun analysis for selection of variants to be forwarded for further characterization
- nomination of three laboratories to support genetic characterization of antigenic variants, launch the capacity building activities for sequencing in March 2010 and benchside workshop in June 2010
- data available to date presented at November 2009 technical review meeting
- DG agrees in principle to the release of virus sequences into the public domain in June 2010
- presentation at the seventh International Symposium for Avian Influenza in April 2009
- presentation at the regional meeting on "Molecular epidemiology of origin and evolution of H5N1 Highly Pathogenic Avian Influenza Virus in Asia," (USDA/FAO) in Bangkok, Thailand on September 2009

Output C: Challenge testing of antigenic variants and vaccine strains selection

- signing of collaborative MTA between DGLS, AAHL, SEPRL and industry and receipt of selected vaccine candidate and challenge strains at SEPRL in June 2009 to continue vaccine development and challenge testing
- selection of five vaccine strains and six challenge strains based upon data generated from antigenic and molecular characterization of isolates
- collaborative MTA to return fully characterized isolates to Indonesia
- challenged the tests conducted using available reverse genetics constructs at SEPRL using updated challenge viruses selected from the OFFLU project data

Output D: Capacity building

- OFFLU workshops have been conducted on introductory molecular and antigenic analysis for 56 Indonesian scientists representing all DICs, four veterinary faculties, industry and the Ministry of Agriculture (November 2008, March and September 2009)

- the FAO/OFFLU scientist has completed the five-month capacity building activities in close coordination with AAHL; support visits and technical assessments have been conducted at DIC Wates, Denpasar, and Bukittinggi; and capacity building activities for antigenic cartography will continue in close coordination with AAHL
- a national OTF has been hired to assist with the coordination of OFFLU activities in close collaboration with representatives from the DAH/CMU, the seven DICs, particularly DIC Wates, and other relevant public sector structures and private sector stakeholders to support the transfer of activities to Indonesia
- capacity building activities conducted to allow DICs to perform antigenic characterization of viruses and analyse resulting data in order to identify isolates to be further tested with challenge studies to ensure that vaccines in use in Indonesia are efficacious
- positive response from the DAH to engage the industry in the virus monitoring effort will contribute to a broader understanding of viruses circulating in Indonesia

Output E: Technical recommendations for the vaccination strategy

- FAO interim recommendations submitted to the DGLS in April 2008
- an update to the FAO interim recommendations was submitted to the DGLS in June 2009 based upon data analysed from the OFFLU project
- development of a mechanism to monitor AI antigenic variants which involves all DICs and collaborating laboratories using a virus prescreening assay and antigenic cartography
- consultation with a legal firm specializing in intellectual property has been completed
- development and assessment of newly engineered low pathogenicity reverse genetics vaccine strain(s) for Indonesia selected through data gathered from this project
- OFFLU Technical review meetings with open forum held in June and November 2008 and November 2009
- final report prepared by socio-economist on "Vaccination and surveillance costs for operational research project in Indonesia"
- interview of 155 broiler chicken farmers (average flock size 2 700) and 56 layer chicken farmers (average flock size 2 200) was conducted for the ICASEPS field survey "Assessment of farm level financial incentives and Willingness to Pay for HPAI Vaccination in Indonesia" in 13 districts/municipalities in western Java
- presentation at the seventh International Symposium on Avian Influenza in Athens, Georgia, USA from 5 to 8 April 2009 "Characterization of H5 HPAI virus variants in Indonesian poultry – OFFLU Indonesia Project"
- presentation of the OFFLU project at the regional meeting on Molecular Epidemiology of Origin and Evolution of H5N1 Highly Pathogenic Avian Influenza Virus in Asia (USDA/FAO) Bangkok, Thailand on 9 September 2009.

Project Monitoring Sheet: **OSRO/INT/001/USA**

Project title: **EPT+ Characterizing influenza viruses posing risks as the next global pandemic**

Reporting period: **April to September 2012**

Country: Bangladesh, China, Viet Nam and Thailand
Project title: EPT+ Characterizing influenza viruses posing risks as the next global pandemic
Code: OSRO/INT/001/USA
Budget: USD 2.75 million
Effective starting date: 1 November 2011
Planned end date: 30 September 2013
<p>Context of the project</p> <p>To improve our understanding of the role livestock play in serving as reservoirs for potential pandemic influenza viruses in Southeast, East and Southern Asia, the United States Agency for International Development (USAID) has provided funding to the Food and Agriculture Organization of the United Nations (FAO) to expand influenza surveillance activities through the EPT+ programme, part of the broader Emerging Pandemic Threat (EPT) programme. Approval of the initial EPT+ project proposal from USAID was received in November of 2011, and project activities were initiated by FAO in December 2011. The project contains four components: (1) improving our understanding of fundamental drivers of influenza emergence through risk assessments and risk modelling; (2) conducting influenza surveillance in farmed animals (swine, ducks) to improve knowledge about circulating viruses of pandemic potential in livestock; (3) developing and implementing questionnaires to improve our understanding of the risk for influenza transmission among sectors; and (4) sharing information and contributing to major global influenza initiatives. The geographic scope of EPT+ initially included Viet Nam, China, and Bangladesh, with Thailand being a country that might be phased in at a later point in time. The largest portion of the EPT+ project focuses on livestock surveillance activities and aims to detect and characterize animal influenza viruses circulating in targeted livestock systems.</p>
<p>Objective of the project</p> <p>EPT+ project will contribute to the improvement of food security through prevention, detection, control and response to animal and public health risks attributable to zoonoses and animal diseases. The main objective of the project is to improve characterization and surveillance of influenza-related pandemic threats at national and regional levels in livestock populations.</p>
<p>Planned activities for the reporting period (April to September 2012)</p> <p>OUTPUT 1: Fundamental drivers of influenza emergence refined, mapped and included in the risk analyses to improve geolocalization of potential pandemic emergence sites</p> <ul style="list-style-type: none"> • Revise the agro-ecological and environmental spatial risk-factor layers • Collate and prepare influenza viral sequence data for risk analysis and modeling • Conduct a knowledge-based risk analysis for pandemic influenza • Integrate epidemiological and molecular data with agroecological factors and conduct niche modeling to determine areas with similar risk profiles • Conduct predictive modeling of pandemic influenza risk based on viral evolutionary rates and reassortment events • Conduct a risk assessment and modeling workshop to review modeling approaches

OUTPUT 2: Robust influenza surveillance strategy implemented at national/regional level to improve knowledge about circulating viruses of pandemic potential in livestock

- Conduct national stakeholder workshops for development of sampling strategies
- Conduct a regional stakeholders launching workshop
- Create an EPT+ influenza surveillance guidance strategy
- Create an off and online accessible, password-protected surveillance module, linked to the Relational Database (Activity 3.2) to enable sample information and diagnostic test results to be managed
- Conduct national laboratory capacity assessments and compile a list of necessary equipment and supplies necessary for diagnostics to support EPT+ sample analyses
- Procure necessary laboratory supplies and equipment
- Conduct a laboratory sampling refresher course
- Conduct a field sampling refresher course
- Conduct influenza surveillance sampling
- Analyse influenza virus surveillance samples including screening, isolating virus and conducting full genomic sequencing for positive samples
- Conduct closing project workshop

OUTPUT 3: Understanding of risk for influenza transmission improved among sectors

- Develop a questionnaire to be administered at surveillance sampling sites (farm, household, slaughterhouse, etc.)
- Create an off and online accessible, password protected relational database that is linked to the Surveillance Module (Activity 2.4), and enables results from the questionnaire (Activity 3.1) to be managed
- Procure tablets, write script and programme tablets to enable questionnaires to be administered using this technology

OUTPUT 4: Information exchange and coordination improved among major global influenza initiatives

- Participate in and exchange surveillance data with international influenza networks, such as FAO's Network of Expertise on Animal Influenza (OFFLU) and the OFFLU Swine Influenza Group
- Bridge the gap between various genetic databases and epidemiological data

Activities undertaken during the reporting period (April to September 2012)

National Programme Progress – in support of Output 2

- **Bangladesh**
 - EPT+ national surveillance strategy developed and agreed upon;
 - Laboratory assessment conducted to ensure sample analyses capacity and quality; and
 - Draft letters of agreement between FAO and national authorities being circulated.
- **Viet Nam**
 - FAO officially requested EPT+ to be approved by national authorities;
 - Agreement between FAO and national authorities to hire national EPT+ focal points for both surveillance and laboratory activities;
 - National surveillance strategy submitted to national authorities and under consideration; and
 - Laboratory assessment conducted to ensure the capacity and quality of sample analyses.

- **China**
 - Agreement between FAO and national authorities to hire national EPT+ focal point and broad agreement to implement EPT+ in China;
 - Draft national surveillance strategy developed;
 - Meetings with China Center for Disease Prevention and Control (CDC) and Chinese National Influenza Center to discuss potential collaborative livestock and human surveillance; and
 - Preliminary laboratory assessments conducted to ensure the capacity and quality of sample analyses.
- **Thailand**
 - Several factors have led to the decision to not currently implement EPT+ activities in Thailand including consultations with the Department of Livestock Development (DLD) in Thailand, swine surveillance currently underway by DLD, and recent swine and duck influenza surveillance results. While activities in Thailand were not completely ruled out, they are not envisioned to be implemented in the near future, and it is unlikely that they will take place during this funding cycle.

GLOBAL ACTIVITIES – In support of Outputs 1 and 4

- Some agro-ecological and environmental spatial risk-factor layers, including domestic duck and swine populations, and intensive versus extensive duck production were revised and updated
- Influenza viral sequence data was compiled
- Niche models were revised and updated
- Conference calls were conducted to discuss how to combine agro-ecological data and virus cartography data, and further details about how to integrate viral evolutionary rates and reassortment events also considered
- The Pandemic Influenza Risk Assessment and Modeling workshop was planned from 7 to 9 November 2012 including a draft agenda, list of participants and draft invitation letter
- The EPT+ influenza surveillance guidance strategy was developed, and is pending finalization
- Coordination among other influenza risk assessment and modeling programmes was undertaken including coordination with Flurisk, CDC and National Institute of Health (NIH)-funded partners
- Dialogue between EPT+ and the OFFLU scientists and the swine influenza group was established

Planned activities for the next six-month period (October 2012 to March 2013)

- See above

Main challenges encountered and responses provided

- Fully engaging national authorities in EPT+

Solution: In China, further consultations and final agreement to move forward with hiring an EPT+ national focal point

Solution: In Viet Nam, an official letter was sent from the FAO Regional Office for Asia and the Pacific (RAP) to the national authorities in Viet Nam, and FAO is currently hiring a permanent (as opposed to temporary) Emergency Centre for Transboundary Animal Diseases national team leader to support EPT+ and other projects in country

- Agreeing on sample sizes to optimize surveillance strategies
- Solution:** Requested expert opinion from a virologist involved in the OFFLU network and renegotiating with national authorities in Viet Nam and Bangladesh

Main progress made towards the achievement of project outcomes

- National agreement to move forward with EPT+ in China and Viet Nam
- Terms of reference for national consultants in China and Viet Nam and agreement to hire them between FAO and national authorities
- Surveillance guidance document developed and available
- Laboratory capacity assessed in several countries
- Risk modeling activities underway
- Engagement of other partners on influenza activities at international level.

Project Monitoring Sheet: **OSRO/INT/001/USA**

Project title: **EPT+ Characterizing influenza viruses posing risks as the next global pandemic**

Reporting period: **from October 2011 to March 2012**

Country: Bangladesh, China, Viet Nam and Thailand
Project title: EPT+ Characterizing influenza viruses posing risks as the next global pandemic
Code: OSRO/INT/001/USA
Budget: USD 2.75 million
Effective starting date: 1 November 2011
Planned end date: 1 November 2012
Context of the project EPT+ is focused on improving our understanding of the role that livestock plays as potential reservoirs for pandemic disease threats initially focusing on influenza.
Objectives of the project <ul style="list-style-type: none"> • Influenza risk modeling • Influenza surveillance in farmed animals (swine, aquatic waterfowl and others) • Conduct concurrent market trade and commodity networks assessments in the sectors sampled • Contribute to broader global influenza initiatives, such as the Food and Agriculture Organization of the United Nations (FAO) Global Animal Disease Information System (EMPRES-i) genetic module, the Joint World Organization for Animal Health (OIE)/FAO Network of Expertise for Animal Influenza (OFFLU) and others
Planned activities <ul style="list-style-type: none"> • Influenza risk modeling <ul style="list-style-type: none"> ○ collection and mapping of data on pig and poultry production ○ preparation of data layers to conduct multi-criteria decision analysis and niche modeling ○ obtaining virus/genetic sequence information to build into modeling • Influenza surveillance in farmed animals (swine, aquatic waterfowl and others) <ul style="list-style-type: none"> ○ Bangladesh, Viet Nam – start surveillance sampling and sample analyses ○ China, Thailand – conduct official consultation and develop Emerging Pandemic Threats (EPT)+ national surveillance strategies ○ In China, recruit a national EPT+ focal point • Conduct concurrent market trade and commodity network assessments in the sectors sampled <ul style="list-style-type: none"> ○ Bangladesh, Viet Nam – conduct market trade and commodity network assessments in conjunction with surveillance sampling ○ China, Thailand – discuss conducting market trade and commodity network assessments in conjunction with surveillance sampling • Contribute to broader global influenza initiatives, such as the EMPRES-i genetic module, OFFLU and others <ul style="list-style-type: none"> ○ Participate in the United States Agency for International Development (USAID) H5N1 high burden country meeting in Ho Chi Minh ○ Participate in the USAID convened Bangladesh coordination workshop ○ Coordinate with other Influenza Risk Modeling Programmes (the National Institute of Health [NIH], the Centers for Disease Control and Prevention [CDC], FluRisk) to consider a joint risk modeling workshop in the fall 2012

Activities undertaken during the reporting period

- Official consultations and unofficial sensitization
 - **Viet Nam and Bangladesh** – EPT+ national surveillance strategy developed as an outcome of the official consultations
 - **Thailand and China**- one unofficial sensitization visit was carried out
- Risk modeling conference calls and workshop (January/February 2012 at FAO headquarters)
- EPT+ inception workshop – 23-24 February 2012, Bangkok, Thailand
 - produced a media notification and webpage on the EPT+ inception workshop and project launch
 - developed a draft questionnaire to accompany surveillance
 - discussed a coordinated methodology for sampling and sample testing
 - identified a mechanism for risk assessment, coordination, sharing of results, information, expertise, and samples, and developed a draft Letter of Agreement for implementation
 - Developed draft work plans for all four countries
- Communication and coordination with USAID IDENTIFY project, CDC, the World Health Organization and several other partners
- Provided inputs to the OFFLU /Swine Influenza Working Group meeting (March 2012)
- Provided inputs to the European FluRisk workshop (March 2012)
- Conducted linking of genetic sequences and epidemiological data in the EMPRES-i genetic module

Planned activities for the next six-month period

- See above

Main challenges encountered and responses provided

- Fully engaging national authorities in EPT+
Solution: In China, hiring an EPT+ national focal point
- Agreeing on sample sizes to optimize surveillance strategies
Solution: Requested expert opinion from a virologist involved in the OFFLU network and renegotiating with national authorities in Viet Nam and Bangladesh

Main progress made towards the achievement of project outcomes

- Official national consultations were carried out in two of the four target countries, and draft surveillance strategies were developed.
- Inception workshop launched the EPT+ programme.
- Risk modeling activities are underway.
- Engagement of other partners on influenza activities at international level.

Project Monitoring Sheet: OSRO/INT/604/USA Baby 01

**Project title: Support for FAO/OIE/WHO collaboration on
HPAI rapid response and containment**

Reporting period: April to September 2012

Regional: Global
Project title: Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment
Code: OSRO/INT/604/USA Baby 01
Budget: USD 5 000 000 ¹
Effective starting date: 1 January 2007
Planned end date: 30 April 2014
<p>Context of the project:</p> <p>The Crisis Management Centre – Animal Health (CMC-AH) of the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) is mandated to respond to new outbreaks and critical epidemiologic situations involving Highly Pathogenic Avian Influenza (HPAI) and other transboundary animal diseases (TADs) upon official government request. Within the framework of the Emergency Centre for Transboundary Animal Diseases (ECTAD), the CMC-AH provides assistance where local governmental capacity may be insufficient to respond effectively and where the spread of the virus may pose a broader regional or global risk. In support of this mandate and within the context of the mandates of the World Organisation for Animal Health (OIE) to improve animal health worldwide and the World Health Organization (WHO) to lead global human health initiatives, the United States Agency for International Development (USAID) has provided to-date a total of USD 5 million to FAO in support of the CMC-AH for sustained emergency preparedness, rapid assessment and response in the field and at headquarters to suspected or confirmed outbreaks of HPAI and other zoonoses in collaboration with OIE and WHO. Under this project, the CMC-AH continues to carry out its mandate while working to combine efforts, avoid overlaps and build synergies between FAO, OIE and WHO, as the organizations work to facilitate the containment of HPAI and other zoonotic diseases at its source in animals, prevent its spread across international borders and mitigate the risk of a human pandemic.</p>
<p>Objectives²:</p> <p>The purpose of the grant is to provide funding to FAO to support activities to prevent and control HPAI worldwide and reduce the risk of a human pandemic. In this general context and in the specific context of Amendments 1 and 2, the objective of the project is to support CMC-AH operations and missions for: (i) enhanced core team capacity; (ii) improved FAO/OIE/WHO linkages at regional and country level; (iii) increased immediate capacity building; and (iv) strengthened risk communication support (provided to affected/at-risk countries) and overall communication activities (targeting donor, partner and other audiences).</p>

¹ The budget allocation amounts to USD 2 000 000 (Phase I), USD 2 000 000 (Phase II) and USD 2 000 000 (Phase III). The total budget takes into account the reallocation of USD 1 million of CMC-AH funds to the surveillance and response component of the USAID grant as agreed with the Donor.

² These objectives represent a synthesis of the main Grant Objectives contained in the Grant Agreement and Amendments 1 and 2 (i.e. the project document). They have been presented in summarized form in compliance with the Progress Monitoring Sheet format. Detailed reporting on objectives and activities will be included in the final narrative report upon project completion.

Planned activities of the project:

- planning, deploying and following up on CMC-AH rapid response missions;
- developing tools in support of CMC-AH operations and response capacity;
- defining cooperation mechanisms between WHO and the CMC-AH;
- exchanging information and regularizing communications;
- developing standard operating procedures (SOPs) for FAO, WHO and OIE; and
- coordinating missions at headquarters and field levels.

Activities implemented during the reporting period (April to September 2012)

- **No requests were issued for assistance to respond to emergency situations linked to HPAI.**
- **Missions for other disease crises**

Democratic Republic of the Congo (DRC), 22 April-1 May 2012

This mission was deployed as a response to a virulent epidemic of *peste des petits ruminants* (PPR) causing the massive mortality of goats in the Bandundu Province. The objectives of the mission were to support the Government's response to these outbreaks and recommend appropriate control measures. The mission offered a number of recommendations to stall the outbreak including the establishment of rigorous animal movement control and epidemiological surveillance, and of a vaccination campaign in at-risk zones; a large scale awareness campaign about safe biosecurity measures; an international collaboration to strengthen the capacity of the central veterinary laboratory and other veterinarian services; and the establishment of a regional strategy with neighbouring countries.

Post-mission, CMC-AH secured FAO funding under the Technical Cooperation Programme to implement some of its recommendations, prioritizing the vaccination of 500 000 animals. Over half the targeted animals had been vaccinated by mid-September 2012.

Middle East and North Africa foot-and-mouth disease (FMD) serotype SAT2 response coordination

In 2012, outbreaks of FMD serotype SAT2 were reported in the Middle East and North Africa region, in Egypt, Libya, the Gaza Strip and Bahrain. The SAT2 strain, which originates in sub-Saharan Africa, constitutes a serious threat for the immunologically naive livestock population in this region and neighbouring regions. The CMC-AH coordinated FAO's response to contain the outbreaks in collaboration with the Organization's Regional Office for the Near East (RNE) and the European Commission for the Control of Foot-and-Mouth Disease (EuFMD). As part of this effort, the CMC-AH fielded missions to Libya and the West Bank and Gaza Strip (see below).

Libya, 1-6 May 2012

This mission was deployed as a response to an official notification of FMD SAT2 strain in the area of Benghazi, followed by notifications of other FMD strains in the area of Tripoli. The objectives of the mission were to carry out an assessment of the situation; advise on vaccination implementation and targeted control measures; and help with the elaboration of an action plan to manage short and medium-term response measures to the outbreaks. In concurrence with the veterinary authorities, the team formulated recommendations including strengthening surveillance and sampling to obtain a more accurate picture of the types of FMD circulating; implementing an awareness campaign on FMD prevention and

control; carrying out a mass vaccination strategy; enhancing collaboration with all stakeholders (farmers, traders, private veterinarians, animal production department and veterinary faculties) in FMD control strategy and activities; and developing a long-term FMD control programme.

The West Bank and Gaza Strip, 14-23 May 2012

This mission was deployed as a response to an official notification of foot-and-mouth disease (FMD) SAT2 in the Gaza Strip. The objectives of the mission were to investigate the reported outbreaks and assess the FMD SAT2 situation; evaluate risks of further outbreaks and spread of the disease; advise on targeted vaccination implementation and monitoring; assist with the elaboration of an action plan to manage prevention and response measures including surveillance strategies; and advise on a regional approach to control current outbreaks and prevent future incursions, including of new strains. The team concluded that there was no evidence of spread of the disease. However, they recommended further testing to determine the exact strains circulating, as well as booster vaccination of cattle against SAT2 in the Gaza Strip as a preventive measure. Having observed limited monitoring and diagnostic capacities and implementation of biosecurity measures at the farm level, the team also recommended investments in veterinary diagnostic capacity, the design of an active surveillance strategy, and the implementation of an awareness campaign.

Pakistan, 8-17 July 2012

This mission was deployed as a response to outbreaks of Newcastle disease (ND) in poultry already vaccinated against the virus. Upon the Government's request, the CMC-AH fielded a mission to help the country investigate the extent of spread of the virus; identify containment measures; and assist with the elaboration of an action plan and the identification of resources. Following investigations, the team concluded that outbreaks were ongoing and widespread in all regions and suggested that future work focus on biosecurity and vaccinations practices, as well as surveillance and response coordination. The mission recommended a two-phase response composed of an initial short-term action plan of six months including a new vaccination strategy; immediate improvements to biosecurity systems including the disinfection of vehicles transporting poultry; a surveillance programme and national disease emergency committee with appropriate legislation; and a compensation plan to encourage farmers to report the disease. Recommendations for a longer term three-year plan focused on ensuring the sustainability of the surveillance network and reporting system; further research into the disease and its epidemiological characteristics; and the establishment of farming practices that follow biosecurity guidelines.

- **Workshop of FAO's Good Emergency Management Practice (GEMP)**

Tunis, 12-14 September 2012

The French translation of the revised "GEMP: The Essentials" Manual (September 2011) was completed, and a preliminary version was published in September 2012. As part of its efforts to implement this second phase, CMC-AH organized a regional workshop in Tunis, Tunisia, from 12 to 14 September 2012 (a pilot workshop was carried out in Entebbe, Uganda, from 28 to 30 November 2011). CMC-AH trained a total of 17 animal health professionals and the Mediterranean Animal Health Network/Reseau Méditerranéen de Santé Animale (REMESA) focal points from four countries (i.e. Algeria, Mauritania, Morocco and Tunisia). OIE also participated, along with the United States Department of Agriculture - Animal and Plant Health Inspection Service. CMC-AH is now working on the translation of the manual in other United

Nations official languages and on the evaluation of adaptability of GEMP concepts for promotion in the Middle East, East Asia, and South and Central America.

Revision of internal SOPs for CMC-AH operations

To further streamline CMC-AH activities and work flow, the Centre developed a working group on SOPs to review their current status and suggest improvements.

○ **OIE and WHO coordination**

The Agreement between FAO and OIE dated 24 May 2004 was superseded by a reframed Memorandum of Understanding (MoU) on 31 January 2011. The ratified MoU enables FAO and OIE to better clarify respective roles and responsibilities in communication and organization of CMC-AH facilitated missions. To ensure greater effectiveness of the Agreement (e.g. streamlining the procedures for the use of the OIE expertise in accordance with FAO regulations), both parties convened in January 2012 as a first step in the process of defining standard operating guidelines (SOGs) and its continued discussion on improvement of SOGs is underway.

○ **FAO Representatives (FAORs)**

Outreach to FAORs remained a core activity, with CMC-AH continuing to brief newly appointed country and regional FAORs as standard practice.

○ **Budget adjustment requested and approved**

On 30 August 2012, the request for a budget revision was proposed to USAID by CMC-AH in order to allocate sufficient resources under appropriate budget line to ensure the functioning of the CMC-AH platform and allow the implementation of deployment activities until the end of the project (30 April 2014). The request was approved by USAID on 31 August 2012.

Planned activities for the next six-month period (October 2012 to March 2013)

- continued monitoring of high-risk countries and situations;
- mission planning and deployment upon request for or acceptance of assistance;
- continued CMC-AH awareness building activities including the Sixth Steering Committee to take place 4 October 2012;
- continued discussions with OIE and WHO on working methodologies;
- continued promotion of GEMP publications (including Spanish and Arabic translations) and concepts; and
- finalization of common FAO/OIE SOGs.

Main challenges encountered and response provided: None

Main progress made towards project objective, listed by activity³ (from project start)

- **Mission planning, deployment and follow-up**
HPAI missions: 25 Total missions: 59 Total countries: 39
- **Development of tools supporting CMC-AH response capacity**
 - Reagent contingency stock implemented for HPAI
 - HPAI reagent stock successfully utilized to support government response efforts
 - Technical SOPs revised as part of overall GEMP efforts
- **Refining cooperation mechanisms between WHO and CMC-AH**
 - Standard lines of interagency communication defined
 - Information focal points established
 - Coordinated missions (human and animal health) deployed and followed up

³ Owing to the nature of the CMC-AH concept and the project's main aim to support FAO's capacity for rapid response, the majority of activities are to be considered as ongoing initiatives.

- **Exchanging information and regularizing communications**
 - WHO's Emergency Management System analysed for applicability to CMC-AH
 - Event Tracking and Management System (ETMS) development and data entry complete; final system online and in use
 - Regular information exchange through regular meetings and staff visits
 - FAO/OIE/WHO coordination methodologies confirmed through standardized information sharing methods and focal points
- **SOP development for FAO, WHO and OIE**
 - Initial, internal SOPs defined: 21
 - Consolidated, internal SOPs: 4
 - Further streamlined SOPs: 3
- **Strengthening mission coordination and field-level cooperation**
 - After-action review processes implemented to capture lessons learned
 - Headquarter- and field-level contacts established and disseminated
 - Coordination mechanisms strengthened through mission experience
 - Field-level SOPs completed and printed for enhanced national response to HPAI

Quarter III 2010**Project Monitoring Sheet**

Project title: Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment

Reporting period: July – September 2010

Regional:	Global
Project title:	Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment
Code:	OSRO/INT/604/USA (Baby 1)
Budget:	USD 5 000 000 ¹
Planned end date:	30 April 2014
Effective starting date:	January 2007
Context of the project: <p>The Crisis Management Centre – Animal Health (CMC-AH) of the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) is mandated to respond to new outbreaks and critical epidemiologic situations involving highly pathogenic avian influenza (HPAI) and other transboundary animal diseases (TADs) upon official government request. Within the framework of the Emergency Centre for Transboundary Animal Disease Operations (ECTAD), the CMC-AH provides assistance where local governmental capacity may be insufficient to respond effectively and where the spread of the virus may pose a broader regional risk.</p> <p>In support of this mandate and within the context of the mandates of OIE to improve animal health worldwide and the World Health Organization (WHO) to lead global human health initiatives, the United States Agency for International Development (USAID) has provided to date a total of USD 5 million to FAO in support of the CMC-AH for sustained emergency preparedness, rapid assessment and effective response in the field and at headquarters to suspected or confirmed outbreaks of HPAI in collaboration with OIE and WHO.</p> <p>Under this project the CMC-AH continues to carry out its mandate while working to combine efforts, avoid overlaps and build synergies between FAO, OIE and WHO, as the organizations work to facilitate the containment of HPAI at its source in animals, prevent its spread across international borders and mitigate the risk of a human pandemic.</p>	
Objectives²: <p>The purpose of the Grant is to provide funding to FAO to support activities to prevent and control HPAI worldwide and reduce the risk of a human pandemic. In this general context and in the specific context of Amendments 1 and 2, the objective of the project is to support CMC-AH operations and missions for: (i) enhanced core team capacity; (ii) improved FAO/OIE/WHO linkages at regional and country level; (iii) increased immediate capacity building; and (iv) strengthened risk communication support (provided to affected/at-risk countries) and overall communication activities (targeting donor, partner and other audiences).</p>	

¹ The budget allocation amounts to USD 2 000 000 (Phase I), USD 2 000 000 (II) USD 2 000 000 (III). The total budget takes into account the reallocation of USD 1 million of CMC-AH funds to the surveillance and response component of the USAID grant as agreed with the donor.

² These objectives represent a synthesis of the main Grant Objectives contained in the Grant Agreement and Amendments 1 and 2 (i.e. the project document). They have been presented in summarized form in compliance with the Quarterly Update format. More detailed reporting on objectives and activities will be included in the Final Narrative Report upon project completion.

Planned activities of the project:

- Planning, deploying and following up CMC-AH rapid response missions;
- developing tools in support of CMC-AH operations and response capacity;
- defining cooperation mechanisms between WHO and the CMC-AH;
- exchanging information and regularizing communications;
- developing standard operating procedures (SOPs) for FAO, WHO and OIE; and
- coordinating missions at headquarters and field levels.

Activities implemented during the reporting period (July – September 2010):

- **Missions for HPAI³**
No missions were deployed for HPAI during the reporting period.
- **Missions for zoonoses or unknown disease crises**
No missions were deployed for zoonoses or unknown emergencies under USAID funding during the reporting period.

With alternate funding from the Centers for Disease Control and Prevention (CDC), the CMC-AH deployed an animal health expert to Togo to help: (i) assess the rabies situation; (ii) sensitize authorities and partners to the rabies threat; and (iii) raise awareness of World Rabies Day (see below).
- **FAO-OIE Memorandum of Understanding (MoU)**
An agreed upon and renewed MoU will be signed following respective legal clearances.
- **Strengthening coordination and building awareness of CMC-AH and its services**
 - The CMC-AH briefed five FAORs to strengthen collaboration with response missions.
 - The Centre invited a delegation from *France Vétérinaire Internationale* and *Agronomes et Vétérinaires Sans Frontières* to FAO headquarters in July to exchange past and future experiences relevant to CMC-AH missions in the field with FAO colleagues in both the CMC-AH and the broader animal health programme.
 - The CMC-AH Rapid Missions Update and the biennial Activity Report are under production and planned for publication this fall.
- **Revision and update of FAO's Good Emergency Management Practices (GEMP)**
This project has progressed during the quarter. Preparations for seeking external comments on GEMP in the next reporting period are under discussion.
- **Event Tracking and Management System (ETMS)**
Testing is in its final phases. The system is scheduled to go live by the end of the year.
- **Staffing**
The CMC-AH identified and recruited a francophone Operations Officer during the reporting period.
- **Steering Committee preparations**
The date of 22 November 2010 has been confirmed. Preparations are underway.
- **Support to veterinary laboratory networks in Africa**
The CMC-AH provided support to the FAO study on sustainability of the West and Central Africa Veterinary Laboratory Network for Avian Influenza and other Transboundary Diseases (RESOLAB) to help improve TAD diagnostic capacities. Assistance included technical advice on:
 - sample preparation, shipment and needs assessment; and

³ During the reporting period and with alternate funds, the CMC-AH deployed a mission to the United Republic of Tanzania to help the Government assess and respond to an emergency situation involving *peste des petits ruminants*.

- liaison work between national authorities and international institutions/experts.

- **Support to zoonoses mitigation and awareness**

In the context of the strong working relationship between the CMC-AH and Togo the CMC-AH was requested to support response capacity building efforts for TADs including rabies through alternative funding. Specifically, through the above-mentioned CDC-funded mission, the CMC-AH also assisted with rabies work in Togo and raised local awareness of and support for the World Rabies Day.

Planned activities for October 2010 to March 2011:

- Continued monitoring of high-risk countries and situations;
- mission planning and deployment upon request for or acceptance of assistance;
- further review and editing of technical response and control SOPs;
- final testing of ETMS prototype;
- continued CMC-AH awareness building activities;
- continued finalization of the draft of GEMP;
- continued contact with OIE regarding the completion of FAO-OIE MOU;
- finalization and publication of CMC-AH awareness raising documents; and
- planning and preparations for and hosting of the fourth CMC-AH Steering Committee.

Main challenges encountered and response provided: None

Main progress made towards project objective, listed by activity⁴ (since project start):

- **Mission planning, deployment and follow-up**
HPAI missions: 24 Total missions: 46 Total countries: 32
- **Development of tools supporting CMC-AH response capacity**
 - Reagent contingency stock implemented for HPAI
 - Possibility obtained to store HPAI stocks under cold chain at the United Nations Humanitarian Response Depot (UNHRD) in Brindisi, Italy
 - Technical SOPs revised as part of overall GEMP efforts
- **Refining cooperation mechanisms between WHO and CMC-AH**
 - Standard lines of interagency communication defined
 - Information focal points established
 - Coordinated missions (human and animal health) deployed and followed up
- **Exchanging information and regularizing communications**
 - WHO's Emergency Management System (EMS) analyzed for applicability to CMC-AH
 - Development of ETMS prototype complete; testing underway
 - Regular information exchange through regular meetings and staff visits
 - FAO/OIE/WHO coordination methodologies confirmed through standardized information sharing methods and focal points
- **SOP development for FAO, WHO and OIE**
 - Initial SOPs defined: 21
 - Consolidated SOPs: 4
- **Strengthening mission coordination and field-level cooperation**
 - After action review processes implemented to capture lessons learned
 - Headquarter- and field-level contacts established and disseminated
 - Coordination mechanisms strengthened through mission experience
 - Field-level SOPs under development for enhanced national response

⁴ Due to the nature of the CMC-AH concept and the project's main aim to support FAO's capacity for rapid response, the majority of activities are to be considered as ongoing initiatives.

Quarter III 2010**Project Monitoring Sheet**

Project title: Support of HPAI field activities related to Regional Animal Health Centres (RAHCs) in Africa

Reporting period: July – September 2010

Regional:	Africa
Project title:	Support of HPAI field activities related to Regional Animal Health Centres (RAHCs) in Africa
Code:	OSRO/INT/604/USA Baby 2
Budget:	USD 1 000 000
Effective starting date:	16 July 2010
Planned end date:	31 December 2010
<p>Context of the project:</p> <p>Within the framework of the Emergency Centre for Transboundary Animal Diseases (ECTAD), the Crisis Management Centre – Animal Health (CMC-AH) provides assistance where local governmental capacity may be insufficient to respond effectively and where the spread of the virus may pose a broader regional risk. Given this mandate and within the context of the mandates of the World Organisation for Animal Health (OIE) to improve animal health worldwide and the World Health Organization (WHO) to lead global human health initiatives, a special fund of USD 1 million was originally secured to support rapid deployments to Africa for Highly Pathogenic Avian Influenza (HPAI) emergencies. Africa was initially chosen for additional funding support owing to the high risk of new HPAI outbreaks faced by the continent.</p> <p>Revised scope:</p> <p>Noting the limited incidence of HPAI activity on the continent (except in Egypt), a request was made to the Donor to broaden the usage of the remaining funds totaling approximately USD 300 000. The use of these funds is focused on delivering the remainder of the CMC Africa component, while still maintaining sufficient funds under the main CMC-AH/the United States Agency for International Development (USAID) funding component to respond to outbreaks if they occur in the future. Moreover, as a result of the agreement with the Donor in July 2010, the budget was revised in order to support the implementation of HPAI laboratory, epidemiological and socio-economic and farming systems activities in sub-Saharan Africa through the three ECTAD Units in Bamako, Gaborone and Nairobi.</p>	
<p>Objectives of the revised scope</p> <p>The purpose of the grant is to provide funding to FAO to support activities to prevent and control HPAI worldwide and reduce the risk of human exposure to infected animals. In this context, the objective of the project is to provide immediate assistance to countries in Africa through the deployment of rapid response missions, both for non-infected nations at high</p>	

risk of HPAI infection and for infected countries during HPAI outbreaks. In addition to that, the project's revised objective is to co-fund the following activities implemented by the three ECTAD RAHCs based in Bamako, Gaborone and Nairobi.

The revised project has two expected results:

1. Support to laboratory and epidemiology networks.
2. Support to socio-economics and farming systems networks.

Planned activities for the revised scope

Result 1: Support to laboratory and epidemiology networks.

RAHC-Bamako activities (i.e. ECTAD-West and Central Africa [WACA])

1. Information collection and dissemination (Web site maintenance, information bulletins, DVD training, education material, etc.)
2. Organize two workshops on diagnostic laboratory quality assurance (third one for the French-speaking countries of Central Africa will be under the IDENTIFY component of the USAID Emerging Pandemic Threats [EPT] programme):
 - a. French-speaking countries: Benin, Burkina Faso, Cap-Verde, Côte d'Ivoire, Guinea, Guinea Bissau, Mali, Niger, Senegal and Togo
 - b. English-speaking countries: Ghana, Liberia, Nigeria and Sierra Leone
3. Organize two thematic meetings for the West and Central Africa Veterinary Laboratory Network for Avian Influenza and other Transboundary Disease (RESOLAB) laboratories
4. Poultry diseases diagnosis (epidemiology and laboratory teams)
5. HPAI and Newcastle disease (ND) laboratory diagnosis (intermediate level)
6. Resume with harmonization of techniques among less advanced RESOLAB members and provide appropriate reagents:
 - a. Support to Burkina Faso laboratory upgrading
 - b. Procurement of reagents to regional and selected laboratories
7. Proficiency test panels and reagents for Group 2 and 3 laboratories
8. Improve epidemiology and laboratory networks visibility and sustainability
9. Compile information on lessons learned for publishing
10. Contribute to replenishment of regional buffer stock of critical reagents and specimen shipping material
11. Procurement of reagents to Bamako buffer stock
12. Strengthen links between epidemiosurveillance and laboratory networks: common field epidemiologist and laboratory technician workshop on sampling and samples submission
13. SIG risk analysis activity
14. The Regional Network of National Epidemiosurveillance Systems for HPAI and other Priority Animal Diseases in West Africa (RESEPI) annual coordination meeting:
 - a. TADinfo regional meeting
 - b. Disease prioritization
 - c. Action programme 2010-2014

RAHC-Gaborone activities (i.e. ECTAD-Southern Africa [SA])

1. Meeting to harmonize polymerase chain reaction (PCR) avian influenza (AI) standard operating procedures (SOPs)

2. Meeting to revise haemagglutinin/haemagglutinin inhibition (HA/HI) AI SOPs
3. Memorandum of Understanding (MoU) for socio-economic study with the Keeyma Foundation
4. Reagents for ND serology
5. Awareness material
6. FLU group meeting in November
7. Backstopping country activities
8. Digital Pen Technology (DPT) licenses and server hosting for 2010

RAHC-Nairobi Activities (i.e. ECTAD-Eastern Africa [EA])

1. Mission to the Democratic Republic of the Congo (DRC) for programme formulation
2. Laboratory network coordination meeting
3. Laboratory training
4. Chief Veterinary Officers (CVOs) meeting
5. Epidemiology network coordination meeting
6. Disease information systems workshop

Result 2: Support to socio-economics and farming systems networks.

RAHC-Bamako activities (i.e. ECTAD-WACA)

1. Develop and disseminate modular self-training tool kits for biosecurity
2. Live bird market biosecurity pilot operation on three countries (Benin, Burkina Faso and Cote d'Ivoire)
3. Support private public partnership for the establishment of national poultry data/knowledge bases (Benin, Burkina-Faso and Côte d'Ivoire)
4. Field test and validation of the Economic Community of West African States (ECOWAS) zoosanitary certificate template
5. Value chain publication
6. Support development of biosecurity self-auditing tools (Ghana-pilot)
7. Review of work in compensation in EA
8. Public/private institutional arrangements around disease surveillance

RAHC-Nairobi Activities (i.e. ECTAD-EA)

1. Support the study on the development of poultry sector in EA risk assessment
2. Develop EA approach for impact of HPAI (by conducting detailed livelihood analysis in Kenya)
3. Develop appropriate HPAI compensation implementation, funding and documentation procedures
4. Support legal review process and adoption of the draft compensation plan in the South Sudan and Tanzania

Activities implemented during the reporting period (July-September 2010)

As agreed in discussions with USAID during the third quarter of 2010, the remaining funds were allocated towards the implementation of HPAI laboratory, epidemiological and socio-

economic and farming systems activities in sub-Saharan Africa through the three ECTAD Units in Bamako, Gaborone and Nairobi.

Result 1: Support to laboratory and epidemiology networks

RAHC-Gaborone activities (i.e. ECTAD-SA)

1. Harmonization of SOPs

FAO supported the implementation of proficiency tests (PTs) to test surveillance and laboratory diagnostic capacities as part of overall HPAI preparedness and prevention. With funding from this and other projects, two rounds of PTs were implemented, the first in 2009 under the guidance of the Onderstepoort Veterinary Institute (OVI) in South Africa and the second round under the coordination of the Botswana National Veterinary Institute (BNVI), with the participation of all SADC countries. ECTAD-SA facilitated the harmonization of protocols of two of the tests (i.e. HA/HI and PCR). The harmonized PCR SOP was completed during the reporting period.

2. Support to surveillance of HPAI

Increased surveillance of HPAI is the key to prevention and early detection of the disease, should it spread to SA. It is not standard to carry out surveillance of poultry diseases in sector 3 and 4 production settings, placing small to medium and backyard poultry farms at higher risk for the disease. The USAID contribution allowed ECTAD-SA to assist the countries by facilitating surveillance in the context of ND vaccination campaigns, as carried out routinely by many countries.

In addition, ECTAD-SA introduced a real-time surveillance data recording device, DPT, which has now been successfully introduced in Angola, Botswana, Malawi, Mozambique, South Africa and Zambia and which is also used for the surveillance of poultry diseases. This device was also presented to the Veterinary Authorities in South Africa during this reporting period.

RAHC-Nairobi Activities (i.e. ECTAD-EA)

1. Technical support to the DRC

8-18 August 2010: FAO deployed a follow-up mission funded under this project to help improve capacities to fight HPAI and other transboundary animal diseases (TADs) in the country by formulating a programme based on the roadmap developed by the February mission. The programme focuses on public/private partnership, especially the issuance of veterinary care with the below-mentioned objectives:

- improved rapid response for emergencies involving HPAI and other animal diseases;
- enhanced control of HPAI and other animal disease types (e.g. transboundary diseases, emerging and neglected diseases, parasite-caused diseases); and
- modernized and aligned national animal health programme.

Through its technical inputs and capacity building work, the mission supported larger Government efforts to: (i) develop policies for medium- and longer-term prevention and control of HPAI and other TADs as part of a broader animal health programme; and (ii) restore cooperation with technical and financial partners as the security situation improves.

Result 2: Support to socio-economics and farming systems networks

RAHC-Bamako activities (i.e. ECTAD-WACA)**1. Poultry trade certification support**

An international zoosanitary certificate for trade of poultry and poultry products within ECOWAS was developed by ECTAD-WACA as requested by member countries in the framework of cross-border meetings. The project supported the field testing of this certificate involving 16 border posts in Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali and Togo and six types of poultry products. Reports from these tests are being prepared.

2. Poultry value chain studies

A consultant was recruited from 13 August to 25 September 2010 to compile and make accessible to stakeholders information gathered and analyses carried out in the framework of poultry value chain studies in Burkina Faso, Côte d'Ivoire, Ghana and Togo. A full draft of the document entitled "Poultry and poultry product market chain in support of disease risk analysis" was produced and will be finalized by the end of October.

Planned activities for October to December 2010 (NTE of the project)**RAHC-Bamako activities (i.e. ECTAD-WACA)**

- ECOWAS interstates zoosanitary certificate field tests and follow-up

RAHC-Gaborone activities (i.e. ECTAD-SA)

- **SADC Veterinary Public Health Subcommittee (5-7 October, Maseru, Lesotho)**
Lessons learned from FAO's HPAI activities illustrate the need to address public health in a holistic way (i.e. veterinary and medical). FAO plans to support SA's efforts to apply HPAI knowledge within the "One Health" framework through the above-mentioned meeting.
- Proficiency testing of harmonized PCR SOP in 2011
- Results of poultry trade study to be reported

RAHC-Nairobi Activities (i.e. ECTAD-EA)

- **Interim Secretariat meeting (6-7 October, Nairobi)** organized by ECTAD to be attended by two participants, one from EAC and one from Ethiopia, as well as the representatives of AU-IBAR, OIE and the Kenya Department of Veterinary Services. This meeting is to be facilitated by ECTAD/AU-IBAR at the CVOs meeting in Zanzibar, from 24 to 26 August 2010. The objective of the Secretariat is to run the EAREN/Eastern Africa Region Laboratory Network (EARLN). The Secretariat is to be comprised of ECTAD, AU-IBAR, EAC, IGAD, one representative for Wildlife from Tanzania and one representative for veterinary services (domestic livestock) from Ethiopia.

Main challenges encountered and response provided:

None

Main progress made towards project objectives:**Result 1: Support to laboratory and epidemiology networks**

RAHC-Gaborone activities (i.e. ECTAD-SA)

The capacity of SADC laboratories to test for HPAI was increased through tailor-made training of technicians within and outside the SADC region and through the use of standardized test protocols, such as HA/VI and PCR (real-time PCR and conventional PCR) and the implementation of two rounds of proficiency testing, followed by in-country trainings carried out by the coordinating laboratory to the least performing laboratories in each PT. The BNVL received technical support and equipment in order to fulfil its role as the second service laboratory to the SADC region.

Result 2: Support to socio-economics and farming systems networks**RAHC-Bamako activities (i.e. ECTAD- WACA)**

In WACA the project supported two major activities implemented under the umbrella of the socio-economics and farming system network, the Socio-Economics and Production Network for Animal Health (RESECOP) and thus contributed to its progress.

The development and testing of the international zoosanitary certificate template for poultry and poultry products in response to a request of ECOWAS countries involved participation and collaboration between the veterinary services and the private sector. This work contributed to the establishment of more systematic private/public partnership promoted by RESECOP. Considering the role of trade in the dissemination of HPAI and other poultry diseases, the adoption of the certificate by ECOWAS member countries would represent a major step toward reduction of risk of HPAI dissemination.

It is expected that the report compiling value chain studies carried out as a pilot project in Burkina Faso, Cote d'Ivoire, Ghana and Togo will encourage and serve as a basis for other countries to undertake similar work, which will also require close cooperation between private sector and veterinary services. Better knowledge of poultry trade routes, trade actors and practices and enhanced private public partnership will support the formulation and implementation of more effective prevention and control strategies and will support decision making and better targeting of interventions for given epidemiological situation.

RAHC-Gaborone activities (i.e. ECTAD-SA)

In parallel to the surveillance activities at common border posts of the four countries, a sociological study/survey was conducted using questionnaires and interviews in villages with poultry owners and at border posts, markets and farms (poultry sector 3). The target groups were veterinary staff, backyard poultry producers and semi-commercial producers. The objective was to gain information on production systems, biosecurity, movement of poultry and poultry products, transport and trading at four out of five border districts/posts. A very detailed report is available.

Quarter II 2010

Project Monitoring Sheet

Project title: Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment

Reporting period: April – June 2010

Regional Component:	Global
Project title:	Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment
Code:	OSRO/INT/604/USA (Baby 1)
Budget:	USD 5 000 000 ¹
Planned end date:	30 April 2014
Effective starting date:	January 2007
Context of the project: <p>The Crisis Management Centre – Animal Health (CMC-AH) of the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) is mandated to respond to new outbreaks and critical epidemiologic situations involving highly pathogenic avian influenza (HPAI) and other transboundary animal diseases (TADs) upon official government request. Within the framework of the Emergency Centre for Transboundary Animal Disease Operations (ECTAD), the CMC-AH provides assistance where local governmental capacity may be insufficient to respond effectively and where the spread of the virus may pose a broader regional risk.</p> <p>In support of this mandate and within the context of the mandates of OIE to improve animal health worldwide and the World Health Organization (WHO) to lead global human health initiatives, the United States Agency for International Development (USAID) has provided to date a total of USD 5 million to FAO in support of the CMC-AH for sustained emergency preparedness, rapid assessment and effective response in the field and at headquarters to suspected or confirmed outbreaks of HPAI in collaboration with OIE and WHO.</p> <p>Under this project the CMC-AH continues to carry out its mandate while working to combine efforts, avoid overlaps and build synergies between FAO, OIE and WHO as the organizations work to facilitate the containment of HPAI at its source in animals, combat its spread across international borders and mitigate the risk of a human pandemic.</p>	
Objectives²: <p>The purpose of the Grant is to provide funding to FAO to support activities to prevent and control HPAI worldwide and reduce the risk of a human pandemic. In this general context and in the specific context of Amendments 1 and 2, the objective of the project is to support CMC-AH operations and missions for: i) enhanced core team capacity; ii) improved FAO/OIE/WHO linkages at regional and country level; iii) increased immediate capacity building; and iv) strengthened risk communication support (provided to affected/at-risk countries) and overall communication activities (addressing donor, partner and other audiences).</p>	

¹ The budget allocation amounts to USD 2 000 000 (Phase I), USD 2 000 000 (Phase II) and USD 2 000 000 (Phase III). The total budget takes into account the reallocation of USD 1 million of CMC-AH funds to the surveillance and response component of the USAID grant as agreed with the donor.

² These objectives represent a synthesis of the main Grant Objectives contained in the Grant Agreement and Amendments 1 and 2 (i.e. the project document). They have been presented in summarized form in compliance with the Quarterly Update format. More detailed reporting on objectives and activities will be included in the Final Narrative Report upon project completion.

Planned activities of the project:

In light of the project objective, planned activities concentrate on:

- planning, deploying and following up CMC-AH rapid response missions;
- developing tools in support of CMC-AH operations and response capacity;
- defining cooperation mechanisms between WHO and the CMC-AH;
- exchanging information and regularizing communications;
- developing standard operating procedures (SOPs) for FAO, WHO and OIE; and
- coordinating missions at headquarters and field levels.

Activities implemented during the reporting period (April – June 2010):

- **Rapid missions deployed for HPAI³**

Bhutan; 17–21 May 2010

Following up on the first mission to Bhutan reported during the previous period, the CMC-AH deployed a second mission to help increase laboratory capacities for polymerase chain reaction (PCR) diagnostics. An FAO laboratory capacity building expert provided theoretical and practical training to five national counterparts from the National Centre for Animal Health (NCAH). CMC-AH also provided the below-mentioned equipment and materials.

Table: Items provided to the Government of the Kingdom of Bhutan

Sl No	Items	Quantity	Date received
I. Personnel Protective Equipment			
1	Coverall (Dupont)	500 sets	14/5/2010
2	Gloves (Latex)	40 boxes	14/5/2010
3	Gloves (Rubber)	43 doz	14/5/2010
4	Safety goggles (3M)	500 pcs	14/5/2010
5	Boots (rubber)	25 doz	14/5/2010
6	Mask (N-95)	2500 Pcs	14/5/2010
7	Mask (3M)	4000 Pcs	14/5/2010
8	Waste bags (Black)	1000 Pcs	14/5/2010
9	Biohazard bags (red)	1000 Pcs	14/5/2010
II. Consumables/Diagnostics			
1	Disinfectant (Virkon 2.5kg packs)	30 packs	14/5/2010
2	Shipping boxes (IATA containers)	3 packs	16/5/2010
3	FluDetect kits	18 kits	16/5/2010
4	PCR reagents / kits	3 boxes	4/6/2010
III. Equipments			
1	Motorized sprayers	10 Pcs	4/6/2010

- **FAO-OIE Memorandum of Understanding (MOU)**

The MOU has been reviewed by FAO for OIE final consideration prior to formal clearance procedures.

- **Strengthening coordination and building awareness of CMC-AH and its services**

Briefings and outreach activities

- The CMC-AH briefed three FAO Representatives (FAORs) to strengthen collaboration with response missions.
- CMC-AH management embarked on a mission to North America to strengthen donor and partner relationships to enhance CMC-AH services. Management met with the: i) Canadian International Development Agency (CIDA); ii) Canadian Food Inspection Agency (CFIA); iii) Centres for Disease Control and Prevention (CDCP); iv) FAO

³ During the reporting period and with alternate funds, the CMC-AH deployed missions to the Democratic Republic of Congo to help the government assess the situation involving multiple TADs and outline a roadmap for an overall animal disease prevention and control strategy.

liaison office in Washington; v) United States Department of Agriculture (USDA); and vi) USAID.

- The Administration Coordinator participated in the annual consultation with the Swedish International Development Agency (Sida), which provided an opportunity to present the below-mentioned advocacy document on Sida-supported activities.
- The CMC-AH has invited *France Vétérinaire International* and *Agronomes et Vétérinaires Sans Frontières* to FAO headquarters in July to exchange past and future experiences relevant to CMC-AH missions in the field with FAO colleagues in both the CMC-AH and the broader animal health programme.

Communication tools and materials

The CMC-AH prepared a new advocacy publication on the activities and achievements supported by Sida. The document, entitled "Sida and the CMC-AH, 2007–2010", is planned for dissemination prior to the fourth CMC-AH Steering Committee meeting later this year. In addition, the CMC-AH has been updating its standard publications (the CMC-AH Rapid Missions Update and biennial Activity Report) for publication this fall.

- **Revision and update of FAO's Good Emergency Management Practices (GEMP)**
Revision and improvement of GEMP continues with the consultant recruited during the previous quarter and headquarters personnel. Ten of twelve technical response guidelines were reviewed and edited during the quarter.
- **Reagent contingency stock**
Having identified the need, the CMC-AH had the opportunity to rapidly deploy rapid antigen test kits to Bhutan as a follow-up to the mission (see above-mentioned table). The Government expressed its great appreciation for this assistance supported by USAID through an acknowledgement letter of 7 June 2010.
- **Roster of experts for rapid deployment**
New data is being updated as it is acquired.
- **Event Tracking and Management System (ETMS)**
The CMC-AH team has continued testing the pre-beta version of the system. Development is on schedule, with weekly meetings continuing to improve functionality.
- **Field HPAI simulation exercise, Togo from 4 May to 8 May 2010**
In order to share its experience in assisting countries with rapid response, a CMC-AH Response Veterinarian participated in Togo's first HPAI simulation exercise held in Kara. The CMC-AH officer took the opportunity to present the upcoming revised version of GEMP as a tool that will support improved rapid response capacity and activities. The exercise raised the need for Togo and other participating countries (e.g. Benin and Gabon) to pursue training sessions for rapid response at central and regional levels.
- **Staffing**
The CMC-AH is going through a period of change with regards to staffing with several members moving on during the period. New resources are being identified.

Planned activities for July to September 2010:

- continued monitoring of high-risk countries and situations;
- mission planning and deployment upon request for acceptance of assistance;
- maintenance, updating and continued integration of roster data within the global animal disease information system of FAO's Emergency Prevention Programme for Transboundary Animal Diseases (EMPRES-i);
- further review and editing of technical response and control SOPs;
- assistance in the shipment of pig samples from Cameroon to reference laboratory for

further analysis with regard to Cameroon's first African swine pest (ASF) outbreak occurring in the north;

- support to the ongoing FAO study on sustainability of veterinary laboratories in Western and Central Africa (i.e. RESOLAB [West and Central Africa Veterinary Laboratory]);
- assistance to larger FAO efforts in preparing for world Rabies day;
- participation in HPAI cross-border workshop with Cameroon, the Central African Republic, Chad and Nigeria;
- continued testing of ETMS prototype;
- continued CMC-AH awareness building activities;
- continued finalization of the draft of GEMP;
- continued contact with OIE regarding the completion of FAO-OIE MOU;
- finalization and publication of Rapid Missions Update, Sida brochure and Activity Report;
- planning and preparations for the fourth CMC-AH Steering Committee; and
- continued FAO/WHO coordination initiatives where feasible (see challenges).

Main challenges encountered and response provided:

The CMC-AH has experienced notable difficulty in further strengthening collaboration with WHO following the agency's reorganization. Experience has raised questions regarding the capacity of WHO counterparts to continue close engagement with the CMC-AH.

Main progress made towards project objective, listed by activity⁴ (since project start):

- **Mission planning, deployment and follow-up**
 - HPAI response missions: 24
 - total missions deployed: 45
 - total countries assisted: 32
- **Development of tools supporting CMC-AH response capacity**
 - reagent contingency stock implemented for HPAI
 - possibility obtained to store HPAI stocks under cold chain at United Nations Humanitarian Response Depot (UNHRD) in Brindisi, Italy
 - successful deployment to Bhutan of one shipment of five reagent kits (see table)
 - ten of twelve technical SOPs revised as part of overall GEMP efforts
- **Refining cooperation mechanisms between WHO and CMC-AH**
 - standard lines of interagency communication defined
 - information focal points established
 - coordinated missions (human and animal health) deployed and followed up
- **Exchanging information and regularizing communications**
 - WHO's Emergency Medical Services (EMS) analysed for applicability to CMC-AH
 - development of ETMS prototype complete; testing underway
 - regular information exchange through regular meetings and staff visits
 - FAO/OIE/WHO coordination methodologies confirmed through standardized information sharing methods and focal points
- **SOP development for FAO, WHO and OIE**
 - initial SOPs defined: 21
 - consolidated SOPs: 4
- **Strengthening mission coordination and field-level cooperation**
 - after action review processes implemented to capture lessons learned
 - headquarter- and field-level contacts established and disseminated
 - coordination mechanisms strengthened through mission experience
 - field-level SOPs under development for enhanced national response

⁴ Due to the nature of the CMC-AH concept and the project's main aim to support FAO's capacity for rapid response, the majority of activities are to be considered as ongoing initiatives.

I Quarter 2010

Project Monitoring Sheet

Project title: Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment

Reporting period: January – March 2010

Regional Component:	Global
Project title:	Support for FAO/OIE/WHO collaboration on HPAI rapid response and containment
Code:	OSRO/INT/604/USA (Baby 1)
Budget:	USD 3 000 000 (Phase I), USD 2 000 000 (Phase II)
Total budget:	USD 5 000 000 ²
Planned end date:	30 April 2014
Effective starting date:	January 2007
Context of the project: <p>The Crisis Management Centre – Animal Health (CMC-AH) of the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) is mandated to respond to new outbreaks and critical epidemiologic situations involving highly pathogenic avian influenza (HPAI) and other transboundary animal diseases (TADs) upon official government request. Within the framework of the Emergency Centre for Transboundary Animal Disease Operations (ECTAD), the CMC-AH provides assistance where local governmental capacity may be insufficient to respond effectively and where the spread of the virus may pose a broader regional risk.</p> <p>In support of this mandate and within the context of the mandates of OIE to improve animal health worldwide and the World Health Organization (WHO) to lead global human health initiatives, the United States Agency for International Development (USAID) has provided to date a total of USD 5 million to FAO in support of the CMC-AH for sustained emergency preparedness, rapid assessment and effective response in the field and at headquarters to suspected or confirmed outbreaks of HPAI in collaboration with OIE and WHO.</p> <p>Under this project the CMC-AH continues to carry out its mandate while working to combine efforts, avoid overlaps and build synergies between FAO, OIE and WHO as the organizations work to facilitate the containment of HPAI at its source in animals, combat its spread across international borders and mitigate the risk of a human pandemic.</p>	

Objectives³:

The purpose of the Grant is to provide funding to FAO to support activities to prevent and control HPAI worldwide and reduce the risk of a human pandemic. In this general context and

² The total budget takes into account the reallocation of USD 1 million of CMC-AH funds to the surveillance and response component of the USAID grant as agreed with the donor.

³ These objectives represent a synthesis of the main Grant Objectives contained in the Grant Agreement and Amendments 1 and 2 (i.e. the project document). They have been presented in summarized form in compliance with the Quarterly Update format. More detailed reporting on objectives and activities will be included in the Final Narrative Report upon project completion.

in the specific context of Amendments 1 and 2, the objective of the project is to support CMC-AH operations and missions for: i) enhanced core team capacity; ii) improved FAO/OIE/WHO linkages at regional and country level; iii) increased immediate capacity building; and iv) strengthened risk communication support (provided to affected/at-risk countries) and overall communication activities (targeting donor, partner and other audiences).

Planned activities of the project:

In light of the project objective, planned activities concentrate on:

- planning, deploying and following up CMC-AH rapid response missions;
- developing tools in support of CMC-AH operations and response capacity;
- defining cooperation mechanisms between WHO and the CMC-AH;
- exchanging information and regularizing communications;
- developing standard operating procedures (SOPs) for FAO, WHO and OIE; and
- coordinating missions at headquarters and field levels.

Activities implemented during the reporting period (January – March 2010):

• Rapid missions deployed for HPAI⁴

Nepal; 9–20 March 2010

Long threatened by HPAI via cross-border threats and in-country reoccurrences, Nepal has worked with the CMC-AH since its first outbreaks in January 2009 to respond to HPAI and control the spread of the virus. Initial response efforts yielded positive results, which were backed up by CMC-AH rapid missions and their strategic recommendations. Despite continued work guarding against outbreaks, HPAI resurfaced in Nepal in early 2010.

The Government acted quickly to control the new threat in-country, having worked progressively to increase its prevention and control capacity through FAO and other international support. The CMC-AH mission provided additional support in assessing the: i) HPAI situation in the poultry sector; ii) potential involvement of wild birds; iii) relevance of biosecurity issues; and iv) gaps in funding or opportunities for the redirection of resources. The CMC-AH team, which included a wildlife specialist from FAO's Regional Office for Asia and the Pacific, conducted extensive field visits and engaged with a wide range of government and public stakeholders. Recommendations focused on: i) improving disease surveillance and reporting; ii) enhancing regional response team capacities; iii) building private-public partnerships to implement biosecurity measures and raise awareness; and iv) conducting assessments of the role of wild birds in Nepal's outbreaks.

Bhutan; 21–27 March 2010

When the Government of the Kingdom of Bhutan experienced its first outbreak of HPAI in February 2010, authorities took swift and immediate action to respond to the threat. To further support its own efforts, the Government requested FAO assistance to: i) review control measures implemented and advise on improvements; ii) assess risks of future introductions; and iii) examine requirements for equipment and operational costs. The CMC-AH deployed an expert epidemiologist on a five-day mission to address these issues.

In addition to the mission, the CMC-AH continued to support Bhutan through the provision of personal protective equipment, sprayers and rapid test kits. The Centre also facilitated the shipment of samples to the OIE regional reference laboratory and promoted cross-border linkages. A second mission, with a focus on increasing laboratory capacities for polymerase chain reaction diagnostics, was confirmed for late May 2010.

⁴ During the reporting period and with alternate funds, the CMC-AH deployed missions to the Democratic Republic of Congo to help the government assess the situation involving multiple TADs and outline a roadmap for an overall animal disease prevention and control strategy.

- **FAO-OIE Memorandum of Understanding (MOU)**

In order to build on lessons learned and capitalize on synergies, FAO and OIE have been working to revise and improve the MOU guiding their collaboration in the CMC-AH. The MOU is currently undergoing legal review.

- **Strengthening coordination and building awareness of CMC-AH and its services**

The CMC-AH briefed seven FAO audiences, including FAORs and field-based experts at headquarters and in the field (e.g. FAO's Regional Office for Asia and the Pacific) to ensure collaboration with CMC-AH response missions. Meetings were also held with one donor delegation, which included veterinary civil servants and ministers of agriculture, and five audiences containing potential rapid response roster candidates.

In February 2010, the CMC-AH participated in two FAO-OIE-WHO meetings: one in Rome on tripartite coordination and the other in Paris⁵ attended by the Canadian International Development Agency (CIDA) and emphasizing CIDA project outputs. Both meetings offered the opportunity to strengthen tripartite coordination for overall CMC-AH response initiatives. In March 2010, the CMC-AH met with a high-level delegation from the Center for Disease Control and Prevention (CDC) to explore ways to strengthen CDC participation in CMC-AH initiatives.

- **Revision and update of FAO's Good Emergency Management Practices (GEMP)**

Following the review of the CMC-AH technical response guidelines reported in the previous quarter, the CMC-AH recruited a technical expert in February 2010 to develop a revised version of GEMP. The new version will include the technical response guidelines and outbreak communication toolkit generated previously by the CMC-AH.

- **Reagent contingency stock**

Thanks to preparatory efforts during the reporting period, the CMC-AH now stands ready to deploy polymerase chain reaction diagnostic kits (including reagents) to support rapid response.

- **Roster of experts for rapid deployment**

The CMC-AH completed uploading existing profiles into the roster database nested within EMPRES-i. New human resource data is being added as it is acquired. Efforts have been focused on making the roster as user-friendly and accessible as possible.

- **Event Tracking and Management System (ETMS)**

An ETMS prototype was developed in late 2009. Efforts this quarter have focused on testing and revising the system through extensive analysis and review with FAO ICT experts. The system is scheduled to go live in mid to late 2010 after further team testing.

- **Planning for Chief Veterinary Officer (CVO) management training**

Planning has continued, with the CMC-AH developing strategies for the delivery of training packages for senior level veterinary officers (including CVOs) in conjunction with the release of the above-mentioned, revised GEMP.

- **CMC-AH staffing changes**

A loaned officer from USDA joined the CMC-AH in March 2010 and has taken up the role of Planning Coordinator and Deputy Manager.

⁵ The CMC-AH participated via video link.

Planned activities for April to June 2010:

- continued monitoring of high-risk countries and situations;
- mission planning and deployment upon request for or acceptance of assistance;
- finalization expert roster data updating, maintenance and continued Emergency Prevention Programme for Transboundary Animal Diseases (EMPRES) information system EMPRES-i integration;
- further finalization of technical response and control SOPs;
- continued finalization and deployment of contingency stocks (i.e. reagents);
- continued testing of ETMS prototype with a testing of complete system to start mid 2010;
- continued CMC-AH awareness building activities;
- finalization of the draft of GEMP, including draft plans for senior-level veterinary training;
- completion of FAO-OIE MOU; and
- continued FAO/WHO coordination initiatives.

Main challenges encountered and response provided:

None

Main progress made towards project objective, listed by activity⁶ (since project start):

- **Mission planning, deployment and follow-up**
 - HPAI response missions: 22
 - Total missions deployed: 42
 - Total countries assisted: 29
- **Development of tools supporting CMC-AH response capacity**
 - Reagent contingency stock developed; restocking and streamlining ongoing
 - Discussions ongoing with United Nations Humanitarian Response Depot (UNHRD) for cold chain storage and delivery
- **Defining cooperation mechanisms between WHO and CMC-AH**
 - Standard lines of interagency communication defined
 - Information focal points established
 - Coordinated missions (human and animal health) deployed and followed up
- **Exchanging information and regularizing communications**
 - WHO's EMS analyzed for applicability to CMC-AH
 - Development of ETMS prototype complete; testing underway
 - Regular information exchange through regular meetings and staff visits
 - FAO/OIE/WHO coordination methodologies confirmed through standardized information sharing methods and focal points
- **SOP development for FAO, WHO and OIE**
 - Initial SOPs defined: 21
 - Consolidated SOPs: 4
- **Strengthening mission coordination and field-level cooperation**
 - After action review processes implemented to capture lessons learned
 - Headquarter- and field-level contacts established and disseminated
 - Coordination mechanisms strengthened through mission experience
 - Field-level SOPs under development for enhanced national response

⁶ Due to the nature of the CMC-AH concept and the project's main aim to support FAO's capacity for rapid response, the majority of activities are to be considered as ongoing initiatives.

I Quarter 2010

Project Monitoring Sheet: **OSRO/INT/704/USA**

Title: Enhancing preparedness and response capacity to highly pathogenic avian influenza (and other emerging/re-emerging zoonotic diseases) in Eastern Europe and Central Asia countries

Reporting period: **January – March 2010**

Regional component: Europe and Central Asia Title: Enhancing preparedness and response capacity to highly pathogenic avian influenza (and other emerging/re-emerging zoonotic diseases) in Eastern Europe and Central Asia countries Code: OSRO/INT/704/USA
Budget: USD 370 000 (Phase I) Total budget: USD 370 000
Effective starting date: 1 July 2008
Planned end date: 30 June 2010
Context of the project <p>Although most of the countries within Eastern Europe and Central Asia region have developed a preparedness and contingency plan for the Highly Pathogenic Avian Influenza (HPAI), the need for generic operation procedures to minimize the spread of HPAI virus in case of its occurrence, as well as to reduce the risk of human infection still remains.</p> <p>Therefore, this project will include the development of generic standard operating procedures (SOP's) applicable in countries (or districts within countries) of different socio-economical, cultural and geographical structures and capacities in the Eastern Europe and Central Asia regions. Under the project a better understanding of the SOP's would be enhanced through dissemination of basic knowledge of Epidemiology.</p> <p>In addition, the project specifically aims at enhancing the coordination and collaboration between Veterinary Services, Ministries of Forestry, Ministries of Environment and/or Departments of Ornithology which often have jurisdictional authority over wildlife management.</p> <p>The risk of disease introduction and spreading within domestic poultry by migrating wild water birds remains high in these regions. In the rural poultry sector with predominant backyard poultry breeding, the risk point of introduction could be through hunters bringing back hunted wild birds that might have been previously infected with the virus. These call for the need for harmonised multi-sectoral coordination and management of risks and outbreaks as well as strengthening the epidemiological intelligence in the regions.</p> <p>International sharing of wild bird epidemiology and surveillance information, as well as developing and applying SOP's on risk reduction in backyard poultry breeding in areas as the Black Sea and Caspian Sea regions would have a direct impact on reducing the risk of virus spreading.</p>

Objectives of the project

The main goal of the project is to reduce the H5N1 viral spread from wild birds to domestic poultry and among domestic poultry by enhanced wild bird disease management and providing generic operational guidance and procedures to the veterinary services within the Eastern Europe and Central Asia regions. The ultimate goal of this project is to promote long-term veterinary service capacity building that will promote both public health improvement and better economic impact of poultry and livestock production in the future.

The main outputs expected from the project are:

1. Development of generic SOPs for HPAI and improvement of epidemiology understanding within the veterinary services;
2. Improvement of multi-sectoral coordination and management of risks and outbreaks involving wild birds and free range domestic duck, goose and chicken populations in the Black Sea and Caspian Sea regions.

Planned activities for the reporting period

1. Development of generic standard operating procedures for HPAI and improvement of epidemiology understanding within the veterinary services

1.5. Disseminate generic operating procedures to Ministries, Task Forces, Veterinary Services and eventually donors. Make SOP's available for global access through FAO website.

Activities undertaken during the reporting period

- The developed SOPs are being revised by FAO for clearance among in-house experts.

Planned activities for the next quarter

1. Development of generic standard operating procedures for HPAI and improvement of epidemiology understanding within the veterinary services

1.5. Disseminate generic operating procedures to Ministries, Task Forces, Veterinary Services and eventually donors. Make SOP's available for global access through FAO website.

Main challenges encountered and response provided

As FAO has also developed SOPs for other regions, the main challenge has been to streamline the different SOPs into a common format.

Main progress made towards the achievement of project outcomes

The project is expected to achieve its set out objectives and will make a substantial contribution to HPAI prevention and control, especially through the development of generic SOPs and enhanced cooperation between sectors.

Quarter II 2010

Project Monitoring Sheet: OSRO/INT/803/USA

Project Title: Development of integrated desktop simulation exercise on Avian Influenza in animal and human population in Europe and Eurasia

Reporting period: April – June 2010

Regional component: Eastern Europe and Central Asia Project Title: Development of integrated desktop simulation exercise on Avian Influenza in animal and human population in Europe and Eurasia. Code: OSRO/INT/803/USA
Budget: USD 130 000
Effective starting date: 1 November 2008
Planned end date: 31 December 2010
Context of the project <p>Emergency preparedness planning is crucial for the successful management of outbreaks of Highly Pathogenic Avian Influenza (HPAI) and for minimizing the outbreak's impact. Preparedness encompasses the development of contingency plans, operational procedures and engagement of national and local authorities in capacity building.</p> <p>The basis for an adequate implementation of measures and operations considering HPAI is a developed integrated action (contingency) plan that will clarify technical procedures, operational activities, lines of command and communication channels. To test its efficiency, however, the implementing capacity of the contingency plan should be monitored from time to time by conducting, for example, integrated desktop simulation exercises. These exercises provide an opportunity for the authorities to identify areas where cooperation and coordination needs to be improved as well as to test internal and external roles and responsibilities. Measurable outcomes need to reflect the technical and operational improvements, training and capacity building, transparency of communication and levels of coordination between different government sectors and agencies involved. The Food and Agriculture Organization of the United Nations (FAO) and World Health Organization - Regional Office for Europe (WHO-EURO) are the focal points for the technical cooperation for animal and human cases of HPAI. Both organizations are involved in assisting UN Member States in enhancing their emergency preparedness and response capacity. The United States Government through the United States Agency for International Development (USAID) is one of the leading donors in strengthening the national capacity to respond to the risk of avian and pandemic influenza.</p> <p>The starting point of WHO's pandemic preparedness plan is to strengthen the capacity of countries to respond to seasonal influenza epidemic. FAO's activities in the field of avian influenza (AI) have focused on prevention, early detection and control of HPAI in animal populations. So far, FAO, the World Organization for Animal Health (OIE) and WHO, are encouraging countries to develop or enhance existing national preparedness plans to fully consider an integrated approach by addressing animal and human health aspects as well as other sectors needed for the control of HPAI.</p>

This integrated approach allows:

- to improve the cooperation and communication of different sectors involved in HPAI emergency preparedness and response;
- to develop and implement integrated epidemiological surveillance and early warning systems for HPAI; and
- to ensure the most efficient implementation of measures and operations during an HPAI outbreak.

From December 2006, FAO and WHO EURO have been developing and implementing integrated desktop simulation exercises within the ongoing OSRO/INT/603/USA B02 project. However, emergency preparedness is a continuous process, which needs to be adapted to prevailing conditions in a country and to new scientific insights.

The geographical scope of this project is limited to countries within the Eastern Europe and Central Asia regions of the FAO Headquarters (FAO/HQ) and WHO EURO, excluding the countries that have joined the European Union.

In the Central Asia region, during the beginning of 2006, two outbreaks of HPAI in humans have been observed in Turkey and Azerbaijan. The WHO and FAO missions to the region have indicated that the animal and human health sectors needed urgent strengthening. As in most countries, the relationship between the human and animal health sectors is fragmented, as is the cooperation in response to outbreaks. This leads to delays, thus increasing the impact of the disease in the poultry industry as well as the risk for human infection.

Since the first HPAI outbreaks, the Eastern Europe and Central Asia countries, with the guidance of FAO and WHO, have established AI task forces or inter-ministerial AI working groups with the aim to prepare the country to face HPAI outbreaks. Furthermore, the development of contingency plans for HPAI and pandemic influenza preparedness plans has been promoted. However, only a limited number of countries have developed integrated multi-sectoral HPAI contingency plans or have tested their plans, while some of the existing plans still need to be revised or approved by their government.

Objectives of the project

The aim of this project is to enhance the preparedness of the Eastern Europe and Central Asia countries to respond to the outbreaks of HPAI through testing the coordination and communication mechanisms among all involved in HPAI control at national and regional level. The project activities are conceived to reduce the risk of viral introduction or spread by improving the coordination of actions to be taken. The ultimate goal of this proposal is to further develop and adapt an optimal model for HPAI desktop simulation exercises that could in the long-term strengthen the capacities of the veterinary and public health services and serve as a template for testing the preparedness for other emerging and re-emerging zoonotic diseases.

The expected outcomes of the project:

- inter-sectoral coordination and communication of stakeholders involved in the control of HPAI outbreaks improved;
- strengths and weaknesses of existing plans and response mechanisms for AI in animals and humans identified;
- understanding and practice of command and coordination to respond to AI identified;
- existing national contingency plans for HPAI enhanced;

- veterinary and public health preparedness capacities for HPAI and other emerging and re-emerging animal and human diseases strengthened.

Planned activities

Output 1: Development and implementation of two national integrated table-top simulation exercises for HPAI

Activities for the national integrated table-top simulation exercise for HPAI:

- liaising with FAO and WHO local offices to recruit national focal points for logistical and administrative support (venue, dates, translations and letters);
- identifying prospective participants including scenario writers and facilitators;
- developing the exercise scenario and handbook materials for players and observers and printing and photocopying the respective materials (at least in two languages); and
- preparing the exercise.

Activities undertaken during the reporting period

- The hybrid simulation exercise in Kiev, Ukraine was carried out from 13 April to 15 April 2010. The exercise, carried out in collaboration with Stamping Out Pandemic and Avian Influenza (STOP AI) project, consisted of both tabletop and field components. This was the first time that FAO combined the tabletop with a field exercise, and it was regarded as a very useful combination as reflected in the participant feedback/evaluation received after the exercise.

Planned activities for the next quarter

- finalization of the simulation exercise report;
- translation and dissemination of the simulation exercise report;
- participation in a final lessons learned meeting to be organized by USAID, tentatively in December 2010, to build on the experiences of the USAID projects implemented by FAO and other implementing agencies with the participation of a wider donor community.

Main challenges encountered and response provided

- A hybrid table-top and field exercise had been planned for November 2009, but the exercise had to be postponed in view of the occurrence of severe outbreaks of H1N1 in Ukraine.
- Thanks to a good relationship with an FAO national consultant, a producer in the Kiev area, agreed to provide his farm as a location for the field exercise. The task of finding a suitable location, however, has proven to be challenging because of the biosecurity considerations and the effect that the teams dressed in personal protective equipment (PPE) might have.

Main progress made towards the achievement of project outputs

- The conducting of the hybrid simulation exercise further contributed to the preparedness of the country to face HPAI outbreaks. The lessons learned during the exercise are communicated to the authorities, and it is expected that the contingency plan will be enhanced.

1 Quarter 2010**Project Monitoring Sheet: OSRO/INT/805/USA**

Project title: Developing and maintaining public-private partnerships (PPP) for the prevention, detection and control of Highly Pathogenic Avian Influenza H5N1 and other emerging infectious animal diseases

Reporting period: January – March 2010

Global component: Global cross-country
Countries: Bangladesh, Egypt and Indonesia
Project title: Developing and maintaining public-private partnerships (PPP) for the prevention, detection and control of Highly Pathogenic Avian Influenza H5N1 and other emerging infectious animal diseases
Code: OSRO/INT/805/USA
Total budget: USD 1 600 000 ¹
Effective starting date: October 2008
Planned end date: July 2010
<p>Context of the project</p> <p>The ongoing Highly Pathogenic Avian Influenza (HPAI) crisis has highlighted that the current approach for operating public animal health services is not optimal given the major changes and trends occurring in the livestock sectors. This is particularly true in the dynamic and rapidly changing poultry and swine sub-sectors.</p> <p>At the same time, the private poultry sector has received insufficient attention from governments and donors. The private sector shares many of the safety and health concerns promoted by public animal health services. However, longstanding mutual mistrust and the lack of coordinating mechanisms have hampered cooperation in controlling HPAI.</p> <p>In a technical meeting held in Rome in June 2007, in preparation for the New Delhi Inter-Ministerial Conference on HPAI, the Food and Agriculture Organization of the United Nations (FAO) outlined the need to move beyond the public veterinary services and incorporate the private sector in order to strengthen national animal health systems.</p>
<p>Objectives of the project</p> <p>To create, strengthen and maintain public-private partnerships (PPP) to support poultry health and production systems in countries worse affected by HPAI within a functional animal health system led by official veterinary services.</p>

¹ This amount of USD 1 600 000 is the total contribution that includes the allocation per country. The project budget has been divided into four main project components which are: Global cross-country coordination, (budget allocation amounts to USD 650 000), the People's Republic of Bangladesh (budget allocation amounts to USD 301 000) the Arab Republic of Egypt, (budget allocation amounts to USD 312 000) and the Republic of Indonesia (budget allocation amounts to USD 337 000).

Planned activities

BANGLADESH

Output 1: Roles of the stakeholders of public and private sectors involved in the poultry production and marketing chains in the control of HPAI and other animal diseases assessed, clearly defined, distributed and agreed

Activity 1.1: Review of current level of partnership between the public services and private sector (needs, actors, resources available) at national level:

- Identification of public and private stakeholders at country level.
- Assessment of the private sector's current capacity in animal health disease prevention and control (producers, farmers, private veterinarians and other service providers, traders, drug suppliers/manufacturers and others).
- Assessment of the public veterinary services' capacity in animal health disease prevention and control including its capacity to collaborate with private sector, in line with the evaluation tool of the World Organisation for Animal Health (OIE) for the Performance of Veterinary Services (PVS).
- Assessment of the current level of collaboration between the public and the private sectors (baseline survey).

Activity 1.2: Review of related legislation and regulatory framework:

Review of in-country pre-existent animal health legislative and regulatory framework on the respective roles of the public and private sectors.

Activity 1.3: Revisiting of roles and responsibilities:

- Review of the roles and responsibilities of public veterinary services, private veterinary services, producers and sellers in poultry diseases prevention and control within the framework of standards set by OIE (workshop).
- Formulation of guidelines on roles and responsibilities of public veterinary services, private veterinary services, producers and sellers in poultry diseases prevention and control (workshop).

Output 2: The capacity of the public veterinary services strengthened to lead the development and management of the animal health systems to prevent, detect and control HPAI and other animal diseases

Activity 2.1: Facilitation for leadership and vision in public veterinary services for improved national animal health systems:

- Facilitation of the process of strengthening the public veterinary services through joint activities with the private sector (training, seminars, meetings, workshops and working committees).
- Establishment of Biosecurity Guidelines by a biosecurity committee that will focus on the development of a minimum biosecurity standard for poultry farming.
- Establishment of vaccination committee that will focus on the development of vaccination policy and programme for the poultry industry.
- Implementation of biosecurity and good farming auditors training activity for the public sector.

- Implementation of biosecurity training for input providers.

Output 3: The lessons learned from cases of PPP in key areas of disease control (vaccination, compensation, biosecurity) available for replication

Activity 3.1: Implementing a socio-economic study in a live-bird market (LBM) as a case study of PPP.

Output 4: Forums and networks of public-private stakeholders in place for enhanced communication, education, information dissemination and awareness for the prevention, detection and control of HPAI and other animal diseases

Activity 4.1: Setting up regular meetings and exchange of information of the biosecurity guidelines committee.

Activity 4.2: Setting up regular meetings and exchange of information of the vaccination committee.

Production of a newsletter or website for PPP on biosecurity and vaccination, building on the existing poultry and Ministry of Agriculture (MoA) Newsletter and websites with stronger contribution from the private sector.

EGYPT

Output 1: Roles of the stakeholders of public and private sectors involved in the poultry production and marketing chains assessed and clearly defined, distributed and agreed to control HPAI and other animal diseases.

Activity 1.1: Review of current level of partnership between the public services and private sector (needs, actors, resources available) at national level.

- Identification of public and private stakeholders at country level.
- Assessment of the private sector's current capacity in animal health prevention and control (producers, farmers, private veterinarians and other service providers, traders, drug suppliers/manufacturers and others).
- Assessment of the public veterinary services' capacity in animal health prevention and control including its capacity to collaborate with private sector, in line with OIE PVS evaluation.
- Assessment of the current level of collaboration between the public and the private sectors (baseline survey).
- Finalization of the Report on current legislation and regulations initiated under the World Bank funded project.

Activity 1.2: Revisiting of roles and responsibilities.

- Review of the roles and responsibilities of public veterinary services/private veterinary services/producers and sellers in poultry diseases prevention and control within the frame of standards set by OIE (workshop);
- Formulation of guidelines on roles and responsibilities of public veterinary services/private veterinary services/producers and sellers in poultry diseases prevention and control (workshop).

Output 2: Capacity of the public veterinary services strengthened to lead the development and management of the Animal Health System to prevent, detect and control HPAI and other animal diseases.

Activity 2.1: Facilitation for leadership and vision in public veterinary services for improved national animal health systems.

- Facilitation of the process of strengthening collaboration between the central and governorate Veterinary services in a crisis situation (through seminars, meetings, workshops).
- Implementation of workshop on Roles and responsibilities of public veterinary services/private veterinary services/producers and sellers in poultry diseases prevention, detection and response.
- Implementation of training activities for the public sector to develop and lead public-private alliances in disease control programs.

Output 3: Lessons learnt from cases of PPP in key areas of disease control (vaccination, compensation, biosecurity) available for replication.

Activity 3.1: Initiation/strengthening of partnerships between the public services and the private sector.

- Identification of mechanism for the registration of all poultry commercial farms.
- Discussion of a mechanism and elaboration of a model of contract for official delegation of public mission to private vets.
- Discuss and design a poultry multi-disease vaccination protocol.

Activity 3.2: Development, drafting and presentation of guidelines on cost sharing compensation mechanism for culled animals.

- Facilitation of further dialogue for the development of a legal framework and cost-sharing mechanism for compensation.
- Joint drafting of the compensation guidelines and facilitation of their adoption.

Output 4: Forums and networks of public-private stakeholders in place for enhanced communication, education, information dissemination and awareness for HPAI and other.

Activity 4.1: Advocacy to secure buy-in from all stakeholders

Activity 4.2: Setting up of exchange and communication platforms to facilitate interaction between public services and the private sector (discussions on animal health strategies, market mitigation measures, value chain bio-security and social responsibilities).

- Strengthening the existing platforms (such as Supreme and Technical Committees for HPAI) based on the Recommendations of the FAO– World Health Organization (WHO) – United Nations Children’s Fund (UNICEF) evaluation, through technical assistance and workshops/seminars.
- Production of a newsletter building on the existing Egypt HPAI Newsletter with stronger contribution from the private sector.

Activity 4.3: Awareness and communication.

- Development of an information brochure on the policies/legislations.

INDONESIA

Output 1: Roles of the stakeholders of public and private sectors involved in the poultry production and marketing chains in the control of HPAI and other animal diseases, is assessed and clearly defined, distributed and agreed

Activity 1.1: Review of current level of partnership between the public services and private sector (needs, actors, resources available) at national level.

- Identification of public and private stakeholders at country level.
- Assessment of the private sector's current capacity in animal disease prevention and control (producers, farmers, private veterinarians and other service providers, traders, pharmaceutical suppliers/manufacturers).
- Assessment of the public veterinary services' capacity in animal health disease prevention and control including its capacity to collaborate with private sector, in line with the World Organisation for Animal Health – Public Veterinary Services (OIE PVS) evaluation.
- Assessment of the current level of collaboration between the public and the private sectors (baseline survey).
- Mapping of all similar activities implemented by other stakeholders to allow collaboration and avoid redundancies.

Activity 1.2: Review of related legislation and regulatory framework

Review of in-country pre-existent animal health legislative and regulatory framework on the respective roles of the P/P sectors.

Activity 1.3: Revisiting of roles and responsibilities.

- Review of the roles and responsibilities of public veterinary services/private veterinary services/producers and sellers in poultry diseases prevention and control within the framework of standards set by OIE (workshop).
- Formulation of guidelines on roles and responsibilities of public veterinary services/private veterinary services/producers and sellers in poultry diseases prevention and control (workshop).

Output 2: The capacity of the public veterinary services strengthened to lead the development and management of the animal health systems to prevent, detect and control HPAI and other animal diseases.

Activity 2.1: Facilitation of the process of strengthening the public veterinary services through joint activities with the private sector such as: trainings, seminars, meetings, workshops and working committees.

Facilitate the establishment of PPP between the government and commercial poultry industry modelled on the US National Poultry Improvement Program to gain more coordinated and broad-based approach to poultry health (workshop).

Activity 2.2: Facilitate collaborative planning between DKI Jakarta (special zone) government and the private sector on implementation of the DKI market restructuring programme, and

assist the government to minimise the negative impact of poultry market restructuring on poultry producers, traders and consumers

- Assess poultry market chain in DKI Jakarta and make recommendations on the facilities required to meet supply and demand under the restructured market system.
- Assess the potential impact that restructuring will have on the livelihoods of slaughterers, brokers, traders and vendors of live poultry through focus group discussion.
- Facilitate the establishment of a working group, which includes representatives from key interest groups as well as national and local government, charged with the task of designing and implementing the government's transition plan.
- Assist the DKI Jakarta government in the process of establishing the proposed new six slaughter houses, possibly through links with the poultry industry.

Output 3: The lessons learnt from cases of PPP in key areas of disease control (vaccination, compensation, biosecurity) available for replication.

Activity 3.1 Writing case studies of PPP initiatives.

Output 4: Forums and networks of public-private stakeholders are in place for enhanced communication, education, information dissemination and awareness for HPAI and other animal diseases prevention, detection and control

Activity 4.1: Establishment of committees and working groups.

- Establish committees and working groups.
- Facilitate the establishment of and support the National Poultry Quality Improvement Programme.
- Facilitate the establishment of and support a DKI market restructuring working group.

Activity 4.2: Production of communication materials.

Develop a communication strategy for stakeholders affected by DKI market restructuring.

Activities undertaken during the reporting period

BANGLADESH

Output 1: Roles of the stakeholders of public and private sectors involved in the poultry production and marketing chains in the control of HPAI and other animal diseases assessed, clearly defined, distributed and agreed

Activity 1.1: Review of current level of partnership between the public services and private sector (needs, actors, resources available) at national level.

- Meetings were held with various stakeholders such as Animal Health Companies Association of Bangladesh (AHCAB), Bangladesh Poultry Industries Association (BPIA), Polygon Co-operative Feed Mill and Renata Pharmaceuticals, Ltd. to discuss on the way forward with PPP. The identified fields are as follows:
 - PPP compensation plan. (since insurance is not a feasible option);
 - PPP committee at the Department of Livestock Services (DLS) for policy development and adaptation (currently DLS develops policy without any consultation with stakeholders and private sector is forced to comply);
 - PPP committee for program continuity and sustainability at BPIA;

- PPP laboratory facilities accessible to farmers;
- PPP co-operative feed mills & hatchery;
- PPP controlled supply chain network for equal contribution;
- PPP training sessions for specific sectors;
- PPP committee for price fixation of poultry product;
- PPP collection committee of contributions to compensation/development;
- PPP decentralized committee for health services to farmers;
- PPP policy adaptation committee;
- PPP quality assurance committee.

Activity 1.2 Review of related legislation and regulatory framework.

In-country pre-existing animal health legislative and regulatory framework are regularly reviewed on the respective roles of the public-private sectors.

Activity 1.3 Revisiting of roles and responsibilities.

- The roles and tasks of public veterinary services/private veterinary services/producers and sellers were clearly defined.
- Personnel from the public, private or other sectors were identified as the most suitable for the performance of the roles in poultry diseases prevention and control.
- Eleven training workshops on biosecurity, each with 50 participants, were conducted for poultry suppliers throughout the country.
- Participants were selected by BPIA among poultry suppliers based on the following criteria: active poultry suppliers; supply at least 15 farms; willing to actively share biosecurity knowledge with farmers; and, with minimum secondary school certificates.
- The guidelines on biosecurity were endorsed by the Director General of the Department of Livestock Services (DG-DLS) in December 2009. Final endorsement by the Ministry of Fishery and Livestock is under process.

Output 2: The capacity of the public veterinary services strengthened to lead the development and management of the Animal Health Systems to prevent, detect and control HPAI and other animal diseases

Activity 2.1: Facilitation for leadership and vision in public veterinary services for improved national animal health systems

- Auditing exercises for the DLS are being formulated to improve biosecurity. A meeting was held with SGS Bangladesh (a biosecurity auditing company) and DLS training division regarding biosecurity auditing practices. It was suggested that PPP team elaborate a plan for biosecurity auditing and organize training for senior level DLS veterinarians so that these senior officials will be able to act as instructors for field level DLS veterinarians.
- A biosecurity training for the Poultry Industry Suppliers throughout the country is in progress. Eleven out of 17 planned training has been so far implemented during the reporting period. Extra sessions approved in response to the request of BPIA. The first training for poultry suppliers has been successfully completed in five divisions (Chittagong, Sylhet, Barishal, Khulna, and Rajshahi) and partly Rangpur. In these

training, 498 poultry industry suppliers were trained to enable them to communicate to about 4 000 commercial poultry farmers. During the training sessions, active discussions on issues relating to their associations were held in the presence of a local public official. This meeting has resulted in greater interaction and strengthening of relationships among the poultry associations and their members. Furthermore, this activity has provided strong advocacy for the PPP project in Bangladesh as evidenced by media coverage.

Output 3: The lessons learnt from cases of PPP in key areas of disease control (vaccination, compensation, biosecurity) available for replication

Activity 3.1: Implementing a socio-economic study in a LBM as a case study of PPP

The process of contracting out the socio-economic study at the live bird market in Mohammedpour to an NGO is in the final stage.

Output 4: Forums and networks of public-private stakeholders are in place for enhanced communication, education, information dissemination and awareness for HPAI and other animal disease prevention, detection and control

Activity 4.2: Setting up regular meetings and exchange of information

- The project manager from FAO attended the 16th Annual Conference of Bangladesh Society for Veterinary Education and Research (BSVER) held on 6 and 7 February 2010 at Bangladesh Agricultural University. During the conference, a symposium titled "Public Private Partnership": Development of Livestock Entrepreneurship in Bangladesh" was held.
- The PPP project manager from FAO headquarters delivered a key note speech at the Conference titled "PPP: Development of Livestock Entrepreneurship".
- The PPP activities were updated to provide information about the PPP project and the relevant activities, like poultry training materials, poultry technical information, upcoming events, etc at the website www.aitubd.org

EGYPT

Output 1: Roles of the public and private sector stakeholders involved in poultry production and marketing chains assessed and clearly defined, distributed and agreed upon to control HPAI and other animal diseases.

Activities 1.1 & 1.2: Review of current level of partnership between the public services and private sector (needs, actors, resources available) at national level, and Revisiting of roles and responsibilities.

These two activities have been completed during the previous quarters

Output 2: Capacity of the public veterinary services strengthened to lead the development and management of the Animal Health System to prevent, detect and control HPAI and other animal diseases.

Activity 2.1: Facilitation for leadership and vision in public veterinary services for improved national animal health systems.

The activities under this section have been revised and the focus has been shifted toward the private sector, such as poultry producers, service providers and feed-millers. Collaboration with these segments of the poultry industry aims at the formation of effective producers' networks and associations to enable better cooperation between producers and to better represent small farmers' interest within the poultry union. Other activities focus on capacity building and implementation of disease prevention and control measures against HPAI and other poultry diseases through series of training on biosecurity, cleaning, disinfection, and composting.

New training materials specifically for small scale commercial poultry producers of low level literacy have been developed and translated into Arabic. By the end of this quarter four out of the twenty-five planned training sessions for the Fayoum governorate have been successfully completed. The Fayoum directorate veterinarians' participated in these training sessions too.

Output 3: Lessons learned from cases of PPP in key areas of disease control (vaccination, compensation, biosecurity) available for replication.

Activity 3.2: Development, drafting and presentation of guidelines on cost-sharing compensation mechanism for culled animals:

The compensation plan developed by the public and private sectors with the facilitation of international consultant was submitted to the Minister of Agriculture for consideration. This proposed compensation strategy was widely discussed during the three days revision meeting in February 2010 of the national HPAI strategy plan.

Up to date the proposed compensation strategy has not been endorsed by the Minister of Agriculture, therefore the implementation of the compensation plan has not yet started. Recently the new CVO has been briefed about the proposed compensation strategy and intensive lobbying activity has been taken by the FAOR, assisted by the Emergency Centre for Transboundary Animal Diseases Operations (ECTAD) team leader.

Output 4: Forums and networks of public-private stakeholders in place for enhanced communication, education, information dissemination and awareness for the prevention, detection and control of HPAI and other animal diseases.

Activity 4.2: Setting up of exchange and communication platforms to facilitate interaction between public services and the private sector (discussions on animal health strategies, market mitigation measures, value chain biosecurity and social responsibilities).

The bi-weekly newsletter of the ECTAD published an article about the outcomes of the compensation workshops, technical materials and upcoming events.

Biosecurity communication materials are under development. Service providers and feed-mills in the Fayoum governorate have agreed to disseminate these communication materials to their customers. A monthly message will be attached to feed bags and distribute to all farms at the Fayoum governorate. These messages will serve as reinforcement to the information provided during the biosecurity training program in this governorate.

The formation of small poultry producers association has been strongly promoted and supported by FAO in the Fayoum governorate. The formation of this association will improve the collaboration between producers and be used as a platform for the dissemination of

information regarding the prevention and control of HPAI and other diseases. The formation and registration of such association is in process.

INDONESIA

Output 1: Roles of the stakeholders of public and private sectors involved in the poultry production and marketing chains in the control of HPAI and other animal diseases is assessed and clearly defined, distributed and agreed

Activity 1.1: Identification of public & private stakeholders at country level

The detailed organizational structure of the public sector and their relationship with the Ministry of Agriculture and the Directorate General of Livestock Services, their functional components and implementation framework from headquarters to the provinces, districts, and to the targeted farmers have been identified and mapped. A similar mapping exercise for the private sector is in process. So far, six fully integrated private poultry companies have been identified and the rest of the stakeholders in the private sector are now in the process of being identified.

Output 2: The capacity of the public veterinary services strengthened to lead the development and management of the animal health systems to prevent, detect and control of HPAI and other animal diseases

Activity 2.1: Facilitation of the process of strengthening the public veterinary services through joint activities with the private sector

Support for these activities on the National Poultry Quality Improvement Programme (NPQIP) by ECTAD Indonesia is ongoing. An Indonesian expert was successfully identified and recruited for the NPQIP Facilitation consultancy. The NPQIP Facilitator conducted interviews of stakeholders for NPQIP concept development in West Java, Lampung, and South Sulawesi provinces. Monthly coordination meetings on NPQIP progress were held between the United States Department of Agriculture and ECTAD Indonesia. A second individual to assist in NPQIP development was identified and will be recruited next quarter as a NPQIP Facilitator.

Activity 2.2: Facilitate collaborative planning between DKI Jakarta government and private sector on implementation of the DKI market restructuring programme, and assist the government to minimise the negative impact of poultry market restructuring on poultry producers, traders and consumers

Support for this program by ECTAD Indonesia is ongoing. The following activities were carried out during this quarter:

- Awareness raising
After the assessment of the perceptions of consumers and small traders regarding the risks of avian influenza and the benefits of healthy chicken meat, a proposal for an awareness-raising campaign has been prepared, submitted for financing and is expected to be approved soon. Two roundtable meetings with 22 media agencies have already been successfully conducted.
- Facilitation of relocation of collectors and slaughterers

- The social economic study has been finalized. Based on its recommendations specific standard operating procedures (SOP) for the relocation of the collectors and slaughterers were developed.
- ECTAD Indonesia continued promotion of DKI market restructuring with selected key stakeholders in DKI Jakarta:
 - SOPs for the management of the relocation centres and SOPs in Skills Development for the relocation centre users (collectors and slaughterers) were developed.
 - Training modules for the management teams were developed, tested and applied.
 - Training in competency development of collectors and slaughterers was also further developed.
- ECTAD Indonesia supported the finishing of small scale manual slaughterhouses in two of the five relocation centres.
- Regular consultations were held with the DKI Governor's office on strategic approaches to improve the likelihood of restructuring success.
- **Sanctions and regulation**
 - ECTAD Indonesia supported the DKI Jakarta livestock service (dinas) in developing an SOP for coordination among law-enforcement bodies for the implementation of the Jakarta Poultry Market Restructuring Decree (PERDA 4).
 - In collaboration with DKI Jakarta 'dinas', a first draft of a geographic roadmap showing drivers how to reach designated checkpoints and the five selected collection yards has been tested and partially approved.

Planned activities for the next quarter

BANGLADESH

Output 1: Roles of the stakeholders of public and private sectors involved in the poultry production and marketing chains in the control of HPAI and other animal diseases assessed clearly defined, distributed and agreed

Activity 1.1: Review of current level of partnership between the public services and private sector (needs, actors, resources available) at national level

Meeting with private stakeholders.

Output 2: The capacity of the public veterinary services strengthened to lead the development and management of the animal health systems to prevent, detect and control HPAI and other animal diseases

Activity 2.1: Facilitation for leadership and vision in public veterinary services for improved national animal health systems

- Workshop on further steps for the development of Biosecurity Guidelines for commercial poultry in Bangladesh.
- Training for biosecurity auditors for public veterinarians in June 2010.
- Continuation of the biosecurity training for the remaining four divisions of the Poultry Industry Suppliers in Bangladesh. An additional seven training workshops on

biosecurity shall be carried out.

- A total of 800 poultry industry suppliers including suppliers of poultry such as chicks, feed, medicine, farm equipment, etc will be directly trained who will then transmit the biosecurity knowledge through training for sharing of knowledge to about 10 000 commercial poultry farmers.

Output 3: The lessons learnt from cases of PPP in key areas of disease control (vaccination, compensation, biosecurity) available for replication

Activity 3.1: Implementing a socio-economic study in a LBM as a case study of PPP

Finalization and contracting out a socio-economic study to a NGO on a LBM which can be reproduced as a PPP case study. The study will be carried out under FAO team supervision.

Output 4: Forums and networks of public-private stakeholders are in place for enhanced communication, education, information dissemination and awareness of HPAI and other animal diseases prevention, detection and control

Activity 4.2: Setting up of regular meetings and exchange of information

Update technical information and upcoming events on the website.

EGYPT

Output 2: Capacity of the public veterinary services strengthened to lead the development and management of the Animal Health System to prevent, detect and control HPAI and other animal diseases.

Activity 2.1: Facilitation for leadership and vision in public veterinary services for improved national animal health systems.

- Completion of the biosecurity, decontamination and composting training program (additional twenty-four sessions) for poultry producers and government veterinarians at the Fayoum governorate. This training program will reach the majority of producers in this governorate.
- Assessment of the trainings' impact will be conducted in sampled farms.
- The FAO, PPP project will continue to support the formation of poultry association in the Fayoum governorate. The formation of this association will improve the collaboration between producers and be used as a platform for the dissemination and sharing of information regarding the prevention and control of HPAI, other diseases and any other matters of concern to the producers.
- Seven sessions of training on biosecurity, decontamination, vaccination, record keeping and production improvement will be conducted for large egg producing farms in seven governorates.
- An information sharing workshop on live bird market restructuring will be conducted for general Organization for Veterinary Services (GOVES) veterinarians and markets' operators. This workshop will provide participants with alternatives for market restructuring, based on the experienced gained in Bangladesh and Indonesia.

Output 4: Forums and networks of public-private stakeholders in place for enhanced communication, education, information dissemination and awareness for the prevention, detection and control of HPAI and other animal diseases.

Activity 4.2: Setting up of exchange and communication platforms to facilitate interaction between public services and the private sector (discussions on animal health strategies, market mitigation measures, value chain biosecurity and social responsibilities):

- Continue the collaboration with feed mills and services providers in the Fayoum governorate for the dissemination of biosecurity monthly messages and materials that will serve to reinforce the messages provided during training.

INDONESIA

Output 1: Roles of the stakeholders of public and private sectors involved in the poultry production and marketing chains in the control of HPAI and other animal diseases, is assessed and clearly defined, distributed and agreed

Activity 1.1: Review of current level of partnership between the public service and private sector (needs, actors, resources available) at national level

- Assessment of the private sector's current capacity in animal disease prevention and control (producers, farmers, private veterinarians and other service providers, traders, pharmaceutical suppliers/manufacturers).
- The final draft of public-private sector mapping will be completed next quarter.

Activity 1.3: Revisiting of roles and responsibilities

- A workshop to review the roles and responsibilities of public veterinary services/private veterinary services/producers and sellers in poultry diseases prevention and control will be organized.
- The potential for a workshop to prepare guidelines on roles and responsibilities of public veterinary services/private veterinary services/producers and sellers in poultry diseases prevention and control will be discussed with key stakeholders.

Output 2: The capacity of the public veterinary services strengthened to lead the development and management of animal health systems to prevent, detect and control HPAI and other animal diseases

Activity 2.1: Facilitate the process of strengthening the public veterinary services through joint activities with the private sector such as: trainings, seminars, meetings, workshops and working committees

Activity 2.2: Facilitate collaborative planning between DKI Jakarta government and private sector on implementation of the DKI market restructuring programme, and assist the government to minimize the negative impact of poultry market restructuring on poultry producers, traders and consumers

- Continue to encourage the public awareness campaign for promotion of healthy chicken meat via press conferences, talk shows, and organized visits to the marketing and slaughter areas in DKI Jakarta.
- Liaise with the DKI Governor's office and its administration to reconsider the critical deadline for relocation of live poultry slaughtering and the potential for postponement.
- Continue to support the development of SOPs related to the organization of the five collection yards and their management, as well as the training of the collectors and slaughterers.
- Continue to support the promotion of the collection yards with the collectors and

slaughterers in collaboration with the local administration.

- Collaborate closely with the private sector and the local administration in the restructuring of poultry distribution channels from the five collection yards to traditional markets, particularly regarding provision of cold chain.
- Continue to provide limited technical support to law enforcement units in view of the postponement of the relocation.

Output 3: The lessons learnt from the cases of PPP in key areas of disease control (vaccination, compensation, biosecurity) available for replication

Activity 3.1: Writing case studies of PPP initiatives

Initiation of the case study on the market restructuring project shall be undertaken after its implementation which is expected to start in April 2010.

Output 4: Forums and networks of public-private stakeholders are in place for enhanced communication, education, information dissemination and awareness for HPAI and other animal diseases prevention, detection and control

Activity 4.1: Establishment of committees and working groups

- Continue to support the establishment of NPQIP between public and private sectors.
- Continue to facilitate effective engagement among DKI Market restructuring stakeholders in both public and private sectors.

Activity 4.2: Production of communication materials

Initiate awareness-raising campaign for DKI restructuring using materials developed during this quarter.

Main challenges encountered and response provided

BANGLADESH

- Endorsement process by the Government is lengthy. The PPP team actively met with DLS to address the difficulties.
- Due to the short duration of the project, the follow-up of trainings cannot be done properly.

EGYPT

- Limited collaboration between the poultry companies and small involvement in the development or commenting about the biosecurity guideline for the commercial sector. Future activities will focus on the needs of this sector to ensure better engagement.
- Meantime the biosecurity guideline will be presented to the new CVO for endorsement and implementation.
- Difficulties in identifying experienced national communication experts.
- The compensation plan developed by the public and private sectors in Egypt with the FAO facilitation, has not been endorsed and implemented by the Minister of agriculture and land reclamation. An intense lobbying activity by the FAOR and the ECTAD team leader has initiated to promote the adoption of this compensation plan.

INDONESIA

- The lack of any meaningful business or subsector association for stakeholders in the post-production poultry market chain has significantly hampered the development of agreement and coordination amongst these stakeholders. At the same time, critical private- and state-companies continue to show limited understanding/collaboration on a more “comprehensive” implementation of the necessary changes to Jakarta’s poultry marketing systems. In response to these challenges, ECTAD Indonesia continues to engage closely with both private (small-scale and large-scale) and public sector stakeholders to develop a ‘win-win’ implementation strategy. ECTAD Indonesia is initiating an awareness-raising campaign to help raise public support for market restructuring in the next quarter.
- ECTAD Indonesia has been dealing with the major setback of no longer having an NGO available to contract for implementation of the Tangerang market interventions programme. The ECTAD team is continuing to recruit additional staff and provide additional operational support in order to manage the increased workload that the Tangerang programme entails.

Both the transition to a national veterinary service and the national poultry quality improvement programme are activities which require full engagement and leadership from Indonesian stakeholders. As such, activity implementation in these areas may be delayed (e.g. workshops on the role of the public and private sector in delivery of veterinary services), until FAO’s Indonesian counterparts assume process ownership.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

BANGLADESH

- Development of biosecurity guideline for commercial poultry in Bangladesh. The workshop from 20 to 22 October 2009 resulted in the preparation of a national biosecurity document by FAO and DLS. The biosecurity guidelines from this document are expected to be implemented soon.
- Biosecurity training provided to the poultry industry suppliers of commercial poultry. The trained participants have already started participating in the information sharing network.
- DLS agreed to train their senior veterinarians on good biosecurity auditing practices.

EGYPT

- The roles of the public and private sector stakeholders involved in poultry production and marketing chains in Egypt and the level of collaboration between the sectors were assessed and clearly defined and mapped.
- The compensation programme developed and submitted to the Ministry of Agriculture for consideration and implementation. This program will be considered as well during review of the national strategy that will be developed following the UN Joint mission that assessed past work/strategy in Egypt.
- A draft national biosecurity guideline for the commercial poultry sector has been prepared and has been circulated for further comments and refinement.
- A biosecurity training program for the small poultry producers of the Fayoum governorate has been developed and four out of twenty-five sessions have been delivered

- The formation of poultry association in the Fayoum governorate has been promoted and supported.
- Collaboration between service providers and feed mills has been established for the formation of producers' networks and delivery of communication materials.

INDONESIA

- The recruitment of the national consultant has resulted in greater engagement and collaboration with the public and private sector on their respective roles in poultry production, market chains and disease control. The stakeholders in the public sector have been fully identified and the identification of private sector stakeholders has started.
- The initial meeting of representatives from the poultry industry and the government was completed with the development of the roadmap document for the formation of NPQIP. The NPQIP concept and design continues to evolve along with strong interest from private sector stakeholders.
- DKI Jakarta's market chain and the potential impact of market restructuring on private sector stakeholders' livelihoods have been assessed and specific strategic recommendations have been made by ECTAD Indonesia to DKI Jakarta provincial government. These recommendations have been incorporated into DKI Jakarta's planning and strategy development for market restructuring implementation.
- Selected strategy recommendations to improve the DKI market restructuring process are being implemented by both public and private sector stakeholders.
- A study tour to better understand poultry marketing in Viet Nam and Hong Kong has been undertaken. It is hoped that this exchange will develop into more regular exchange of experiences between Indonesia, Viet Nam and Hong Kong on sustainable measures for control and prevention of H5N1.
- A more comprehensive and participatory planning and implementation process for the DKI Jakarta poultry market restructuring is now in place, taking into account the needs and expectations of the existing small-scale collectors and slaughterers.
- An awareness-raising campaign has been developed and has been launched by the DKI Jakarta leadership and will be followed by a series of media events and field activities.
- Trial activities on law enforcement and police preparation are being undertaken through regular checkpoint control operations.



USAID
FROM THE AMERICAN PEOPLE

IDENTIFY | FAO

BIANNUAL REPORT

(SIX-MONTHLY PROGRESS REPORT)

REPORTING PERIOD 1 OCTOBER 2011 – 31 MARCH 2012

PLANNED ACTIVITIES 1 APRIL 2012 – 30 SEPTEMBER 2012

TO BE SUBMITTED TO:

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

UNDER COOPERATIVE AGREEMENT

SUBMITTED BY

IDENTIFY PROJECT PARTNER: FAO

Regional component: Global/Inter-regional
Three hot spot areas (with countries) : <ul style="list-style-type: none"> • Congo Basin: Uganda, Democratic Republic of the Congo, Cameroon, Republic of Congo, Tanzania, Gabon, Equatorial Guinea, Rwanda, Central African Republic, South Sudan • Southeast Asia: Cambodia, China, Indonesia*, Lao People's Democratic Republic, Malaysia, Myanmar,* Philippines, Thailand, Viet Nam • South Asia: Bangladesh, India, Nepal (future activities pending)
Project title: Support for strengthening animal health laboratory capacities in hot spot regions to combat zoonotic diseases that pose a significant public health threat - IDENTIFY
Code: OSRO/INT/902/USA
Total budget: USD 15 419 371 (of which USD 11 919 371 were allocated for implementation of activities by FAO, and USD 3 500 000 were allocated for implementation of activities by OIE through funds transferred by FAO to OIE as per the Letter of Agreement). The activities of OIE will be reported on separately.
Effective starting date: 1 October 2009
Planned end date: 30 September 2012 (31 December 2012 for the FAO project)
Context of the project <p>This project is part of a complex programme – Emerging Pandemic Threats (EPT) – designed by the United States Agency for International Development (USAID) and aimed to identify and implement mechanisms to detect disease emergencies, especially from wildlife. The One Health concept is an important component of the whole programme. The IDENTIFY project is implemented jointly by the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE) and the World Health Organization (WHO).</p>
Objectives of the project <ul style="list-style-type: none"> • Enhance laboratories' ability to detect – to the appropriate level of characterization for the laboratories' capability – IDENTIFY targeted diseases¹ • Enhance/support laboratories' timely reporting of IDENTIFY targeted diseases to national authorities, in support of their official notification to the appropriate regional and international organizations • Laboratories have adopted or improved Quality Assurance practices, inclusive of biosafety and biosecurity measures, and a comprehensive Quality Management System • Laboratories are participating in relevant regional and international laboratory networks according to their respective abilities, disease priorities and responsibilities
Short summary of main activities planned (1 October 2011 – 30 September 2012) <p>Main activity headings are as follows – for further details, please refer to the FAO IDENTIFY Year Three Work Plan:</p> <p>Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced</p> <p>1.A Follow-up of laboratory mapping exercise activities</p> <p>1.B Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines and standards</p> <p>1.C Develop and conduct trainings or workshops to build laboratory capacity and to promote</p>

*Indonesia and Myanmar are included in regional activities under separate funding.

¹ "IDENTIFY targeted disease" indicates those diseases selected at the regional level for support under IDENTIFY. Some IDENTIFY laboratories have no mandate/interest to detect all IDENTIFY targeted diseases and data will not be reported for diseases in those cases.

national laboratory policies and guidelines

1.D Promote and support laboratory quality management

1.E Provide laboratory equipment and supplies in a coordinated manner

Output 2. Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened

2.A Communication tool development and resource building

2.B Development of joint meetings and conferences to support networking and promote national laboratory policies

2.C Review and update of the tripartite Laboratory Networking Strategy (LNS) and future planning

2.D Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories

2.E Support and promote laboratory networks

2.F Support and promote laboratory partnerships

ACRONYMS AND ABBREVIATIONS

AAHL	Australian Animal Health Laboratory
AI	Avian Influenza
APHIS	Animal and Plant Health Inspection Service
AU-IBAR	African Union-Interafrican Bureau for Animal Resources
CAHEC	China Animal Health and Epidemiology Centre
CBPP	Contagious bovine pleuropneumonia
CDIL	Central Disease Investigation Laboratory, Bangladesh
CVO	Chief Veterinary Officer
DAH	Department of Animal Health, Viet Nam
EARLN	East Africa Regional Laboratory Network
ECTAD	Emergency Centre for Transboundary Animal Diseases
EMPRES-I	FAO Global Animal Disease Information System
EPT	Emerging Pandemic Threats
FAO	Food and Agriculture Organization of the United Nations
FMD	Foot-and-mouth disease
FRET	Fluorescence resonance energy transfer
HPAI	Highly Pathogenic Avian Influenza
HPED	Highly Pathogenic Emerging and Re-emerging Diseases in Asia
IAEA	International Atomic Energy Agency
IZSVe	<i>Istituto Zooprofilattico Sperimentale delle Venezie</i>
LANAVET	<i>Laboratoire National Vétérinaire, Cameroon</i>
LIMS	Laboratory Information Management System
LoA	Letter of Agreement
NAHC	National Animal Health Centre, Lao PDR
NaVRI	National Veterinary Research Institute, Cambodia
NIAH	National Institute of Animal Health, Thailand
OFFLU	Joint OIE/FAO Network of Expertise for Animal Influenza
OIE	World Organisation for Animal Health
PPR	Peste des petits ruminants
RAHO 6	Regional Animal Health Office Number 6, Viet Nam
RESOLAB	Western and Central Africa Veterinary Laboratory Network for Avian Influenza and other Transboundary Animal Diseases (RESOLAB)
RVF	Rift Valley fever
SAARC	South Asian Association for Regional Cooperation
SADC	Southern African Development Community
SIV	Swine influenza virus
TAD	Transboundary animal disease
USAID	United States Agency for International Development
US CDC	United States Centers for Disease Control
USDA	United States Department of Agriculture
VRI	Veterinary Research Institute, Malaysia
WHO	World Health Organization

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1 ACTIVITIES UNDERTAKEN DURING THE REPORTING PERIOD (1 OCTOBER 2011 – 31 MARCH 2012) AND PLANNED ACTIVITIES FOR THE NEXT REPORTING PERIOD (1 APRIL 2012 – 30 SEPTEMBER 2012)

1.1 ACTIVITIES GLOBAL COMPONENT (FAO HEADQUARTERS AND FAO/IAEA)

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced

1.A.G Follow-up of laboratory mapping exercise activities

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- The Food and Agriculture Organization of the United Nations (FAO) laboratory mapping tool (LMT) was harmonized across Asia and Africa regions. A final version of the tool was produced, and comprises five modules. The tool can be used as a whole, or in part, by focusing on just one or more modules. Before finalization of the tool, an expert-based opinion survey was conducted for ranking of the elements; no need for the weighting of elements was identified. 1.A.6.G
- All data obtained with the LMT was compiled and analysed at headquarters for production of an overall report on the status of IDENTIFY laboratories, and for the monitoring and evaluation (M&E) and the United States Agency for International Development (USAID) data call.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Produce an overall report on the status of IDENTIFY laboratories supported by FAO. 1.A.4.G
- Develop specific modules for LMT to ease independent application of specific modules, for example, disease-targeted modules and a module to measure the project's impact on laboratory functionality. 1.A.6.G
- Compare historic disease reporting data (FAO Global Animal Disease Information System [EMPRES-i]) with current data for sentinel diseases, to be determined by region. 1.A.1.G
- Improve data collection from FAO Reference Centres. 1.A.3.G
- Identify regional service laboratories by disease focus, based on the outcomes of laboratory mapping. 1.A.5.G

1.B.G Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines and standards

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- None

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Support to three to four participants from South/Southeast Asia and the Congo Basin to attend the 13th Conference of the International Society for Veterinary Epidemiology and Economics (ISVEE XII), from 20 to 24 August 2012 in Maastricht, the Netherlands. The conference will focus on Building Bridges - Crossing Borders.

1.C.G Develop and conduct trainings or workshops to build laboratory capacity and to promote national laboratory policies and guidelines

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Contract (Letter of Agreement [LoA]) with *France Vétérinaire Internationale* was prepared to provide trainings in Africa in various expert fields (mostly trainings in French) and submitted for internal clearance.
- Contract (LoA) with *Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe)*, Padova was prepared and submitted for internal clearance. Its requirements are to provide on-site technical assistance for rabies diagnosis (DRC, Cameroon and Uganda) and testing services, and to contribute to the work on provision of access of sub-Saharan African laboratories to sequencing services.
- A workshop on Classical and Molecular Veterinary Virology was held in Vienna from 28 November to 9 December 2011. Ten participants from the Congo Basin (Kenya, Senegal, Tanzania and Uganda) and Southeast Asia (Indonesia, LAO PDR, Malaysia, Philippines, Thailand and Viet Nam) attended the workshop. It was jointly organized by the International Atomic Energy Agency (IAEA), FAO, the University of Veterinary Medicine, Vienna, and the European Society for Veterinary Virology (ESVV) (co-funded by the European Commission projects EPIZONE, ConFluTech and AniBioThrea). The workshop covered the topics of molecular techniques and classical virology. The participants were able to better understand the benefits of classical and molecular technologies, and their laboratory proficiencies were enhanced. *1.C.3.G.*
- Organizational support was provided for the South/Southeast Asia regional workshop, Laboratory Information Management Systems: Identifying Needs, Resources and Ways Forward in Thailand on 8 and 9 December 2011. *1.C.1.G and linked to global activity 2.A.4.G.*
- Preparation of training workshops and a consultation:
 - Regional training course on Major Transboundary and Zoonotic Animal Diseases: Early Detection, Surveillance and Epidemiology (*1.C.4.G*), *Laboratoire National Vétérinaire (LANAVET)*, GAROUA (Cameroon), from 11 to 22 June 2012. The following activities were carried out: drafting of the prospectus, discussions (i.e. teleconferences and email exchanges) on the course content with selected trainers, contacts established (i.e. at the training location, the Emergency Centre for Transboundary Animal Diseases (ECTAD) Bamako and Nairobi and the FAO headquarters). Location and dates were confirmed, and the host country officially contacted by IAEA. The invited countries are: Cameroon, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Ethiopia, Gabon, Rwanda, South Sudan, Tanzania and Uganda .
 - Regional training course on Major Transboundary and Zoonotic Animal Diseases in the Region: early Detection, Surveillance and Epidemiology for Asia region (*1.C.5.SSEA*) decision to replace it with a training course on Sequencing and Sequence Analysis in Vienna in October 2012.
 - Consultation on Good Laboratory Practices for Conducting Multiple Disease Diagnosis (*1.C.5.G*): Terms of reference (ToR) were drafted, and location and date confirmed (Vienna, September 2012).
- Validation and transfer of new techniques for multiple disease diagnosis (polymerase chain reaction [PCR] using the fluorescence resonance energy transfer [FRET] system) *1.C.6.G*
- A method developed at the Animal Production and Health Laboratory (APHL) of the joint FAO/IAEA Division for capripoxvirus detection and differentiation was taught to the participants of the workshop on Classical and Molecular Veterinary Virology, from 28 November to 9 December 2011 in Vienna.

- Terms of collaboration were defined between APHL of the joint FAO/IAEA Division and Pathofinder (Dutch company) for the development of a multiple pathogen detection assay for major pathogens causing respiratory diseases and symptoms in ruminants. This project is only partially supported by IDENTIFY.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Conduct activities under the LoA with *France Vétérinaire International*. See also 1.C.2.C, 1.C.5.C, 1.C.4.C and 1.C.7.C
- Conduct activities under the LoA with *IZSVE, Padova*.
- Coordinate the three sessions of the regional training-of-trainers (TOT) pathology workshop Basics of Field and Laboratory Diagnosis in both regions. 1.C.2.G and linked to global activity 2.A.2.G
- Conduct regional training course on Major Transboundary and Zoonotic Animal Diseases: early Detection, Surveillance and Epidemiology, focusing on African Swine Fever, capripox and rabies (LANAVET, GAROUA (Cameroon), from 11 to 22 June 2012). 1.C.4.G
 - Teach the variant FRET method developed at APHL of the joint FAO/IAEA Division for which a prototype kit has been made. Distribute this prototype to participants for testing and validation of the assay. 1.C.6.G
- Hold consultation on good laboratory practices for conducting multiple disease diagnosis (September 2012, Vienna). 1.C.5.G
- Carry out validation and transfer of new techniques for multiple disease diagnosis (PCR using the FRET system). The following laboratories are targeted: the National Animal Health Diagnostic Investigation Centre and the Pan-African Veterinary Vaccine Centre in Ethiopia and LANAVET in Cameroon. 1.C.6.G
 - Undertake the final discussion with Pathofinder and first steps of the development of the multiple pathogens detection assay for the major pathogens causing respiratory diseases and symptoms in ruminants.

1.D.G Promote and support laboratory quality management

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Preparation of proficiency testing. 1.D.3.G:
 - For Rift Valley fever (RVF): serology kits were delivered to the FAO/IAEA joint Division; proficiency panels were prepared and ready for shipment.
 - For peste des petits ruminants (PPR): proficiency panels were prepared.
- Access to standardized veterinary diagnostic reagents and international standards, training on recombinant RVF antigens and sera anti-RVF production (South Africa), discussion and agreement with the National Institute for Communicable Diseases (NICD), South Africa on the period and duration of the training on production of recombinant RVF antigens and anti-RVF antisera. The beneficiary countries were Senegal and Kenya. 1.D.5.G

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Provide support to the activities under the LoA with *France Vétérinaire International*: on-site audit/backstopping missions for: (i) assessing quality assurance system implementation in the Democratic Republic of the Congo, the Central African Republic, the Republic of the Congo, Rwanda, Tanzania and Uganda; and (ii) assessing biosecurity and biosafety in Cameroon and the Democratic Republic of the Congo. *linked to regional activity 1.D.2.C*

- Provide support to the activities under the LoA with IZSVe, Padova: avian influenza (AI)/Newcastle Disease (ND) proficiency test organized. 1.D.3.G
- Provide standardized veterinary diagnostic reagents and international standards in a coordinated manner. 1.D.5.G
- External Quality Assurance for targeted diseases.1.D.3.G:
 - Deliver RVF kits and RFV and PPR proficiency panels to selected laboratories (Cameroon, the Central African Republic, the Republic of the Congo, the Democratic Republic of the Congo, Ethiopia, Gabon, Kenya, Rwanda, Tanzania and Uganda) for testing.
- Organize training on Recombinant RVF antigens and biologicals production (South Africa, one month between July and October 2012) for each of two scientists to be selected from Kenya and Senegal). 1.D.5.G
- Sign an IAEA Technical contract with a laboratory (to be selected in the Congo basin region) for serum production to create the PPR reference sera bank at the FAO/IAEA Division. 1.D.5.G

1.E.G Provide laboratory equipment and supplies in a coordinated manner

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Checklist of a minimum supply established per list of IDENTIFY priority diseases and provided to the Congo basin region. *linked to regional activity 1.E.1.C*

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Launch a tender for all Congo Basin countries for procurement of equipment and consumables. *linked to regional activity 1.E.1.C*

Output 2. Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened

2.A.G Communication tool development and resource building

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- A glossary was developed consisting of the available diagnostic assays and cross-cutting technologies for selected animal diseases, including zoonoses: most chapters of the glossary written and validated by experts in the field. New name for the document: LabCards. AI LabCard was validated by the Joint OIE/FAO Network of Expertise for Animal Influenza (OFFLU) for posting on the OFFLU Web site. 2.A.3.G
- Basics of Field Pathology training manual was provided to the Congo Basin and South/Southeast Asia regions: the manuals will be distributed during the regional (African and Asian) TOT pathology workshops Basics of Field and Laboratory Diagnosis. 2.A.2.G linked to regional 2.A.2.C and 2.A.1.SSEA
- A road map and a self-assessment tool for laboratories to identify the elements needed for a laboratory information management system (LIMS) were developed at FAO headquarters together with the Australian Animal Health Laboratory (AAHL) to critically review the individual laboratory needs, infrastructure and resources needed for successful implementation and sustainability of LIMS platform, and to establish guidelines for selection of a "fit-for-purpose" LIMS platform. These tools were piloted and delivered to laboratory managers during the South/Southeast Asia workshop in December 2011 (refer to 1.C SSEA) 2.A.4.G

- EMPRES-i genetic module: second phase of collaboration with the Swiss Institute of Bioinformatics started (LoA, November 2011-June 2012). Production phase of the work was initiated. Linkages were validated between the virus and epidemiological information for H5N1 (tentatively). Applications and tools of the module are under discussion. A supportive tool was offered to the FLURISK project (EFSA pandemic influenza Risk Assessment project). 2.A.5.G
- Access to sequencing services to Africa laboratories 2.A.7.G:
 - Concept note on harmonization of molecular tests and provision of access to sequencing services to Africa laboratories were developed.
 - Meeting at FAO headquarters on Improving Sequencing Access for sub-Saharan African Laboratories, Rome (10 February 2012) with 14 participants including six scientists from three FAO Reference Centres, the IDENTIFY coordinator from the joint FAO/IAEA division, IDENTIFY|FAO regional coordinators from Bamako and Nairobi, and HQ IDENTIFY|FAO management team.
 - Major OUTCOMES: Beneficiary laboratories for the improved access to sequencing services were selected; work plan and coordination between the different partners were established; training objectives and logistics, as well as the modalities for the submission of samples for sequencing, procurement and tender needs were discussed.
 - Available protocols for PCR diagnosis and sequencing for the priority pathogens targeted in the Congo Basin was compared across the three FAO Reference Centres with the aim to harmonize protocols for multiple diseases testing. Beneficiary laboratories were informed, and baseline information on PCR testing and sequencing was requested.
- Development of e-learning modules on bioinformatics (phylogeny and sequence analysis) was initiated with the partner (Swiss Institute of Bioinformatics). 2.A.6.G
 - A first draft containing the Chapter 1 of 3 was discussed between the Joint FAO/IAEA division, FAO headquarters and the Swiss Institute of Bioinformatics.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Finalize translation in French of the Basics of Field Pathology training manual, and distribute to French-speaking Congo basin TOT pathology workshop attendees of the Basics of Field and Laboratory Diagnosis. 2.A.2.G, linked to regional 1.C.4.C and 2.A.2.C
- Finalize all chapters of the LabCards and disseminate them to laboratories. 2.A.3.G
- Present EMPRES-i genetic module at the AI Symposium and OFFLU technical meeting for comments and future use by the scientific community. Support a master student from Viet Nam on the use of the EMPRES-i genetic module with a focus on Vietnamese H5N1 data. Validate the developed algorithm. Launch the genetic module to the public. Publish the work. 2.A.5.G
- Access to sequencing services to Africa laboratories 2.A.7.G: develop and test harmonized protocols for PCR diagnosis and sequencing. Procure reagents for PCR and preparation of products for sequencing. Develop decision trees and sequencing strategy. Carry out workshop for laboratory and epidemiology staff on PCR protocols, sequencing and bioinformatics. Tender and select sequencing provider for provision of sequencing services. Develop a moderator system for sequencing services. Promote sharing of results.
- Finalize the two e-learning modules on bioinformatics (phylogeny and sequence analysis). 2.A.6.G

2.B.G Development of joint meetings and conferences to support networking and promote national laboratory policies

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Supported the preparation and co-funding of the Western and Central Africa Veterinary Laboratory Network for Avian Influenza and other Transboundary Animal Diseases (RESOLAB) Annual coordination meeting (from 6 to 9 December 2011, Bamako, Mali). FAO/IAEA coordinator participated in the meeting. linked to regional 2.B.C

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Support to the preparation of the East Africa Regional Laboratory Network (EARLN) meeting (Mombasa, July 2012). linked to regional 2.B.C

2.C.G Review and update of the Laboratory Networking Strategy and future planning

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Routine project management at headquarters and regional levels continued through conference calls/videoconferences as needed, daily email communication and tripartite face-to-face meetings between FAO, OIE and the World Health Organization (WHO) as well as the use of the IDENTIFY SharePoint.
- Participation in monthly teleconferences with IDENTIFY project management team and USAID Agreement Officer's Technical Representative on 9 March 2012 and 10 April 2012, and face-to-face meeting on 17 January 2012.
- Continued rotating system of responsibility sharing on a monthly basis between the three partners to more effectively and rapidly handle communication with programme partners, day-to-day operations and logistic arrangements. This system also applies to document creation, revision and meeting hosting.
- IDENTIFY|FAO planning meeting with the FAO project management team, the FAO/IAEA coordinator and the FAO regional coordinators from Bamako, Nairobi and Gaborone (via teleconference) in Rome on 8 and 9 February 2012; The IDENTIFY|FAO activities were planned for the coming eight months.
- IDENTIFY project planning was discussed during the following meetings:
 - Tripartite headquarters meeting on the monitoring and evaluation process and Year 12-13 planning on 17 January 2012, Washington, DC; Tripartite headquarters' meeting on the monitoring and evaluations process and IDENTIFY indicators, Paris, France, 16 February 2012.
 - Emerging Pandemic Threats (EPT) Quarterly Partners meeting, Washington, DC, from 18 to 20 January 2012.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Routine project management at headquarters and regional levels continued.
- Participation of the IDENTIFY |FAO management team to the Congo basin IDENTIFY|FAO planning meetings, tentatively planned on 12 and 13 July 2012.
- Participation (tentative) of the IDENTIFY |FAO management team to the Congo basin and S/SE Asia Regional EPT planning meetings, July 2012.
- Moreover, project planning will be discussed during the following meetings:
 - USAID and Tripartite Meeting to discuss IDENTIFY, Rome, on 20 and 21 June 2012.

2.D.G Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Four-way linking for assessing health risks at the human-animal interface. 2.D.2.G:
 - Planning mission carried out in Viet Nam (on 17 and 18 October 2011) to prepare the concept, agenda and logistics for the four-way linking workshop in Viet Nam, in collaboration with local FAO and WHO offices.
 - Viet Nam FAO/OIE/WHO workshop was conducted in Nha Trang, from 14 to 16 February 2012 for 26 Vietnamese participants from the animal health sector. OUTCOMES: communication, information sharing and joint risk assessment were the main gaps identified. Next steps for national, regional and provincial level on communication, data sharing and joint risk assessment for Highly Pathogenic Avian Influenza (HPAI) were developed.
 - Presentation of a four-way linking concept given at the Meeting on Laboratory Strengthening for Emerging Infectious Diseases Diagnosis in Asia Pacific (October 2011 in Kuala Lumpur, Malaysia).
- FAO headquarters and FAO/IAEA provided assistance to the regional preparation of the Congo Basin National Veterinary Laboratories' Directors and Central Veterinary Officers (CVOs)/FAO planning meeting in Libreville, Gabon, from 3 to 5 April 2012, and Entebbe, Uganda, from 11 to 13 April 2012.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Four-way linking in Bangladesh: review mission in July 2012 and workshop in October 2012. 2.D.2.G
- Attend the Congo Basin National Veterinary Laboratories' Directors and CVOs/FAO planning meeting in Gabon, from 3 to 5 April 2012, and Entebbe, Uganda, from 11 to 13 April 2012.

2.E.G Support and promote laboratory networks

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Inventory of training material in animal influenza was validated and made available on the OFFLU Web site.
- Contributed to the WHO VCM Meeting consultation (December 2011) aimed to improve the influenza vaccine virus selection process through: exploring ways to improve the extent, timeliness and quality of virological and epidemiological surveillance data; the development and application of new assays and new modelling approaches; the understanding of the relationship between virus characteristics and vaccine efficacy, and the general understanding of regulatory considerations. OFFLU activities were presented to the participants of the public health sector to show animal health involvement in pandemic preparedness.
- Contributed to the WHO Vaccine Composition meeting from 20 to 22 February 2012, WHO headquarters, Geneva by collecting and compiling epidemiological analysis, genetic and antigenic data. In September 2011, OFFLU shared new and previously unreported sequences from Bangladesh, Egypt, India, Indonesia, Israel, Lao PDR, Myanmar and Viet Nam (clades 1, 2.1.3, 2.2, 2.2.1, 2.3.2, 2.3.4) with the VCM. The report included 245 H5 sequences (120 non-public and 12 public domain sequences from 2011; 113 non-public 2009–2011). For H9, the OFFLU network contributed 20 pre-2011 sequences (majority from 2009), and one 2011 sequence from Bangladesh. Among these viruses, one was selected by WHO for candidate vaccine virus preparation (clade 2.3.4.2 A/chicken/Bangladesh/11rs1984-30/2011). FAO

requested the transfer of the strain from Italy to the United States Centers for Disease Control (US CDC). The agreement was provided by Bangladesh, and the strain transferred from IZSVe to US CDC.

- Support and participation in the 2nd OFFLU Swine Influenza Virus (SIV) technical meeting, Paris, on 27 and 28 March 2012: FAO's contribution to global surveillance activities for SIV was presented, and next year activities for the SIV groups were planned.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Support the annual technical meeting of OFFLU on 4 and 5 April 2012, back-to-back with the 8th International Symposium on Avian Influenza, from 1 to 4 April 2012 (co-funding), London, UK.
- Finalize the development of the OFFLU training Web site, with various training materials.
- Contribute to the next WHO Vaccine Composition meeting (end of September 2012, China).

2.F.G Support and promote laboratory partnerships

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Progress was made towards the designation of FAO Reference Centres in China, India, Kenya, South Africa and Thailand (government endorsement pending for most dossiers). 2.F.1.G
- Concept note was developed on the roles and responsibilities of regional service laboratories in sub-Saharan Africa and submitted to OIE and the African Union-Interafrican Bureau for Animal Resources (AU-IBAR) for discussion. 2.F.2.G

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Support the organization of the regional meeting in Addis Ababa from 11 to 13 July 2012 to define the roles and responsibilities of regional service laboratories in sub-Saharan Africa with institutional, technical and funding partners. 2.F.2.G

2 ACTIVITIES UNDERTAKEN DURING THE REPORTING PERIOD (1 OCTOBER 2011 – 31 MARCH 2012) AND PLANNED ACTIVITIES FOR THE NEXT SIX-MONTH PERIOD (1 APRIL 2012 – 30 SEPTEMBER 2012)

2.1 ACTIVITIES SOUTH/SOUTHEAST ASIA COMPONENT

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced

1.A.SSEA. Follow-up of laboratory mapping exercise activities

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Refer to backstopping visits described in 1.D.SSEA in Lao PDR (National Animal Health Centre [NAHC]) on 6 and 7 October 2011, Cambodia (National Veterinary Research Institute [NaVRI]) from 10 to 12 October 2011, Malaysia (Veterinary Research Institute [VRI]) from 11 to 13 October, Thailand (National Institute of Animal Health [NIAH]) from 14 to 18 October, Viet Nam (Regional Animal Health Office Number 6 [RAHO 6]) on 20 and 21 October, and China (China Animal Health and Epidemiology Centre [CAHEC]) from 20 to 27 November 2011.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Compile/update relevant laboratory capacity data for the network and associated laboratories through the laboratory mapping exercise; implementing partner: AAHL.

1.B.SSEA. Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines and standards

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- The 2nd OFFLU SIV Technical Meeting, on 27 and 28 March 2012 Paris, France: IDENTIFY provided the support for a specialist from NIAH, Thailand, and a specialist from the National Centre for Veterinary Diagnostics (NCVD)/Department of Animal Health (DAH), Viet Nam to attend the meeting. The meeting was to discuss the progress made and to work towards developing a better understanding of the global implications of influenza infection in swine at the human-animal influenza interface. The two participants were also given the opportunity to visit the Animal Health and Veterinary Laboratories Agency (AHVLA) Weybridge and the Institute for Animal Health (IAH) Pirbright laboratories in the United Kingdom on 29 and 30 March 2012.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- The 8th Avian Influenza International Symposium, from 1 to 4 April 2012, London. The project provided support for three participants, including one participant from NIAH, Thailand, and two participants from DAH, Viet Nam to attend the conference. This conference was held for scientists, biologists, veterinarians, medics and government regulators interested in the exchange and discussion of current scientific information on AI. It intended to provide a broader understanding of the global nature of AI and a framework to develop international solutions.
- The OFFLU Annual Technical Meeting, on 4 and 5 April 2012, London, UK: Following the AI Symposium, three participants also attended the meeting that brings together the leading influenza experts from all over the world to present and discuss OFFLU's progress.

- The Asia-Pacific Biosafety Association's 7th Annual Biosafety Conference, Bali, Indonesia, from 24 to 27 April 2012: Under the support from the project, a Biosafety Officer and a Biosafety Engineer from VRI, Malaysia attended the two-day preconference workshop on 24 and 25 April and a two-day conference on 26 and 27 April 2012. This regional conference aimed at generating a formal exchange on various developments in biosafety, ranging from the strategic coalition and road map for the Asia-Pacific region to biosafety capability and capacity building in the region.

1.C.5SEA. Develop and conduct FAO/OIE/WHO trainings or workshops to build laboratory capacity and to promote national laboratory policies and guidelines

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- REGIONAL training: Advanced Biorisk Training, Geelong, Australia, from 14 to 18 November 2011. 1.C.1.SSEA:
 - With the priority given to participants who attended the Biosafety Management Training in 2011, out of ten participants, seven participants were from China, Malaysia, Thailand and Viet Nam, while three participants from India joined the training with the funding support from another project.
 - Implementing partner: AAHL.
 - OUTCOME: The trained-participants would become regional biosafety resource persons to provide technical support to other countries in the region.
- REGIONAL training: Laboratory Engineering and Equipment Maintenance Training, Geelong, Australia, from 21 to 25 November 2011:
 - With priority given to those who participated in the Biosafety Management Training in 2010, there were 13 participants from China, India, Lao PDR, Malaysia, Thailand and Viet Nam
 - Implementing partner: AAHL.
 - OUTCOME: The trained biosafety engineers would become regional resource persons to provide support to other countries in the region.
- REGIONAL workshop: Laboratory Information Management Systems: Identifying Needs, Resources, and Ways Forward in Phuket, Thailand, on 8 and 9 December 2011. 1.C.3.SSEA
 - The workshop was attended by 19 participants from national animal health laboratories in 11 countries of South and Southeast Asia;
 - Implementing partners: AAHL and CSU.
 - OUTCOME: A self-assessment tool to aid in determining individual laboratory needs for LIMS was piloted and delivered to laboratory managers for their use in decision making and creating an action plan on selection and implementation of a LIMS.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- REGIONAL training, Laboratory and Field Epidemiology Linkage TOT Workshops: Basics of Field and Laboratory Diagnosis in Chiang Mai, Thailand, scheduled for 21-25 May 2012; implementing partner: the University of Georgia. 1.C.4.SSEA
- REGIONAL workshop, Laboratory and Field Epidemiology Linkage TOT: Strengthen Laboratory and Field Epidemiology Linkages. Schedule is to be confirmed; implementing partner: AAHL.
- REGIONAL workshops related to regional laboratory networking of selected regional priority diseases for Asia. Schedules are to be confirmed; implementing partner: AAHL.
- Provide consultancy on risk assessment, standard operating procedures development and training on biosafety management to network laboratories; implementing partners: international/national consultants and PREDICT.

1.D.SSEA. Promote and support laboratory quality management

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Conducted backstopping missions to seven laboratories to ensure implementation of appropriate diagnostic protocols under a quality assurance system. During the visits to laboratories, AAHL laboratory experts provided the following inputs: (i) follow-up on proficiency testing results for PRRS, CSF and HPPI; (ii) trouble shooting technical problems revealed by proficiency testing results; (iii) in-house training on equipment usage and maintenance; (iv) follow-up on laboratory quality systems; (v) inputs on biosafety and biosecurity; and (vi) advocacy for laboratory support for surveillance. These missions were carried out at IDENTIFY-supported laboratories: NAHC in Lao PDR on 6 and 7 October 2011, NaVRI in Cambodia from 10 to 12 October, VRI in Malaysia from 11 to 13 October, NIAH in Thailand from 14 to 18 October, RAHO 6 in Viet Nam on 20 and 21 October, and CAHEC and the Chongqing Animal Disease Control Centre (CADCC) in China from 20 to 27 November 2011. *1.D.2.SSEA*
- Provided consultancy and technical assistance to activities related to the laboratory relocation and implementation of the Biosafety Level 3 (BSL3) facility at NAHC, Lao PDR (March-May 2012).
- Provided laboratory visits and technical consultation to assist development and implementation of laboratory quality management to the network laboratories: NAHC in Lao PDR from 22 to 24 November 2011, DAH in Viet Nam, from 18 to 20 December 2011, the Central Disease Investigation Laboratory [CDIL] in Bangladesh, on 25 January 2012, NAHC in Lao PDR on 22 March and on 29 and 30 March 2012, NaVRI in Viet Nam from 26 to 29 March 2012.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Continue to provide advice and technical assistance to activities related to the laboratory relocation and implementation of the BSL3 facility at NAHC, Lao PDR (March-May 2012).
- Provide biosafety cabinet testing and calibration to the network laboratories (Indonesia, Lao PDR, Myanmar, the Philippines and Viet Nam). *1.D.1.SSEA*.
- Provide consultation and facilitate the procurement/access of LIMS to the network laboratories (NIAH, Thailand, and NAHC, Lao PDR). *1.D.4.SSEA*
- Continue to facilitate proficiency testing programme for diagnosis of selected regional priority diseases and provide backstopping missions to the participating laboratories to ensure implementation of appropriate diagnostic protocols under a quality assurance system; implementing partner: AAHL. *1.D.6.SSEA*.
- Provide laboratory visits and technical consultation to assist development and implementation of laboratory quality management to the network laboratories. *1.D.2.SSEA*.

1.E.SSEA. Provide laboratory equipment and supplies in a coordinated manner

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Two PCR cabinets were procured: one for CDIL, Bangladesh, and one for the Central Veterinary Laboratory, Nepal.
- Eight biosafety cabinets procured in August 2011 were delivered and installed at the laboratories in: Bangladesh (one), Cambodia (one) and Malaysia (two) in January 2012, and at the laboratory in Nepal (two) in February 2012. Two biosafety cabinets were delivered to the laboratory in Lao PDR in November 2011, and will be installed in the new laboratory.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Provide necessary supplies and equipment, based on the findings and recommendations of the biosafety assessment and cabinet testing activities, to ensure the proper biosafety containment and practices in the network laboratories.
- Provide standardized veterinary diagnostic reagents including proficiency testing panel complement, supplies and equipment as requested by the network laboratories, or recommended in support of the proficiency testing programme.

Output 2 Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened

2.A.SSEA. Communication tool development and resource building

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Supported production of IDENTIFY leaflets for distribution to participants attending FAO-organized meetings and workshops. 2.A.1.SSEA.
- Provided technical inputs and supported the implementation of EMPRES-i Asia platform to share expertise and information in a real-time manner across the network.
- Provided administration and information update to the AI Network Asia email list.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Continue to support the implementation of EMPRES-i and AI Network Asia.
- Provide the guidelines and documents related to diagnosis, management and control of transboundary animal diseases (TADs) as per requested Distribution of Basics of Field Pathology Training manual for trainers.
- Develop training materials for the laboratory – Field Epidemiology Linkage Training.

2.B.SSEA. Development of joint meetings and conferences to support networking and promote national laboratory policies

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- REGIONAL Laboratory Directors' Forum meeting and Regional Laboratory Network meeting. 2.B.1.SSEA: The Third Laboratory Directors' Forum was jointly organized by the Department of Veterinary Services Malaysia, FAO and OIE on 18 October 2011 in Kuala Lumpur, Malaysia. The meeting was attended by 35 participants from Cambodia, Lao PDR, Malaysia, Myanmar, Thailand and Viet Nam, NIAH Japan, AAHL, OIE and FAO. The Forum welcomed new members from China, Indonesia and the Philippines. The main objective of the meeting was to update the directors of key national laboratories on the ongoing activities related to laboratory capacity building and laboratory networking in Southeast Asia.
- Meeting on Laboratory Strengthening for Emerging Infectious Diseases Diagnosis in Asia and the Pacific was held from 19 to 21 October 2011 in Kuala Lumpur, Malaysia. The meeting was organized jointly by FAO/OIE/WHO. It was the first time that representatives from cross-sectoral groups, particularly the animal and public health, met to discuss laboratory issues in the region. The international organizations, FAO, OIE and WHO presented their frameworks for implementing the laboratory strengthening programme in the region: FAO Regional Strategy on Emerging Diseases, OIE Performance of Veterinary Services Pathway and WHO Western Pacific Region Asian Pacific Strategy for Emerging Diseases. Animal and public health sectors met to

discuss the issues related to strengthening capacities before convening on the third day for an information sharing session on One Health and cross-sectoral group work.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Regional Laboratory Technical Advisory Group meeting (June 2012, Bangkok, Thailand).
- The 4th Laboratory Directors' Forum meeting (July 2012, Viet Nam).
- Regional Laboratory Network meeting (September 2012, Viet Nam).

2.C.SSEA. Review and update of the tripartite Laboratory Networking Strategy and future planning

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- The IDENTIFY|FAO Southeast Asia coordinator together with the OIE IDENTIFY Southeast Asia coordinator participated in the tripartite 2012 EPT Lao PDR work plan review meeting on 23 November 2011 in Vientiane, Lao PDR.
- The IDENTIFY|FAO Southeast Asia coordinator participated in the 2012 EPT Thailand work plan review meeting on 6 February 2012 in Bangkok, Thailand.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- The IDENTIFY|FAO Southeast Asia coordinator will participate in the 2nd Quarterly EPT Lao PDR Work Plan Review meeting to be held on 5 April 2012 in Vientiane, Lao PDR.
- Participation in the Regional EPT planning meeting, July 2012, and in the EPT country level work planning meetings (tentatively).

2.D.SSEA. Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Provided assistance and inputs on development of the Regional Framework for Animal Health Laboratory Capacity Building and Networking in Asia which was presented and adopted during the 3rd Laboratory Directors' Forum meeting (from 19 to 21 October 2012).
- Facilitated the development of ToR for roles and responsibilities of the regional leading laboratory for classical swine fever (CSF) (DAH, Viet Nam), foot-and-mouth disease (FMD) (Regional Reference Laboratory, Thailand) and HPAI (VRI, Malaysia), which was presented and agreed at the 3rd Laboratory Directors' Forum meeting (from 19 to 21 October 2012).

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Provide technical assistance in preparation of the Regional Framework for Animal Health Laboratory Capacity Building and Networking in Asia to the Association of Southeast Asian Nations Sectoral Working Group on Livestock (ASWGL) in the upcoming ASWGL meeting in May 2012 in Myanmar.

2.E.SSEA. Support and promote laboratory networks

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- The IDENTIFY|FAO SE Asia Coordinator participated in and provided technical inputs to DAH Viet Nam 10th Epidemiology Laboratory Network Meeting from 19 to 21 December 2011 in Hanoi, Viet Nam. A total of 50 participants attended the meeting including staff from DAH Epidemiology Division, NCVD and RAHOs. Representatives from the Viet Nam National Institute of Health and Epidemiology (NIHE), the Hanoi Agriculture University (HAU), USAID, US CDC and the Wildlife Conservation Society (WCS), and laboratory experts from FAO also participated in the meeting. The goals of the meeting were to share updates on diseases surveillance and diagnosis and to discuss plans for future surveillance, diagnosis and networking activities.
- The IDENTIFY|FAO Southeast Asia Coordinator provided technical inputs during the First Laboratory Directors' Forum meeting and workshop on Laboratory Networking and Proficiency Testing for Priority Highly Pathogenic Emerging and Re-emerging Diseases in Asia (HPEDs) in South Asian Association for Regional Cooperation (SAARC) countries on 23 and 24 January 2012 in Dhaka, Bangladesh. The meeting and workshop were attended by 27 participants from the SAARC countries including Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, with technical support from AAHL, OIE and FAO Regional Office for Asia and the Pacific. The ultimate goal of this Forum was to provide a platform to discuss problems and issues related to the national veterinary diagnostic laboratories and networks of member states in the SAARC region; and to act as a coordinating platform for the national veterinary diagnostic laboratories of the region to promote harmonization and to enhance laboratory capacity and standards for the diagnosis of TADs and emerging/re-emerging infectious diseases.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Continue to provide inputs and support communication and interaction among the regional network laboratories, and support national laboratory networking activities.

2.F.SSEA. Support and promote laboratory partnerships

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Support and promote the establishment/development of regional leading laboratories
2.F.1.SSEA:
 - Supported the development and implementation of Regional Guiding Principles for Diagnosis of HPAI, FMD, CSF and porcine reproductive and respiratory syndrome (PRRS) by regional leading laboratories.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Provide support to the regional leading laboratory for swine diseases in Viet Nam to host the 4th Laboratory Directors Forum meeting and the Regional Laboratory Network meeting.

3 ACTIVITIES UNDERTAKEN DURING THE REPORTING PERIOD (1 OCTOBER 2011 – 31 MARCH 2012) AND PLANNED ACTIVITIES FOR THE NEXT SIX-MONTH PERIOD (1 APRIL 2012 – 30 SEPTEMBER 2012)

3.1 ACTIVITIES CONGO BASIN COMPONENT

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced

1.A.Congo. Follow-up of laboratory mapping exercise activities

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- The first report on the Congo Basin National Veterinary Diagnostic Laboratories Mapping, based on laboratory self-evaluation system data was finalized in December 2011. Translation of the report into French was carried out. 1.A.1.C
- Harmonization of the FAO laboratory mapping tool across Asia and Africa regions (activity linked to 1.A.6.G):
 - Review and translation of the new and consolidated laboratory mapping tool in French. 1.A.5.C
 - Migration of data from the 2010 questionnaires and presentation into the new laboratory mapping tool. 1.A.2.C

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Outcomes of the mapping results to be presented to laboratory directors and CVOs (Libreville, Entebbe meetings, April 2012) 1.A.1.C
- Additional targeted data collection, with laboratory visits and/or follow-up assessments if necessary, to fill in gaps in knowledge on laboratory capacities; IDENTIFY supported laboratories, including regional laboratories, will be assessed with the new laboratory mapping tool by third parties. 1.A.3.C
- Integrate the outcomes of the laboratory mapping into the Laboratory Networking Strategy. 1.A.4.C

1.B.Congo. Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines and standards

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- None

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Support to quality/biosafety managers from Botswana, Cameroon and Uganda to attend the 3rd Annual African Biological Safety Association (AfBSA) conference, from 24 to 27 June 2012, Sandton Convention Centre, Johannesburg, South Africa.
- Support the participation of the Congo Basin and South/Southeast Asia countries in the global FMD conference in Bangkok in June 2012.
- Support the participation in East Africa Regional Biosurveillance workshop in Kampala in June 2012.

1.C.Congo. Develop and conduct trainings or workshops to build laboratory capacity and to promote national laboratory policies and guidelines

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Preparation of a series of trainings planned in year 3 was carried out: finalization of ToR undertaken, trainers and partners contacted, preparation of contracts with training providers carried out, location and dates confirmed, countries informed about the training, logistics partially prepared, etc. The preparation covered the following activities:
 - Regional workshop on Process Control - Quality Control (sample management, quality control for quantitative tests, quality control for qualitative tests), tentatively Libreville, July-September 2012. 1.C.2.C
 - Regional workshop on Laboratory Equipment Calibration and Maintenance, Gambia, tentatively in July 2012, co-funded with the United States Department of Agriculture (USDA)/Animal and Plant Health Inspection Service (APHIS). 1.C.5.C
 - Regional training course on Major Transboundary and Zoonotic Animal Diseases in the Region: Early Detection, Surveillance and Epidemiology, Garoua, Cameroon, from 18 to 29 June 2012, organized together with FAO/IAEA. 1.C.3.C (see also 1.C.4.G)
 - Regional TOT pathology workshops (location, time, main trainers): Basics of Field and Laboratory Diagnosis. 1.C.4.C:
 - Session 1 (anglophone countries): Eastern Congo Basin, Nairobi, from 23 to 27 April 2012
 - Session 2 (francophone countries): Western Congo Basin. Venue and dates TBD. French version of the manual is under finalization. *linked to global activity 2.A.2.G*
 - Regional training on biosecurity/biosafety for Cameroon, the Central African Republic, the Democratic Republic of the Congo, the Republic of the Congo, Gabon and Equatorial Guinea, to be held tentatively in Kinshasa, September 2012. 1.C.7.C
 - Rabies national training (location, time, main trainers) for rabies diagnosis, followed by national seminars on rabies in Cameroon, the Democratic Republic of the Congo and Tanzania.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Provision to each laboratory of ISO 17025 manual, OIE terrestrial manual and OIE guidelines on biosafety in veterinary laboratory. 1.C.1.C
- Carry out national trainings with field epidemiologists on sample collection, storage and shipping. 1.C.6.C

1.D.Congo. Promote and support laboratory quality management

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Two trainings in laboratory equipment calibration and maintenance (1.C.5.C) were prepared in support of laboratory quality management, and as part of the regional road map for quality assurance management. Laboratory support trainings to assist in equipment maintenance and calibration:
 - Session 1: at the *Laboratoire Vétérinaire* of Kinshasa for three to four trainees from each participant national veterinary laboratory (the Democratic Republic of the Congo, the Republic of the Congo and Gabon).
 - Session 2: at LANAVET of Garoua (Cameroon) for four to five trainees from each participant national veterinary laboratory (Cameroon, the Central African Republic, Chad and the Niger).

- Preparation of activities aimed at developing specific technical testing competence to face emerging disease situations: Cameroon, the Central African Republic, the Democratic Republic of the Congo (bush meat microbiology, advanced CBPP, ASF), Gabon (rabies, CBPP), the Republic of the Congo, Rwanda (ASF), Tanzania and Uganda (Contagious bovine pleuropneumonia [CBPP]). Experts were identified. Country time frames proposed. *1.D.9.C*
- Contacts were established with AfBSA for a possible collaboration with FAO and with regional laboratory networks. As a first step, it was agreed that IDENTIFY will support the participants from beneficiary countries in the AfBSA activities (see *1.B.C*). FAO requested that participants be able to submit abstracts and present veterinary perspectives in the meeting. *1.D.6.C*

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Conduct two training sessions on laboratory equipment calibration and maintenance.
- Issue the call for a regional consultancy for on-site audit/backstopping missions for assessing quality assurance system implementation and development of quality documentation in the Central African Republic, the Democratic Republic of the Congo, the Republic of the Congo, Rwanda, Tanzania and Uganda. These missions will provide information for the IDENTIFY indicators linked to objective 3. *1.D.2.C*
- Proficiency testing for AI/ND in September 2012 for all IDENTIFY beneficiary countries (except Equatorial Guinea) and regional laboratories in Africa; RVF and PPR proficiency testing for selected countries (Cameroon, the Central African Republic, the Democratic Republic of the Congo, Ethiopia, Kenya, Senegal, Tanzania and Uganda). *linked to global activity 1.D.3.G*
- Carry out all expert missions aimed at developing specific technical testing competencies to face emerging disease situations. *1.D.9.C*
- Organize scientific visits for laboratory directors within and outside their region (all countries). *1.D.4.C*
- Conduct assessment missions (Cameroon and the Democratic Republic of the Congo) for biosafety and biosecurity infrastructures, equipment and practices. *1.D.5.C*
- Provision to the nine beneficiary countries with validated standardized veterinary diagnostic reagents (antigens and antisera) targeting priority TAD laboratory diagnosis. *1.D.8.C*

1.E.Congo. Provide laboratory equipment and supplies in a coordinated manner

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- A checklist of minimal equipment and consumables to be made available in each beneficiary laboratory was determined, which will be used as priority procurement items. The approach was developed on combining the checklist with the results of the mapping and with the list of needs for equipment and consumables already collected from beneficiary laboratories. *1.E.1.C*

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Approach on procurement of equipment and consumables to be agreed during laboratory directors and CVOs meetings (Libreville, Gabon, from 3 to 5 April, 2012, and Entebbe, Uganda, from 11 to 13 April 2012). An indication of the budget range will be communicated to the laboratories. *1.E.1.C*

Output 2 Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened

2.A.Congo. Communication tool development and resource building

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Conception and production of a leaflet on IDENTIFY activities, in addition to the posters was produced and distributed to beneficiary laboratories. 2.A.1.C
- The following progress was made in the second phase of the study on the development of collaborations and/or partnerships between public veterinary laboratories and the animal industry: consultant to carry out the second phase of the study was preselected, pilot countries were selected (Cameroon, the Democratic Republic of the Congo and Rwanda), and his ToR were finalized. 2.A.3.C

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Production, printing and dissemination of various public awareness and advocacy materials. 2.A.1.C
- Provide the guidelines and documents related to diagnosis, management and control of TADs as per requested distribution of the Basics of Field Pathology training manual for trainers during the TOT pathology workshops on the Basics of Field and Laboratory Diagnosis. 2A.2.C
- Production, printing and dissemination of case definition and recommended test repertoire for IDENTIFY listed priority diseases. The Veterinary school in Dakar, Senegal (EISMV) was selected to lead this activity through an LoA with FAO. During the implementation period of the LoA, EISMV will make available one expert and two students to develop two guides for field and laboratory diagnosis for priority diseases in the Congo Basin. 2.A.5.C
- Initiate the second phase of the study on the development of collaborations and/or partnerships between public veterinary laboratories and the animal industry. This study will take place in three pilot countries (Cameroon, the Democratic Republic of the Congo and Rwanda) as a follow-up to the first study conducted by FAO in year 2. It aims at identifying alternative activities that will generate additional and sustainable financial resources for concerned laboratories. 2.A.3.C
- Propose sample referral guidelines for two priority TADs. 2.A.4.C

2.B.Congo. Development of joint meetings and conferences to support networking and promote national laboratory policies

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- RESOLAB annual coordination meeting conducted in December 2011, Bamako. All beneficiary countries, except Gabon, were able to participate. Meeting was co-funded by USDA/APHIS. Minutes can be found at:
http://www.fao-ectad-bamako.org/fr/IMG/pdf/Report_5th_RESOLAB_Dec2011_Engl_F16Jan_GD.pdf

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- EARLN annual coordination meeting, Mombasa, Kenya, on 27 and 28 July 2012.

2.C.Congo. Review and update of the tripartite Laboratory Networking Strategy and future planning

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- The IDENTIFY|FAO regional coordinators from Bamako, Nairobi and Gaborone (via teleconference) participated in the IDENTIFY|FAO planning meeting with the project management team in Rome (on 8 and 9 February 2012). The IDENTIFY|FAO activities were planned for the coming eight months.

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Tripartite regional coordination meetings, date and venue TBD.
- Participation of the IDENTIFY |FAO regional coordinators in the Regional EPT planning meeting, July 2012.

2.D.Congo. Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- None

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Year 3 work plan implementation meeting of IDENTIFY|FAO project with the Western Congo Basin National Veterinary Laboratories' Directors and CVOs, from 3 to 5 April 2012, Libreville, Gabon. OIE, WHO and AU-IBAR will participate. Intersectoral discussions at national levels will be supported through national LoA.
- Year 3 work plan implementation meeting of IDENTIFY|FAO project with the Eastern Congo Basin National Veterinary Laboratories' Directors and CVOs, from 11 to 13 April 2012, Entebbe, Uganda. OIE, WHO, USAID and AU-IBAR are invited. Intersectoral discussions at national levels will be supported through national LoA.
- Facilitate national rabies seminars in Cameroon, the Democratic Republic of the Congo and Tanzania, with all stakeholders (public health, universities, WHO, laboratories, veterinary services and private veterinarians).

2.E.Congo. Support and promote laboratory networks

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Annual regional networking meetings: participation in RESOLAB annual coordination meeting, Bamako, Mali, from 12 to 16 December 2012 for nine participants from five Congo Basin countries (Cameroon, the Central African Republic, the Republic of the Congo, the Democratic Republic of the Congo and Equatorial Guinea), two participants from RESOLAB Regional laboratories (LNERV of Senegal and NVRI of Nigeria), three participants from FAO/OIE Reference laboratory (IZSVe of Padova, Italy) and three participants from the EARLN network. Implementing partners: *France Vétérinaire Internationale*, USDA/APHIS, AIEA, USAID, CIRAD, OIE and AU-IBAR. 2.E.1.C

- An OFFLU representative was present at the RESOLAB meeting and ensured good linkage between OFFLU activities and RESOLAB (e.g. information on OFFLU activities, invitation to contribute to OFFLU technical work). *2.E.1.C*
- Representatives of Eastern and Southern African Development Community (SADC) Africa regional laboratory networks were present at the RESOLAB meeting and maintained linkages between sub-Saharan Africa regional laboratory networks. *2.E.1.C*
- Participation of EARLN interim coordinator and the National Animal Disease Diagnostics and Epidemiology Centre of Uganda Executive Manager and one senior staff in the RESOLAB 5th Annual coordination meeting. *2.E.1.C*
- Coordination of the activities of the subnetworks on PPR, FMD and rabies for Western and Central Africa region. *2.E.1.C*
- Information collection and dissemination via emailing list and Web site. Support for sharing of information and biological materials: technical information was shared through RESOLAB Web site (www.fao-ectad-bamako.org) and mailing list. In addition, contacts are underway with the International Livestock Research Institute (ILRI) to implement joint activities that aim at sequencing the gene of ASF virus isolated in Cameroon; *2.E.3.C*
- Support participants to attend an EARLN-FMD subnetwork coordination meeting and regional FMD progressive control pathway meeting in Nairobi (from 5 to 7 March 2012). *2.E.1.C*

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Provide support to RESOLAB and EARLN network and subnetwork meetings. *2.E.1.C*
- Facilitate common workshops, at country level, between laboratory technicians and epidemiologists. *2.E.2.C*
- Resume with information collection and dissemination via emailing list and Web site. *2.E.3.C*
- Invite RESOLAB/SADC Laboratory Network members, FMD subnetwork coordinator and OFFLU representative(s) to the EARLN annual coordination meeting in July 2012 in Kenya. *2.E.1.C*
- Develop linkages with the joint AU-IBAR/OIE/FAO project entitled, Reinforcing Veterinary Governance in Africa, that will be launched in May 2012, and which includes, under FAO component, activities to support the regional networks (laboratory, epidemio-surveillance, etc.).

2.F.Congo. Support and promote laboratory partnerships

Activities undertaken during the current reporting period (1 October 2011 - 31 March 2012)

- Contribution to concept notes developed at FAO headquarters on:
 - definition of the roles and responsibilities of regional laboratories in sub-Saharan Africa and establishment/development of regional service laboratories; OIE was contacted for review and comments on the proposed approach, and a concept note was transmitted to WHO. *linked to global activity 2.F.G*
 - provision of access to sequencing services for sub-Saharan veterinary laboratories.
- Contact was established with AfBSA to explore a possible membership for RESOLAB/EARLN networks. *linked to activity 1.D.C*

Planned activities for the next reporting period (1 April 2012 - 30 September 2012)

- Meeting on regional laboratory services from 9 to 11 July 2012 in Addis Ababa. *linked to global activity 2.F.2.G*

4 MAIN CHALLENGES ENCOUNTERED AND RESPONSE PROVIDED

- The implementation of the project activities under the Year 3 work plan, corresponding to this reporting period (1 October 2011 - 31 March 2012), was delayed owing to the completion of the validation process of the Year 3 work plan in November 2011, which resulted in the adoption of a new timetable of project activities.
- In the Congo Basin, there is still a need to improve the involvement of the beneficiary laboratories in IDENTIFY|FAO activities. FAO meetings with veterinary laboratory directors and CVOs are planned in the next reporting period to present and discuss the project's implementation, common constraints, current and future work plans, and to improve the project ownership by beneficiary laboratories. For a better implementation of the IDENTIFY project at the national level, with a more active role played by the beneficiary laboratories, FAO will discuss the designation (and Terms of Reference) of national coordinators responsible for follow-up and linkages with other national and EPT partners. LoA will be signed with each laboratory, with activities carried out by beneficiary laboratories.
- IDENTIFY|FAO is seeking to fill the gaps defined from the first mapping exercise result in the Congo Basin. The major constraints reported by the laboratories with respect to the adequate performing of laboratory diagnosis were: financial and material resources (reported by 29 percent of the laboratories), inadequate number of qualified human resources (26 percent), difficulties in procurement of reagents and consumables (23 percent) and difficulties in metrology and equipment maintenance (6 percent). Furthermore, the quality system development and/or implementation have faced difficulties ranging from an insufficiency of financial and material resources (26 percent), lack of trained personnel (23 percent), suboptimal metrology and equipment maintenance operations (13 percent) to an irregular provision of water and electricity (7 percent). FAO will address the issue of advocacy to national authorities and regional institutions as well as development of national laboratory policy.
- The low priority given to animal health in country policies and development strategies often leads to difficulties in mobilizing technical, financial and human resources at national level, thus compromising the sustainability of activities implemented under the project. Therefore, there is a need to intensify advocacy at country level and increase sustainable financial resources.

5 MAIN PROGRESS MADE TOWARDS THE ACHIEVEMENT OF PROJECT OUTCOMES (FROM THE START OF THE PROJECT ACTIVITIES)

- The support provided by IDENTIFY to-date has contributed to a greater understanding of the regional animal health priorities, assessment of laboratory capacities, and identification of regional and national gaps and resources.
- The direct support afforded to laboratories is substantial, and has allowed for an expansion of the activities to include: quality assurance, biosafety, and maintenance and calibration of equipment, thus contributing to laboratories' capacity to conduct work in accordance with internationally accredited standards (e.g. ISO 17025). Many national laboratories never had the opportunity to consider these major issues. The support provided is neither isolated nor sequential; the project builds upon previous and current investments in laboratory networking and allows for a programmatic approach, proper approval of planned activities by countries and a regional approach to TADs.
- As many priority diseases are TADs, a regional approach (where agreed) allows for rapid disease detection/identification. Response measures can be coordinated regionally for more effective control. The networks in the West/Central, Eastern Africa and Southeast Asia regions have set a good example, with both the formal and informal exchange of information, collective effort and responsibility to build laboratories in the regions. Other partners, such as USDA/APHIS, EU-FMD Commission and CIRAD have demonstrated an increasing interest in and support for these laboratory networks. The growing confidence lends credence to the regional approach, and FAO has a comparative advantage in the coordination of such support and inputs. This project has provided support to regional laboratory networks, allowing networking and progress in the strategy of these networks, especially related to the status and mandate of regional service laboratories.
- While laboratory capacities and national needs are heterogeneous within each region, the laboratory mapping tool developed by FAO is contributing to a regional perspective on laboratory capacities and gaps. This tool can serve for laboratories themselves, as well as decision-makers and technical partners, to identify the regional and individual support required. It is also an invaluable tool for FAO to tailor its capacity building support in line with the project's objectives, measuring the progress made and the impact of the project. This tool is also applicable in other contexts, or under other FAO projects in the future. It will continue to evolve, through the development of specific modules and according to the feedback received.
- This project has enabled or will shortly enable the launching of innovative initiatives, such as the genetic module in the EMPRES-i database, the four-way linking framework, the laboratory mapping tool, the development of private-public partnerships between laboratories and the animal production sector and the provision of access of laboratories to sequencing services. The genetic module represents an ideal example of a multidisciplinary success, linking virology, epidemiology and bioinformatics, and is receiving increasing interest from the scientific community and from policy makers.
- Building on the investments made with support under AI, this project sustains previously established mechanisms: collaborations and communication pathways between organizations, global OFFLU and regional networks, and benefits from the momentum gained through public good concepts, such as the recognition of the importance of early detection and intervention and impacts of pathogens with pandemic potential. These investments are crucial to the continued development of technical laboratory capacities, especially molecular techniques, to respond to other transboundary and priority diseases.

Project Monitoring Sheet: **OSRO/MYA/702/USA**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **October 2012 to March 2013**

Country: Myanmar
Project: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/MYA/702/USA
Budget: USD 500 000 (Phase I), USD 750 000 (Phase II), USD 375 000 (Phase III), USD 150 000 (Phase IV), USD 279 000 (Phase V), USD 275 000 (Phase VI)
Total budget: USD 2 329 000
Effective starting date: 1 January 2008
Planned end date: 30 September 2013
<p>Context of the project</p> <p>Myanmar has experienced five waves of Highly Pathogenic Avian Influenza (HPAI) outbreaks in 2006, 2007, 2010, 2011 and 2012. The last outbreaks occurred in February and March 2012 in two townships (Chaung Oo and Taungoo) in Sagaing and Bago regions, and were successfully managed. The country remains at risk from duck populations, in which the virus is endemic, migrating wild birds and trade with neighboring countries. The Food and Agriculture Organization of the United Nations (FAO) is implementing an avian influenza (AI) control programme funded during the reporting period by the United States Agency for International Development (USAID). The programme is being implemented in collaboration with the Livestock Breeding and Veterinary Department (LBVD) of the Ministry of Livestock and Fisheries. This report describes activities funded by the project from October 2012 to March 2013.</p>
<p>Project impact</p> <p>The impact of the project is to reduce and stop the spread of H5N1 among flocks of poultry in the country, thus reducing the risk of contagion to other mammals and humans, and avoiding the possibility of a pandemic.</p>
<p>Project outcome</p> <p>The project outcome is to continue the improvement of the capacities and capabilities of Myanmar to prevent, prepare for and respond to the outbreaks of HPAI in the animal population effectively so as to limit its impacts and risk of infection to humans.</p>
<p>Planned activities for the reporting period (October 2012 to March 2013)</p> <p>Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses</p> <p>Activity 1.1: Support the Country team to provide inputs for planning coordination required at the country level.</p> <p>Activity 1.2: Support national and international coordination related to disease control. This includes active participation of the country programme with other projects or programmes, such as the European Union (EU) Highly Pathogenic Emerging Diseases (HPED) project and the Emerging Pandemic Threats (EPT) programme, and exploring collaboration with PREVENT on risk communication.</p>

Activity 1.3: Support the Government of Myanmar to participate in a laboratory quality assurance (QA) and quality control (QC) system for HPAI and regional HPAI laboratory networks.

Activity 1.4: Support LBVD staff in veterinary epidemiology training at the regional and country levels, including the Field Epidemiology Training Programme for Veterinarians (FETPV).

Output 2: Risk assessment and management strengthened along the poultry supply chain at the selected townships of Mandalay region

Activity 2.1: Establish a team and network. The network will consist of FETPV graduates/trainees from LBVD, laboratory experts from Central Veterinary and Mandalay Laboratories who have been trained previously, public health authorities and community workers, etc. Through consultation with relevant authorities, identify their roles and responsibilities for surveillance and outbreak response.

Activity 2.2: Conduct longitudinal surveillance in high-risk townships and animal populations (such as ducks, wild birds, live bird markets, environment, etc.), based on the risks identified by the previous supply chain studies.

Activity 2.3: Conduct 'active clinical surveillance' during the high-risk period through 'community networks'; and strengthen 'zero reporting' from selected communities and teams.

Activity 2.4: Design and organize simulation training exercises.

Activities undertaken during the reporting period (October 2012 to March 2013)

Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses

Activity 1.1: Support the Country team to provide inputs for planning coordination required at the country level.

- The national project team consists of a National Project Director, National Operations Officer and technical consultants. A new National Project Director was appointed overlapping with a one-month hand-over period with his retiring predecessor. A new National Consultant for biosecurity and risk management was also appointed, replacing the previous national consultant.
- A new Country Team Leader was appointed in mid-November, filling the post which had been vacant since June 2012. Available funding allows an eight-month input for the team leader of which three and one-half months were completed during this period.

Activity 1.2: Support national and international coordination related to disease control. This includes the active participation of the country programme with other projects or programmes such as the EU-HPED project and the EPT programme, and exploring collaboration with PREVENT on risk communication.

- The Country Team Leader and National Project Director have interacted regularly with implementing partners, including meetings with:
 - the Director-General of the Livestock Breeding and Veterinary Department (LBVD) and key directors at the LBVD headquarters in NayPyiTaw;

- the heads and staff of the Mandalay and Yangon regional veterinary laboratories;
- the LBVD epidemiology group; and
- the Myanmar Livestock Federation.
- Coordination with the World Health Organization and the United Nations Educational, Scientific and Cultural Organization officers in Yangon has been maintained. International agencies with which project staff have interacted include USAID (Yangon) and USAID (Washington), Regional Development Mission for Asia (Bangkok), the Australian Agency for International Development, the World Organisation for Animal Health (OIE), Japan International Cooperation Agency, International Atomic Energy Agency, EPT-PREVENT and the EU.
- In collaboration with PREVENT, a consultative workshop on risk communication was held in Naypyitaw on 28 March 2013.

Activity 1.3: Support the Government of Myanmar to participate in a laboratory QA and QC system for HPAI and regional HPAI laboratory networks.

- A meeting to identify the scope of FAO-LBVD collaboration on this activity was held on 6 December 2012 and details of the opportunity for the Government of Myanmar to participate in a regional QA/QC programme has been communicated to the LBVD.
- LBVD staff attended the fourth laboratory directors' forum organized in Nha Trang City, Vietnam from 10 to 11 October 2012.
- Under the regional laboratory capacity building programme, a laboratory proficiency testing was conducted at the Yangon diagnostic veterinary laboratory, Mandalay diagnostic veterinary laboratory and Yangon foot-and-mouth disease (FMD) laboratory in November 2012.

Activity 1.4: Support LBVD staff in veterinary epidemiology training at the regional and country levels, including the FETPV.

- The FAO Animal Health and Production team has met with the LBVD epidemiology group to discuss FAO support for the planned in-country FETPV training course and information received from FAO's Regional Office for Asia and the Pacific (RAP) on possible additional funding. The offer of a detailed curriculum based on previous FAO regional experience has been communicated to the group through a meeting held in Nay Pyi Taw on 28 March 2013.
- The project facilitated the attendance of FETPV graduates from the 2011 and 2012 cohorts at a workshop on assessment of FMD risk via social network analysis held from 12 to 14 February 2013 in Bangkok, Thailand.
- The project coordinated with FAO-Emergency Centre for Transboundary Animal Diseases (ECTAD)-RAP to include LBVD candidates in the next regional FETPV programme and a final decision on the candidates selected by the Department of Livestock Development of Thailand is awaited.

Output 2: Risk assessment and management strengthened along the poultry supply chain at the selected townships of Mandalay region

Activity 2.1: Establish a team and network.

- The project team has established links with the LBVD epidemiology group, with which it has conducted HPAI awareness workshops in January 2013 in seven high-risk locations, including five poultry production zones with 400 participants from private and public service sectors. The Country Team Leader gave a presentation to regional, district and township officers concerning their respective roles in disease detection. Orientation meetings were held with selected township veterinary officers and community animal

health workers in five Mandalay region townships in January 2013.

- The network approach has facilitated the completion of the commercial farm database in five townships during November and December 2012 with 194 participants in stakeholder meetings (152 males and 42 females).
- Similarly, working together with LBVD staff, the project completed biosecurity training in Mandalay region from November to December 2012, reaching 184 beneficiaries (153 male and 31 female) including broiler, layer, duck and quail farmers and egg and meat traders.

Activity 2.2: Conduct longitudinal surveillance in high-risk townships and animal populations based on the risks identified by the previous supply chain studies.

- This study aims to complement previous work which has shown that H5N1 antibodies are prevalent in adult ducks in township flocks in different parts of the country. The objective was to gain an understanding of the possible impact of HPAI during the period from day-old duckling to the pullet stage. The study was taken forward in December 2012 in Thanatpin and Hlegu townships in Bago and Yangon regions, respectively, when bleeding of ducks from the monitored flocks took place. In Amarapura, bleeding at the pullet stage commenced in March 2013. Once the results are available from the laboratories, the epidemiology unit will conclude the analysis.

Activity 2.3: Conduct 'active clinical surveillance' during the high-risk period through 'community network'; and strengthen 'zero reporting' from selected communities and teams.

- Five Mandalay region townships were selected (Pyawbe, Sintgaing, Madaya, Pyin Oo Wlin and Amarapura). Training sessions were conducted in each township. Participants included 59 community animal health workers, 5 township veterinary officers and 22 deputy township veterinary officers. Orientation was given on different aspects of HPAI surveillance and the role of the community animal health workers was explained. The surveillance period for these five pilot townships was set as March to May 2013. The Project National Consultant is following the programme with the respective township officers and with regional epidemiology and laboratory LBVD personnel.

Activity 2.4: Design and organize simulation training exercises.

- Following discussions held in Mandalay with the LBVD Director of Disease Control, it was agreed that field simulations were not appropriate for the present circumstances. The agreed plan now is to conduct table-top outbreak simulation exercises in the second semester.

Planned activities for the next reporting period (April to September 2013)

Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses

Activity 1.1: Support the Country team to provide inputs for planning coordination required at the country level.

- The project team will continue to provide technical support during the reporting period through periodic meetings with the Director-General of LBVD and interaction with relevant key staff at headquarters, appropriate regional offices and technical units

Activity 1.2: Support national and international coordination related to disease control.

- The project team will facilitate a three-day consultation in April 2013 on the Myanmar FMD control plan, jointly with OIE, FAO-ECTAD-RAP and LBVD and supported by

the EU-HPED project.

- The project team is working with the PREVENT project of the USAID EPT programme to formulate a training programme on risk communication in support of project implementation which PREVENT will carry out during the upcoming period.
- Interactions with FAO-RAP on regional programmes, including porcine reproductive and respiratory syndrome, will continue. The project will also continue to engage with other national and international actors on disease control.

Activity 1.3: Support the Government of Myanmar to participate in a laboratory QA and QC system for HPAI and regional HPAI laboratory networks.

- This will be implemented through the Southeast Asia regional laboratory network (RLN) supported by USAID-EPT-IDENTIFY and the EU-HPED programme and designed to strengthen laboratory capacity, assure the quality of lab services, improve biosafety and facilitate networking. A key element will be the lab proficiency testing scheme, which will take place this semester.

Activity 1.4: Support LBVD staff in veterinary epidemiology training at the regional and country levels including the FETPV.

- Curriculum material and financial support are being made available to the LBVD epidemiology unit to conduct domestic FETPV courses in July and August 2013.

Output 2: Risk assessment and management strengthened along the poultry supply chain at the selected townships of Mandalay region

Activity 2.1: Establish a team and network.

- The project, in collaboration with the established network, particularly the epidemiology team and laboratory services, will (i) conduct awareness training for dealers, collectors and processors at Live Bird Markets (LBM) in Mandalay and Yangon; (ii) conduct biosecurity training for farmers in the Shwe Bo poultry production zone and townships of the Sagaing region; and (iii) recommend improvements in biosecurity for the Mandalay LBM. The network approach will also facilitate the poultry supply chain risk assessment and commercial poultry farm database studies in selected townships.

Activity 2.2: Conduct longitudinal surveillance in high-risk townships and animal populations.

- The field work has been completed. Testing and analysis of the results remain to be done during this period.

Activity 2.3: Conduct 'active clinical surveillance' during the high-risk period through 'community network'.

- This programme is underway and will be monitored during April and May with analysis and report preparation in June.

Activity 2.4: Design and organize simulation training exercises.

- The project will conduct two table-top exercises in high-risk regions and states, engaging decision makers and appropriate field officers and stakeholders around a staged response to a developing threat with incrementally worsening scenarios to assess preparedness and identify gaps.

Main challenges encountered and response provided

- In the general context, recent political changes are likely to bring additional resources and missions into Myanmar, and this is challenging given the absorptive and coordination capacity of the LBVD.
- Due to the decentralization process within the Ministry of Livestock and Fisheries, and devolution of responsibility and authority to the state/regional level for livestock development and disease control issues, it is not clear how much influence the technical division will have over decision-making in the immediate response to H5N1. With respect to HPAI control, the major challenge is trying to maintain surveillance systems across the country in the context of reduced funding.
- The Animal Health and Production Programme Steering Committee meeting has been progressively delayed owing to busy schedules on the Government's side, transfer of key staff in LBVD and gaps in the fielding of the FAO Country Team Leader.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

1. Strengthened planning and cross-sectoral coordination

Good relations with the Government are established. The coordination between the animal-human sectors has further improved with additional meetings, but further work needs to be done.

2. Strengthened laboratory capacity

The laboratory system is operating well, with recent outbreaks rapidly diagnosed and samples from field surveys being processed effectively. The laboratory information system has been developed and regularly updated to store data of samples, diagnostic results as well as laboratory inventory. Past and future participation in regional and international proficiency testing programmes is maintaining the quality of the laboratory service.

3. Strengthened disease control management capacity

There is now a much better understanding of the concepts of risk, supply chains, and of epidemiology of HPAI based on the national duck survey and national surveillance programmes, both of which were major achievements. The national commercial farm database proved to be an invaluable tool in responding to the outbreaks and identifying high-risk areas. Response capacity has developed well. During recent outbreaks in Sagaing, better understanding of epidemiology is providing LBVD with the confidence to try and reduce the number of farms to be culled. The establishment of an in-country Integrated Disease Control Training Programme is a major step forward. Although biosecurity has increased in production zones, further work needs to be done in this area.

Project Monitoring Sheet: **OSRO/MYA/702/USA**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **April to September 2012**

Country: Myanmar
Project: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/MYA/702/USA
Budget: USD 500 000 (Phase I), USD 750 000 (Phase II), USD 375 000 (Phase III), USD 150 000 (Phase IV), USD 279 000 (Phase V)
Total budget: USD 2 054 000
Effective starting date: 1 January 2008
Planned end date: 31 December 2012
<p>Context of the project</p> <p>Myanmar has experienced five waves of Highly Pathogenic Avian Influenza (HPAI) outbreaks in 2006, 2007, 2010, 2011 and 2012. The last outbreaks occurred in February and March 2012 in two townships (Chaung Oo and Tuangoo) in Sagaing and Bago regions, and were successfully managed. The country remains at risk from duck populations in which the virus is endemic, migrating wild birds and trade with neighbouring countries. The Food and Agriculture Organization of the United Nations (FAO) is implementing an avian influenza (AI) control programme funded by the United States Agency for International Development (USAID) during the reporting period. The programme is being implemented in collaboration with the Livestock Breeding and Veterinary Department (LBVD) of the Ministry of Livestock and Fisheries. The report describes activities funded by the project from April to September 2012.</p>
<p>Project impact</p> <p>The impact of the project is to reduce and stop the spread of H5N1 among flocks of poultry in the country, thus reducing the risk of contagion to other mammals and humans, and avoiding the possibility of a pandemic.</p>
<p>Project outcome</p> <p>The project outcome is to continue the improvement of capacities and capabilities of Myanmar to prevent, prepare for and respond to the outbreaks of HPAI in the animal population effectively so as to limit its impacts and risk of infection to humans.</p>
<p>Planned activities for the reporting period (April to September 2012)</p> <p>Output 1: Strengthened planning and cross-sectoral coordination</p> <p><i>Activity 1.1: Support the Emergency Centre for Transboundary Animal Diseases (ECTAD) Country Team Leader and the team to provide inputs for planning coordination required at country level</i></p> <ul style="list-style-type: none"> The project team, including the Chief Technical Advisor (CTA), and the national operations and technical consultants, will be in place throughout the reporting period, co-funded by other projects. <p><i>Activity 1.2: Support national and international coordination related to disease control</i></p> <ul style="list-style-type: none"> The project will coordinate with FAO regional projects on HPAI and other diseases, including IDENTIFY, and the Highly Pathogenic Emerging Diseases Project. The Animal Health and Production Programme Steering Committee (AHP-PSC) is expected to meet in March, and this will usher in a new structural arrangement for coordination across the whole livestock sector.

Activity 1.3: Support in-country linkages between public-private and animal-human health sectors relevant to HPAI control

- The project will participate in the national zoonosis workshop planned for March 2012 and consider follow-up actions depending on the outcome of the workshop.

Output 2: Strengthened laboratory capacity

Activity 2.1: Support improvement of laboratory management, including through technical advice of international experts to be provided through other regional projects related to regional laboratory networks

- The project will continue to update standard operating procedures (SOPs) and will further develop data management in the laboratory, including quality systems, routine data, assets and supplies management

Activity 2.2: Support development of a laboratory quality assurance and quality control system (QA/QC) for HPAI, including through regional HPAI laboratory networks, and through support of sample submissions to an international reference laboratory as part of the proficiency testing

- The project will develop and implement a domestic QA/QC programme, building on previous programmes implemented in-country.
- The project will coordinate with regional FAO projects conducting laboratory benchmarking and biosecurity assessments. The project will assist with the structured test of biosafety cabinets in Yangon laboratory.

Activity 2.3: Procurement of necessary laboratory equipment and supplies for HPAI activities as necessary

- The project will assess the need for supplies, taking into account supplies from other projects.

Output 3: Strengthened disease control management capacity

Activity 3.1: Support regional veterinary epidemiology trainees through in-country training and field work

- The project will continue to support the 2010 and 2011 Field Epidemiology Training Programme for Veterinarians (FETPV) trainees through in-country training. The 2011 trainee will need to complete outbreak investigations and a field study, and the 2010 trainee will complete a field study and final reports from previous activities.

Activity 3.2: Support Integrated Disease Control Training Programme (IDC-TP) in Myanmar, encompassing application of epidemiology, supply chain and institutional aspects to field disease control

- The IDC training will be a major focus, and staff from the laboratory, epidemiology and planning statistics will be enrolled in what will still be a pilot structure. Trainees will review existing data and collaborate on improved disease control at the field level.

Activity 3.3: Support risk-based biosecurity and surveillance activities

- The project will review biosecurity arrangements around the production zones which are showing steady improvement year-by-year and will also review biosecurity in the previous outbreak areas from both 2011 and 2012 outbreaks to see what lessons-learned can be made from these experiences.

Activity 3.4: Support response activities

- The project will continue to provide support for the outbreak currently underway in Myanmar and for any further outbreaks, and review the experience and lessons learned.

Activities undertaken during the reporting period (April to September 2012)

Output 1: Strengthened planning and cross-sectoral coordination

Activity 1.1: Support the Team Leader and the team to provide inputs for planning coordination required at country level

- The national project team consisting of national project director, national operations officer and technical consultants, was in place throughout the reporting period.
- Country team leader was funded for three months until May 2012 before being transferred to another project position in Mongolia. Technical backstopping was supported by the Regional Project Coordinator from June 2012 throughout the reporting period.

Activity 1.2: Support national and international coordination related to disease control

- The ECTAD country team coordinated with FAO regional project including the the European Union Highly Pathogenic Emerging Diseases Project (EU-HPED).

Activity 1.3: Support in-country linkages between public-private and animal-human health sectors relevant to HPAI control

- The project collaborated with the World Health Organization (WHO) on animal-human linkages. The first national zoonosis workshop focusing on rabies in March 2012 was organized jointly by the Ministry of Livestock and Fisheries and the Ministry of Health as well as WHO. The ECTAD country team planned to organize a joint national zoonosis workshop focusing on rabies during the last week of September 2012.

Output 2: Strengthened laboratory capacity

Activity 2.1: Support improvement of laboratory management

- SOPs on virology and serology were updated, and are being practised. Laboratory staff continued updating the database of the laboratory information system developed in the previous phases. The datasets from the system are being analysed and utilized when necessary.

Activity 2.2: Support Myanmar to participate in QA/QC for HPAI and regional HPAI laboratory network

- The country team facilitated the participation of laboratory staff to a workshop on basics of field and laboratory diagnosis training-of-trainers (ToT) in Chiang Mai, Thailand, and a Regional Laboratory Network Training on Diagnostics of Swine Diseases in Ho Chi Minh City, Viet Nam.
- The country team continued to facilitate the participation of the Central Diagnostic Laboratory in Yangon, LBVD in the regional proficiency testing programme as part of QA/QC programme. The team also supported LBVD in implementing a domestic QA/QC programme among laboratories in Myanmar.

Activity 2.3: Procurement of necessary laboratory equipment and supplies for HPAI activities

- Project procured reagents necessary for HPAI diagnosis and laboratory testing, including primers and probes for AI virus H5 and H7 as well as qRT-PCR and RNA/DNA kits during that reporting period.

Output 3: Strengthened disease control management capacity

Activity 3.1: Support regional veterinary epidemiology at regional levels through in-country training

- The project continued to support LBVD staff enrolled in the regional FETPV in the years 2010 and 2011 focusing on the assignments to be conducted in-country. The trainee enrolled in 2011 completed two outbreak investigations including the reports. The trainee enrolled in 2010 successfully completed his FETPV study and graduated in May 2012.

Activity 3.2: Support IDC-TP in Myanmar, encompassing epidemiology, supply chain and institutional aspects of disease control

- Surveillance of HPAI along poultry supply chain and training on biosecurity on poultry production in Yangon and Mandalay Regions were conducted in collaboration with LBVD.
- A multidisciplinary team of IDC-TP in collaboration with the University of Veterinary Science (UVS) conducted a field epidemiology study for the fourth year students of the UVS in Kyauksae Township in July 2012.

Activity 3.3: Support risk-based biosecurity and surveillance activities

- Post outbreak serosurveillance was conducted in Taze township.
- The project monitored biosecurity arrangements around the production zones, and the findings indicated that there has been improvement in movement control of dealers, animal feed, people living in nearby villages, vehicles, motorcycles, etc.

Activity 3.4: Support response activities

- The project continued to provide technical support for HPAI outbreaks that occurred during the reporting period.

Planned activities for the next reporting period (October to December 2012)

Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses

Activity 1.1: Support the country team to provide inputs for planning coordination required at the country level

- The project team, including the CTA, and the national operations and technical consultants, will be providing technical support during the reporting period.

Activity 1.2: Support national and international coordination related to disease control

- The project will coordinate with FAO regional projects on HPAI and other diseases, including active participation with other programmes or projects such as EU-HPED project and the EPT programme, and exploring collaboration with PREVENT on risk communication.
- The Animal Health and Production Programme Steering Committee (AHP PSC) meeting will be held in December 2012.

Activity 1.3: Support Myanmar to participate in a laboratory QA/QC for HPAI and regional HPAI laboratory networks

- The project will participate in the national zoonosis workshop planned for September 2012 and consider follow-up actions depending on the outcome of the workshop.
- The project will coordinate regional trainings and continue laboratory networks in the region.
- The project will assist with the structured test of biosafety cabinets in Yangon and Mandalay laboratories in November 2012.

Activity 1.4: Support LBVD staff to participate in the veterinary epidemiology training at regional and country levels including FETPV

- The project will coordinate with regional FAO projects to support LBVD staff to participate in the regional level FETPV programme, and will continue support LBVD staff at country level FETPV programme.

Output 2: Risk assessment and management strengthened along the poultry supply chain at the selected townships of Mandalay region

Activity 2.1: Establish a team and network. The network will consist of FETPV graduates/trainees from LBVD, laboratory experts from Central Veterinary and Mandalay Laboratories who have been trained previously, public health authorities and community workers, etc. Through consultation with relevant authorities, identify their roles and responsibilities for surveillance and outbreak response

- The project will support to conduct poultry supply chain risk assessment and management in selected townships in Mandalay and other regions.
- The project will facilitate the establishment of a disease control team consisting of FETPV graduates, laboratory experts from Central and Mandalay laboratories and Community Animal Health Workers, and will improve networking system among them.
- The project will facilitate the preparation of roles and responsibilities of the disease control team for surveillance and outbreak response activities.

Activity 2.2: Conduct longitudinal surveillance in high-risk townships and animal populations (such as ducks, wild birds, live bird markets, environment, etc.), based on the risks identified by the previous supply chain studies

- The project will conduct day old duck longitudinal surveillance in three high-risk townships which have high duck populations.
- The project will conduct duck longitudinal surveillance in risk-based areas.

Activity 2.3: Conduct 'active clinical surveillance' during the high-risk period through 'community network'; and strengthen 'zero reporting' from selected communities and teams

- The project will conduct active surveillance on poultry in five townships during high-risk period through community networks and disease control team.

Activity 2.4: Design and organize simulation training exercises

- The project will provide feedback on previous HPAI outbreak experiences and conduct refresher course on warning, precaution and preparation for upcoming high-risk season to the township veterinary officers.
- The project will develop simulation exercise design and will demonstrate the design for proper application of outbreak response in high-risk regions and states.

Main challenges encountered and response provided

- In the general context, recent political changes are likely to bring additional resources and missions into Myanmar, and this is challenging given the absorptive and coordination capacity of the LBVD.
- Because of decentralization process within the Ministry, and devolution of responsibility and authority to the State/Regional Level for livestock development and disease control issues, it is not clear how much influence the technical division will have over decision-making in the immediate response to H5N1. At a sectoral level, outbreaks of other infectious diseases in livestock stretched the capacity of the veterinary services. With respect to HPAI control, the major challenge is trying to maintain surveillance systems across the country in the context of reduced funding.
- Animal Health and Production Programme Steering Committee (AHP-PSC) meeting was delayed from March to December 2012, owing to busy schedules on the Government's side, and arrangement of movement of remaining staff and office facilities from Yangon to Naypyitaw in September 2012.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

Output 1: Strengthened planning and cross-sectoral coordination

Good relations with the Government are established. The coordination between the animal-human sectors has further improved with additional meetings, but further work needs to be done.

Output 2: Strengthened laboratory capacity

The laboratory system is operating well, with recent outbreaks rapidly diagnosed and samples from field surveys being processed effectively. Laboratory information system has been developed and regularly updated to store data of samples, diagnostic results as well as laboratory inventory.

Output 3: Strengthened disease control management capacity

There is now a much better understanding of the concepts of risk, supply chains, and of epidemiology of HPAI based on the national duck survey and national surveillance programmes, both of which were major achievements. The national commercial farm database proved to be an invaluable tool in responding to the outbreaks and identifying high-risk areas. Response capacity has developed well. In recent outbreaks in Sagaing, better understanding of epidemiology is providing LBVD with the confidence to try and reduce the number of farms to be culled. The establishment of an in-country IDC-TP is a major step forward. The biosecurity in production zones has increased, although further work needs to be done in this area.

I Quarter 2010

Project Monitoring Sheet: OSRO/RAF/717/USA**Reporting period:** January – March 2010

Regional component: OSRO/RAF/717/USA
Country: Regional west and central Africa
Project title: HPAI early warning, early response and preparedness strategy support in western and central Africa
Code: OSRO/RAF/717/USA
Budget: USD 432 000 (Phase I), USD 1 000 000 (Phase II) Total budget: 1 432 000
Effective starting date: 01 March 2008
Planned end date: 30 June 2010
Context of the project <p>Highly Pathogenic Avian Influenza (HPAI) in western and central Africa is effectively prevented and controlled through improved early warning and diagnosis capacities, effective national plans and enhanced coordination and information sharing between neighbouring countries.</p>
Objectives of the project <p>The main objective is to assist countries in western and central Africa to enhance their capacities to prevent the introduction of HPAI and to respond efficiently to HPAI outbreaks. The goal is to limit the spread of the disease in the sub-region and to minimize its negative social and economic impacts.</p> <p>Improving each country's capacity to prevent and control HPAI will accomplish the following:</p> <ul style="list-style-type: none"> • Protect human health and prevent a human pandemic; • Maintain and develop the poultry sector as a valuable source of protein and income for all actors within the poultry chain (including women and the rural population); • Strengthen national and regional capacities to address other transboundary animal diseases.
Planned activities – second phase <u>A. Activities related to project Phase I</u> <p>Recording commentary for PCR SOPs Video (English and French). SOPs for an operational contingency plan (online on the web site).</p> <u>B. Activities related to project Phase II</u> <p>Output 1.1: An active regional epidemio-surveillance network is established to support the national network.</p> <p><i>1.1.1 Establish a comprehensive directory of epidemio-surveillance network actors.</i></p>

The finalized directory for networks in the region (laboratory and epidemiology) will be distributed to countries and partners.

1.1.2 Support passive and active surveillance in key countries.

Finalization of the LoA for Côte d'Ivoire .

Output 2.1: Through RESOLAB networking activities, diagnostic capacity at laboratory and field levels are strengthened.

2.1.1 Promote laboratory diagnostic test quality assurance and inter-laboratory proficiency testing rounds; Avian influenza and Newcastle disease inter-laboratory proficiency testing round; Ring test monitoring (PCR for group 3) and (Serology for group 2 and 1).

Output 3.1: Poultry associations are supported and private-public partnerships are enhanced (regional and national) for a better understanding of the sector and the identification of practical and cost-effective investments/measures.

3.1.1 Building on previous poultry sector reviews, develop sustainable private-public partnerships to produce and maintain updated information and data (including geo-referenced maps) on poultry sector responses to veterinary services and private sector needs.

The project documents for Burkina Faso, Benin, Côte d'Ivoire, Ghana and Togo have not yet been finalized.

Output 3.2: Overall biosecurity is improved throughout the poultry chain.

3.2.1 Building on STOP AI/FAO training workshops, develop and disseminate multimedia modular training tools on biosecurity, including cost and benefit studies.

Finalize the development of the toolkit, including training modules, technical brochures, documented good biosecurity practices and guidelines on biosecurity. The training tools will be tested by targeted users for further improvement before publication.

3.2.2 Conduct biosecurity pilot operations on live bird markets in Benin, Togo, Guinea Bissau, Ghana, Côte d'Ivoire, Burkina Faso, Gambia and Niger.

The pilot operations should be completed in Côte d'Ivoire and Togo, and well advanced in Benin, Burkina Faso and Ghana.

Output 3.3: Poultry and poultry product zoo sanitary certificate has been tested and adapted with the Economic Community of West African States (ECOWAS) for use at the regional level.

3.3.1 Support ECOWAS for the promotion and adoption at the regional level of relevant zoo sanitary and trade regulations and support the use, in a pilot phase, of a harmonized zoo sanitary certificate for poultry and poultry products.

The field simulation at six road border control posts and two international airports should have been planned for the first quarter 2010.

Output 4.1: Epidemiology surveillance and laboratory network data collection and management are actively supported through national databases and specific gateways within the regional website and Geographic Information Systems (GIS) services are developed.

4.1.1 Support networking activities through the existing website to facilitate and strengthen overall information sharing and networking harmonization on laboratory diagnosis, epidemio-surveillance, socio-economics and production, and related communication. This is also a tool to improve the visibility of the donors in Africa.

News and updates from the network will continue to be published on the website.

4.1.2 Implement and improve data management on animal health issues (zoo sanitary database), including active collaboration with SRA/AU-IBAR project. This would facilitate a Pan-African information/knowledge management component linked to the other regional animal health centers (RAHCs).

During the first quarter, the transboundary animal disease (TAD) info was planned for installation in Guinea Bissau, Niger and Côte d'Ivoire.

Activities undertaken during the reporting period

A. Activities related to project Phase I

The head of virology at the Laboratoire Central Vétérinaire (LCV) Bamako was on mission, thus interrupting the finalization of a video describing SOPs for the installation of a polymerase chain reaction (PCR) diagnosis unit in a veterinary laboratory.

Activities related to project Phase II

Output 1.1: An active regional epidemio-surveillance network is established to support the national network.

1.1.1 Establish a comprehensive directory of epidemio-surveillance, laboratory, socio-economic and production and communications network actors.

The printed version of the directory was sent to all network members and partners.

1.1.2 Support passive and active surveillance in key countries.

Funds were made available to the FAO country team through an agreement with Côte d'Ivoire to implement surveillance activities.

Output 2.1: Through RESOLAB networking activities, strengthen diagnostic capacity at laboratory and field levels.

2.1.1 Promote laboratory diagnostic tests quality assurance and inter-laboratory proficiency testing rounds.

During this period the shipping of reagents and samples for all groups (1, 2 and 3) was completed. Upon receipt the samples were tested by each laboratory and the results sent to the Tri-Veneto Region Experimental Animal Health Care Institute (IZS^{Ve}) in Padua (except 3 countries) for analysis.

The terms of reference (TORs) of the second round of QA workshops were finalised and adopted by the different partners. These workshops will involve the participation of the quality assurance manager of each laboratory and will be focused on the study of standard 17025 for laboratories.

Output 3.1: Poultry associations are supported and private-public partnerships are enhanced (regional and national) for a better understanding of the sector and the identification of practical and cost-effective investments/measures.

3.1.1 Building on previous poultry sector reviews, develop sustainable private-public partnerships to produce and maintain updated information and data (including geo-referenced maps) on poultry sector responses to veterinary services and private sector needs. (Benin, Burkina Faso, Côte d'Ivoire, Ghana and Togo)

Consultations between public and private sector actors are ongoing in Benin, Burkina-Faso, Côte d'Ivoire and Togo. In each country, a national consultant facilitates the process. They have identified the main partners and developed a work plan which is currently being implemented. The work is most advanced in Togo and Burkina-Faso. However, in each country, more time than expected is needed to reach an agreement between the various stakeholders, possibly due to their interest and involvement in the project. As the consultations have not yet begun in Ghana, it was decided to concentrate on the four other countries at this time.

Exchanges between Togo, Cote d'Ivoire and Burkina Faso have been facilitated in order to complement and share each other's work.

Output 3.2: Overall biosecurity along the poultry chain is promoted and improved.

3.2.1 Building on STOP AI/FAO training workshops, develop and disseminate multimedia modular training tools on biosecurity, including cost and benefit studies.

The development of "Biosecurity self-training and communication toolkits" is ongoing. The second batch of training modules and technical brochures have been developed and submitted by the national consultant (Dr Yaghouba Kane from the Inter-States School of Veterinary Sciences and Medicine, Dakar, Senegal) to ECTAD Bamako for assessment, improvements and technical clearance.

The manual presenting guidelines to improve biosecurity on live bird markets, validated by poultry actors in Côte d'Ivoire, is being formatted for different target audiences prior to its publication, after inclusion of some suggested illustrations and pictures.

3.2.2 Conduct biosecurity pilot operations on live bird markets (Benin, Togo, Guinea Bissau, Ghana, Côte d'Ivoire, Burkina Faso, Gambia and Niger).

Biosecurity pilot operations on live bird markets are being conducted in Côte d'Ivoire, while

the preliminary work has been completed for Benin and Burkina Faso. In collaboration with the USAID-funded STOP AI Project, a preliminary operation has been initiated in Mali. Similar activities are planned for Togo, Ghana, Gambia and Niger, and will be considered and adopted according to funding availability and country willingness.

Output 3.3: Poultry and poultry product zoo sanitary certificate has been tested and adapted with ECOWAS for use at the regional level.

3.3.1. Support ECOWAS for the promotion and adoption at the regional level of relevant zoo sanitary and trade regulations and support the use, in a pilot phase, of a harmonized zoo sanitary certificate for poultry and poultry products.

A technical regional briefing meeting was held in Bamako, Mali on 23-24 March 2010 to present and discuss the prototypes of international veterinary certificates for the ECOWAS sub-region, and to plan the technical and operational aspects of field testing in six countries (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali and Togo). The sixteen border posts involved have been identified, as well as the type of poultry or poultry products concerned.

Output 4.1: Epidemiology surveillance and laboratory network data collection and management are actively supported through national databases and specific gateways within the regional website and GIS services are developed.

4.1.1 Support networking activities through existing website in order to facilitate and strengthen overall information sharing and networking harmonisation on laboratory diagnosis, epidemio-surveillance, socio-economics and production, and related communication. This is also a tool to improve the donor visibility in Africa.

Since its development, the website www.fao-ectad-bamako.org has received 40 000 visitors with distinct IP addresses.

4.1.2 Implement and improve data management on animal health issues (zoo sanitary database) through active collaboration with the SRA/AU-IBAR project. This would facilitate a Pan-African information/knowledge management component linked to other Regional Animal Health Centres.

During this reporting period, the new version of TADinfo was installed in Côte d'Ivoire and Guinea Bissau and an update has been initiated in Togo. In these countries, staff has been trained and computers provided. The political problem that occurred in Niger has led to a postponement of the installation.

Planned activities for the next quarter

A. Activities related to project Phase I

Record the commentary for the PCR SOPs video (English and French).
Post on the website the SOPs for an operational contingency plan.

B. Activities related to project Phase II

Output 1.1: Establish regional epidemio-surveillance networks to support the national network.

1.1.1 Support passive and active surveillance in key countries.

Finalize the various studies on active surveillance in Burkina Faso, Côte d'Ivoire and Benin.

Output 2.1: Through RESOLAB networking activities, strengthen diagnostic capacity at laboratory and field levels.

2.1.1. Promote laboratory diagnostic test quality assurance and inter-laboratory proficiency testing rounds and avian influenza and Newcastle disease inter-laboratories proficiency testing round.

Analysis and distribution of 2009 Avian influenza and Newcastle disease proficiency test exercise that involved 21 out of 23 network labs.

Output 3.1: Poultry associations are supported and private-public partnerships are enhanced (regional and national) for a better understanding of the sector and the identification of practical and cost-effective investments/measures.

3.1.1 Building on previous poultry sector reviews, develop sustainable private-public partnerships to produce and maintain updated information and data (including geo-referenced maps) on poultry sector responses to veterinary services and private sector needs. (Benin, Burkina Faso, Côte d'Ivoire, Ghana and Togo)

Finalize the consultation process and prepare a project document for Benin, Burkina Faso, Côte d'Ivoire, Ghana and Togo.

Advocate for the development of a private-public database/information system on the poultry sector as a means to better prevent and control HPAI and any other existing or emerging disease in the poultry sector.

Output 3.2: Improve biosecurity throughout the poultry chain.

3.2.1 Building on STOPAI/FAO training workshop, develop and disseminate multimedia modular training tools on biosecurity, including cost and benefit studies.

Finalize the development of the toolkit, including training modules, technical brochures, and documented best practices for biosecurity. The training tools will be published and distributed to targeted users.

3.2.2 Conduct biosecurity pilot operations on live bird markets (Benin, Togo, Guinea Bissau, Ghana, Côte d'Ivoire, Burkina Faso, Gambia and Niger).

The implementation of operations in Benin, Burkina Faso and Côte d'Ivoire will be completed. Implementation should be well advanced in Mali.

Output 3.3: Poultry and poultry product zoo sanitary certificate has been tested and adapted with ECOWAS for use at the regional level.

3.3.1. Support ECOWAS for the promotion and adoption at the regional level of relevant zoo sanitary and trade regulations and support the use, in a pilot phase, of a harmonized zoo

sanitary certificate for poultry and poultry products.

The implementation of the field test operations will be launched and completed in Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali and Togo (covering 16 border posts). Results and recommendations resulting from these tests will be made available.

Output 4.1: Epidemiology surveillance and laboratory network data collection and management are actively supported through national databases and specific gateways within the regional website and GIS services are developed.

4.1.1 Support networking activities through the existing website to facilitate overall information sharing and networking harmonization on laboratory diagnosis, epidemio-surveillance, socio-economics and production and related communications. This is also a tool to improve the visibility of the donor in Africa.

News and updates from the network will continue to be published on the website.

4.1.2 Implement and improve data management on animal health issues (zoo sanitary database), including active collaboration with the SRA/AU-IBAR project. This will facilitate a Pan-African information/knowledge management component linked to other RAHCs.

Provide computers, install TADinfo and train veterinary service personnel in Niger and Gambia.

Main challenges encountered and response provided

There remains a need for closer cooperation with organizations such as the ECOWAS, the African Union Inter-African Bureau for Animal Resources (AU-IBAR), the International Office of Epizootics (OIE) and with implementing partners. This would enhance relevance, sustainability and impact of activities, but would require substantial additional resources.

The activities planned under this project pertained primarily to national capacity building to improve preparedness, early warning and response to HPAI outbreaks. A special range of activities was added at the time of the extension, including the improvement of disease intelligence and biosecurity, and better information and data management. These activities rely essentially on the expertise available at FAO ECTAD at the regional animal health centre in Bamako, as well as in the targeted countries (via national consultants). To date most of these activities have been implemented.

Some additional activities have proven more difficult to implement due to the high level political input required. This is the case for testing regional zoo sanitary certificates that would improve traceability and biosecurity in the trade of poultry and poultry products. The testing requires official commitments from voluntary countries as well as from the Economic and Monetary Union of West Africa (UEMOA) and/or ECOWAS.

Finally the success in implementing activities such as national databases, capacity building to run official websites for veterinarian services, and biosecurity in poultry markets resulted in a high number of requests from beneficiary countries. A lack of available funds has compelled us to limit any extra activities. It is hoped that the completion of remaining activities will attract more funds to extend activities to more countries.

In order to respond to the country requests and complete the planned activities, USAID has agreed to extend the completion date to 30 June 2010 and allow some of the saved funds to be re-allocated to sustain key technical staff.

Main progress made towards the achievement of project outcomes (from the start of the project activities)

This project has contributed significantly to the efforts made by countries, regional organisations, and technical and financial partners to build capacities and prevent and control HPAI in the sub-regions. In particular the project:

- Implemented timely and effective outbreak response capacities (under project Phase I);
- Enhanced the capacities of laboratories to perform timely and reliable HPAI diagnosis (under Phases I and II). For example, the last confirmations of H5N1 HPAI outbreaks were made within 48 hours in Togo and 24 hours in Nigeria.

Under Phase II, which started in April 2009, the project activities reported above accomplished the following:

- Improved surveillance capacities;
- Enhanced capacities to promote and implement good biosecurity practices;
- Assisted countries in establishing public-private partnerships for a more integrated approach towards controlling HPAI and other poultry diseases;
- Supported the revival of the poultry sector.

The regional networking approach and the sharing of information and expertise have significantly contributed to the harmonization of strategies and protocols and to capacity building, a key element for sustainability.

I Quarter 2010**Project Monitoring Sheet: OSRO/RAF/718/USA Phase II**

Project title: Strengthening capacity of the Eastern Africa Sub-region to prevent and control HPAI

Reporting period: January – March 2010

Regional component: Eastern Africa (Burundi, Djibouti, Ethiopia, Kenya, Rwanda, South Sudan, Tanzania and Uganda)
Project title: Strengthening capacity of the Eastern Africa Sub-region to prevent and control HPAI
Code: OSRO/RAF/718/USA Phase II
Budget : USD 1 209 601 (Phase I), USD 650 000 (Phase II)
Total budget: USD 1 859 601
Effective starting date: 01 October 2009
Planned end date: 30 September 2010
<p>Context of the project</p> <p>The outbreak of the Highly Pathogenic Avian Influenza (HPAI) in Africa in 2006 prompted national and international agencies to initiate programmes to contain and prevent the disease. At this time, eleven African countries have reported outbreaks of HPAI. There is an elevated risk that the disease will spread throughout eastern Africa due to unregulated intra-regional trade in poultry and poultry products. In addition, many of these countries engage in trade beyond the eastern Africa region. Some of these trading partners are located in the pathways of migratory birds, which are thought to play a role in the spread of HPAI.</p>
<p>Objectives of the project</p> <p>The objective of the project is to assist eastern African countries (Burundi, Djibouti, Ethiopia, Kenya, Rwanda, South Sudan, Tanzania and Uganda) to develop and implement effective plans for the prevention and control of HPAI and other transboundary animal diseases (TADs), including strengthening epidemiology and laboratory networks for improved surveillance. The prevention and control of HPAI and other TADs requires regional cooperation and collaboration. Such cooperation could be strengthened by networking and inter-country interactions between disease surveillance and diagnosis teams. Increased collaboration also would help to coordinate efforts against emerging zoonotic diseases, which are increasing due to climatic changes, human population dynamics and livestock/human/wildlife interactions.</p> <p>The principal objective of the project will be achieved through a regional and multidisciplinary approach implemented by the Food and Agriculture Organization of the United Nations (FAO) Emergency Centre for Transboundary Animal Disease Operations (ECTAD) unit of the Regional Animal Health Centre (RAHC) in Nairobi, facilitated by staff at FAO headquarters in Rome, and by working in close collaboration with national governments, regional economic communities (East African Community (EAC) and Intergovernmental Authority on Development (IGAD)), institutions of higher learning, other United Nations (UN) agencies such as the World Health Organization (WHO), non-governmental organizations (NGOs), African Union/Interafrican Bureau for Animal Resources (AU/IBAR) and the private sector. The project implementation will embrace the One World One Health concept particularly when addressing zoonosis.</p>

Successful implementation of the project will result in the following major outcomes:

1. Laboratory capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs

The various diagnostic laboratory systems in each country will be assessed and documented to enable harmonization of protocols and guidelines for surveillance, reporting, diagnoses, prevention and control of priority diseases.

2. Epidemiology capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs

Different systems of operation of the epidemio-surveillance systems in different countries will be assessed and documented to enable harmonization at the regional level. The project will assist the network to define terms of reference and operational frameworks, including detailed descriptions of the relationships, roles and responsibilities of stakeholders such as the private sector, research institutions, universities, AU/IBAR, FAO, World Organization for Animal Health (OIE), WHO and other NGOs. In order to ensure sustainability, the network plans will be presented for endorsement by regional and national leaders, with financial commitments for specific national requirements.

3. Animal health interventions and data will be used to analyse and improve poultry and livestock value chains

Policy makers, governments and network experts will be provided with evidence-based information to better understand the dynamics of poultry value chains as they relate to disease control and food safety. Evidence will be provided on cost-effectiveness, costs and benefits, suitability and appropriateness of disease control measures. The project will educate and develop best practices along the poultry value chain and strengthen partnerships between private and public sector through consultations, working with national governments and regional economic communities (RECs) to develop and implement policies.

Planned activities

Outcome 1: Laboratory capacity and networks are strengthened and consolidated to improve the management of HPAI and other TADs.

Activity 1.1 Assessment of diagnostic capacity of central veterinary laboratories for HPAI and other TADs.

Activity 1.2 Assist national laboratories in implementation of quality management systems (QMS).

Activity 1.3 Organize targeted training courses on disease recognition and diagnostic techniques for emerging zoonotic diseases in order to facilitate prevention and control actions.

Activity 1.4 Hold a joint five day epidemiology and laboratory networks meeting to share regional information including reaching a consensus on list of priority TADs for targeted prevention and control.

Activity 1.5 Hold a workshop with the chief veterinary officers and heads of central veterinary laboratories, RECs, AU-IBAR and development partners. The workshop will discuss the

findings of laboratory assessments, select regional laboratories for the network and promote integration of the network into the RECs structures.

Activity 1.6 Supply critical equipment, materials and reagents for diagnosis of HPAI and other priority TADs at the national laboratories.

Activity 1.7 Strengthen regional laboratory network web page and link it with other existing (epidemiology) and proposed thematic networks to increase the information sharing capacity.

Outcome 2: Strengthen and consolidate epidemiology capacity and networks in order to improve the management of HPAI and other TADs

Activity 2.1 Assess national epidemio-surveillance systems for HPAI and other TADs.

Activity 2.2 Hold a joint five day annual epidemiology and laboratory networks meeting to share regional information, and to reach a consensus on priority TADs for targeted prevention and control.

Activity 2.3 Supply critical equipment, materials and reagents for field surveillance of HPAI and other priority TADs at the national laboratories.

Activity 2.4 Prioritize TADs detection, reporting and preparedness in the region through structured qualitative national risk assessments including probable impacts of the disease.

Outcome 3: Animal health interventions and data will be used to analyse and improve poultry and livestock value chains

Activity 3.1 Consolidate information on cross-border trade in poultry and poultry products to enable a country-level poultry value chain analysis. Targeted disease surveillance and monitoring plans will be based on this analysis.

Activity 3.2 Conduct a cost-benefit analysis of functional laboratory and epidemiology surveillance systems. This analysis will be used to lobby national governments to include funding for the systems into their annual budgets.

Activity 3.3 Commission a study to identify and quantify the key drivers in public sector adoption of biosecurity and poultry health interventions along the poultry value chains. The study will be conducted in Sudan and Kenya in consultation with the International Livestock Research Institute (ILRI) and Winrock International non-profit organization.

Activity 3.4 Organize a stakeholder workshop to facilitate policy dialogue between public and private sector operators on restructuring the poultry industry and improving poultry health management in the region.

Activities undertaken during the reporting period

The project inception workshop was held on 3 and 4 February 2010 in Mombasa, Kenya. Attendees included officials from AU-IBAR and FAO-ECTAD, in addition to thirty epidemiology and laboratory experts from the eastern Africa region. The objectives of the workshop were to facilitate discussions between representatives of beneficiary countries and

other stakeholders regarding final project content, work plan and implementation time tables, and project roles and responsibilities. A workshop report has been prepared and technically cleared by the ECTAD Regional Manager.

Outcome 1: Laboratory capacities and networks are strengthened and consolidated to improve the management of HPAI and other TADs

Activity 1.2 Assist national laboratories in implementation of Quality Management Systems (QMS).

- Activity 1.2a Questionnaires have been sent to beneficiary countries to assess the current status of QMS implementation. In-country quality assurance training will be provided, including the development of quality manuals and the implementation of QMS.
- Activity 1.2b A Letter of Agreement (LoA) is being finalised with the Tri-Veneto Region Experimental Animal Health Care Institute (IZSVe) to carry out proficiency ring tests for central veterinary laboratories in the region.

Outcome 2: Epidemiology capacities and networks are strengthened and consolidated to improve the management of HPAI and other TADs

Activity 2.1 Assess national epidemio-surveillance systems for HPAI and other TADs.

- Activity 2.1a Questionnaires were prepared and sent to national epidemiology units in order to understand the level of epidemiologic activities in each country. This information will be used to design action plans for intra- and inter-regional collaboration.

Outcome 3: Animal health interventions and data will be used to analyse and improve poultry and livestock value chains

Activity 3.1 Consolidate information on cross-border trade in poultry and poultry products to enable a country-level poultry value chain analysis. Targeted disease surveillance and monitoring plans will be based on this analysis.

- Activity 3.1a Identification of experts to undertake trade flow mapping in Rwanda and Burundi has been initiated.

Planned activities for the second quarter of 2010 and future proposed actions

Outcome 1: Surveillance and diagnostic capacity will be strengthened

Activity 1.1 Assessment of diagnostic capacity of central veterinary laboratories for HPAI and other TADs.

- Activity 1.1a An LoA is being finalised with IZSVe to carry out the assessments. This activity is scheduled for June 2010.

Activity 1.2 Assist national laboratories in implementation of QMS.

- Activity 1.2a A five day regional training workshop on QMS will be held in Debre Zeit, Ethiopia from 31 May to 4 June 2010.
- Activity 1.2b Questionnaires completed by beneficiary countries will be analysed in order to understand the level of QMS implementation in diagnostic laboratory units.
- Activity 1.2c Proficiency ring tests should be carried out (through an LoA in preparation at HQ with IZSVe).

Activity 1.3 Organize targeted training courses on disease recognition and diagnostic techniques for emerging zoonotic diseases to facilitate prevention and control actions.

- Activity 1.3a A ten day training course on the laboratory diagnosis of avian influenza and Newcastle disease will be conducted from 7 to 20 April at Centre for Virtual Learning (CVL) Dar Es Salaam for four laboratory personnel from Burundi and South Sudan.

Activity 1.4 Supply critical equipment, materials and reagents for field surveillance of HPAI and other priority TADs at the national laboratories.

- Activity 1.4a Countries will be requested to provide lists of necessary equipment and materials. Procurement procedures will then be initiated to procure and distribute the equipment and materials.

Activity 1.5 Strengthen regional laboratory network web page and link it with other existing (epidemiology) and proposed thematic networks to increase information sharing capacity.

- Activity 1.5a A communications consultant will be recruited in April 2010 to train the FAO ECTAD staff to administer the web page.

Outcome 2: Strengthen and consolidate epidemiology capacity and networks to improve the management of HPAI and other TADs

Activity 2.1 Assess national epidemio-surveillance systems for HPAI and other TADs.

- Activity 2.1a A five day workshop is planned to take place from 7 to 11 June 2010 in Kigali, Rwanda. The workshop will bring together representatives of the national epidemiology units to discuss the results of the assessments carried out and to make recommendations for the adoption of harmonized surveillance systems.

Outcome 3: Animal health interventions and data will be used to analyse and improve poultry and livestock value chains

Activity 3.1 Consolidate information on cross-border trade in poultry and poultry products in order to enable a country-level poultry value chain analysis. Targeted disease surveillance and monitoring plans will be based on this analysis.

- Activity 3.1a Finalize recruitment of national consultants to undertake trade flow mapping in Rwanda and Burundi.

Activity 3.2 Conduct a cost-benefit analysis of functional laboratory and epidemiology surveillance systems. This analysis will be used to lobby national governments to include funding for the systems into their annual budgets.

- Activity 3.2a Identify an international consultant to undertake cost-benefit analysis of the epidemio-surveillance network in Kenya and Uganda.

Activity 3.3 Commission a study to identify and quantify the key drivers in public sector adoption of biosecurity and poultry health interventions along the poultry value chains. The study will be conducted in Ethiopia and Tanzania in consultation with ILRI and Winrock International.

- Activity 3.3a Hold meetings with Winrock International and ILRI.
- Activity 3.3b Identify national consultants to undertake the studies in both countries.

All outputs

- Carry out activities as proposed in the three outputs outlined above.

Reports

- Continue preparing project progress reports on the implementation of activities.

Main challenges encountered and responses provided

- The questionnaires on epidemiology and laboratory assessments were not returned on time despite a clearly stated deadline.

Main progress made towards the achievement of project outcomes (from the start of project activities)

- Completion of a project inception workshop at which participants agreed upon the final project content, work plan and implementation time tables, and project roles and responsibilities. A workshop report has been prepared and technically cleared by the ECTAD Regional Manager.
- Preparation and distribution of questionnaires to assess the status of central veterinary laboratories and national epidemiology units.

I Quarter 2010

Project Monitoring Sheet: OSRO/RAF/719/USA – Phase II

Project Title: Strengthening HPAI surveillance, preparedness and response capacity in Southern Africa

Reporting period: January to March 2010

Regional component: Southern Africa Project title: Strengthening HPAI surveillance, preparedness and response capacity in Southern Africa Code : OSRO/RAF/719/USA
Budget : USD 1 099 175 (Phase I), USD 500 000 (Phase II) Total budget: USD 1 599 175
Effective starting date: 1 January 2010
Planned end date: 30 September 2010
Context of the project <p>Since the outbreak of the Highly Pathogenic Avian Influenza (HPAI) on the African continent in February 2006, the Southern African region has remained free from the infection. In response to the potential threat of incursion of the disease, African countries have formulated National Preparedness and Response Plans, which led to the development of a Regional Plan by the Southern African Development Community (SADC). The levels of implementation of the national plans, however, differ greatly between the countries. This project, therefore, aims at assisting the countries at both national and regional levels in retaining a disease free status.</p>
Objectives of the project <p>Impact of the project Improvement and safeguarding of animal health and livelihoods from the threat of HPAI and mitigation of the risk of a human pandemic within the SADC region.</p> <p>Outcome of the project Enhanced and harmonized regional preparedness, effective response to HPAI outbreak and strengthened regional and national surveillance of HPAI in the SADC region.</p> <p>Outputs of the project</p> <ol style="list-style-type: none"> 1. Expanded and consolidated risk analysis-based HPAI surveillance (Malawi, Mozambique, Zambia and Zimbabwe); 2. Enhanced capacity of regional and national veterinary laboratories for the diagnosis of Low Pathogenic Avian Influenza (LPAI) and HPAI and provision of essential material to second regional service laboratory (Botswana); 3. Regional coordination and networking.
<u>Activities that were planned for this quarter</u> <p>Output 1 Activity 1.1: Implementation of cross-border surveillance</p> <ul style="list-style-type: none"> • Identification of border points for cross border surveillance in respective countries and formalization of a timetable for joint surveillance activities by participating countries.

Activity 1.2: Promoting HPAI surveillance and its integration into ongoing national animal health activities

- Convening of a consultative meeting at the country level with national veterinary services with the view of integration of avian influenza surveillance into national animal health plans, particularly Newcastle Disease (ND) vaccination campaigns.
- Monitoring of the need for laboratory supplies and sampling material in order to facilitate the sampling activities in the four countries.

Activity 1.3: Enhancing integration of producers into surveillance activities

- Convening of national consultative meetings with poultry producer associations with the view of identifying *master farmers*.

Activity 1.4: Training of field personnel in surveillance techniques

- Training of relevant field personnel and distribution of sensitization and information material.

Activity 1.5: Training for expansion of the use of Data Point Type (DPT) in selected areas in Malawi and Zambia

- Training of Zambia's veterinary staff in the use of DPT with a special focus on the collection of information on poultry disease and expansion of its use to additional HPAI risk areas.

Output 2

Activity 2.1: Enhanced surveillance in the region via laboratory support

- Signing of the Letter of Agreement with Botswana National Veterinary Laboratory (BNVL) and finalizing of the work plan.
- Supporting BNVL in establishing and developing the capacity of new tests to diagnose LPAI/HPAI (enzyme linked immunosorbent assay (ELISA) and agar gel immunodiffusion (AGID)).
- Continuous supply of swab and serum samples to BNVL sent by all countries with enhanced surveillance.
- Transfer of the demand-supply hub from South Africa's Onderstepoort Veterinary Institute (OVI) to BNVL and procurement and distribution of reagents to recipient laboratories.

Output 3

Activity 3.1: Coordination

- Organizing of an Inception workshop by FAO ECTAD.
- Finalizing of a work plan (activities of Phase 2) and evaluation of its progress by the project management team.

Activities undertaken during the Reporting Period

Output 1

Activity 1.1: Implementation of cross-border surveillance

- During the Inception workshop on 16 and 17 February, the participating countries agreed with their respective neighbours on common cross-border posts to be sampled: Malawi identified five (sharing three with Mozambique and two with Zambia), Mozambique identified five (sharing three with Malawi and two with Zimbabwe), Zambia identified

three (sharing two with Malawi and one with Zimbabwe) and Zimbabwe identified three (sharing one with Zambia and two with Mozambique) border posts. The timing of the sampling by participating countries has been harmonized.

Activity 1.2: Promoting HPAI surveillance and its integration into ongoing national animal health activities

- All national project consultants agreed to hold a meeting with the authorities of the veterinary services in order to discuss the integration of Avian Influenza (AI) surveillance into their regular national animal health activities. During the reporting period, only Mozambique and Zimbabwe submitted a written statement on the outcome of this discussion; both countries agreed to harmonize the AI surveillance with an ND vaccination campaign.
- Two members (Dr Radosavljevic and Dr Costa) of the KYEEMA Foundation participated in the AI working group meeting on 23 and 24 March 2010. They presented the ND vaccination and surveillance program and its possible integration within the AI surveillance project. A Concept Note on collaboration during cross-border surveillance will be produced.
- The FAO ECTAD office in Gaborone ordered the field sampling material to be used for surveillance which was delivered by local suppliers and sent to the respective countries: red top blood collection tube, 21G luer lock needles, 5 ml luer lock syringes, 15ml conical bottom disposable sterile plastic tubes, 2 ml Cryotubes, sampling swabs, 100 mm scissors, disposable medical gloves and permanent markers. 4000 units of each item were supplied per country. The ECTAD office has also facilitated the purchase of additional laboratory and sampling material from country budgets on request.

Activity 1.3: Enhancing integration of producers into surveillance activities

- During the Inception workshop, the four participating countries presented their different approaches to identify *master farmers* through poultry associations (Zimbabwe), community leaders and vaccinators (Mozambique and Zambia) and existing agriculture development systems (Malawi). The training program for *master farmers* was discussed and training topics were suggested.

Activity 1.4: Training of field personnel in surveillance techniques

- All the participating countries identified high risk areas where retraining of field personnel is necessary based on high staff turn-over and capacity of field staff.
- The "Picture book" on infectious poultry disease has been revised and a second edition has been produced as a training tool for extension personnel and poultry producers involved in passive surveillance. A total of 4000 copies will be printed in English and Portuguese, 1000 booklets per country.

Activity 1.5: Training for expansion of the use of DPT in selected areas in Malawi and Zambia

- Dr Mokopasetso from FAO ECTAD Unit travelled to Zambia in mid February where field training was conducted for all newly identified high risk areas. The technology has been successfully implemented in both countries and so far outputs have been positive.

Activity 1.6: Dynamic mapping of surveillance results

- Geographic Information System (GIS) maps which indicate the high risk sampling areas covered during Phase I have been created for all four countries. At the same time, the second generation HPAI risk map was made available by International Livestock

Research Institute (ILRI) under the Early Detection, Reporting and Surveillance of Avian Influenza in Africa (EDRSAIA) project. After technical problems of projection compatibility were resolved, the two maps attached in Annex have been overlaid. The high risk areas identified by this project corresponded to those calculated by ILRI in all countries except in Mozambique. The high risk sampling areas for Phase II, including the cross border points, have also been mapped and overlaid with the HPAI risk map of ILRI.

- All four countries have been motivated to collect Global Positioning System (GPS) points during the sampling activities under Phase II. Based on these coordinates, more precise maps will be produced.

Output 2

Activity 2.1: Enhanced surveillance in the region via laboratory support

- The activities implemented by the Agricultural Research Council-Onderstepoort Veterinary Institute (ARC-OVI) between December 2008 and December 2009 under a Letter of Agreement (LoA) with FAO have been completed and the final report was supplied by Dr Phelix Majiwa of the ARC-OVI in February 2010. This report has been distributed to all SADC laboratories.
- BNVL is in the process of establishing ELISA, Neuraminidase Inhibition (NI) and Real-time reverse transcriptase PCR (r RT- PCR) tests, facilitated by their OIE twinning project with Veterinary Laboratories Agency (VLA).
- At the time of reporting, BNVL had received a total of 1199 serum and 1393 swab samples (199 sera and 387 swab samples from Mozambique, 1006 swab samples from Zambia and 1000 serum samples from Zimbabwe). During the Inception workshop, BNVL reported their experiences and challenges with the samples received so far. The participating countries took note of the suggestions for improvement to be made.
- The demand-supply hub has been transferred from the ARC-OVI to BNVL and restocking is in process. The first consignment of reagents, supplied by FAO arrived in January and early February 2010. The ARC-OVI handed over the remaining reagents of the hub to Botswana. Currently, the following reagents are available at the BNVL supply hub: ELISA kit (24 boxes), H5N1 antigen (91 ampoules), H5N8 antigen (35 ampoules), H5N9 antigen (20 ampoules), H7N1 antigen (46 ampoules), H7N7 antigen (12 ampoules), SPF sera (24 vials), H5N2 positive antisera (11 vials), H7N7 positive antisera (11 vials). The request form for the demand supply hub has been designed by BNVL and widely distributed to all SADC laboratories. So far, a request for reagents has been handed in by Zambia (CVRI Lusaka).
- During the AI working group meeting on 23 and 24 March, all laboratories which are running PCR for AI agreed to send their SOP to ECTAD. The intention is to harmonize the PCR protocols for AI in a similar manner as it was done for haemagglutination (HA) and haemagglutination inhibition (HI).

Output 3

Activity 3.1: Coordination

- During the reporting period, the Inception workshop (on 16 and 17 February) and three regional meetings were organized by FAO ECTAD and held in Gaborone. The regional events were the Epidemiology and Informatics Sub-Committee (EIS) meeting (from 2 to 4 March), the Laboratory Diagnostic Sub-Committee meeting (from 16 to 18 March) and the SADC AI working group meeting (on 23 and 24 March).
- A LoA on the provision of funds from FAO to the Governmental Department of Veterinary Services for Phase II of the project is in the process of being drafted by Zimbabwe, Zambia and Mozambique. In Malawi, no LoA will be signed between FAO and the Government and the funds will be managed by FAO.

Activities planned for the 2nd quarter**Output 1****Activity 1.1: Implementation of cross-border surveillance**

- Sampling at common cross-border points will be implemented between June and July and timing will be harmonized between neighbouring countries.

Activity 1.2: Promoting HPAI surveillance and its integration into ongoing national animal health activities

- Trained field personnel shall continue with the sampling activities and the AI surveillance program will be coupled with ND vaccination campaigns or integrated into other ongoing animal health activities, e.g. dipping programs. Monthly reports on the number of samples submitted from the field and tested at the CVLs will be submitted to FAO ECTAD.
- The KYEEMA foundation and the project will have integrated their activities and will work closer together.
- The project will continue to monitor the need for sampling material.

Activity 1.3: Enhancing integration of producers in surveillance activities

- Master farmers will have been identified and trained. Their role in conducting passive surveillance will be evaluated.

Activity 1.4: Training of field personnel in surveillance techniques

- Additional field personnel will have been trained in previously identified high risk areas.
- "Picture books" on infectious poultry diseases will be available at all high risk District Veterinary Offices and widely used in the field.

Activity 1.5: Training for expansion of the use of DPT in selected areas in Malawi and Zambia

- DPT shall be widely used for the collection of information on poultry disease, especially for HPAI in all identified high risk areas in Zambia and Malawi.

Activity 1.6: Dynamic mapping of surveillance results

- GPS coordinates will be collected during the sampling activities for further analysis and mapping.

Output 2**Activity 2.1: Enhanced surveillance in the region via laboratory support**

- Additional diagnostic tests for the detection of LPAI/HPAI, such as ELISA and Neuraminidase (NI) will be established while the development of the r-RT PCR will still be in progress.
- Regular reporting from BNVL on the number of samples they received from the different SADC laboratories and the test results will be submitted monthly.
- BNVL shall provide an update on the use of the demand-supply hub.
- The SOPs for PCR (Avian Influenza) will have been submitted by all SADC laboratories to ECTAD and harmonization shall have been finalized.

Output 3**Activity 3.1: Coordination**

- Will continue throughout the project implementation.

Main challenges encountered and response provided during 1st quarter 2010

The main challenge during this reporting period was the reduction of the budget from USD 750 000 to USD 500 000. This reduction had to be accommodated by the project and the participating countries had to adapt their national work plans to the decreased funds.

Main progress made towards the achievement of project outcome *(from the start of the project activities)*

The Inception workshop that took place in early February marked the start of Phase II of the project. The following contributions demonstrate the progress made towards achieving the expected outputs: 1) challenges and lessons learned in Phase I were identified and suggestions for improvement in Phase II were made; 2) the sustainability of the project was discussed and the necessity to integrate AI surveillance into an ongoing animal health activity was fully acknowledged by all participants; 3) the four participating countries agreed on common border posts and on harmonizing the time of sampling; 4) the work plan was designed and approved.

GIS maps were produced for the sampling areas in Phase I and were overlaid with the second generation high risk map produced by ILRI, showing concurrence for high risk areas, except for Mozambique.

The second SADC Service laboratory for HPAI has started its services: the demand supply hub has been established at the BNVL and is operational. BNVL has already received aliquots of serum samples and swab samples from SADC laboratories for testing using HA/HI and is now in the process of establishing ELISA, NI and Real-time reverse transcriptase PCR.

Three regional meetings were held in Gaborone between mid February and the end of March. The project was presented and discussed at all three meetings and valuable additional comments and suggestions were made. The transition to the regional ownership of the project was achieved.

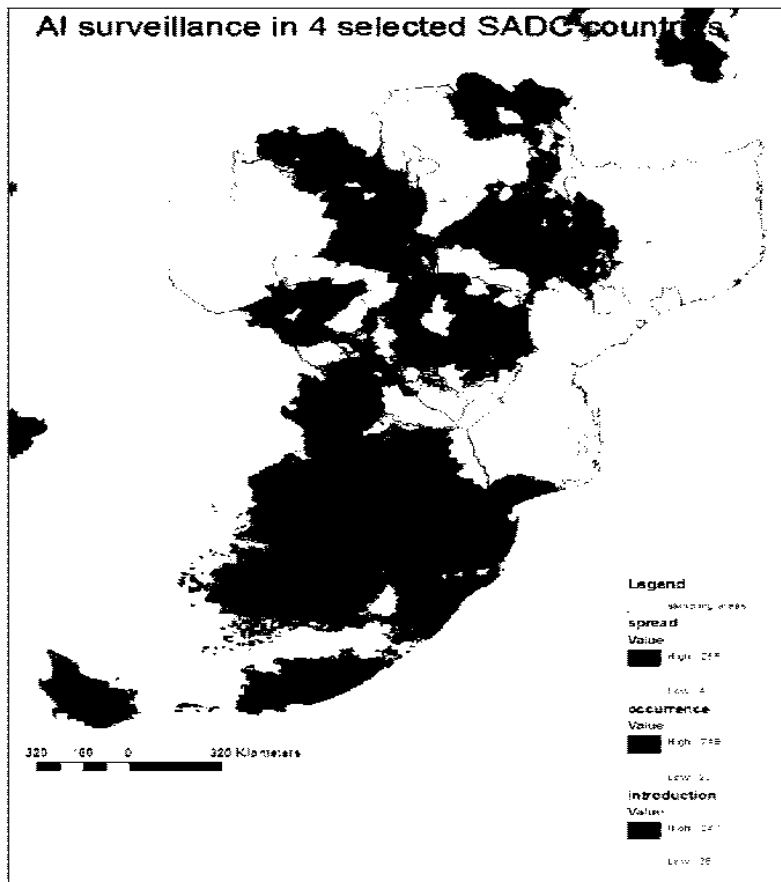
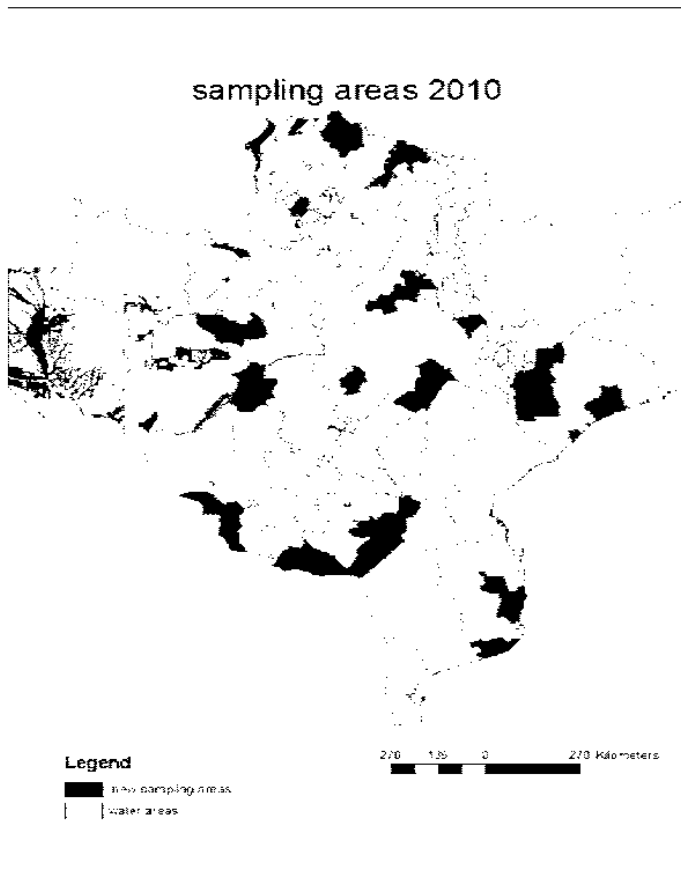
Annex 1**Figure 1: Sampling areas during Phase I (2009) overlaid with EDRSAIA AI High Risk map**

Figure 2: Sampling areas during Phase II (2010)



Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 01**Project Title: **Support to Highly Pathogenic Avian Influenza Surveillance Programme in Cambodia**Reporting period: **April to September 2012**

Country: Cambodia
Project title: Support to Highly Pathogenic Avian Influenza Surveillance Programme in Cambodia
Code: OSRO/RAS/604/USA Baby 1
Budget: USD 1 150 000 (Phase I), USD 1 900 000 (Amendment no. 1), USD 600 000 (Amendment no. 2), USD 400 000 (Amendment no.3), USD 400 000 (Amendment no.4), USD 372 000 (Amendment no. 5) and USD 150 000 (Amendment no.6)
Total budget: USD 4 972 000
Effective starting date: 1 October 2006
Planned end date: 30 September 2013
Context of the project <p>As stated in the previous reports, outbreaks of Highly Pathogenic Avian Influenza (HPAI) in poultry and humans indicate that the H5N1 virus is still circulating in Cambodia. Therefore, it is necessary to detect the outbreaks as early as possible and ensure that immediate and appropriate containment measures are taken to prevent the spread of the disease. The continued improvement of capacities and capabilities in Cambodia to prevent and control HPAI in animal population is necessary to limit its impacts in poultry sectors and minimize the risk of an infection in humans. The Food and Agriculture Organization of the United Nations (FAO) Avian Influenza (AI) Programme in Cambodia is currently funded by the United States Agency for International Development (USAID) in Cambodia for surveillance activities and by the World Bank for Village Animal Health Workers' (VAHWs) training and strengthening of the laboratory capacities and capabilities.</p>
Objectives of the project <p>The main objective of the project is to reduce and stop the spread of H5N1 among and between flocks of birds in Cambodia, and between Cambodia and neighboring countries (Viet Nam, Thailand and the Lao People's Democratic Republic [PDR]), thus reducing the risks of a pathogen spread to mammals and humans and of an emergence of pandemic influenza.</p>
Planned activities for the reporting period (April to September 2012) Output 1: Strengthened planning and cross-sectoral coordination at national and international levels <ul style="list-style-type: none"> • Technical consultation on HPAI surveillance in lower Mekong was organized in Siem Reap on 25 and 26 September 2012. The key persons from the Cambodian Department of Animal Health and Production and the Vietnamese Department of Animal Health, provincial officers and technical officers from FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Cambodia, ECTAD in the Regional Office for Asia and the Pacific (RAP) and Viet Nam attended and actively shared information. At the time of this report, the proceedings of the meeting were not completed. A report will be made available soon. • Through advocacy effort from FAO, the livestock subsector is now being represented within the Technical Working Group on Agriculture and Water through the Livestock Subworking Group. • Seven HPAI risk communication fora were organized in six provinces bordering Viet Nam

and Thailand namely: Banteay Meanchey, Kandal, Kampong Cham, Kampot, Prey Veng and Takeo. Some 2 297 farmers attended the fora.

Output 2: Strengthened laboratory capacity

- The second round of biosafety risk assessment and annual biosafety cabinet testing and calibration service for the regional laboratory was conducted in the National Veterinary Research Institute (NaVRI). Biosafety risk assessment and training was conducted with NaVRI laboratory officers. This assessment is to be used to monitor the improvement of biosafety management (in comparison with the last assessment result), and to address the needs at NaVRI for further improvement on biosafety issues, including procurement of the relevant equipment.
- Supplied consumable equipment and reagents to NaVRI to maintain the ongoing testing.
- Provided support to NaVRI towards becoming a member of proficiency testing laboratories.
- Provided support for the assessment of the laboratory and fixed biosafety cabinets.
- Provided assistance to laboratory officers with international trainings and workshops.

Output 3: Strengthened veterinary epidemiology capacity

- A first three-week Cambodian Applied Veterinary Epidemiology Training (CAVET) was conducted in Takeo province. The cohort of trainees is now moving to a five-month on-the-job training. The 15 trainees are district veterinarians, human health officers (from Takeo and Kampong Cham) as well as wildlife protection officers. Five Cambodian former alumni of one-month Field Epidemiology Training Programme for Veterinarians (FETPV) in Bangkok served as trainers with the assistance from foreign supervisors from FAO RAP, United States Centers for Disease Control and Prevention and Kon Kaen University.
- A hand book for CAVET training was produced in Khmer language.
- In line with the World Bank-funded project “Animal and human influenza control and preparedness project”, under the new component “Healthy livestock, healthy village, better life,” village surveillance was planned in 15 villages of three provinces with the technical support of FAO.

Output 4: Improved surveillance system

- Owing to the lack of reporting, FAO jointly with the Department of Animal Health and Production (DAHP)/NaVRI conducted an assessment on the HPAI surveillance to better understand “WHY” a number of outbreaks are not reported and “HOW” the early warning information system can be improved.
- Organized a workshop on HPAI and emergency infectious diseases (EIDs) surveillance and response in Cambodia in March 2012, the objectives are to: (1) revisit the objectives and review experiences and lessons learned from implementation of the current HPAI surveillance strategy in Cambodia; and (2) to identify practical options to improve HPAI surveillance in Cambodia and apply to other diseases focusing on multi-sectoral collaboration under the One Health approach.
- Support to DAHP/NaVRI to conduct surveillance and investigation during HPAI outbreaks (outbreak in Kampong Speu on 31 May 2012).
- Following a 12-day mission (9 to 20 September 2012), a revised strategy for animal surveillance in Cambodia is under finalization. Activities on surveillance for the next phase will follow recommendations.
- The guide for HPAI outbreak investigation and response was reviewed and will be

expanded to other animal diseases.

- Specific period HPAI surveillance was conducted during the Chinese and Khmer New Year. See Annex 1: Table of HPAI surveillance in live bird markets (LBMs).

Output 5: Improved policy and legislation for trade purposes between Cambodia and its neighbouring countries

- Two consultative workshops with development partners and donors on animal health and production legislation were organized by MAFF. FAO assisted the Animal Health and Production Legislation Committee in terms of granting technical expertise from local and international experts. Cambodian Animal Health and Production Legislation document is now finalized, and was submitted to the Council Minister.
- In coordination with the World Bank-funded Avian and Human Influenza Preparedness and Response Project, FAO conducted a study of poultry value chain analysis for the Phnom Penh markets. Information on traded poultry products-, volumes-, sources- and disease transmission-related trading behaviour was collected from vendors in three different poultry wholesale/retail markets in Phnom Penh. The Report is available upon request.

Other related activities funded under the programme

The Annual Review of the Cambodia Zoonotic Diseases Technical Planning Workshop (on 5 and 6 June 2012) involved the four projects/components implementers (PREDICT, RESPOND, IDENTIFY AND PREVENT) of Emerging Pandemic Threats Program, United States agencies working in the field of animal and human health sectors and the Government of Cambodia, represented by the Ministry of Health (MoH) and MAFF. The workshop identified the needs of the Government counterpart, which is crucial to successful implementation of the strategic planning of zoonotic diseases. It was also a good opportunity that partners explored their available resources for matching with the needs of the government counterpart in term of activities implementation and technical support and strengthening partnerships between the Government of Cambodia, the United States Government and other organizations working in the field of zoonotic diseases. The fiscal year 2013 Action Plan for zoonotic diseases was developed and agreed upon by both ministries, MAFF and MOH.

Planned activities for the next six-month period (October 2012 to March 2013)

Output 1: Strengthened planning and cross-sectoral coordination at national and international levels

- Activity 1.1. Support from ECTAD Country Team Leader and the team to provide inputs for planning the coordination required at country level.
- Activity 1.2. Support national and international coordination related to disease control.

Output 2: Strengthened laboratory capacity

- Activity 2.1. Strengthen laboratory management through technical and management advice.
- Activity 2.2. Support Cambodia's participation in laboratory quality assurance and quality control system for HPAI and regional HPAI laboratory network, including support of sample sharing with the International Reference Laboratory and of proficiency testing.
- Activity 2.3. Procure necessary laboratory supplies (when needed).

Output 3: Strengthened veterinary epidemiology capacity

- Activity 3.1. Support veterinary epidemiology training at regional and country levels.
- Activity 3.2. Support community-based surveillance and response activities.

Output 4: Improved surveillance system

- Activity 4.1. Review disease surveillance strategy in collaboration with human health sector.
- Activity 4.2. Support risk-based surveillance activities focusing on where human cases are reported and along the areas identified as high-risk supply chains.
- Activity 4.3. Conduct workshops and training exercises to follow up on new surveillance modalities and facilitate planning of field work.
- Activity 4.4. Communicate the risks identified by the means of surveillance through public awareness campaigns, particularly during festival period by organizing fora and media spots on TV or radio.
- Activity 4.5. Provide logistic support to field activities (when needed).

Output 5: Improved policy and legislation for trade purposes between Cambodia and its neighbouring countries

- Activity 5.1. Support activities related to policy and legislation for trade purposes between Cambodia and neighbouring countries through the expertise provided to finalize the international animal trade component of the main law.

Main challenges encountered and response provided

- The disease surveillance in general and the diagnostic capacities need to be further strengthened.
- The surveillance in high-risk areas and cross-border issues needs to be addressed for a better control of transboundary animal diseases to improve food safety and livelihoods of smallholders.

Main progress made towards the achievement of project outcomes

- First CAVET cohort training successfully organized;
- Seven risk communication fora organized in bordering provinces to Viet Nam and Thailand;
- Animal Health and Production Legislation drafted;
- Current HPAI surveillance assessed;
- Technical consultation on HPAI surveillance in lower Mekong between Cambodia and Viet Nam carried out;
- Laboratory equipment well maintained and assessed; and
- HPAI Investigation and Response protocol reviewed and tentatively expanded to other animal diseases investigation and response.

Annex 1: Active surveillance in LBM

Name of province (or other similar administrative boundary market) or epidemiological unit (such as production zone, wetland)	Sampling farm (e.g. ducks in the areas with previous outbreak, LBM along the border, etc.)	Type of samples (sera, swab, feces, etc.)	Laboratory performing the results	Test to be used	No. of samples collected	No. of +ve	% of +ve	Remarks
Siem Reap, market	Poultry from different places to be slaughtered for high consumption demand	Swab (cloacal and tracheal) and sera	NaVRI	Egg inoculation for swabs & HA-HI test for sera	2 070 690 cloacal 690 tracheal 690 sera	0	0	Surveillance during 3 months (end of Jan./Feb./Mar/Apr. 2012)
Phnom Penh, Chbar Ampov market	Whole sale poultry and gathering place for poultry from different provinces	Swab (cloacal and tracheal) and sera	NaVRI	Egg inoculation for swabs & HA-HI test for sera	2 160 720 cloacal 720 tracheal 720 sera	LPAI, 1 of 720	0.14	Surveillance during 3 months (end of Jan./Feb./Mar/Apr. 2012)
Phnom Penh, O russey market	Whole sale poultry and gathering place for poultry from different provinces	Swab (cloacal and tracheal) and sera	NaVRI	Egg inoculation for swabs & HA-HI test for sera	2 160 720 cloacal 720 tracheal 720 sera	LPAI, 22 of 720	3.05	Surveillance during 3 months (end of Jan./Feb./Mar/Apr. 2012)
Prey Veng, Neak Luang ferry boat	Shared borders with Viet Nam, high population of ducks and chicken (main road between Ho Chi Minh City and Phnom Penh)	Swab (cloacal and tracheal) and sera	NaVRI	Egg inoculation for swabs & HA-HI test for sera	1 662 556 cloacal 556 tracheal 550 sera	0	0	Surveillance during 3 months (end of Jan./Feb./Mar/Apr. 2012)
Total	Cloacal = 2 686 (+ve = 0)		Tracheal = 2 686 (+ve = 0)		Scrum = 2 680 (+ve = 0.86% LPAI)			

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 02

Project Title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)

Reporting Period: April 2012 to September 2012

Country: The People's Republic of China
Project title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 02
Budget: USD 500 000 (Phase I), USD 500 000 (Phase II), USD 650 000 (Phase III), USD 1 150 000 (Phase IV), USD 1 250 000 (Phase V), USD 1 005 500 (Phase VI)
Total budget: USD 5 055 500
Effective starting date: 1 August 2006
Planned end date: 30 September 2012
<p>Context of the project</p> <p>Despite efforts by the Government of the People's Republic of China to improve the surveillance and control of Highly Pathogenic Avian Influenza (HPAI) through the commitment of resources and development of widespread and comprehensive programmes in both animal disease surveillance and preventive vaccination, the disease remains endemic in some areas of the country. More specifically, the virus is still circulating widely in agro-ecological zones and traditional production systems where the implementation of the control policy requires major effort and commitment of human and financial resources at national and provincial levels. This project was designed to improve the country's capacities to detect and control HPAI in identified high-risk ecological and production systems at an early stage, through the implementation of intensified surveillance activities, epidemiological studies, socio-economic activities, capacity building and training.</p>
<p>Objectives of the project</p> <p>The main objectives under Phase VI of the United States Agency for International Development (USAID)-funded project are to continue working in Hunan, Yunnan, Guangxi, Guangdong Provinces and Chongqing Municipality, and to provide technical assistance and support in the areas of HPAI epidemiology, disease risk analysis and control. A significant part of Phase VI of the project will revolve around training and capacity building through the China Field Epidemiology Training Programme for Veterinarians (FETPV). The project will also follow up on new activities and approaches that have been initiated in previous phases, including improvement of public-private partnerships (PPPs) and biosecurity in live bird markets (LBMs) and investigation and reporting of outbreaks. Other activities include fostering exchanges of knowledge and good practices with neighboring countries on vaccination strategies, cross-border trade and controlling risks of transboundary animal diseases (TADs) using HPAI as a model, operationalizing the "One Health" concept, and addressing health issues at the human-animal-ecosystem interface with a special emphasis on a multi-disciplinary and cross-sectoral approach.</p>
<p>Planned activities for the reporting period (April to September 2012)</p> <p>Output 1: Cross-sectoral coordination at the national and international level strengthened</p> <p>Activity 1.1 Support national consultants in coordinating project implementation</p> <p>Activity 1.2 Organize regular meetings with the Veterinary Bureau/ Department of International Cooperation (DIC) of the Ministry of Agriculture (MoA) and the State Forestry Administration (SFA) to discuss project activities</p> <p>Activity 1.3 Contribute to and facilitate the coordination of surveillance and applied research activities at the wild bird/domestic poultry interface at Poyang Lake Reserve</p> <p>Activity 1.4 Strengthen cooperation with the World Organisation for Animal Health (OIE)/the Food and Agriculture Organization of the United Nations (FAO) Network of Expertise on Animal Influenza (OFFLU) and other laboratories and epidemiology networks - discuss and define joint</p>

scientific collaboration perspectives and opportunities

Activity 1.5 Organize regular FETPV Steering Committee meetings and workshops (involving the Veterinary Bureau of MoA, the China Animal Health and Epidemiology Center (CAHEC), Harbin National Reference Laboratory (HNRL), provincial Centres for Animal Disease Prevention and Control (ACDCs), United States Center for Disease Prevention and Control (US CDC), China CDC/China Field Epidemiology Training Programme (FETP) and other stakeholders)

Activity 1.6 Coordinate the newly created United Nations Theme Group on Health (UNTGH) Subworking group on diseases at the human-animal interface

Activity 1.7 Foster dialogue and exchange of experiences with Viet Nam on vaccination strategies and cross-border trade as a follow-up of the Viet Nam-China Discussion Forum

Activity 1.8 Improve PPP cooperation through LBM restructuring in Guangdong Province

Activity 1.9 Introduce and promote the concept of One Health at the inter-institutional level; cooperate with the World Health Organization (WHO), Ministry of Health (MoH), China CDC and SFA on topics of mutual interest

Output 2: Capacity building in epidemiology strengthened - the China FETPV programme

Activity 2.1 Deliver the fourth module of China FETPV (advanced training on topics of disease surveillance, outbreak investigation, geographic information system [GIS], etc.)

Activity 2.2 Organize FETPV "Training through services (TTS)" activities on outbreak investigation and epidemiological survey at provincial level (including LBM surveillance)

Activity 2.3 Deliver the fifth module of China FETPV (TTS assignments coaching, simulation exercise, problem-based learning exercise, paper critique, etc.)

Activity 2.4 Work jointly with international experts from the Netherlands in veterinary epidemiology to develop outbreak investigation case studies for the FETPV teaching modules

Activity 2.5 support veterinary epidemiology training at regional level to reinforce collaboration with OFFLU network

Output 3: Knowledge of HPAI epidemiological, ecological and socio-economic risk factors improved

Activity 3.1 Assist national authorities in analysing national surveillance results, and provide guidance on improving national and provincial surveillance policies

Activity 3.2 Conduct follow-up socio-economic studies in Guangdong province: compile key information on poultry sector and its structure to analyse product flow along the market chains, determine the implications for disease surveillance, and control issues in combination with the results obtained in Hunan, Yunnan and Guangxi

Activity 3.3 Finalize the epidemiological studies at the domestic poultry/wildlife interface in Poyang Lake to uncover risk factors associated with the emergence of new virus strains

Output 4: HPAI control strategy improved through focused control actions

Activity 4.1 Refine the strategic vision for the national vaccination campaign

Activity 4.2 Provide guidance on improving the progressive control of HPAI through vaccination

Activity 4.3 Finalize the analysis of a ring trial among three provincial laboratories to provide guidance on testing capacity, results reliability and comparisons

Activity 4.4 Strengthen HPAI Disease Surveillance System and Response Capacity at national and subnational levels through the China FETPV and TTS activities

Activity 4.5 Procure necessary laboratory equipment and supplies for HPAI diagnosis, data analysis, and information sharing for national and provincial partners

Activity 4.6 Organize stakeholder meetings and group discussions in the framework of the PPP activities to develop minimum biosecurity standards for LBMs

Activity 4.7 Improve disease surveillance and control activities through an PPP approach based on the studies carried out in Guangdong Province

Activities undertaken during the reporting period (April to September 2012)

Output 1: Cross-sectoral coordination at the national and international level strengthened

Activity 1.1: Coordination and communication with national partners were further enhanced over the past six months. More specifically, a five-year summary report (in Chinese) covering ECTAD China's activities, achievements and progress was produced and shared with China MoA; The Chinese Version Monthly Bulletin was produced and distributed to MoA, SFA and other partners and stakeholders in a timely manner.

Activity 1.2: Several briefing meetings with the Veterinary Bureau and the Department of International Cooperation (DIC) of MoA were held during the reporting period; A transition meeting was held for the replacement of the Team Leader of ECTAD China by the Senior Technical Coordinator at the end of April.

Activity 1.3: The visit of China MoA Delegation led by the Director-General of the Veterinary Bureau, China MoA to FAO headquarters (HQs) in Rome from 14 to 20 May 2012 was coordinated. The visit involved meetings with senior FAO staff and the heads of the main technical sections. A follow-up briefing meeting was held with China MoA and the FAOR after the visit; A Memorandum of Understanding (MoU), Recommendation and Action Plan were prepared by the Office for further processing with MoA.

Activity 1.4: The sixth China FETPV Steering Committee Meeting was held on 28 August 2012 in China MoA and attended by representatives from China MoA, CAHEC, China FETPV, US CDC and ECTAD China. China MoA, CAHEC and ECTAD China reached preliminary consensus over the issue of co-funding more of the activities of the second cohort of the programme and increased focus on long-term sustainability.

Activity 1.5: A Seminar on "Veterinary public health in a changing world" was organized by ECTAD China on 30 July, under the umbrella of the UNTGH Subworking Group on Diseases at the Human-Animal Interface, during the visit of the Senior Officer - Veterinary Public Health from FAO HQs.

Activity 1.6: A UNTGH Subworking Group Meeting was held on 14 September 2012. The meeting focused on reviewing progress and refining the annual work plan as well as providing and updating on recent developments with HPAI and rabies in the country.

Activity 1.7: A training session was arranged at the Guangzhou Animal Health Inspection Institute (GAHII) to help local animal health authorities to have a better understanding of the PPP concept, and using the Guangzhou PPP project in the Jiangcun Poultry Wholesale Market as an example. Advanced ideas on animal disease prevention and control were also covered.

Output 2: Capacity building in epidemiology strengthened - the China FETPV programme

Activity 2.1: The fifth module of the China FETPV was held in Qingdao and Beijing during 21 May to 8 June 2012. The training was delivered by a team from RVC and mainly focused on mentoring of trainee's field practices, simulation exercises, problem-based learning exercises, scientific writing and paper critiques. This is the last training module for the first cohort of the programme.

Activities 2.2: Trainee's implementation of field practices activities (i.e. TTS assignments) - Field surveillance studies and outbreak investigations:

- 12 field surveillance studies were completed by trainees. Results were reviewed by national and international mentors and summarized in a final narrative report;
- In total, 18 outbreak investigations were carried out, and these covered the investigation of outbreaks of HPAI and other animal diseases;

Activity 2.3: An introductory and course summary CD of the China FETPV first cohort was designed and finalized; The design and construction of the China FETPV bilingual Web site (www.china-fetpv.org) was completed in July 2012. It will strengthen the branding of China FETPV as well as facilitate information exchange.

Activity 2.4: The second stakeholder meeting of the China FETPV was held on 7 and 8 June 2012 in Beijing. The two-day event attracted both the national and international stakeholders in the

country, and was attended by representatives from MoA, SFA, United Nations Development Program (UNDP), WHO, World Bank, USCDC, Royal Veterinary College (RVC), International Development Center for Agriculture and Research (CIRAD), CAHEC, provincial Animal CDCs, embassies, universities, FAO RAP and ECTAD China.

Activity 2.5: A two-day China FETPV course content review and module refining workshop was held from 4 to 6 July 2012. Trainee representatives, national mentors and staff from CAHEC and ECTAD China reviewed past training modules and refined the training programme framework and curriculum outline for the second cohort of China FETPV.

Activity 2.6: The sixth Steering Committee meeting was held to discuss the key issues for the second cohort development. The two-year training framework and some key issues were agreed by Steering Committee members, e.g. train and engage potential Chinese trainers/mentors for the long-term sustainability of the China FETPV programme; and address One Health approaches and facilitate joint activities between animal and public health sectors.

Activity 2.7: A final narrative report was submitted to HQs for the closure of the Netherlands-funded project (OSRO/CPR/001/NET) for the China FETPV; Regular communication is maintained for seeking further support for the second cohort.

Activity 2.8: A meeting with the European Union (EU)-China Trade Project II (EUTCP II) for co-funding of the second cohort of the China FETPV was held in the ECTAD China Office on 12 August 2012. A Concept Note for the funding of a joint workshop, seminars and other activities was prepared and submitted for consideration.

Activity 2.9: The participation of a national trainee from CAHEC in the Regional FETPV training in Bangkok was finalized.

Activity 2.10: The visit from FAO RAP was coordinated. A mission to Qingdao was carried out in September 2012 to advance the cooperation and resource mobilization for China FETPV and Regional FETPV.

Output 3: Knowledge of HPAI epidemiological, ecological, and socio-economic risk factors improved

Activity 3.1: Ten issues of the ECTAD China monthly bulletin (with five English versions of the China HPAI highlight and five Chinese correspondents), one China HPAI disease update (No. 6, June 2012) were produced and shared with all relevant stakeholders on a regular basis; All production documents of ECTAD China Office were collected and shared with HQs and RAP upon request;

Activity 3.2: A consultation meeting with partners from the Agriculture, Health and Forestry sectors was held on 24 September for the implementation of the EPT+ project in the country;

Activity 3.3: A specific report on source tracking for pet birds tested H5H1 HPAI positive in Taiwan was produced in August; An informal investigation in the pet market in Guangzhou was carried out by ECTAD China team to collect preliminary information to understand the risks associated with the pet bird market and to provide the basis for a more formal investigation along the pathway from the market to Taiwan.

Output 4: HPAI surveillance and control strategy improved through focused control actions

Activity 4.1: The final report of the Ring Trial Proficiency Test was finalized on 18 July by the *Istituto Zooprofilattico Sperimentale delle Venezie* (IZSVe) and shared with all three provincial partners of Chongqing, Hunan and Guangxi Animal CDCs;

Activities 4.2: The PPP Project in Guangzhou was successfully closed after the newly built vehicle cleaning and disinfection station was launched on 7 August 2012.

- A national consultant on construction and engineering and an international PPP expert were recruited during the reporting period;
- Five missions were carried out to Guangzhou for the construction work in the market and for final inspection and acceptance work of the station; and
- A launching ceremony was held with the local partner-GAHII and the market, and was attended by representatives from MoA, provincial and municipal veterinary/agricultural

authorities. The FAOR attended and officially opened the facility.

- Training sessions on PPP and animal disease prevention and control were arranged by GAHII in Guangzhou on 8 August 2012; and
- A brief meeting on the implementation of the PPP project in Guangzhou was held with China MoA on 29 August; The scaling-up of the LBM upgrading in other markets and other places was discussed.

Activities 4.3: Two important documents were translated and shared with RAP and HQ staff: (1) The National Medium and Long-term Plan for Animal Diseases Prevention and Control in China (2012–2020) and (2) Speech on Policy Measures and Achievements of the Veterinary Public Health in China by the Director-General of the Veterinary Bureau at a meeting of the Chinese Veterinary Medical Association held in June;

Activities 4.4: A two-day Global Animal Disease Information System (EMPRES-i) training was organized in Qingdao on 17 and 18 September 2012 for staff from the Veterinary Bureau, China Animal Disease Control Center and CAHEC.

Main challenges encountered and responses provided

Endeavors are being made to accelerate the transfer of the China FETPV programme to the national Government. However, MoA is still in the early stages of moving to full adoption of international standards for information sharing, transparency and strategies for targeted and effective management of TADs and Emerging Infectious Diseases (EIDs), and they need epidemiological knowledge and skills to do this. There is a severe lack of skilled Chinese epidemiologists in China, and this applies to the MoA, research agencies and universities. This project is the only coordinated approach to partly overcoming this problem, and the focus is now on developing a sustainable capacity for training future cohorts of the FETPV programme. For these reasons, the full adoption by the national Government requires additional time, but remains a realistic goal. The MoA and CAHEC are showing strong commitment and other international experts working in China recognize the importance of the initiative. Therefore, in the short to medium term, FAO and other partners must continue to play an important role in helping to fill the critical gaps and to accelerate the rate of change.

Main progress made towards the achievement of project outcomes

The project has made considerable progress towards achieving the expected outcomes, which can be summarized as follows:

- The visit of China MoA Delegation to FAO HQs has further strengthened the cooperation between China MoA and FAO on prevention and control of TADs and EIDs; The proposed MoU is expected to be signed between China and FAO in the near future;
- China FETPV is a pivotal activity of the USAID-funded HPAI programme in the country, which is also recognized by high-level officials from both the central and provincial governments. Beyond the original objective of creating a pool of skilled veterinary field epidemiologists in the country, China FETPV also aims at strengthening partnerships between national, provincial and international institutions and fostering greater synergy and collaboration among them;
- Building on the successful implementation of the PPP project in Guangzhou and experience in the LBMs, it is expected that good practices and the demonstration role of the model market will be used to further duplicate the approaches in other markets and other places;
- Under the UNTGH umbrella, ECTAD China Office is now taking the lead in coordination with national institutions and international partners in the country on zoonotic diseases and the application of One Health approaches. A platform of information exchange and coordination among the public health and the animal health sectors now exists among FAO, WHO, MoA, MoH and SFA;
- The HPAI project in the country is also in line with FAO's One Health Strategy and Global Programme, and is addressing emerging events involving human-animal-ecosystem health. The ultimate goal is to expand the country's capacities to be able to deal with other EIDs and TADs using HPAI as a model.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 03**

Project title: **Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza (HPAI) in Lao PDR**

Reporting period: **April to September 2012**

Country: Lao People's Democratic Republic
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 03
Budget: USD 1 000 000 (Phase I), 1 284 990 (Phase II), 900 000 (Phase III), 800 000 (Phase IV), 550 000 (Phase V), USD 372 000 (Phase VI)
Total budget: USD 4 906 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2013
Context of the project <p>The project assists the Government in responding to the consequences of a possible poultry disease epidemic that could not only cause serious damage to the poultry sector, but also cause serious consequences to human health and household livelihoods.</p>
Objectives of the project <p>The specific objectives of the project are to:</p> <ul style="list-style-type: none"> • strengthen coordination and support of avian influenza (AI) control policy development; • strengthen risk-based surveillance for Highly Pathogenic Avian Influenza (HPAI) in target provinces; • improve disease response capability; and • strengthen risk management measures, including biosecurity measures and cross-border movement
Planned activities for the reporting period (April to September 2012) Output 1: Planning, coordination and policy support <ul style="list-style-type: none"> • Continue the weekly meetings among the AI project staff • Participate at the United States Agency for International Development (USAID) Emerging Pandemic Threat (EPT) programme review meeting planned in April 2012 • Continue to participate in technical meetings organized by the National Emerging Infectious Diseases Coordination Office (NEIDCO) to support the multi-sectoral coordination and collaboration in the spirit of One Health • Regularly communicate and meet with the USAID Representative for Lao People's Democratic Republic (PDR) to keep them informed of the project work plan • Continue to support Department of Livestock and Fisheries (DLF)'s bilateral meetings with Thailand, Viet Nam and China • Continue to participate in the development of joint activities with other partners related to the implementation of the 2011–2015 National Work Plan for Emerging Infectious Diseases (EIDs) and Public Health Emergencies (PHEs) Output 2: Strengthen veterinary legislation for animal disease control <ul style="list-style-type: none"> • Recruitment of an international consultant on veterinary legislation (for three weeks) to continue to assist in drafting further subsidiary legislations in the field of animal health as required by DLF • Organize a workshop on the development of secondary veterinary laws

Output 3: Strengthen laboratory capacity

- Recruitment of an international consultant on laboratory services (for three weeks) to evaluate the current laboratory operations and management system as well as implement standard operating procedures (SOPs) for the biosafety level (BSL)2 laboratory
- Provide necessary reagents and supplies for the laboratory
- Organize in-country training to support the development of a Laboratory Information Management System (LIMS) roadmap
- Under EPT IDENTIFY regional project:
 - Provide standardized diagnostic reagents
 - Organize a basic field and laboratory diagnosis training-of-trainers
 - Organize a training workshop on diagnosis of priority diseases
 - Support proficiency testing programme for HPAI and other priority diseases
 - Visit the Veterinary Research and Diagnostic Center for Eastern Region, Chonburi, Thailand, to provide exposure to LIMS
 - Provide LIMS
 - Recruit an international consultant to calibrate laboratory equipment (second mission)
 - Organize in-country training-of-trainers on laboratory/field epidemiology linkage
 - Recruit an international consultant to develop BSL3 biosafety and SOPs and provide training

Output 4: Strengthen veterinary epidemiology capacity

- Recruitment of an international consultant on veterinary epidemiology (for three weeks) to assist in synthesizing, analysing and interpreting the information generated from the past three years of active surveillance programme
- Participate in the surveillance working group (SWG) meeting for sharing surveillance data and updates on surveillance issues with human health sectors and other partners
- Provide necessary equipment and supplies for surveillance programme
- Continue with the second sampling of active surveillance in ten provinces from 13 to 23 June 2012
- Support disease investigations based on passive reporting (as necessary)
- Organize in-country training on veterinary epidemiology
- Organize training-of-trainers on One Health in collaboration with other partners
- Provide information technologies (IT) backup support for the Epidemiology Unit and the Laboratory of the National Animal Health Centre (NAHC)

Activities undertaken during the reporting period (April to September 2012)**Output 1: Planning, coordination and policy support**

- The project AI weekly meetings with staff to discuss technical and operational issues have continued
- The Team Leader (TL) assigned as the Food and Agriculture Organization of the United Nations Representative (FAOR) ad interim from 1 March to 30 April 2012, and started his duty on 1 May 2012
- Teleconference to discuss laboratory issues with the Regional Office for Asia and the Pacific (RAP) was held on 6 March 2012 and with USAID on 7 March 2012
- The TL, National Project Director (NPD), national consultant on veterinary epidemiology and national operation assistant participated in the roll-out face-to-face training on Manual Section 507 on Letters of Agreement organized by FAOR Office on 8 and 9 March 2012
- The TL attended the eco-health EIDS workshop in Vientiane from 12 to 16 March 2012 organized by the Canada's International Development Research Centre (IDRC)
- A country consultation meeting to discuss human resource issues attended by DLF, RAP,

Emergency Centre for Transboundary Animal Diseases (ECTAD) country team and USAID was held in Vientiane on 30 March 2012

- The TL and NPD attended the launching meeting for national EIDs and PHE programme monitoring and evaluation (M&E) at the Ministry of Health (MOH) on 8 April 2012 and the wrap-up meeting for national EIDs and PHE programme M&E on 15 April 2012
- The TL participated in the technical policy discussion on Improving the prevention and control of HPAI H5N1 in highly-affected country and neighbouring countries in Ho Chi Minh City, Viet Nam, from 23 to 25 April 2012
- The project supported the participation of 11 Lao PDR's delegation to the 9th Thai-Lao PDR bilateral meeting of the Livestock Development Committee and the 2nd bilateral meeting of Thai-Lao PDR Animal Quarantine Committee from 24 to 26 April 2012 in Chiang Mai, Thailand
- The TL (as the FAOR a.i.) and the Programme Officer from FAOR office in Lao PDR attended the round table meeting (RTM) 2012 for provincial consultation on the Northern Region in Xiengkhouang on 31 May 2012
- The TL and NPD participated in the inception workshop on foot-and-mouth disease (FMD) control in Southeast Asia through the application of the progressive control pathway (PCP) – GCP/RAS/283/ROK in Bangkok, Thailand, on 12 and 13 June 2012
- The TL and NPD participated in the workshop on National Animal Health Strategic Plan 2011–2015 in Vientiane Province from 25 to 27 June 2012
- The project supported the participation of nine Lao PDR's delegates to the 10th Lao PDR - Viet Nam annual bilateral meeting on transboundary animal disease control on 12 and 13 July 2012 in Nha Trang City, Khanh Hoa Province, Viet Nam
- The national consultation workshop on FMD control in Southeast Asia through application of PCP - GCP/RAS/283/ROK was organized in Vientiane Capital on 7 and 8 August 2012
- One Health symposium was organized on 3 September 2012 by MOH and the Ministry of Agriculture and Forestry in collaboration with the World Health Organization and FAO
- Training on One Health approach to achieve a better understanding of One Health, common zoonotic diseases, integrated surveillance, and intersectoral linkages in the prevention and control measures was organized on 4 and 5 September 2012 in Vientiane Capital

Output 2: Strengthen veterinary legislation for animal disease control

- The international consultant on veterinary legislation completed the three-week assignment from 18 June to 6 July 2012 to assist in drafting further subsidiary legislations in the field of animal health as required by DLF
- A workshop on Animal disease control policy development under the umbrella of the Livestock Production and Veterinary Law of 2008 was organized in Paksane, Bolikhamxay province, on 3 and 4 July 2012 to review the newly approved decrees and discuss the newly formulated regulation/decrees/guidelines under the umbrella of the Livestock Production and Veterinary Law to comply with the minimum World Organisation for Animal Health (OIE) requirement
- A workshop on the Socialization of the two newly approved decrees on prevention and control of animal diseases, and control movement of animal and animal products was organized in Vientiane Capital on 24 and 25 July 2012, and attended by the Provincial Agriculture and Forestry Office (PAFO) staff and livestock private sectors
- Discussions were continued to review the legislative development work with the FAO legal expert from the UTF/LAO/018/LAO project

Output 3: Strengthen laboratory capacity

- The TL and NPD participated regularly in coordination meetings with NEIDCO, DLF/NAHC and the World Bank from March to June 2012 to discuss the master plan for the new NAHC laboratory building finalization and commissioning
- The TL, NPD and the Regional Laboratory Network Coordinator from RAP Bangkok participated in the USAID EPT meeting organized by NEIDCO on 5 April 2012
- The TL and NPD attended the inauguration of the new laboratory building of National Centre for Laboratory and Epidemiology (NCLE) on 4 June 2012
- The inauguration of the new laboratory building of NAHC was held on 5 June 2012
- The TL involved in the discussion with NAHC and OIE Regional Representation in Tokyo, Japan on upgrading the sequencing skills for NAHC laboratory staff on 5 and 6 June 2012
- The procurement of reagents and supplies for NAHC laboratory to support the HPAI surveillance programme was finalized.
- The TL participated in the EPT planning meeting for Lao PDR for 2013 at the Regional Development Mission for Asia (RDMA) Office in Bangkok on 12 June 2012
- Under EPT IDENTIFY regional project:
 - The expert on laboratory relocation completed his first mission from 19 March to 5 April 2012 to prepare the list of laboratory equipment to be relocated, generate action plan for space allocation and equipment installation, and write up the moving plan; the second mission from 22 April to 12 May 2012 to develop cleaning and decontamination of equipment protocols, provide technical advice for layouts/fixtures of laboratory furniture and finalize the logistic plan for the equipment move; and the third mission from 5 to 11 August 2012 to run the decontamination of biosafety cabinets and advise the movement of equipment into the new NAHC building
 - The movement of laboratory equipment from the old to the new NAHC facilities was successfully completed from 5 to 11 August 2012
 - Two NAHC staff participated in the basics of field and laboratory diagnosis training-of-trainers workshop from 21 to 25 May 2012 in Chiang Mai, Thailand
 - Two NAHC staff participated in the regional workshop and training on diagnosis of rabies and Newcastle Disease from 6 to 17 August 2012 in Bangkok, Thailand
 - The biosafety cabinet testing and certification were conducted by biosafety professionals from Esco (the company that specializes in biological safety cabinets) from 27 to 30 August 2012
 - The expert for biosafety risk assessment and management completed his mission from 13 to 15 September 2012 to conduct the biosafety risk assessment and assess the specific needs on biosafety management and constraints at NAHC facility

Output 4: Strengthen veterinary epidemiology capacity

- The first and second samplings of active surveillance in ten provinces (Vientiane Capital, Vientiane, Savannakhet, Champasak, Luang Prabang, Luang Namtha, Xayabouly, Xiengkhouang, Oudomxay and Phongsaly) conducted from 14 to 23 March 2012, and 13 to 22 June 2012 respectively
- The TL, NPD and national consultant on veterinary epidemiology participated at the SWG meeting for sharing surveillance data and updates on surveillance issues with human health sector and other partners on 25 May 2012
- The international consultant on veterinary epidemiology completed the three-week assignment from 6 to 27 July 2012 to assist in synthesizing, analysing and interpreting the information generated from the past two years of active surveillance programme
- Provision of additional equipment (syringe, needles, vacutainers, etc.) and supplies

<p>(alcohol, transport media, etc.) for the HPAI surveillance to ten provinces</p> <ul style="list-style-type: none"> • Training on basic veterinary epidemiology and technical skills of epidemiology methods needed to conduct surveillance and disease investigation was organized in Thalang, Vientiane Province, from 13 to 16 August 2012
<p>Planned activities for the next six-month period (October 2012 to March 2013)</p> <p>Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses</p> <ul style="list-style-type: none"> • Process the Government of Lao PDR approval for the Phase 7 of the project • Recruit a national project director, national consultant on veterinary epidemiology, national operational assistant, national administrative/finance assistant and one driver • Organize an inception workshop to formally start the activities of the next phase (Phase 7) of the project • Continue regular project meetings among the HPAI project staff • Regularly communicate and meet with the USAID Representative for Lao PDR to keep them informed of the project work plan • Continue to participate in the technical meetings organized by NEIDCO to support the multi-sectoral coordination and collaboration in the spirit of One Health • Continue to participate in the development of joint activities with other partners related to the implementation of the 2011–2015 National Work Plan for EIDs and PHEs • Participation of NPD in the USAID partners' meeting <p>Output 2: Risk assessment and management along the poultry supply chain strengthened</p> <ul style="list-style-type: none"> • Recruitment of an international consultant on veterinary epidemiology for one month to provide recommendations on surveillance activities and data management • Organize a planning workshop to support the longitudinal risk-based surveillance in five target provinces • Conduct the first two samplings of the longitudinal risk-based surveillance in five target provinces • Participate at the SWG meeting for sharing surveillance data and updating on surveillance issues with human health sector and other partners • Provide necessary equipment and supplies for surveillance and response • Establish a team and network consisting of field staff trained in epidemiology (including the Field Epidemiology Training Programme for Veterinarians [FETPV] and the Field Epidemiology Training [FET] graduates/trainees) and laboratory experts from DLF to develop and link epidemiological and virological information for risk assessment and management <p>Main challenges encountered and response provided</p> <ul style="list-style-type: none"> • Failure to report HPAI outbreak early and inadequate outbreak investigation are still considered as gaps that need to be overcome to improve the capacity to respond to HPAI outbreak and other transboundary animal diseases. A sustainable number of staff from central, provincial and district level had been trained in outbreak investigation and simulation exercises during Phase 2, 3, 4 and 5, and should help to address this issue. • The limited availability of national veterinary human resources is a constraint to the absorption capacity of the governmental services in the country. The activities carried out under Output 2 in Phase 3, 4 and 5 and Output 4 in Phase 6 of this project addressed some of the capacity building needed. • There is a very low prevalence of antibodies and virus-positives detected in healthy ducks, but it is widely distributed in all nine out of ten surveillance provinces which indicates that HPAI H5N1 may still be circulating in Lao PDR as in other countries of the region. The extent and the diversity of the virus clades (2.3.2, 2.3.2.1, 2.3.4, 2.3.4.1 and 2.3.4.2)

suggests that these viruses may have been or continue to be introduced into the country from the surrounding territories.

- There are gaps in knowledge on the process by which H5N1 virus enters Lao PDR, and how it remains and spreads within the country, owing to insufficient outbreak investigation. More evidence is being gathered through active surveillance, but this needs to be reinforced by cross-border movements and value chains studies.
- There is a very limited local capacity to manage and analyse data. The limited capacity of an effective Epidemiology Unit at the central level and the heavy workload of the technical staff at the provincial level have exacerbated the problem. Phase 7 of the project should help to address this issue by assisting DLF to develop a human resources plan and support recruitment of additional staff.
- Legislative support to animal health control still remains a challenge - although progress is being made in this area. Activities under Output 2 in Phase 5 and 6 of this project addressed this challenge.

Main progress made towards the achievement of project outcomes

Output 1: Planning, coordination and policy support

- Continued emphasis on the control of HPAI and broadened scope of prevention, control and laboratory diagnosis to other high-impact diseases through the National Mid-Term Priority Plan for Animal Health (NMTPP-AH) for Lao PDR
- Strengthening of the multisectoral cooperation for the prevention and control of five priority zoonoses in Lao PDR through the national work plan for EIDs and PHEs

Output 2: Strengthen veterinary legislation for animal disease control

- Two important prime ministerial decrees were already finalized, which are the Decree on the Prevention and Control of Animal Diseases of 31 May 2012 and the Decree on the Control of the Movement of Animal and Animal Products of 4 June 2012
- The overall compendium of veterinary legislation for Lao PDR is almost complete, albeit largely only in draft forms at present. Seven draft decrees and one technical guidelines were produced, and are ready to be brought to the next step of legislative process

Output 3: Strengthen laboratory capacity

- The new laboratory building of NAHC was completed, and the laboratory equipment was successfully relocated and re-installed
- The new laboratory facility of NAHC is currently functioning

Output 4: Strengthen veterinary epidemiology capacity

- A more targeted and longitudinal active surveillance was implemented, although owing to administrative constraints, only two sampling rounds (March and June) were undertaken in 2011 and 2012
- The three-year risk-based active surveillance programme (2010–2012) in ten provinces improved the project staff ability to conduct descriptive data analyses to identify temporal and spatial patterns, interpretation and report preparation
- The provincial and district staff capabilities in conducting field surveillance and the cold chain for sample submission to the central laboratory were further improved
- The implementation of three-year risk-based active surveillance programme (2010–2012) in ten provinces should briefly describe the epidemiological status as well as risks of HPAI-H5N1 at target sites, which can be utilized for planning of risk management to be carried out in Phase 7 of the project

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 05

Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: April to September 2012

Regional Component: Southeast Asia Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) Code: OSRO/RAS/604/USA Baby 05
Budget: USD 600 000 (Phase I), USD 1 435 000 (Phase II), USD 1 172 700 (Phase III), USD 937 800 (Phase IV), USD 1 000 000 (Phase V), USD 30 667 (from Mongolia Balance) USD 1 192 500 (Phase VI) Total budget: USD 6 368 667
Effective starting date: 1 August 2006
Planned end date: 30 September 2012
Context of the project The Highly Pathogenic Avian Influenza (HPAI) epidemic, caused by H5N1 viruses, began in late 2003 and in early 2004 in Asia and Southeast Asia and spread to many countries in the region. The effects were particularly severe in Indonesia, Thailand and Viet Nam, which saw widespread outbreaks in poultry and also human cases of H5N1 infection. The Food and Agriculture Organization of the United Nations (FAO), through its Emergency Centre for Transboundary Animal Diseases (ECTAD), established a decentralized unit in Bangkok, Thailand, located in the Regional Office for Asia and the Pacific (RAP), to provide technical backstopping for countries in the Asia and the Pacific region that were experiencing outbreaks of the infection or were at risk of it. ECTAD RAP was supported through a preliminary, regional project (OSRO/RAS/505/USA) funded by the United States Agency for International Development (USAID). This support has continued under FAO's present project.
Objectives of the project The objective of this regional component is to coordinate project activities with the target countries and also to ensure continuity from the previous project (OSRO/RAS/505/USA) to the current one. The project also aims to strengthen regional level cross-sectoral coordination and communication for HPAI control.
Planned activities for the reporting period (April to September 2012) Output 1: Strengthened cross-sectoral coordination at regional level <ul style="list-style-type: none"> • continue to provide technical and operational inputs to country-level projects in collaboration with country teams • continue to provide technical inputs, resource persons or training support to the activities related to existing regional HPAI Control Framework for the Association of Southeast Asian Nations (ASEAN) or existing network systems or regional coordination mechanism related to HPAI and animal disease control • continue to coordinate and collaborate with other agencies on activities related to HPAI control • continue to provide technical inputs to support the activities of the USAID Emerging Pandemic Threats (EPT) programme, which are conducted by various partners as well as the EPT+ programme

Output 2: Strengthened regional and national human resources in epidemiology through regional Field Epidemiology Training Programme for Veterinarians (FETPV)

- continue activities to implement the regional FETPV programme, including the seeking of additional support for the programme through other potential partners
- continue to provide support to the development of China FETPV and India FETPV as well as related training programmes in Cambodia and Lao People's Democratic Republic (PDR)
- organize a regional workshop to develop the regional strategy to assist the countries to improve animal disease control systems at the grassroots level focusing on the Community Animal Health Worker System

Output 3: Strengthened coordination of epidemiology and laboratory network

- continue to support the implementation of the Global Animal Disease Information System (EMPRES-i) Asia to share expertise and information in a real-time manner across the network through meetings, workshops and online communication
- prepare the Strategic Framework of the Regional Laboratory and present it to ASEAN
- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium
- continue to provide support for sample submission from member countries to international reference laboratories

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- continue to support the in-depth studies on the risks of HPAI spread along the poultry production and market chains at the border between Thailand and Lao PDR (Mukdaharn and Savannakhet Provinces) including price monitoring of livestock products
- support the organization of a bilateral meeting between the Government of Thailand and Lao PDR to discuss cross-border risk management
- organize regional coordination meetings on risk management at cross-border level among key potential partners including the representatives from participating governments

Output 5: Established regional emergency response services

- continue to provide technical and operational assistance to member countries to contain the HPAI outbreaks in the country

Activities undertaken during reporting period (April to September 2012)

Output 1: Strengthened cross-sectoral coordination at regional level

- The ECTAD RAP team continued to maintain international and national regional support staff for the project.
- The ECTAD RAP team continued to coordinate and collaborate with other United Nations (UN) agencies, donors and international organizations. Specifically, RAP:
 - organized the USAID Partners Meeting on 27 and 28 September 2012 in Bangkok, Thailand among USAID partners in the region. The theme for the meeting this year focused on a review of the HPAI situation and the virus clades circulating in the region, accomplishments and lessons learned on risk communication and advocacy as well as those on multisectoral collaboration and coordination at cross-border

level; and sharing experiences and lessons learned in three technical areas (risk based surveillance, field epidemiology training, and cross-border collaboration and coordination). The progress on the collaboration with ASEAN on developing regional strategies on veterinary epidemiology and laboratory capacity development and networking was also presented at the meeting.

- The ECTAD team participated in FAO-World Organisation for Animal Health (OIE)-World Health Organization (WHO) tripartite events to strengthen collaboration and coordination among the three organizations. The tripartite events included teleconferences and preparation for the following meeting:
 - “The Third Regional Workshop on Multi-Sectoral Collaboration on Zoonoses Prevention and Control” to be organized during 26-28 November 2012 in Bali, Indonesia. The meeting will be organized under the financial support of the European Union (EU) Highly Pathogenic and Emerging and Re-emerging Diseases (HPED) project with the aim to ensure the adoption of a One Health approach and promote collaboration among all relevant sectors.
- The ECTAD team provided technical inputs to support the activities of ASEAN including the development of the two Regional Strategies for Veterinary Epidemiology and Laboratory Capacity Development and Networking for Southeast Asia.
- The ECTAD team provided technical inputs to support the activities of USAID EPT and EPT+ programmes.
- The ECTAD team provided technical and operational inputs to country projects, in collaboration with FAO country teams and national counterparts, for the following activities:
 - recruitment of international consultants;
 - procurement of equipment and supplies;
 - issuance of contracts to conduct field activities/research;
 - provision of inputs and clearance to project proposals prepared by staff of ECTAD country teams for the new USAID funding cycle;
 - provision of clearance to technical reports prepared by staff of ECTAD country teams;
 - backstopping missions to monitor project progress in Myanmar and Lao PDR; and
 - a backstopping mission to Bangladesh to provide technical inputs to the meeting related to HPAI vaccination.

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- The fourth Letter of Agreement (LoA) was signed by FAO and the Thai Department of Livestock Development (DLD) authorities to support the Thai DLD to implement the regional FETPV during the year 2012.
- The Regional Veterinary Epidemiologist (RVE) and Regional Coordinator (RC) continued to work closely with DLD on activities related to FETPV. These included:
 - facilitating the submission of three abstracts by the three final-year FETPV trainees which were accepted for presentation at the Conference of Research Workers in Animal Disease (CRWAD) to be held in December 2012 in Chicago, USA;
 - organizing the second-round visits of the FETPV trainees who were enrolled in the class of 2011 for a series of trainings and workshops in Bangkok in August 2012 including a Data Analysis Workshop, a scientific writing session and mentoring to prepare abstracts to submit to CRWAD;
 - serving as regional programme mentors to the trainees from China and

- Myanmar;
 - conducting missions to China, Indonesia, Myanmar and Viet Nam to advocate for the Regional FETPV programme to the Chief Veterinary Officers (CVOs) of the above-mentioned countries to support their trainees to complete their field assignments which were conducted at the country level; and seeking additional support for the programme including the collaboration with the Faculty of Veterinary Medicine, Chiang Mai University, Thailand; the Animal Population Health Institute, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins; and the Center of Veterinary Public Health, College of Veterinary Medicine, University of Minnesota.
 - participating in the annual Coordination Meeting on Evaluation and Development of FETPV held on 28 and 29 May 2012. Forty-four participants attended the workshop from DLD, universities, Ministry of Public Health, United States Center of Disease Control (CDC), FAO, Zoological Park Organization, and alumni from the Veterinary Field Epidemiology in Action (VFEA) Training course and regional FETPV. Evaluation focused on utilization of knowledge, training curriculum, collaboration and support, and programme coordination and logistics.
- The RVE continued to provide support to the development of China FETPV and India FETPV, as well as related training programmes in Cambodia. The activities included:
 - providing support to the second FETPV short course *Veterinary field epidemiology in action* which was conducted for 15 veterinarians in Khorda District, Orissa State, India from 12 to 20 July 2012 as part of the FETPV field epidemiology three-week short course.
 - providing technical inputs to the first FETPV short course organized by FAO Cambodia in collaboration with Cambodia Department of Animal Health and Production (DAHP). The training course was organized with technical support from the National Veterinary Research Institute of Cambodia (NaVRI), FAO, US CDC, and partly financially supported by RESPOND. Fifteen participants will conduct in-service training component and present the results of their work by February 2013.
 - participating in the second China FETPV stakeholder meeting from 6 to 9 June 2012. The meeting was attended by national and international stakeholders including trainees, international instructors, universities, provincial representatives, national representatives, China Ministry of Agriculture (MoA), FAO and international donors.

Output 3: Strengthened coordination of epidemiology and laboratory networks

- The ECTAD team continued to provide technical inputs and coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks. This included:
 - The Regional Strategy for Veterinary Epidemiology Capacity Development and Networking for Southeast Asia. The draft strategic framework was developed at the workshop organized by ASEAN on 30 and 31 August 2012 at Chiang Mai, Thailand.
 - The Regional Strategy for Laboratory Capacity Development and Networking was prepared by the ECTAD team in collaboration with ASEAN and the framework was subsequently endorsed by ASEAN Working Group on Livestock (ASWGL) in May 2012 in Myanmar.
 - The FAO/OIE Regional Laboratory Technical Advisory Group meeting (Lab-

TAG meeting), on 30 and 31 July 2012, Bangkok, Thailand; The main objectives of the meeting were to update the partners on the ongoing activities related to laboratory policies, laboratory capacity building activities and laboratory networking in Southeast Asia. The meeting was attended by 25 representatives from key technical partners, the regional leading laboratories, international reference laboratories, major donors and implementing partners.

- The ECTAD team continued to provide technical inputs to the disease tracking system EMPRES-i Asia and information sharing via Transboundary Animal Disease Network Asia email circulation.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- The ECTAD team provided inputs to the bilateral meeting between Cambodia and Viet Nam organized at Siem Reap on 25 and 26 September 2012.

Planned activities for the next six-month period (October 2012 to March 2013)

Output 1: Strengthened cross-sectoral coordination at regional level

- continue to provide technical and operational inputs to country-level projects in collaboration with country teams
- continue to provide technical inputs, resource persons or training support to the activities related to existing regional HPAI Control Framework for ASEAN or existing network systems or regional coordination mechanism related to HPAI and animal disease control
- continue to coordinate and collaborate with other agencies on activities related to HPAI control
- continue to provide technical inputs to support the activities of the USAID EPT programme, which are conducted by various partners as well as the EPT+ programme

Output 2: Strengthened regional and national human resources in the field of veterinary epidemiology

- continue activities to implement the Regional FETPV programme, including the seeking of additional support for the programme through other potential partners
- continue to provide support to the development of China FETPV as well as related training programmes in Cambodia, Lao PDR and South Asia

Output 3: Strengthened coordination of the epidemiology and laboratory networks

- continue to support the implementation of EMPRES-i Asia to share expertise and information in a real-time manner across the network through meetings, workshops and online communication
- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium
- continue to provide support for sample submission from member countries to international reference laboratories

Output 4: Strengthened coordination of cross-border risk assessment and management for HPAI transmission

- Support the dialogue between or among member countries on cross-border cooperation and collaboration in management of critical control points at the key regional corridors

Output 5: Established regional emergency response services

- continue to provide technical and operational assistance to member countries to contain the HPAI outbreaks in the country

Main challenges encountered and response provided

- No main challenges encountered during the reporting period.

Progress made towards the achievement of project outcomes (from the start of activities)**Output 1: Strengthened cross-sectoral coordination at regional level**

- Coordination and collaboration between FAO and other international organizations and agencies was strengthened and continued. Engagement with the regional political organization particularly ASEAN through the adoption of strategies jointly developed by member countries and FAO. Coordination has been well established between the projects funded by USAID and the projects funded by other donors.

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- FETPV continued smoothly with additional collaborations at national and international levels and approved joint funding for the programme. ASEAN member countries recognized the importance of integrating veterinary epidemiology activities in the national veterinary services and noted the fact that the Thai DLD has been hosting the Regional FETPV since 2009. Capacity building in the field of epidemiology has been included as one of the main components of the draft Regional Strategies for Veterinary Epidemiology Capacity Development and Networking to be considered for endorsement by ASWGL in their next meeting.
- There have been two graduating cohorts in the year of 2011 and 2012 consisting of 13 veterinary graduates. One hundred and thirty-four veterinarians from 11 countries were trained through the short course - *Veterinary Field Epidemiology in Action*. Eight training modules, an FETPV trainee manual and four structured case studies were developed and used for the training. A total of 44 epidemiology reports (13 surveillance, 18 outbreak investigations and 13 field epidemiology studies) were developed and some of these reports were presented at International Conferences including TEPHINET, European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE), CRWAD and Melbourne One Health Conference

Output 3: Strengthened coordination of the epidemiology and laboratory networks

- The Strategic Framework for Regional Laboratory Networks for Southeast Asia was endorsed by the ASEAN Working Group on Livestock. The international partners for the regional laboratory network in Southeast Asia were recognized by the member countries as the Technical Advisory Group.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- A system for "Price Monitoring of Livestock Products" was developed and tested at a study site at the border between Thailand and Lao PDR (Mukdahan - Savannakhet Provinces).

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 06**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Viet Nam**

Reporting period: **April 2012 to September 2012**

Country: Viet Nam
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Viet Nam
Code: OSRO/RAS/604/USA Baby 06
Budget: USD 2 million (Phase I), USD 3.1 million (Phase II), USD 3.3 million (Phase III), USD 1.075 million (cost extension) ¹ , USD 2.2 million (Phase IV), USD 1.9 million (Phase V).
Total budget: USD 14 083 373 ²
Effective starting date: August 2006
Planned end date: 30 September 2013
Context of the project The control and elimination of H5N1 Highly Pathogenic Avian Influenza (HPAI) demands a long-term approach. Viet Nam is moving from the control phase to the consolidation phase, with an ongoing need for capacity building in the veterinary services and livestock production sectors and support for vaccination and other risk reduction measures. This regional project supported by the United States Agency for International Development (USAID) is currently in its fifth phase of implementation.
Objectives of the project The overall objective of the project is to address the urgent short-term actions that need to be undertaken by the country to strengthen its capacity to rapidly detect the introduction of HPAI and minimize its spread in case of its occurrence.
Planned activities during the reporting period (April to September 2012) Component 1: Preparedness and planning component Output 1: Strategy development for HPAI control <i>Activity 1.1: Review of HPAI Control Strategy in Viet Nam</i> <ul style="list-style-type: none"> • Monitor progress of the passive surveillance being implemented in 22 provinces. • Work with the regional technical drafting team for preparation of a regional HPAI control plan through some key interventions to gather further evidence necessary for the regional HPAI control plan in the lower Mekong (Regional Animal Health Office [RAHO] 7+) and central Viet Nam (RAHO 3). • Develop a draft regional HPAI control plan for Region 3 and Region 7+. <i>Activity 1.2: Scenario planning to analyse the effects of cessation of vaccination</i> <ul style="list-style-type: none"> • Various scenarios were developed in consultation with the Government, and a draft recommendation was forwarded. The HPAI situation will be monitored, and appropriate technical assistance will be provided based on the situation prevailing, or in the event of a change in the vaccination strategy. • A policy brief will be developed based on the matrix of control options by scenario, including the use of a range of vaccine types indicating best options. Output 2: Coordination and communication with donors and other HPAI implementing partners <ul style="list-style-type: none"> • Continue to hold regular coordination meetings with USAID, and also to the extent possible with other implementing partners, e.g. Avian and Pandemic Influenza Initiative (APII).

¹ Project cost extension request from October 2009 to September 2010.

² A balance of USD 508 373 from OSRO/VIF/801/USA was transferred to OSRO/RAS/604/USA B 06. Additional contribution of USD 1.7 million is expected for the October 2012 to September 2013 period.

- Participate in the partner (e.g. APII) activities/events.

Activity 2.1: Core FAO Viet Nam team supported

- Continue to ensure that all required staff is in place.

Activity 2.2: Annual project meetings supported

- Technical and operational support will be provided for the Technical and Policy Discussion Meeting between high-burden HPAI countries and those bordering 'at risk' countries, proposed on 24 and 25 April 2012 in Viet Nam.
- Technical midterm project review and planning meeting will be organized in May 2012.
- Final project workshop and future planning will be held in September 2012.

Activity 2.3: Team meetings from provincial to national level

- Regional planning meeting will be held in July and August 2012.
- Two meetings will be held in April and August 2012 to monitor the implementation of the project with the project regional managers and provincial focal points as well as the core project staff.

Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector

- Periodical coordination meetings will be held with Abt Associates, the Viet Nam Partnership on Avian and Human Pandemic Influenza (PAHI), the World Health Organization (WHO), USAID and others including advocacy coordination.
- A national knowledge sharing workshop with other animal influenza players will be organized in June 2012.
- Support the Department of Animal Health (DAH) in developing a bulletin to consolidate and communicate all animal health-related activities, projects and programmes implemented through DAH. The bulletin will be posted on the DAH Web site and printed copies distributed to RAHO and the Sub-Department of Animal Health (SDAH) offices for wider dissemination.
- DAH Quarterly bulletin for quarter II and III of 2012 will be developed and disseminated.
- Final standard operating procedures (SOPs) on outbreak investigation and response will be disseminated upon endorsement of the Government.
- Materials on duck waste management and hatchery biosecurity minimum standards will be finalized and disseminated to relevant stakeholders.

Component 2: Animal surveillance component

Output 3: Animal surveillance at the national, provincial, district and community level enhanced

Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported

- Upgrade basic and advanced techniques in microbiology at all laboratories. Training courses will be held at the National Center for Veterinary Diagnosis (NCVD), National Institute of Veterinary Research (NIVR), RAHO 1, 2, 3, 4, 6 and 7, Central Vietnam Veterinary Institute (CVVI) between March and September 2012.
- Develop capacity for full characterization of influenza A virus at NCVD. Protocols for sequencing all eight segments of avian influenza (AI) virus will be introduced and applied between March and July 2012.
- Support small research activities at all laboratories. Characterization of H9N2 virus will be carried out at NCVD in March and July 2012.
- Support the laboratory network for strengthening biosafety and quality assurance including regular proficiency testing.
- Support DAH in development of a strategic roadmap for diagnostic services.
- Support the Emerging Pandemic Threats (EPT) IDENTIFY through technical assistance in identified laboratories including advisory service in laboratory protocol, biosafety and quality assurance.

- Support Epi-Laboratory network meeting in July and August 2012.

Activity 3.2: Strengthening of core capacities for animal health and disease control planning in focus provinces and selected regional planning structure

- Conduct risk analysis training course for the technical drafting team for the regional HPAI control plan for the Region 3 and Region 7+.
- Carry out technical situation analysis and draft strategic HPAI control plans for the Region 3 and Region 7+.
- Develop a final draft strategic control approach document.
- Constitution of a public-private partnership (PPP) Working Group in the focus regions.
- Implement passive surveillance, hatchery improvement, capacity building on outbreak investigation and good production practices in Hung Yen and Ha Nam in April and June 2012.
- Provide training to private veterinarians, Chief Animal Health Workers (CAHWs), Agrivet store owners and extension workers on poultry disease information and prevention in Hung Yen (see 6.1.3) in May and June 2012.

Activity 3.3: Further development of monitoring and evaluation (M&E) expertise in animal health

- Focus on gathering sub-IR1 (increased effectiveness of HPAI and EPT prevention and control in the animal health sector) and sub-IR3 (strengthened policies and systems for improved implementation and management of services and programmes) indicators as listed in the USAID Viet Nam HPAI and EPT Performance Management Plan document.
- Ensure that biannual reporting requirements are met.
- Conduct pre- and post-tests for the Applied Veterinary Epidemiology Training (AVET) courses and other trainings.

Activity 3.4: Veterinary epidemiology network supported

- Provide support to integrate the Transboundary Animal Disease Information System (TADinfo) with other suitable softwares (e.g. Decision Support System, developed by the Massey University under the New Zealand Agency for International Development [NZAID] programme, etc.), or any other TADinfo compatible programme.
- Provide support to develop the TADinfo system interface where map and statistic data could be obtained publicly.
- Carry out a needs assessment to determine further training requirements on the use of online disease data management.
- Continue to support the Epi-Lab Network.
- Provide organizational and technical support, in collaboration with DAH, to the AVET programme and carry out two more batches with 16 candidates per batch during the six-month period in coordination with the Hanoi University of Agriculture (HUA).
- Continue to support AVET alumni and the AVET Web site.
- The AVET alumni meeting is scheduled for August 2012.

Activity 3.5: Animal surveillance programme

- Continue to support passive surveillance in 22 pilot provinces and in the regional control plan with the following additional activities: (i) work with DAH to develop and present a policy paper on the need for adequate and timely compensation to the Ministry of Agriculture and Rural Development (MARD) and the Central Government; (ii) determine options and pilot a reward system as permissible within the laws of the land in the form of certificates of appreciation, publicity in the Animal Health Bulletin or similar incentives for encouraging reporting of unusual poultry deaths and suspect HPAI cases by CAHWs and District Veterinary Officers (DVOs); (iii) provide differential diagnosis for poultry disease outbreaks at RAHOs, including training staff in poultry health and zoonoses with differential diagnosis; and (iv) train CAHWs and DVOs on field investigation and data collection of a poultry health event.
- Continue the live bird market surveillance study for subclinical infection of adult ducks with AI in

selected markets of high-risk provinces.

- Implement a study on detecting AI in spent hens that are confiscated along the northern border of Viet Nam (Lang Son and Quang Ninh Provinces).

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- Over the course of the project, laboratory consumables will be procured for HPAI diagnosis and surveillance including training courses and genomic and antigenic characterization of HPAI virus isolates. Equipment will also continue to be maintained as required.

Component 3: Animal response component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk-mapping and risk analysis updated at national level

Activity 5.1.1: Poultry subsector profiling

- Expand provincial profiling and value chain analysis work to cover production and marketing systems in the regional control zones (Regions 3 and 7).
- Engage and train provincial focal points.
- Present profile data/maps to stakeholders and review/finalize with risk assessments.

Activity 5.1.2: Applied risk analysis capacity building

- Review and summarize risk assessments and define the gaps from past regional workshops.
- Conduct further training in risk assessment, planning and mitigation in region 3 and 6/7.
- Conduct regional workshops to target risk mitigations and develop a strategic plan.

Activity 5.1.3: Updating risk assessment and mapping

- Develop regional poultry population and movement models.
- Develop spatio-temporal mapping of influenza viral clades.

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- Once the SOP on outbreak investigation and response developed last year is adopted by the Government, training courses for the new SOP will be undertaken in the focus regions 3 and 7+.
- Suitable training material will be developed, and training will be organized on implementation of an incident command system (ICS) in one of the regions, as has been incorporated in the Livestock Emergency Preparedness Plan, developed last year under the project.

Activity 5.3: Cross-border analysis using a value chain methodology in three border areas

- Review existing information on cross-border trade and identify gaps.
- Investigate the value chain of these commodities.
- Conduct a serial cross-sectional survey to assess presence of AI in confiscated spent hens coming from China into Viet Nam.
- Develop options for risk mitigation.
- Hold bilateral meeting, Viet Nam-China and Viet Nam-Cambodia.

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- Continue to support vaccine efficacy trials for Re-6 and any other vaccines.
- Support studies to carry out pathogenicity tests for new isolates of HPAI and Low Pathogenic Avian Influenza (LPAI) viruses on ducks.
- Support HPAI virus surveillance and virus characterization.

Activity 5.5: Support PPP and institutional strengthening in poultry production and health care system

Activity 5.5.1: Strengthening veterinary services delivery

- Prepare the Terms of Reference (ToRs) for the Veterinary Statutory Body through stakeholder consultations.
- Hold a consultation workshop on creation of a Veterinary Statutory Body.

Activity 5.5.2: Setting up PPP working groups

- Assess opportunities to set up a national industry forum.
- Establish PPP working groups at RAHO 3 and 6/7, if there is positive feedback from the sectors. Otherwise consider merging the PPP Working Group with the Biosecurity Working Group.
- Determine benefits and extend poultry clubs – Quang Nam and An Giang.

Activity 5.5.3: Poultry price monitoring

- Continue support for data collection and reporting.
- Develop options for dissemination of information.

Output 6: Improved biosecurity and market hygiene practices in commercial and scavenging poultry raising settings supported

Activity 6.1: Support biosecurity strengthening in pilot provinces

Activity 6.1.1: Pilot hatchery strengthening

- Conduct study tour for Quang Tri hatchery owners.
- Continue to establish hatchery demonstration pilots in Quang Tri.
- Promote certification with hatcheries.
- Assess options for a quality assurance.
- Pilot auditing and certification, M&E of poultry small hatcheries.

Activity 6.1.2: Reduce the risk of transmission along the value chain

- Continue to develop risk models for additional provinces in Region 3 and 7.
- Train provincial staff to assess development options and constraints in poultry production.
- Develop a strategic risk reduction plan at the aggregation points.
- Hold two risk mitigation workshops in Region 3 and Region 6/7 in March and August 2012.
- Capacity building for technical drafting team on risk analysis in April 2012 for developing the HPAI regional control plan.

Activity 6.1.3: Improving technical advice for poultry producers

- Continue to develop provincial pilot approach, identifying key stakeholders.
- Continue to develop training materials and disease fact sheets.
- Provide training to private veterinarians, CAHWs, Agrivet store owners and extension workers on poultry disease information and prevention.
- Develop farm economics models.
- Review/evaluate the programme.

Activity 6.1.4: Strategic planning for improving poultry production

- Implement a spatial planning process in two identified provinces.
- Set up a Letter of Agreement (LoA) with the Department of Livestock Production (DLP) to develop spatial planning process.
- Conduct training courses in strategic planning - at national and then provincial level (for the technical team in the regional approach in Region 3 and 6/7).

- Review/evaluate strategic plans.

Activity 6.2: Develop good poultry production guidelines and training for DAH, DLP and Regions/Zones

Activity 6.2.1: Develop good biosecurity practices and standards (GPPPs)

- Review/develop minimum biosecurity standards sector-wise.
- Consolidate and prepare guidelines for sectors, species and stakeholders.
- Conduct training workshops on guidelines.
- Print and distribute guidelines.

Duck waste management

- Pilot duck waste management measures.
- Monitor, review pilot and prepare draft outcome report.
- Workshop on duck waste management to share experiences will be held on July 2012.

Activity 6.2.2: Biosecurity working group

- Continue to hold bimonthly meetings.
- List all resource materials.
- Provide discussion forum for the development/finalization of guidelines.

Activities undertaken during the reporting period (April to September 2012)

Component 1: Preparedness and planning component

Output 1: Strategy development for HPAI control

Activity 1.1: Review of HPAI Control Strategy in Viet Nam

- Progress of the passive surveillance being implemented in 22 provinces monitored.
- A regional planning workshop to develop an HPAI control strategy for the Mekong region was held in Ho Chi Minh city from 3 to 6 April 2012 with a total of 54 participants (33 male and 21 female). A similar workshop to develop an HPAI control plan for the north-central provinces of Viet Nam was held in Hue on 24 and 25 May 2012 with a total of 36 participants (25 male and 11 female).
- Debriefings held for the progress on the Regional Strategic Planning process (with DoH and RAHO 3, 6 and 7). A mission was undertaken in Ho Chi Minh city to present the progress with the planning process to the DAH Southern Coordination Office and the Directors of RAHO 6 and 7. A similar meeting was held in Hanoi with the Director of RAHO 3 to discuss the further development of the Regional Strategy for the RAHO3 provinces.
- A consultation workshop to finalize the Mekong regional HPAI disease control strategy was held in Ho Chi Minh city on 24 July 2012 with a total of 39 participants (30 male and nine female), and a similar workshop to finalize the North-central regional HPAI disease control strategy was held in Vinh on 31 July 2012 with a total of 28 participants (20 male and eight female).
- The final drafts of the regional HPAI control plans for the North-central region (Region 3) and the Mekong Delta region (Region 7+) were completed.

Activity 1.2: Scenario planning to analyse the effects of cessation of vaccination

- The policy brief is yet to be developed. The matter has been discussed with DAH and is pending the development of the national HPAI control plan.

Output 2: Coordination and communication with donors and other HPAI implementing partners

Activity 2.1: Core FAO Viet Nam team supported

- The Team Leader left the Emergency Centre for Transboundary Animal Diseases (ECTAD) Viet Nam programme in May 2012. The acting Team Leader arrived in June 2012 to ensure

continuation of ongoing activities until the end of September 2012. The International Technical Advisor (for poultry production, risk assessment and biosecurity) is contributing to the programme on a work-as-required basis (alternating between in-country inputs and home-based work) since June 2012.

- No changes for the other core staff.

Activity 2.2: Annual project meetings supported

- Technical and operational support was provided for the Technical and Policy Discussion Meeting between high-burden HPAI countries and those bordering 'at risk' countries in Ho Chi Minh City from 23 to 25 April 2012 in Viet Nam.
- A consultation meeting with DLP to review project activities and discuss key activities proposed for the 2012–2013 work plan was held in Hanoi on 3 July 2012 with a total of ten participants (five male and five female).
- A consultation meeting with DAH to review project activities and discuss key activities proposed for the 2012–2013 work plan was held in Hanoi on 5 July 2012 with a total 16 participants (eight male and eight female).
- Since the project will be extended for another year (until 30 September 2013), no final workshop was held. Planning workshops were held in July 2012 as mentioned above.

Activity 2.3: Team meetings from provincial to national level

- The regional planning and consultation workshops held to support the formulation of the Regional Disease Control Strategies for the North-central region and the Mekong Delta region, as well as various debriefings were substituted as opportunities to liaise with the Regional Coordinators on planned activities.
- As of February 2012, the programme only supports two provincial focal points (one in Quang Tri and one in Hung Yen).

Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector

- Periodic information sharing and/or coordination meetings were held with Abt Associates, PAHI, WHO, USAID, Centers for Disease Control (CDC), the Livestock Competitiveness and Food Safety Project (LIFSAP) and others actors/partners. Efforts were made to ensure FAO's participation in activities and events of other partners to the extent possible.
- Participated in the USAID API programme partners' planning meeting on 4 June 2012 in Hanoi to set the direction for crafting an integrated work plan for the API programme in Viet Nam.
- Participated in the workshop on slaughter and poultry market on 7 and 8 June 2012 supported by USAID-APII. A presentation on the live bird market surveillance was given by FAO.
- Participated in the USAID retreat in Da Nang on 10 and 11 July 2012 to review accomplishments, challenges and gaps over the past year, identify areas of focus for the coming year and explore collaborative opportunities among implementing partners.
- Participated in the 3rd working meeting on Policy and Advocacy Planning for Avian and Pandemic Influenza (API) on 20 August 2012 in Hanoi.
- Supported DAH in developing a bulletin to consolidate and communicate all animal health-related activities, projects and programmes implemented through DAH. Some 210 copies of the 2011 Animal Health Bulletin was printed and distributed to RAHO and SDAH offices for wider dissemination.

Component 2: Animal surveillance component

Output 3: Animal surveillance at the national, provincial, district and community level enhanced

Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported

- Capacity developed for full characterization of influenza A virus at NCVD. Protocols for

sequencing all eight segments of AI virus introduced and applied.

- Laboratory network for strengthening biosafety and quality assurance supported through proficiency testing.
- DAH supported in the development of a strategic roadmap for diagnostic services.
- EPT IDENTIFY component supported through technical assistance for identified laboratories including advisory service in laboratory protocol, biosafety and quality assurance.
- Epi-Lab network meeting organized from 19 to 21 September 2012 in Ho Chi Minh city with a total of 50 participants (42 male and eight female). Laboratory diagnosis at all laboratories was reviewed, and results of surveillance and vaccine efficacy tests were presented and discussed.

Activity 3.2: Strengthening of core capacities for animal health and disease control planning in focus provinces and selected regional planning structure

- Refresher training on risk analysis along the poultry value chain in the Mekong region was held in Ho Chi Minh city on 2 April 2012 with a total of 20 participants (ten male and ten female).
- Refresher training on risk analysis along the poultry value chain in the Central region was held in Hue on 21 May 2012 with a total of 13 participants (11 male and two female).
- The final drafts of the regional HPAI control plans for the North-central region (Region 3) and the Mekong Delta region (Region 7+) were completed.

Activity 3.3: Further development of M&E expertise in animal health

- Submitted the PMP indicators for the period October 2011 to March 2012.
- Ensured that biannual reporting requirements were met.
- Conducted pre- and post-tests for AVET courses (AVET 10-12).
- Meeting held with MEASURE on 16 May 2012 on PMP templates.
- Meeting held with Abt M&E officer on 8 June 2012 on data cleaning and data reporting.

Activity 3.4: Veterinary epidemiology network supported

- Epi-Lab network meeting organized from 19 to 21 September 2012 in Ho Chi Minh city.
- Organizational and technical support provided for two more batches of the AVET programme, with a total of 32 participants (18 male and 14 female) in collaboration with DAH and HUA.
- Second AVET alumni meeting held in Danang on 6 and 7 September 2012 with a total of 132 participants (93 male and 39 female).

Activity 3.5: Animal surveillance programme

- A Letter of Agreement (LoA) to support passive surveillance in 22 provinces concluded at end of July 2012. A new LoA to continue support to passive surveillance in 20 provinces was signed with DAH in September 2012.
- The first phase of the live bird market surveillance completed. Live bird market surveillance results and analysis meetings held.
- LoA for the second phase of the live bird market surveillance signed with DAH.
- LoA on implementation of spent hen surveillance in Hanoi, Lang Son and Quang Ninh was signed with DAH.
- Participated in field missions to Region 3 provinces (Nghe An and Quang Tri) to visit SDAH and RAHO 3 to assess the passive surveillance project.
- Participated in field missions to Hai Phong and Quang Ninh province to implement spent hen surveillance activities.
- Participated in a field mission with DAH to Ha Vy market to investigate sampling procedures for the next round of live bird market surveillance.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- Over the course of the project, laboratory consumables were procured for HPAI diagnosis and surveillance including training courses and genomic and antigenic characterization of HPAI virus isolates. The maintenance of equipment also continued as required.

Component 3: Animal response component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk-mapping and risk analysis updated at national level

Activity 5.1.1: Poultry subsector profiling

- Provincial profiling and value chain analysis work expanded to cover production and marketing systems in the regional control zones (Regions 3 and 7). Profile data/maps presented to stakeholders.
- Provincial focal points engaged and trained.

Activity 5.1.2: Applied risk analysis capacity building

- Risk assessments reviewed/summarized and gaps from past regional workshops defined.
- Further training in risk assessment, planning and mitigation conducted in Region 6/7.

Activity 5.1.3: Updating risk assessment and mapping

- Regional poultry population and movement models developed to support regional risk assessments.

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- SOPs on outbreak investigation and response developed last year yet to be officially adopted by the Government. The General Department of Legislation of MARD requested a new circular to replace the Circular 69.

Activity 5.3: Cross-border analysis using a value chain methodology in three border areas

- Bilateral meeting between Viet Nam and Cambodia held on 25 and 26 September 2012.

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- LoA on Vaccine Efficacy and Pathogenicity Test and identification of the gene pool of AI viruses signed with DAH.
- Support to vaccine efficacy trials for Re-6 completed. It was demonstrated that Re-6 vaccine is effective to both cluster (A and B) of 2.3.2.1.A virus, but not to clade 1.1 virus.
- First round of vaccine efficacy test (Re-5 vs H5N1 viruses 2012) completed; the same results with the previous test with H5N1 viruses 2011.
- Support continued for HPAI virus surveillance and virus characterization.
- Haemagglutination gene of 175 viruses (120 from outbreaks and 55 from live bird market surveillance) sequenced. Results showed: (1) that three clusters of clade 2.3.2.1 virus are circulating in the north Viet Nam since July 2012, and that H5 viruses collected during live bird market surveillance are similar to those collected from outbreaks in terms of genetic sequences and distribution, except 2.3.2.1. A virus was newly identified in Dong Thap province by live bird market surveillance.
- The laboratory system quickly identified a new H5N1 variant cluster of viruses that initiated a minor epidemic of HPAI in July through September 2012 mostly in young ducks.

Activity 5.5: Support PPP and institutional strengthening in poultry production and health care system

Activity 5.5.1: Strengthening veterinary services delivery

- Discussions held with DAH to organize a study tour on the creation of a Veterinary Statutory Body.

Activity 5.5.2: Setting up PPP working groups

- Consultations held with a private poultry company PROCONCO, and potential areas for collaboration identified.

Activity 5.5.3: Poultry price monitoring

- Pilot completed.
- Options discussed for dissemination of information.

Output 6: Improved biosecurity and market hygiene practices in commercial and scavenging poultry raising settings supported*Activity 6.1: Support biosecurity strengthening in pilot provinces**Activity 6.1.1: Pilot hatchery strengthening*

- LoA on implementation of pilot hatchery model and certification in Can Tho and Quang Tri provinces signed with DLP. The following activities under this LoA were carried out:
 - First training course on Hatchery biosecurity minimum standards in Can Tho on 19 and 20 June 2012 with a total of 17 participants (14 male and three female);
 - Training course on Auditing procedures for small and medium hatcheries in Can Tho on 21 and 22 June 2012 with a total of ten participants (eight male and two female);
 - Second training course on hatchery biosecurity minimum standards in Quang Tri on 9 and 10 July 2012 with a total of 16 participants (14 male and two female);
 - Advanced auditing training course on biosecurity in Quang Tri on 11 July 2012 with a total of ten participants (seven male and three female);
 - Second training courses on Hatchery biosecurity minimum standards in Can Tho on 19 and 20 July 2012 with a total of 25 participants (16 male and nine female);
 - Provincial meeting on evaluation of hatchery models held in Quang Tri on 12 September 2012 and in Can Tho on 25 September 2012 with a total of 64 participants (48 male and 16 female); and
 - National workshop on the hatchery strengthening programme held on 28 September 2012 in Hanoi with a total of 29 participants (20 male and nine female).
- Six monitoring trips to selected hatchery models in Quang Tri and Can Tho.

Activity 6.1.2: Reduce the risk of transmission along the value chain

- Risk reduction models for small and medium scale hatcheries developed.
- Strategic risk reduction plan for hatcheries developed in consultation with key stakeholders.

Activity 6.1.3: Improving technical advice for poultry producers

- Training materials on hatchery biosecurity developed.

Activity 6.1.4: Strategic planning for improving poultry production

- Sustainable development of waterfowl production in southern provinces workshop (in collaboration with DLP) was held in An Giang on April 2012 with a total of 107 participants (94 male and 13 female).

*Activity 6.2: Develop good poultry production guidelines and training for DAH, DLP and regions/zones**Activity 6.2.1: Develop GPPPs*

- Minimum biosecurity standards sector-wise reviewed/developed.
- Guidelines for sectors, species and stakeholders prepared and consolidated.

Duck waste management

- Composting of duck waste training conducted in Vinh Thanh district, Can Tho province on 25 July 2012 with a total of 19 participants (17 male and two female).
- Composting of duck waste training conducted in Co Do district, Can Tho province on 26 July 2012 with a total of 19 participants (all male).
- Composting of duck waste training conducted in Thoi Lai district, Can Tho province on 27 July 2012 with a total of 17 participants (all male).
- Composting of duck waste training conducted in Hai Lang district, Quang Tri province on 17 July 2012 with a total of 25 participants (22 male and three female).
- Nine models on duck waste management in Can Tho and five models on duck waste management in Quang Tri piloted.
- Testing chemical composition of fertilizer in Can Tho is ongoing.

Activity 6.2.2: Biosecurity working group

- The 18th Biosecurity working group meeting, entitled "Duck waste management" was held in Vinh on 22 June 2012 with a total of 29 participants (25 male and four female).
- The 19th Biosecurity working group meeting, entitled "Duck waste management" was held in Can Tho on 23 August 2012 with a total 29 participants (21 male and eight female).

Activities proposed for the next reporting period (October 2012 to March 2013)**Component 1: Preparedness and Planning Component****Output 1: Strategy development for HPAI control*****Activity 1.1: Regional HPAI Control Strategy***

- Facilitate establishment of a coordination structure for the implementation of the regional strategy
- Develop advocacy strategy for implementation in conjunction with PAHI
- Support development of work plans for two zones. Activities should include improved surveillance, value chain mapping, risk planning and disease control
- Joint planning of activities with other partners to ensure linkage to zonal strategy

Activity 1.3 Training in regional control plan management and evaluation

- Conduct real-time training in regional control plan management in conjunction with RAHO meetings.

Output 2: Coordination and communication with donors and other HPAI implementing partners***Activity 2.1 Core FAO Viet Nam team supported and manages project activities******Activity 2.2 Annual project meeting supported******Activity 2.3 Coordination meetings to support regional HPAI control strategy implementation******Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector*****Component 2: Animal surveillance component****Output 3: Animal surveillance at the national, regional/zonal, provincial, district and commune level enhanced*****Activity 3.1 Strengthening of core capacities for animal disease control and disease control planning within regional control strategies***

- Support capacity building to develop work plans to implement regional control strategies
- Support capacity building in risk management along value chains relevant to regional control strategies

- Support development of responses to risk analysis associated with value chains
- Outbreak investigation refresher training for SDAH and RAHO staff using standardized approach to support strategy
- Outbreak response refresher training for SDAH and RAHO staff using standardized approach to support strategy
- Mentoring of epidemiology units in data analysis and interpretation

Activity 3.2 Animal surveillance programme

- Support national surveillance plan for live bird markets, including where appropriate targeting spent hen trade
- Support surveillance plan for live bird markets linked to regional strategic objectives
- Support passive surveillance system under regional control strategy, including employing smart phone technology
- Support linkages in passive surveillance from community level to formal animal health reporting systems
- Training for differential diagnosis of poultry disease outbreak at RAHO and SDAH including poultry post-mortem examination
- Develop policy options for incentives to stimulate reporting of disease events and support advocacy for implementation
- Support DAH to conduct expert consultation on national surveillance system for HPAI and other priority diseases

Activity 3.3 Strengthening of veterinary laboratories diagnostic activities, including biosafety and quality assurance supported

- Supporting laboratory quality assurance through monitoring of performance and SOP review
- Continue support for rapid and differential diagnosis at RAHO level including other zoonoses/high-impact diseases
- Continue support for the full characterization of viruses isolated from outbreaks and live bird market surveillance
- Review the functions and role of the animal health laboratory system
- Support strategy for DAH to assume full technical responsibility for HPAI laboratory programme

Activity 3.4 Veterinary Epidemiology Network capacity supported

- Continue support for AVET programme with emphasis on an advanced course
- Define the framework for the epidemiology network at national level and commence development
- Support regional level epidemiology networks and conduct regular meetings
- Support AVET alumni meeting

Activity 3.5 Further development of M&E expertise in animal health

- Training of managers at RAHO and SDAH in the monitoring and evaluation principles that guide project management
- Support alignment of the overall APII M&E framework to local strategic plans
- Support managers at RAHO and SDAH in gathering and processing M&E data

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement of essential supplies and maintenance of laboratory equipment

Activity 4.2 Procurement of consumables to support laboratory activities

Activity 4.3 Determine and support maintenance requirements for laboratories

Activity 4.4 Procurement of supplies to support field surveillance activities

Component 3: Animal response component**Output 5: Effective and timely animal response efforts promoted***Activity 5.1: HPAI risk mapping and risk analysis updated to support regional strategies*

- Poultry sector profiling to support the regional strategy
- Applied risk analysis capacity building
- Updating risk assessment and mapping
- Detailed characterization of high-risk value chains including network analysis

Activity 5.2: Outbreak control capacity strengthened under regional control strategy

- Further review of SOPs for application to outbreak control, including local incident command system and culling principles
- Refresher training in outbreak control to support strategic control plans
- Assist partners to sensitize grassroots stakeholders to disease control activities
- Review application of carcass disposal in outbreak control in local situations within strategic plans
- Prepare and conduct desktop exercises with public health counterparts

*Activity 5.3 Conduct review of response capability in relation to scenarios developed under activity 1.2**Activity 5.4 Develop tailored compensation mechanisms to support control strategy*

- Support the development of locally feasible and practical compensation mechanisms to support farmers reporting disease.
- Review outbreak control procedures to enable effective audits to support compensation packages

Activity 5.5 Cross-border dialogue and coordinated surveillance

- Support bilateral meetings with China and Cambodia to exchange technical information including surveillance and risk assessment findings, and risk reduction plans
- Review cross border value chains of high-risk commodities
- Develop plans to conduct coordinated cross-border surveillance

Activity 5.6 Vaccine efficacy assessments and virus surveillance supported at the national level

- Conduct vaccine trials against key circulating clades with ranges of vaccines, species and breeds
- Monitoring pathogenicity of selected virus isolates from outbreaks and live bird market surveillance

Activity 5.7 Institutional strengthening in poultry production and animal health advisory systems

- Institutional and core function analysis for poultry production and support services
- Capacity needs assessment of key stakeholders
- Develop the poultry sector advisory services model in collaboration with partners and the Extension Department

Activity 5.8 Support engagement of private sector in execution of regional control strategies

- Develop a poultry industry forum at regional level to support the regional control plan
- Work with other APII partners to engage key value chain stakeholders in regional control strategy

*Activity 5.9 Support DAH to conduct review of the current draft of Veterinary Law**Activity 5.10 Support DAH to finalize guidelines to establish Veterinary Statutory Body, including structure, function and mechanism*

Output 6: Improved poultry production practices in poultry value chains supported

Activity 6.1 Support programme to strengthen safe poultry production practices including biosecurity

- Develop materials and methods with partners including extension service to scale up hatchery pilot programme in support of regional control strategies
- Facilitate development of policy and advocacy brief to support practical measures to upgrade the production of day-old ducks
- Support implementing partners with high-level training and advice on hatchery pilot programme
- Collaborate with DLP to develop upstream standards for parent flocks supplying hatcheries conforming to guidelines and pilot test practical implementation at field level
- Continue support for development of poultry waste disposal systems:
 - review workshop on composting of duck waste
 - national workshop on composting of duck waste
- Develop materials and methods with partners including extension service to scale up the good production practices in support of regional control strategies

Activity 6.2 Support ongoing activity of the Biosecurity working group

- Support national and regional meetings of the Biosecurity working group
- Support dissemination of the Biosecurity working group findings by partners within regional control strategy, including the extension service

Activity 6.3 Provide policy support brief on the inactivation of H5N1 under environmental conditions

- Investigate inactivation of H5N1 strains under simulated environmental conditions
- Develop a policy brief related to the implications of virus survival in the environment

Activity 6.4 Pilot training programme for private sector in various guidelines and GPPP developed

Activity 6.5 Training of provincial Department of Agriculture and Rural Development (DARD) staff in description and mapping of local poultry sector

Main challenges encountered and response provided

- Official government clearance for the project extension (October 2011–September 2012), following the approval of the Project Document by FAO and USAID, was only obtained in late March 2012. Consequently, many activities, which the counterpart government agency had primary responsibility for implementing, could not be initiated until then. Since then, the project has successfully signed several LoAs with the counterpart government agencies which is expected to accelerate implementation of planned activities.
- In the country context, the regional approach to HPAI control is a new concept. The Government administrative structure does not provide for a regional mechanism in-between the national and provincial authorities in Viet Nam. This is being resolved through advocacy with the national department and the provincial one through RAHOs.
- The Senior Technical Coordinator/Team Leader left the ECTAD Viet Nam programme in May 2012, and while an interim Team Leader was immediately recruited in June 2012, a new Team Leader is not yet in place. A vacancy announcement was launched for the position and interviews conducted. The internal selection process will be completed in early October 2012.

Main progress made towards the achievement of project outcomes (from the start of the project)

Output 1: Strategy development for HPAI control in 2006–2010 supported

- Consideration of a regional approach to HPAI control rather than a provincial one was promoted and is attracting interest as featured in the Green Book Review and several International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) documents. The final drafts of the regional HPAI control plans for the North-central region (Region 3) and the Mekong Delta region (Region 7+) were completed.

- A Livestock Emergency Preparedness Plan was developed and submitted to DAH for use in any unusual event in the livestock sector, keeping in view the state of unpreparedness that the Government experienced during the 2003–2004 emergence of HPAI.
- Provincial poultry subsector profiling was effective in describing provincial poultry populations (including the Poultry Atlas), and DLP is considering adopting such an approach more widely.
- Risk assessment and risk-based targeting of control measures are increasingly being included in technical and policy development (however still largely restricted to the control of HPAI). This approach is now expanded and was translated into an HPAI regional control plan particularly for two regions in Viet Nam.

Output 2: Coordination and communication with donors and other HPAI implementing partners

- Programme management, planning and coordination of activities with USAID and other partners were maintained. FAO made 11 major recommendations for the Green Book review, which were well received by the Government of Viet Nam as is evident from the newly released follow-up version of the Green Book as an Action Programme on Avian Influenza, Pandemic Preparedness and Other Emerging Infectious Diseases (AIPED) for the period covering 2011–2016.
- FAO and Abt Associates have a common strategy to risk reduction across the supply chain with a shared activity matrix consolidating the agencies' activities into a single overall approach.
- The first volume of DAH Animal Health bulletin was released in July 2011 (250 copies); and the second volume of DAH Animal Health bulletin was released in August 2012 (210 copies).

Output 3: Animal surveillance at the national, district and community level enhanced

- The project is carrying out animal surveillance activities, which include support in relation to the upgrading of TADinfo and LabNet, development of geographic information systems (GIS) at RAHO. So far, 210 officers from SDAH, 14 RAHO staff and five DAH Epidemiology staff were trained to use this software. Seven units of global positioning system (GPS) and seven licenses of mapping software (ArcView/ArcGIS 9.2) were provided to seven RAHOs (I–VII). A total of 55 SDAH/DAH staff were trained on its use.
- The project also developed a database system software for laboratory diagnostic management within the DAH's LabNet through the services of a local firm in Viet Nam. Laboratory biosafety and quality assurance are being supported and pursued. One laboratory (NCVD) was accredited for ISO17025, and the other laboratories are in process of accreditation.
- The SOPs for H5N1 real-time polymerase chain reaction (PCR) were developed and adopted. It has been used at nine veterinary laboratories extensively for passive and active surveillance. The use of real-time PCR was extended to the differential diagnosis of HPAI, such as Newcastle Disease and Duck Plaque.
- Capacity of genetic sequencing of H5N1 viruses was developed and applied. Genetic analysis of the viruses isolated from HPAI outbreaks in poultry in Viet Nam over several years indicates that Clade 1 is entrenched in south Viet Nam with sporadic forays to central Viet Nam. Clade 2.3.4 used to be the predominant clade for many years in north and central Viet Nam until the winter of 2009–2010. However, clade 2.3.2 viruses have totally replaced the dominance of clade 2.3.4 in late 2010, which continues until present (February 2012). Within the newly emerging clade of 2.3.2.1, an antigenic variant strain of virus was detected. Adequate technical and material support significantly improved the HPAI diagnostic capacity in the laboratories and antigenic and genomic characterization of H5N1 viruses.
- A revised and updated SOP for HPAI Outbreak Investigation and Control was developed comprising 19 sections and 14 job cards for various officials involved in HPAI outbreak management. The English and Vietnamese versions of the SOP were handed over to DAH for transmission to MARD for adoption as a national strategy.
- The awareness raising campaign to encourage poultry farmers to report any unusual occurrences of an infectious disease in poultry flocks and the necessity to report it on time was carried out through TV spots and loudspeakers during the risk period (e.g. the TẾT festival).

- The AVET initiative to improve basic epidemiological investigation capacity through Viet Nam-specific, nine-week long tailor-made course curricula, resulted in the training of 160 veterinarians in 12 cohorts in the period of 2010–2012. At least one veterinarian of each of the 63 provinces of Viet Nam now has specialized basic skills in veterinary field epidemiology. Two AVET alumni workshops were organized for strengthening the animal health epidemiologist network in Viet Nam and improving the sharing of information.
- Active surveillance for HPAI and other poultry diseases launched to complement the community-based surveillance of Abt Associates yielded valuable insight on the efficacy of the surveillance.
- In the event of an outbreak, a new component was launched in March 2011 to early detect any potential secondary outbreaks in the neighbouring area of the index case.
- A cost effectiveness study on surveillance for HPAI was completed. Preliminary findings suggest that there is a qualitative value in surveillance, but the cost of surveillance per outbreak reported is going up with a decrease in the number of outbreaks of HPAI in Viet Nam.
- Live bird market surveillance for subclinical infection of ducks sold at the markets in 30 high-risk provinces indicated widespread circulation of AI virus and also H5N1 viruses, in particular.
- More than 300 copies of the Wild Bird Manual were translated into Vietnamese and distributed to 63 provinces.

Output 4: Priority procurement for animal surveillance and laboratory supported

- Procurement of vehicles, information technologies (IT) equipment, equipment sprayers and most laboratory consumables is complete, and all are in use.

Output 5: Effective and timely animal response efforts promoted

- A cross-border study in the north of Viet Nam concluded that as a result of a high financial return for poultry, smuggling across the border has not decreased, but has become more elaborate, which will pose a constant risk of disease transmission. The market chain is increasingly being recognized as critical to the control of HPAI, particularly in northern Viet Nam, and FAO's strategic targeting of live bird markets was validated.
- Hatchery data collection and mapping in five pilot provinces was completed. Hatchery minimum biosecurity standards were developed through a stakeholders consultation process. A hatchery audit and certification tool was developed, and training was provided to the Government staff on the procedure for hatchery auditing and certification.
- Post-vaccination monitoring and virus circulating surveillance for influenza A/H5N1, supported by this project, shows that vaccinated poultry have a protection rate of 72.10 percent at the bird level. The protection rates of Muscovy ducks, turkey, other ducks, chicken and geese were: 80 percent, 80 percent, 78.90 percent, 68.05 percent and 50 percent, respectively. Prevalence of Type A and H5N1 AI viruses in ducks were 0.94 percent and 0.67 percent respectively, while in chickens, respective prevalence was 0.54 percent and 0 percent. There was no evidence of AI virus persistence found with the samples taken from Muscovy ducks. The AI positive samples were from Khanh Hoa and Quang Ngai provinces (Centre). Currently, the Government of Viet Nam halted mass vaccination of poultry against HPAI.
- A training course on good management practices to key stakeholders, the National Veterinary Company (NAVETCO), Viet Nam's Veterinary Vaccine Company (VETVACO) and DAH was conducted, which covered introductory level Good Manufacturing Practice (according to the 2009 Pharmaceutical Inspection Convention/Pharmaceutical Inspection Co-operation Scheme [PIC/S] Code of GMP) and quality systems applicable to the manufacture of AI H5N1 vaccines.
- The operational appraisal of cold chain integrity was completed, and 39 provinces were provided with walk-in cold rooms. A software for inventory maintenance of vaccine banks in provinces was developed.
- Capacity for animal challenge experiment was developed, following the completion of a high biosecurity animal isolation unit at NCVD. The unit applied for vaccine efficacy tests since 2007 to monitor the adequacy of vaccines against the evolving H5N1 viruses. An antigenic variant of H5N1 virus was found in 2011, for which the vaccine currently in use was not effective.

Output 6: Improved biosecurity practices in commercial and scavenging poultry raising settings supported

- Poultry sector profiling provides important tools for risk-analysis and strategic disease control planning. A guide to provincial poultry sector profiling was developed. Poultry sector profiling was completed for four of the five project provinces. The guidelines are currently being tested externally by an implementing partner in three non-USAID pilot provinces.
- A Biosecurity working group was established which provides a forum to network information and lessons learned, building technical understanding among a peer group of agencies working to strengthen biosecurity.
- A framework for a database on biosecurity materials was developed, and its consolidation is in progress. By now, over 100 documents were compiled in a searchable format. This is now ready for dissemination. Biosecurity activities of all agencies engaged in related work have also been mapped.
- The working group reviewed work on hatchery biosecurity. Training on the principles of biosecurity and on biosecurity auditing was provided to 16 members of the Biosecurity working group. Conventional approaches to biosecurity strengthening were reviewed and evidence gathered to support adoption of a supplementary approach focusing on private sector driven activities and adopting social marketing techniques from the human health sector.
- FAO and Abt Associates liaised on hatchery technical training and registration schemes.
- A regional risk analysis exercise was conducted, which provided information on the character of poultry movement and production in the lower Mekong Region, identifying poultry movements and risk pathways for inter-provincial transmission of infection.

Output 7: Communication capacity supported at DAH and technical inputs to communication activities of other USAID implementing partners are provided

- FAO supported the calendar and sticker production and distribution for pre-TET festival 2010, sending out the message to call the hotline or the SDAH landline to report ill and dead poultry under the Enhanced Reporting component.
- Under the Gathering Evidence for a Transitional Strategy (GETS) project (closed in February 2012), the Academy for Educational Development produced a commercial in which the second part encouraged poultry owners to report ill and dead poultry to SDAH via a hotline or SDAH phone numbers. This was used effectively in this project for awareness-raising purposes.
- Support to DAH communications and technical support to Abt Associates in implementing the field activities was maintained.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 01**Project Title: **Support to Highly Pathogenic Avian Influenza Surveillance Programme in Cambodia**Reporting period: **October 2012 to March 2013**

Country: Cambodia
Project title: Support to Highly Pathogenic Avian Influenza Surveillance Programme in Cambodia
Code: OSRO/RAS/604/USA Baby 01
Budget: The budget of this project, which started in fiscal year 2006, was USD 1 150 000. It was increased by USD 1 900 000 under Amendment no. 1, by USD 600 000 under Amendment no. 2, by USD 400 000 under Amendment no. 3, by USD 400 000 under Amendment no. 4, and by USD 372 000 under Amendment no. 5. With the increase of USD 150 000 under this current Amendment (no. 6), the total budget amounts to USD 4 972 000.
Amendment no. 6: USD 150 000
Total budget: USD 4 972 000
Effective starting date: 1 October 2006
Planned end date: 30 September 2013
Context of the project <p>As stated in the previous reports, outbreaks of Highly Pathogenic Avian Influenza (HPAI) in poultry and humans indicate that the H5N1 virus is still circulating in Cambodia. Therefore, it is necessary to detect the outbreaks as early as possible and ensure that immediate and appropriate containment measures are taken to prevent the spread of the disease. The continued improvement of capacities and capabilities in Cambodia to prevent and control HPAI in the animal population is necessary to limit its impacts in poultry sectors and minimize the risk of an infection in humans. The Food and Agriculture Organization of the United Nations (FAO) Avian Influenza (AI) Programme in Cambodia is currently funded by the United States Agency for International Development (USAID) in Cambodia for surveillance and response activities.</p>
Objectives of USAID project <p>The main objective of the project is to reduce and stop the spread of H5N1 among and between flocks of birds in Cambodia, and between Cambodia and neighboring countries (Viet Nam, Thailand and the Lao People's Democratic Republic), thus reducing the risks of a pathogen spread to mammals and humans and of an emergence of pandemic influenza.</p>
Planned activities and expected outputs <p>Output 1: Strengthened planning and cross-sectoral coordination at national and international levels</p> <ul style="list-style-type: none"> After the first technical consultation meeting in September 2012 in Siem Reap, Cambodia, good surveillance practices were shared along with epidemiology findings and methodology used in the poultry monitoring programmes of each country (Cambodia and Viet Nam). Final recommendations were made by integrating HPAI monitoring in poultry in the lower Mekong Delta border areas, identifying focal points for future interactions/information exchange and reviewing the duck production/marketing systems. These were the first issues that needed to be addressed. Other recommendations were that the Department of Animal Health and Production (DAHP) of Cambodia and the Department of Animal Health (DAH) of Viet Nam share their presentations and/or recommendations from this meeting with their human health counterparts. The two

countries agreed to draft the joint lower Mekong sub-region surveillance proposal, which will be a new approach for the cross-border surveillance of HPAI in the region. The second technical consultation on HPAI monitoring in the lower Mekong region was organized on 21 January 2013 in Hanoi, Viet Nam to follow up activities of the first meeting in Siem Reap.

- On 13 February 2013, an ad hoc meeting was held in DAHP with 24 chiefs from the Offices of Animal Health and Production (OAHP) to discuss the current AI outbreaks and find the solutions to prevent and control AI outbreak. Key messages have been addressed by FAO and the Director of DAHP to all 24 OAHP chiefs:
 - Raise awareness among the public on the impact of AI.
 - Take effective preventive measures (cook poultry meat well, wash hands with soap or ash, ban children from playing with birds and immediately report in case of high fever and recent contact with poultry).
 - Take control measures (increase surveillance of poultry diseases, monitor poultry movement, report suspicious poultry disease and update and train village animal health workers).
 - Strengthen the control and prevention of animal movement from areas with sick/dead animals.
 - Take bio-security measures in poultry raising places, live bird markets (LBMs) and poultry slaughter places every two weeks.
 - For provinces bordering neighbouring countries, provincial Department of Agriculture shall strengthen cooperation with the neighbouring countries and relevant ministries or agencies to control the spread of this disease.
- On 15 February 2013, an ad hoc meeting was held with partners and donors on the recent 2013 AI outbreaks. The meeting was facilitated by FAO in order to let the human and animal authorities to effectively explain to the development partners the animal health situation and the efforts have been put in place by both sectors.
- Through FAO's advocacy efforts, the livestock sub-sector is now being set up as livestock sub-working group under the Technical Working Group of Agriculture and Water (TWG-AW). The Ministry of Agriculture, Forestry and Fisheries (MAFF) appointed the chairperson of livestock sub-working group. FAO is playing the facilitation role.

Output 2: Strengthened laboratory capacity

- supplied consumable equipment and reagents to the National Veterinary Research Institute (NaVRI) to maintain the ongoing testing;
- facilitated NaVRI to be the member of the proficiency testing laboratory;
- facilitated the assessment of the laboratory and bio-safety cabinets; and
- facilitated laboratory officers to be able to attend international trainings and workshops.

Output 3: Strengthened veterinary epidemiology capacity

- Cambodian Applied Veterinary Epidemiology Training (CAVET).
- The proposals for the 15 trainees of CAVET were translated and revised by FAO and DAHP. The 15 trainees (7 from Kampong Cham and 8 from Takeo) will send the finalized proposals along with questionnaires for animal disease survey to FAO on 5 April. Two designs of proposals have been agreed upon by trainees. For non-zoonotic diseases the focus will be on disease rate whereas for zoonotic disease the focus

will be on disease prevalence. On-the-job training will take place for five months, continuously from May 2013 onwards, and will be supported by Safetynet of the United States Center for Disease Control and Prevention (CDC). The mid-term evaluation of survey activities with all trainees is scheduled for June or July 2013.

- Joint AI outbreak and post AI outbreak investigations with DAHP.

Output 4: Improved surveillance system

- The project supported the team of DAHP/NAVRI to conduct surveillance and investigation during HPAI outbreaks.
- The strategy for animal surveillance in Cambodia has been finalized.
- The guide for HPAI outbreak investigation and response has been reviewed and will tentatively be expanded to others animal diseases.
- FAO signed a letter of agreement with *Institut Pasteur du Cambodge (IPC)* on twinning programme to strengthen capacities of NAVRI in order to operationalize the One Health approach, using a joint animal-human-environment survey for HPAI in LBMs. However, the field activities were carried out in first week of January 2013 with the financial contribution of WHO and IPC. The primary results revealed that 50-60 percent of samples collected from four markets of Kampong Cham, Phnom Penh and Takeo tested positive for HPAI H5N1.
- Harmonizing HPAI surveillance in LBMs based on the Vietnamese model is in process.
- The peak of AI outbreaks, both in poultry and humans, during the first two months of 2013 has drawn public attention. The Emergency Centre for Transboundary Animal Diseases (ECTAD) and FAO's Regional Office for Asia and the Pacific (RAP) sent two epidemiologists to conduct risk and pathway assessment of the recent AI outbreaks in three provinces: Kampong Speu, Kampot and Takeo. The mission aimed at better understanding the recent AI outbreaks, which claimed eight lives (out of the nine who had been contaminated), and the six AI outbreaks in poultry.
- AI prevention messages and spots produced by FAO are being used by the Government under the Avian and Human Influenza Control and Preparedness Emergency Project (AHICPEP) project funded by the World Bank.

Output 5: Improved policy and legislation for trade purposes between Cambodia and its neighbouring countries

- The animal health and production legislation is under revision at the Council of Ministers before the Parliament endorsement.
- Cambodian zoonotic policy has been drafted by WHO Consultant with the inputs from zoonotic technical working group members (MAFF, FAO, MOH, WHO, IPC).

Other related activities funded under the programme

- Rabies vaccination campaigns for dogs
Two thousand doses of dog rabies vaccine were administered in 15 villages of Battambang, Kampong Cham and Takeo provinces under "healthy livestock, healthy village, better life" programme. The 2 000 vaccines were provided by USCDC Thailand and 1 200 t-shirts and posters were provided by European Union-Highly Pathogenic Emerging Diseases FAO Regional Project (EU-HIPED project).
- Socio-economic impact assessment in healthy livestock, healthy village, better lives has been conducted in target villages of Battambang, Kampong Cham and Takeo,.
- Animal health and production manuals to be used for training animal health and production practitioners have been jointly revised and finalized by FAO and DAHP.

- Improving bio-security in LBM of Psar Leu, Siem Reap province, under the budget of Global Public and Private Partnership Project of FAO headquarters (OSRO/INT/805/USA).

The provincial department of agriculture of Siem Reap was contracted for implementation of bio-security improvement in LBM. Three bio-security trainings were conducted with poultry sellers, transporters and market management. The committee of LBM have been established and composed by PDA, OAHP, poultry sellers, market management and FAO. The LBM committee has been recognized and endorsed by PDA.

Planned activities for the next six-month period

Output 1: Strengthened planning and cross-sectoral coordination at national and international levels

- Activity 1.1. Support from ECTAD Country Team Leader (CTL) and the team to provide inputs for planning the coordination required at the country level.
- Activity 1.2. Support national and international coordination related to disease control.

Output 2: Strengthened laboratory capacity

- Activity 2.1. Strengthen laboratory management through technical and management advice.
- Activity 2.2. Work to promote laboratory expert's mission to support and train laboratory officers.
- Activity 2.3. Procure necessary laboratory supplies.

Output 3: Strengthened veterinary epidemiology capacity

- Activity 3.1. Facilitate veterinary officer of DAHP to attend the Field Epidemiology Training Programme for Veterinarians (FETPV) in Thailand.
- Activity 3.2. Organize second cohort of CAVET training.
- Activity 3.3. Support community-based surveillance and response activities.

Output 4: Improved surveillance system

- Activity 4.1. Review disease surveillance strategy in collaboration with human health sector.
- Activity 4.2. Support risk-based surveillance activities focusing on where human cases are reported and along the areas identified as high-risk supply chains.
- Activity 4.3. Organize AI school forums and AI field simulation exercises.
- Activity 4.4. Provide logistic support to field activities (when needed).

Output 5: Improved policy and legislation for trade purposes between Cambodia and its neighbouring countries

- Activity 5.1. Support activities related to policy and legislation for trade purposes between Cambodia and neighbouring countries through the expertise provided to finalize the international animal trade component of the veterinary law, which was drafted under FAO ECTAD support.
- Activities 5.2. Draft a joint lower Mekong sub-region surveillance proposal between Cambodia and Viet Nam.

Main challenges encountered and response provided

- The disease surveillance, early reporting and diagnostic capacities need to be further strengthened.
- The surveillance in high-risk areas and cross-border issues need to be addressed for a

improved control of the trans-boundary animal diseases which will result in better food safety and consequently improve the livelihood of smallholders.

Main progress made towards the achievement of project outcomes

- Fifteen proposals of the CAVET trainees have been translated to English and revised in a joint effort of FAO and the US CDC (Cambodia and Thailand).
- Animal health and production legislation has been drafted and is in the Council of Ministers.
- The Cambodian Zoonotic Policy has been drafted.
- Laboratory equipment has been well maintained and assessed.
- HPAI investigation and response protocol has been reviewed and will tentatively be expanded to the investigation of and response to others animal diseases.
- Requests for having two free hotlines have been granted by the Government to be used by DAHP.
- The Second Technical Consultation on HPAI Monitoring in the Lower Mckong Region was organized in Viet Nam.

Quarter II 2010

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 01****Project Title: Support to Highly Pathogenic Avian Influenza (HPAI) control programme in Cambodia**Reporting period: **April - June 2010**

Country: Cambodia
Project title: Support to Highly Pathogenic Avian Influenza (HPAI) control program in Cambodia
Code: OSRO/RAS/604/USA Baby 01
Budget: USD 1 150 000 (Phase I), USD 1 900 000 (Amendment I), USD 600 000 (Amendment II), USD 400 000 (Amendment III)
Total budget: USD 4 050 000
Effective starting date: 1 October 2006
Planned end date: 31 December 2010
Context of the project <p>The sporadic outbreaks of Highly Pathogenic Avian Influenza (HPAI) in poultry and humans indicate that the H5N1 virus is still circulating in the country. Therefore, it is necessary to detect the outbreaks as early as possible and ensure that immediate and appropriate containment measures are taken to prevent the spread of the disease. The continued improvement of capacities and capabilities in Cambodia to prevent and control HPAI in animal population is necessary to limit its impacts in poultry sectors and minimize the risk of an infection in humans.</p>
Objectives of the project <p>The main objective of the project is to reduce and stop the spread of H5N1 among and between the flocks of birds in Cambodia and between Cambodia and the neighboring countries (Viet Nam, Thailand and the Lao People's Democratic Republic), thus reducing the risks of the pathogen spread to mammals and humans and of the emergence of pandemic influenza.</p>
Planned activities <p>Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.</p> <p><i>Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.</i></p> <p><i>Activity 2: Continue active surveillance activities focusing on sentinel flocks, live bird markets (LBMs) and border inspection posts in targeted provinces following a risk assessment approach.</i></p> <p><i>Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.</i></p>

Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at the National Veterinary Institute (NaVRI) and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

Activities undertaken during the reporting period

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.

- The activity is yet to be started.

Activity 2: Continue active surveillance activities focusing on sentinel flocks, live bird markets (LBMs) and border inspection posts in targeted provinces following a risk assessment approach.

- LBM surveillance of avian influenza (AI) in duck (through Letters of Agreement (LoA) with NaVRI) in eight markets of Phnom Penh (3), Takeo, Kampot, Siem Reap, Kampong Cham and Prey Veng is ongoing.
- Sentinel flock surveillance (through LoA with NaVRI) in 12 commercial duck farms of Takeo, Kampong Cham, Prey Veng, Kampot, Battambang and Sihanouk Ville is ongoing.
- All the collected swabs from the above surveillance were found negative for AI virus by egg-inoculation test and all the serum samples were negative for antibody of AI by haemagglutination (HA) and haemagglutination inhibition (HI) tests.
- Coordinated the following country activities for FAO-ASEAN H1N1 (TCP/RAS/3221 E) project:
 - A meeting was organized with participation of the Regional Project Director of TCP/RAS/3221/E, FAO-AI team and the Department of Animal Health and Production (DAHP)/NaVRI's management board on 6 May 2010 to seek an agreement from NaVRI to arrange a training programme on surveillance of animal influenza for DAHP/NaVRI's staff members. The swine influenza surveillance will use the existing AI mechanism and locations to be surveyed will be linked to AI surveillance targeted provinces, which are considered high risk provinces. The regional swine influenza principle guideline will serve as the surveillance guiding document.
 - The FAO, DAHP and Murdoch University jointly organized the training on surveillance of animal influenzas in Cambodia from 7 to 10 June 2010 at NaVRI. Six NaVRI staff and four provincial veterinarians attended the training. The training was aimed at promoting the implementation of harmonized surveillance protocols for animal influenza and at assisting in developing country-specific surveillance implementation plans.
- Coordinated the collection of weekly AI inputs from NaVRI for the UN coordination to include in AI bulletin and circulate to all concerned agencies.
- The AI Technical Working Group meeting was not organized during the reporting period because of time constraints and members' unavailability.
- FAO-AI team participated in the Information, Education and Communication meeting coordinated by the United Nations Children's Fund (UNICEF) for the Avian and Human Influenza (AHI) country programme to discuss Influenza A/H1N1 and its Knowledge, Attitude and Practices (KAP) survey and TV spots.

Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional levels in order to complete the surveillance activities.

- The contract with the Center of Livestock and Agriculture Development (CelAgrid) for supplying fertilized eggs to support NaVRI for virus inoculation test is still ongoing.
- Continued to support consumable laboratory equipment to NaVRI.
- The local purchase order (LPO) of an incubator with KUANG HSIEN Medical Instrument Co, Ltd was cancelled because the company could not satisfactorily fulfil the requirement stated in the LPO. The incubator's specification has been sent to local World Vet Company for quotation.
- Ensured stability and safety of the electric system in the laboratory of NaVRI by providing the following:
 - an Auto Voltage Regulator (AVR);
 - installation of the AVR for the whole building with proper cable and connection;
 - installation of load shedding contactor; and
 - installation of new electrical line from the sub panel to the laboratory equipment.
- Procurement processes have been finalized and the project is in the process of identifying suitable suppliers.

Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at the National Veterinary Institute (NaVRI) and in case of discovered outbreaks to national and/or regional and/or international reference laboratories.

- The Ministry of Health (MOH) and World Health Organization (WHO) had a joint press release of the tenth AI human case, which was officially announced on 21 April 2010, after a 27 year-old man from Peam Sdey village, Prek Chrey commune, Kampong Leav district, Prey Veng province died on 17 April 2010 in Calmette Hospital.
- The investigation team of DAHP conducted disease investigation and sample collection in the village from 20 April to 23 April 2010. NaVRI reported that a sample was positive for H5N1 on 26 April 2010, and the positive sample was confirmed by the *Institut Pasteur de Cambodge* a day later. The Ministry of Agriculture Forestry and Fisheries (MAFF) officially declared (by Prakas No 144) the AI outbreak in Peam Sdey village on 27 April 2010.
- FAO assisted the investigation and culling of 209 chickens and 55 ducks in the outbreak area from 29 April to 30 April 2010.

Planned activities for the next quarter

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

Activity 1: Promote (whenever and if possible) a pre-notification system for trade purpose between Cambodia and neighboring countries.

Activity 2: Continue active surveillance activities focusing on sentinel flocks, live bird markets (LBMs) and border inspection posts in targeted provinces following a risk assessment approach.

Activity 3: Continue to improve the diagnosis service for poultry diseases and provide laboratory supplies to further enhance laboratory diagnostic capacity at national and regional

levels in order to complete the surveillance activities.

Activity 4: Continue to improve and facilitate sample dispatch from surveillance activities to national laboratory at the National Veterinary Institute (NaVRI) and in case of discovered outbreaks to national and /or regional and/or international reference laboratories.

Main challenges encountered and response provided

Additional funds need to be identified for public awareness component of the programme as this area is not funded fully by the current donors.

Main progress made towards the achievement of project outcomes

Output: Surveillance activities in the cross-bordering area between Cambodia and neighbouring countries (especially Viet Nam and Thailand) strengthened.

- Eight LBMs are being surveyed in six provinces and 960 ducks are to be sampled fortnight.
- Twelve duck commercial farms are being surveyed in six provinces and 360 identified ducks are to be sampled fortnight.
- Ten DAHP staff members (six from NaVRI and four from Takeo, Kampong Cham, Sihanoukville and Prey Veng OAHF) were trained on surveillance of animal influenza.

Quarter II 2010**Project Monitoring Sheet: OSRO/RAS/604/USA Baby 02**

Project title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: April -June 2010

Country: People's Republic of China
Project title: Immediate technical assistance to strengthen the surveillance and response capacity for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 02
Budget: USD 500 000 (Phase I), USD 500 000 (Phase II), USD 650 000 (Phase III), USD 1 150 000 (Phase IV)
Total budget: USD 2 800 000
Effective starting date: November 2009
Planned end date: September 2010
Context of the project <p>Despite efforts by the Government of the People's Republic of China to improve the surveillance and control of Highly Pathogenic Avian Influenza (HPAI), the disease is still endemic in some parts of the country, and some basic understanding about the disease and key ecological risk factors is still lacking. Vaccination has been used widely throughout the country to dampen down the infection and bring the disease under control. However, the virus is still circulating in some production systems where the implementation of the vaccination policy requires major effort and where regulation enforcement is difficult. This project was designed to improve the country's ability to detect and control HPAI infection and disease in identified high-risk ecological and production systems at an early stage, through the implementation of intensified surveillance activities, epidemiological studies, socio-economic activities, capacity building and training.</p>
Objectives of the project <p>The main objectives of the assistance under Phase IV of the United States Agency for International Development (USAID) project are to continue and expand the activities in southern China (Hunan and Guangxi with the addition of Yunnan Province and Chongqing Municipality during Phase III and IV) and provide technical assistance and support in the areas of HPAI epidemiological investigation, disease risk analysis and control strategy. Through project activities, a strengthened early detection and response mechanism will enable China to increase its capacity to detect and eliminate the disease in a timely manner, thereby minimizing production losses and risk to human safety. The immediate objective of the project is to improve the understanding of HPAI infection and disease distribution and to assist the country in defining high-risk areas for targeted control activities in order to minimize the risk to human health.</p>
Planned activities (Phase IV) <p>Output 1: Strengthened cross-sectoral coordination at the national level <i>Activity 1.1 Support national consultants to assist in coordinating project implementation with the Government.</i></p>

Activity 1.2 Organize regular meetings with the Ministry of Agriculture (MoA), Veterinary Bureau (VB) and Disease Investigation Center (DIC) and organize project steering committee meetings (involving MoA, VB, China Animal Health Epidemiology Center (CAHEC), National Harbin Reference Laboratory (NHRL) and provincial Center for Animal Disease Prevention and Control (CDC).

Activity 1.3 Contribute to and facilitate the coordination of surveillance and applied research activities at the wild bird/domestic poultry interface in Poyang Lake reserve including the organization of a joint meeting with State Forestry Administration (SFA), provincial veterinary and wildlife authorities to discuss, plan and coordinate field activities.

Activity 1.4 Coordination meeting with CAHEC and national CDC to improve data integration and analysis at national level.

Activity 1.5 Strengthened international cooperation with the World Organization for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO) Network of Expertise on Animal Influenza (OFFLU) and other laboratory and epidemiology networks.

Activity 1.6 Organize steering committee workshop and inception workshop.

Activity 1.7 Organize an FAO HPAI team building workshop to optimize the resources, definition of tasks and responsibilities and to increase project delivery.

Activity 1.8 Organize final workshop at national level to report on the results and achievements of the Phase III and Phase IV of the project.

Activity 1.9 Organize a stakeholder meeting on FETPV.

Output 2: Strengthened HPAI disease surveillance system

Activity 2.1 Training and capacity building.

Activity 2.2 Establish a geographical information system (GIS) at the provincial level to support HPAI surveillance activities.

Activity 2.3 Procurement of necessary laboratory equipment and supplies for HPAI diagnosis, data analysis and information-sharing.

Activity 2.4 Produce the China HPAI quarterly bulletin – update on HPAI situation and analysis of surveillance results. Produce and disseminate the HPAI monthly highlight summarizing key achievements of the project on a monthly basis.

Output 3: Improved knowledge of HPAI epidemiological, ecological and socio-economic risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies. Identify additional risk factors and data to be collected at local, provincial and national levels to refine HPAI risk assessment at national and provincial level in order to better advise on priority surveillance and control activities.

Activity 3.2 Strengthen the existing risk based surveillance approach through the longitudinal monitoring of selected live bird markets (LBMs) in order to identify seasonal changes in infection distribution in winter and define early warning indicators associated to HPAI emergence.

Activity 3.3 Follow-up on socio-economic studies: compile key information on poultry sector and its structure, analyse product flow along the market chains and determine the implications for disease surveillance and control issues in selected border provinces (Guangxi and Yunnan). Produce a report summarizing the main findings of the socio-economic studies performed in the provinces of Hunan, Yunnan and Guangxi, their application in risk assessment studies and the lessons learned.

Activity 3.4 Facilitate the implementation of studies at the domestic poultry/wildlife interface in Poyang Lake Reserve to uncover risk factors associated with the emergence of new virus strains and their subsequent spread.

Output 4: Improved HPAI control strategy through focused control actions

Activity 4.1 Assist national authorities in collating and organizing post-vaccination surveillance data from MoA and CAHEC for the evaluation of the nationwide vaccination surveillance campaign.

Activity 4.2 Assist in refining the strategic vision for the national vaccination campaign, provide guidance in improving the progressive control of HPAI H5N1 through vaccination and share views on defining a vaccination exit strategy.

Activity 4.3 Compile results of above-mentioned epidemiological and socio-economic studies into a final report that will present a framework for changes of national surveillance and control policy.

Activity 4.4 Using LBM survey results generated during the Phase III of the project assess biosecurity levels in LBM of the three pilot provinces, collect information on current regulations and plans for restructuring and advise national/provincial authorities accordingly.

Activities undertaken during the reporting period (April to June 2010)

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1 Support national consultants to assist in coordinating project implementation with the government.

- Initiate the recruitment of a national assistant training coordinator for the China Field Epidemiology Training Programme for Veterinarians (FETPV). This position was not initially planned but was deemed necessary after the Emergency Centre for Transboundary Animal Diseases (ECTAD) – China team held the FETPV stakeholder meeting in May and faced the heavy workload required to finalize the road map and preparation of training material before the launch of the FETPV program towards the end of the year. This position will be kept under the next phase of funding of the USAID project.

Activity 1.2 Organize regular meetings with MoA, VB and DIC and organize project steering committee meetings (involving MoA, VB, CAHEC, Harbin and provincial CDCs).

- The project team has maintained close contact/communication with MoA to ensure smooth implementation of the planned activities in the second quarter, i.e. LBM

surveillance, training workshops in the four project provinces/municipality and preparation for the establishment of the China FETPV.

- Continued efforts to seek feedback from the Russian Federation regarding the FAO Technical Cooperation Programme (TCP) proposal for a FAO regional project on transboundary animal diseases (TADs) surveillance, which has been endorsed already by China and Mongolia at the beginning of 2010.
- Coordinated FAO's technical activities in Mongolia related to cross-border issues:
 - Completed an Incident Response Information System (IRIS) mission to Mongolia from 8 to 14 April 2010 to help design an information system to manage surveillance, early warning and response for avian and human influenza.
 - Conducted the second FAO field mission on risk assessment to Mongolia in May/June 2010.

Activity 1.3 Contribute to and facilitate the coordination of surveillance and applied research activities at the wild bird/domestic poultry interface in Poyang Lake reserve including the organization of a joint meeting with SFA, provincial veterinary and wildlife authorities to discuss, plan and coordinate field activities.

- All the field activities have been completed. The laboratory testing is now ready to start.

Activity 1.4 Coordination meeting with CAHEC and national CDC to improve data integration and analysis at national level.

- Twenty officers/staff at the CAHEC in Qingdao attended the data integration and analysis workshop on 28 May 2010 in Qingdao, China, conducted by Marius Gilbert, veterinary epidemiologist (disease risk assessment and modeling). Participants learned the latest developments of disease modeling, which could be a powerful tool for improving animal disease control in China.

Activity 1.5 Strengthened international cooperation with OIE and FAO-OFFLU and other laboratory and epidemiology networks.

- Organized OFFLU visit to partner laboratory in China (Chongqing Municipality and Nanning/Guangxi) by the Istituto Zooprofilattico Sperimentale delle Venezie (IZSVE) – Padua/Italy in April 2010.

Activity 1.9 Organize a stakeholder meeting on FETPV.

- In close cooperation with MoA and with support from the Livestock Health and Extension Services Programme (LHESP) of Canada, the project team successfully organized a stakeholder meeting on China's FETPV in Beijing on 18 and 19 May 2010. The meeting achieved its intended purpose and identified a number of actions for the period between now and the launching of the first FETPV course in October this year, i.e. establishing a partnership network and a management and coordination mechanism to facilitate the development of the China FETPV, preparing a core curriculum and mobilizing the required technical/financial resources and support from stakeholders and donors. Sixty-five national and international participants attended the two-day meeting, representing the Chinese Government (MoA and the Ministry of Health [MoH]), national research institutions/academies and provinces/municipality project authorities, UN agencies, embassies and donors.

Output 2: Strengthened HPAI disease surveillance system and capacity building

Activity 2.1 Training and Capacity Building.

- Organized three training sessions in disease outbreak investigation and surveillance protocols in Hunan, Guangxi and Yunnan from April to June 2010. A total of 75 (28 women) veterinarians and animal health officers attended the training conducted by Drs Flavie Goutard, François Roger and Stéphanie Devaux, veterinary epidemiologists from the French Center for International Agricultural Research (CIRAD) with assistance from Ms Jia Beibei, ECTAD China veterinary epidemiologist (risk analysis).
- Organized theoretical and hands-on training in biosafety, management and test validation conducted by IZSve for the provincial laboratory staff in Chongqing (from 12 April to 16 April 2010) and in Nanning/Guangxi (from 18 April to 23 April 2010), following IZSve's visit to the laboratories in the two locations. A total of 60 veterinary officers/staff (34 women) joined the training sessions. During the training in Nanning, sequencing activity was performed in the provincial veterinary laboratory where the IZSve sequence primers and sequence SOP were shared with the participants.
- Carried out two follow-up advance training sessions in risk analysis conducted by Royal Veterinary College in London (RVC) from 17 May to 21 May 2010 in Qingdao and from 16 June to 23 June 2010 in Chongqing. The purpose was to familiarize the participants with risk analysis modeling environments and to gain expertise in conducting risk assessment systematically. A total of 47 participants (15 women) attended the training.
- Carried out an FETPV training programme assessment (by David Castellan – regional epidemiologist based at FAO/RAP) in NHRL-Harbin and CAHEC-Qingdao in April 2010 as part of FETPV roadmap implementation.
- Support two national staff to attend the regional FETPV training in Bangkok (January and June/July to August 2010).

Activity 2.2 Establish a geographical information system (GIS) at the provincial level to support HPAI surveillance activities.

- Conducted an initial training on GIS for provincial veterinary officials and staff in Chongqing from 8 June to 11 June 2010. Four veterinary staff (2 women) attended the training.

Output 3: Improved knowledge of HPAI epidemiological and ecological risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies. Identify additional risk factors and data to be collected at local, provincial and national levels to refine HPAI risk assessment at national and provincial level in order to better advise on priority surveillance and control activities.

- Recruited two international consultants (veterinary epidemiology and ecology) to finalize the ongoing analysis on (i) HPAI environmental risk factors in China and (ii) role of LBM in HPAI spread to (a) review the results of the market chain analysis studies conducted in 2009 and to guide the ECTAD team in applying social network analysis (SNA) techniques in disease risk assessment and management from 18 April to 26 April 2010 and (b) provide guidance on disease risk mapping techniques and modeling. A training session was conducted on the subject at CAHEC in Qingdao from 23 May to 2 June 2010.

Activity 3.2 Strengthen existing risk based surveillance approach through the longitudinal monitoring of selected LBMs in order to identify seasonal changes in infection distribution in winter and define early warning indicators associated with HPAI emergence.

- Completed LBM surveys in Guangxi province and Chongqing municipality.

Activity 3.3 Follow-up on socio-economic studies: compile key information on poultry sector and its structure, analyse product flow along the market chains and determine the implications for disease surveillance and control issues in selected provinces (Yunnan and Hunan). Produce a report summarizing the main findings of the socio-economic studies performed in the provinces of Hunan, Yunnan and Guangxi, their application in risk assessment studies and the lessons learned.

- Plan for a poultry sector review in Yunnan and Hunan provinces is under review by MoA and faces the possibility of being cancelled.

Planned activities for the next quarter (July – September 2010)

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1 Support national consultants to assist in coordinating project implementation with the government.

- Recruit a national coordinator for the China FETPV.
- Recruit international expert on biosecurity on LBMs to conduct a mission to Guangxi province in July/August 2010. This mission was not originally planned but its relevance was discussed with Guangxi provincial authorities and USAID- Regional Development Mission in Asia (RDMA) delegation during their visit to China in June 2010. An expert was identified and would be available in early August 2010. If this plan suits the local authorities, this mission will be fielded using savings from other budget lines.

Activity 1.2 Organize regular meetings with MoA, Veterinary Bureau and DIC and organize project steering committee meetings (involving MoA, Veterinary Bureau, CAHEC, Harbin and provincial CDCs.)

- Regular meetings with MoA to discuss programmatic and operational matters and the objectives of Phase V.

Output 2: Strengthened HPAI disease surveillance system and capacity building

Activity 2.1 Training and capacity building.

- Implement FETPV Roadmap - finalize the curriculum and collect training material.
- Support two national staff to attend the regional FETPV training in Bangkok (January and June/July to August 2010).

Activity 2.4 Produce the China HPAI quarterly bulletin – update on HPAI situation and analysis of surveillance results. Produce and disseminate the HPAI monthly highlight summarizing key achievements of the project on a monthly basis.

- Compile information into the HPAI quarterly and monthly bulletins.
- Carry out ring trial activity in the project provinces (IZS Ve).

Output 3: Improved knowledge of HPAI epidemiological and ecological risk factors

Activity 3.1 Assist national authorities in analysing national surveillance results and provide guidance on improving national and provincial surveillance policies. Identify additional risk factors and data to be collected at local, provincial and national levels to refine HPAI risk assessment at national and provincial level in order to better advise on priority surveillance and control activities.

- Share with MoA and publish the results of (1) HPAI environmental risk factors and (2) role of LBM in HPAI spread.

Output 4: Improved HPAI control strategy through focused control actions

Activity 4.3 Compile results of above-mentioned epidemiological and socio-economic studies into a final report that will present a framework for changes of national surveillance and control policy.

- Prepare the final report presenting findings of the different studies conducted in China and provide recommendations for policy changes regarding HPAI surveillance and control (achievement report from 2009 to 2010).

Main challenges encountered and responses provided

There are no major issues at present. As of 23 June 2010, overall project delivery rate was 87 percent (including hard commitments).

Main progress made towards the achievement of project outcomes

Over the period from October 2008 to June 2010, the project has made noticeable progress towards achieving the expected outputs of the project. FAO's technical assistance through the support provided by USAID, particularly the training and capacity building activities designed for and organized in the provinces have fostered a positive spirit and strengthened the relationships between FAO and the Central Government of China as well as with the provincial veterinary authorities. Some of the main achievements are:

(1) Strengthened cross-sectoral coordination and collaboration among all partners:

- increased MoA and national partners' involvement and support to the planning and implementation of field surveillance activities, reinforcing disease surveillance and disease outbreak investigation through promotion and understanding of the importance of animal epidemiology and common approach/practices in other regions and the world;
- improved project/activity planning process and increased involvement and support from the MoA and national partners, resulting in increased project delivery and better outcomes for the various inputs;
- routine functioning of the working groups and project focal points, resulting in better coordination and collaboration on HPAI at national and provincial levels;
- consolidated coordination between the MoA and SFA and among all the national partners, increased collaboration and improved relationship and trust with MoA through regular meetings;
- improved design and effective organization of HPAI studies, field missions and training activities targeting local veterinarian (provincial and prefecture levels) and laboratory staff; and
- increased networking among the Chinese project stakeholders and between the national and international project partners through introduction of knowledge/skills by international centers of excellence during training, exchange and information sharing activities supported by the project.

(2) Strengthened HPAI disease surveillance system and capacity building:

- key competencies and skills required for better HPAI detection and data analysis and the overall capacity of the provincial CDCs have been developed, providing future opportunity and collaboration with national partners during the next phase of the project;
- some changes and adaptation of provincial surveillance protocols and planning (strategy) were made in Guangxi and Hunan, following FAO trainings;
- initial success in the study around the Poyang Lake, which laid down a foundation for studies of similar nature to be carried out during the coming year;
- provincial veterinary authorities and staff learned new skills, obtained first hand data and information and gained the experience in organizing more complex LBM

survey and socio-economic studies. More locations could be included and follow these patterns;

- participants involved in the targeted surveillance activities, training workshops and studies focusing on animal epidemiology and risk analysis (LBM, cross-border socio-economic study, disease outbreak investigation, risk analysis and biosafety in laboratories) gained better understanding of the need for quality information/data for the HPAI disease surveillance system;
- MoA, national and international partners better understood and increased their interest/support for an FETPV programme in China;
- provincial laboratories and staff enhanced their capacities through additional training on laboratory protocol, exchanges with OFFLU laboratories and the provision of laboratory supplies and equipment; and
- continued efforts to involve national research/academies and international centres of excellence to help widen the horizon of the project and improve quality of training, knowledge sharing, networking and to increase the interest and participation of local veterinary authorities and staff.

(3) Contribution to improve knowledge of HPAI epidemiological, ecological and socio-economic risk factors through enhanced skills/knowledge and the overall capacity of provincial veterinary authorities and their staff, in particular:

- the concept, contents and benefits of FETPV in China;
- the role and use of GIS technology in HPAI surveillance and risk analysis;
- the skills and protocols involved in the LBM survey and importance of the studies; and
- the skills of epidemiologists in disease risk analysis and modelling techniques.

Through production of HPAI bulletins and monthly activities reports, the AI project team has shared project information with national counterparts, FAO headquarters and the donor on a regular basis.

(4) Improved HPAI control strategy through focused control actions:

- better understanding of poultry production structure and socio-economic issues for further integration into national response plan.

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 03

Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Lao PDR

Reporting period: October 2012 to March 2013

Country: Lao People's Democratic Republic (PDR)
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Lao PDR
Code: OSRO/RAS/604/USA Baby 03
Budget: USD 1 000 000 (Phase I), USD 1 285 000 (Phase II), USD 900 000 (Phase III), USD 800 000 (Phase IV), USD 550 000 (Phase V), USD 372 000 (Phase VI), USD 50 000 (Phase VII)
Total budget: USD 4 957 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2013
Context of the project The project assists the Government in responding to the consequences of a possible poultry disease epidemic that could not only cause serious damage to the poultry sector, but also have serious consequences in terms of human health and household livelihoods.
Objectives of the project The specific objectives of the project are to: <ul style="list-style-type: none"> • strengthen coordination and support of avian influenza (AI) control policy development; • strengthen risk-based surveillance for Highly Pathogenic Avian Influenza (HPAI) in target provinces; and • improve disease response capability.
Planned activities for the reporting period (October 2012 to March 2013)
Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses <ul style="list-style-type: none"> • recruitment of an International Consultant on Veterinary Epidemiology, National Consultants (Project Director, Veterinary Epidemiology, National Operations Assistant, National Administrative and Finance Assistant), Driver and Cleaner; • inception workshop; • continue the monthly meetings among the AI project staff; • participate at the United States Agency for International Development (USAID) Emerging Pandemic Threats (EPT) programme review meeting planned in September 2013; • participate in the Annual Regional Emergency Management meeting in February 2013; • continue to participate in technical meetings organized by the National Emerging Infectious Diseases Coordination Office (NEIDCO) to support the multi-sectoral coordination and collaboration in the spirit of One Health; • regularly communicate and meet with the USAID Representative for Lao PDR to keep them informed of the project work plan; • continue to support veterinary epidemiology training at regional and country levels, including the Field Epidemiology Training Programme for Veterinarians (FETPV).
Output 2: Risk assessment and management along the poultry supply chain strengthened <ul style="list-style-type: none"> • recruitment of an International Consultant on Veterinary Epidemiology for one month to

- provide recommendations and conduct the training course on Field epidemiology in action;
- support active surveillance in the high risk areas;
- conduct longitudinal risk-based surveillance in 3 rounds (Jan-Feb, April-May, July-August) in three high-risk districts of four selected provinces (Vientiane Capital, Vientiane Province, Luangnamtha and Oudomxay); and
- provide necessary equipment and supplies for surveillance and laboratory diagnosis.

Output 3: Strengthen laboratory capacity

- Under the EPT IDENTIFY regional project:
 - provide standardized diagnostic reagents;
 - support proficiency testing program for HPAI and other priority diseases; and
 - recruit an international consultant to evaluate the current laboratory operations and management system as well as implement standard operating procedures (SOPs) and provide in-country training.

Activities undertaken during the reporting period (October to March 2013)

Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses

- The inception workshop to discuss the planned activities for project implementation was conducted on 26-27 December 2012.
- The recruitment of the National Consultant was conducted from October 2012 to September 2013.
- The project's AI monthly meetings with staff to discuss technical and operational issues have continued.
- A teleconference was held on 6 January 2013 to discuss the planned activities for the HPAI project and linkages with the other ongoing projects as well as cost sharing and staff issues with the Regional Office for Asia and the Pacific (RAP).
- The National Project Director (NPD), National Consultant on Veterinary Epidemiology and National Administrative and Finance Assistant participated in the retreat workshop for staff from the Food and Agriculture Organization of the United Nations (FAO) organized by FAO Representation Office during 15-17 November 2012.
- The NPD attended the Prince Mahidol Awards Conference (PMAC) in Bangkok, Thailand from 27 January to 2 February 2013 organized by the Government of the Kingdom of Thailand, the PMAC Foundation and other international partners including USAID.
- The NPD attended a meeting on 15 February 2013 organized NEIDCO for jointly drafting the concept note for the implementation of a One Health approach to be funded by European Union.
- The NPD and National Operation Assistant attended the Good Emergency Management Practice training and Annual Regional Meeting for the Emergency Centre for Transboundary Animal Diseases (ECTAD) in Bangkok, Thailand from 26 February to 1 March 2013.
- The NPD participated in the quarterly meeting of USAID-funded EPT programme to update the work activities for FAO IDENTIFY on strengthening laboratory diagnosis. The meeting was organized by the National Centre for Laboratory and Epidemiology of Ministry of Health (NCLE).

Output 2: Risk assessment and management along the poultry supply chain strengthened

- A meeting to discuss the plan to conduct the active surveillance in the high risk areas was organized on 26-27 December 2013.
- The letter of agreement to support the field implementation of active surveillance was finalized and signed between the FAO Representation and the Directors of the Provincial Agriculture and Forestry Offices of Vientiane Capital, Vientiane, Luangnamtha and Oudomxay Provinces.
- The necessary equipment to conduct the active surveillance was ordered and distributed to the provinces on 20 February 2013.
- The reagents for testing samples were ordered and received while some items are under the procurement process.

Output 3: Strengthen laboratory capacity

- Under EPT IDENTIFY regional project:
 - The primers and probes were received on 7 March 2013.
 - Proficiency testing for porcine reproductive and respiratory syndrome (PRRS), classical swine fever, foot-and-mouth disease and other diseases were completed in December 2012.
 -

Planned activities for the next six-month period (April to September 2013)**Output 1: Planning, coordination and policy support strengthened for effective management and control of HPAI and other emerging zoonoses**

- continue the monthly meetings among the AI project staff;
- conduct the training course on field epidemiology in action for provincial staff;
- continue to participate in technical meetings organized by NEIDCO to support the multi-sectoral coordination and collaboration in the spirit of One Health;
- regularly communicate and meet with the USAID Representative for Lao PDR to keep him/her informed of the project work plan;
- continue to support veterinary epidemiology training at regional and country levels including FETPV;
- continue to participate in the development of joint activities with other partners related to the implementation of the 2011–2015 National Work Plan for Emerging Infectious Diseases (EIDs) and Public Health in Emergencies (PHEs); and
- participation of the NPD in USAID partners' meetings.

Output 2: Risk assessment and management along the poultry supply chain strengthened

- recruitment of an international consultant on veterinary epidemiology for one month to provide recommendations to conduct the training course on field epidemiology in action;
- conduct the longitudinal risk-based surveillance in four target provinces;
- provide necessary equipment and supplies for surveillance and response; and
- establish a team and network consisting of field staff trained in epidemiology (including the FETPV and FET graduates/trainees) and laboratory experts from DLF to develop and link epidemiological and virological information for risk assessment and management.

Output 3: Strengthen laboratory capacity

- Under the EPT IDENTIFY regional project:
 - recruitment of an international consultant to evaluate the current laboratory operations and management system as well as implement SOPs and provide in-country training.

Main challenges encountered and response provided

- Failure to report HPAI outbreak early and inadequate outbreak investigation are still considered to be gaps that need to be overcome in order to improve the capacity to respond to HPAI outbreak and other transboundary animal diseases. A sustainable number of staff from central, provincial and district levels had been trained in outbreak investigation and simulation exercises during Phases 2, 3, 4 and 5, and should help to address this issue.
- The limited availability of national veterinary human resources is a constraint to the absorption capacity of government services in the country.
- There is very limited local capacity to manage and analyse data. The limited capacity of an effective Epidemiology Unit at the central level and the heavy workload of the technical staff at the provincial level have exacerbated the problem. Phase 7 of the project should help to address this issue by assisting DLF to develop a human resources plan and support the recruitment of additional staff.
- Legislative support to animal health control still remains a challenge, although progress is being made in this area. Activities under Output 2 in Phase 5 and 6 of this project addressed this challenge.

Main progress made towards the achievement of project outcomes**Output 1: Planning, coordination and policy support**

- The project continued the emphasis on the control of HPAI and broadened scope of prevention, control and laboratory diagnosis to other high-impact diseases through the National Mid-Term Priority Plan for Animal Health for Lao PDR.
- The project is strengthening multi-sectoral cooperation for the prevention and control of five priority zoonoses in Lao PDR through the national work plan for EIDs and PHEs.

Output 2: Risk assessment and management along the poultry supply chain strengthened

- The provincial and district staff capabilities in conducting field surveillance and the cold chain for sample submission to the central laboratory were further improved.
- The laboratory facility of the National Animal Diagnostic centre is currently functioning.
- The implementation of longitudinal surveillance and more targeting will describe the epidemiological status as well as risk of HPAI H5N1 at the target sites, which can be utilized for planning management of HPAI prevention and control in the future.

Output 3: Strengthen laboratory capacity

- The staff at the national laboratory was trained on operations management as well as on implementation measures.

Quarter II 2010

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 03**

Project title: **Immediate technical assistance to strengthen emergency preparedness for highly pathogenic avian influenza (HPAI)**

Reporting period: **April – June 2010**

Country: Lao People's Democratic Republic
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 03
Budget: USD 1 000 000 (Phase I), 1 284 990 (Phase II), 900 000 (Phase III), 800 000 (Phase IV)
Total budget: USD 3 984 990
Effective starting date: 1 August 2006
Planned end date: 30 October 2010
<p>Context of the project</p> <p>The project assists the Government in responding to the consequences of a possible poultry disease epidemic that could not only cause serious damage to the poultry sector, but also cause serious consequences to human health and household livelihoods.</p>
<p>Objectives of the project</p> <p>The specific objectives of the project are to:</p> <ul style="list-style-type: none"> • strengthen coordination and support avian influenza (AI) control policy development; • strengthen risk-based surveillance for Highly Pathogenic Avian Influenza (HPAI) in target provinces; • improve disease response capability; and • strengthen risk management measures, including biosecurity measures and cross-border movement.
<p>Planned activities</p> <p>Output 1: Coordinated project implementation and policy support</p> <ul style="list-style-type: none"> • request for the recruitment of the International Operation Officer as planned • continue the weekly meetings among the HPAI project staff • support the national Project Director to participate at the seventh International Ministerial Conference on Animal and Pandemic Influenza (IMCAPI) from 19 April to 21 April 2010 in Hanoi, Viet Nam. • participation of the Team Leader and the national Project Director in various international and regional meetings and workshops during the reporting period • organize information, education and communication (IEC) manuals and flipcharts training and distribution in conjunction with the implementation of village veterinary workers (VWVs) training of the World Bank (WB) project • conduct a national workshop on veterinary legislation framework in June 2010 in collaboration with the Asian Development Bank (ADB) funded regional project (OSRO/RAS/601/ASB)

Output 2: Strengthened surveillance

- continue to conduct the second round of active surveillance in nine provinces from 21 June to 3 July 2010
- finalize procurement of necessary equipment and supplies for surveillance and laboratory diagnosis for all four rounds of active surveillance
- support the national consultant on laboratory diagnosis to attend training covering quality assurances, biosafety, biosecurity and phylogenetic analysis in the Australian Animal Health Laboratory (AAHL) in Geelong, Australia from 19 to 30 April 2010
- conduct a training workshop on animal influenza surveillance in collaboration with the Food and Agriculture Organization of the United Nations (FAO) - Regional Office for Asia and the Pacific (RAP) for 14 central and provincial staff from Lao People's Democratic Republic (PDR) in May 2010

Output 3: Strengthened emergency response

- print and disseminate the standard operating procedures (SOPs) once approved by the Ministry of Agriculture and Forestry (MAF)
- conduct a simulation exercise in Phongsaly in April 2010
- finalize recruitment of an international consultant on Incident Command System (ICS)
- provide necessary equipment and supplies for outbreak response

Output 4: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- organize a workshop to review the existing guidelines on biosecurity improvement at live bird markets (LBMs) and slaughter points in May 2010
- start the pilot implementation on biosecurity improvement in June 2010

Output 5: Strengthening capabilities to manage cross-border trade

- initiate recruitment of an international coordinator for cross-border activities to be responsible for organizing and supervising all cross-border activities planned for this phase of the project
- organize a scoping workshop with stakeholders in Savannakhet province to discuss and identify HPAI risk in relation with domestic poultry value chain and cross-border trade
- organize a study tour across the border of Quang Tri-Savannakhet-Mukdahan for representatives from the national and quarantine/border services of the three countries (Thailand, Viet Nam and Lao PDR) in June 2010
- conduct the tri-lateral workshop, hosted by Lao PDR, in Savannakhet province in June 2010.

Activities undertaken during the reporting period**Output 1: Coordinated project implementation and policy support**

- An international Operations Officer from FAO Viet Nam is on backstopping mission to assist in the daily operation of the project from 21 June to 13 August 2010.
- The AI weekly meetings are being held among HPAI project staff to discuss technical as well as operational issues.
- The national Project Director attended the IMCAPI in Hanoi, Viet Nam from 19 April to 21 April 2010.
- The Joint Implementation Review (JIR) of the National Avian Influenza Control and Pandemic Preparedness Plan 2006-2010 led by the WB was undertaken from 16 June to 30

June 2010. FAO was assigned as the leading agency for the review of Strategy 1 on animal health. The Team Leader and national Project Director participated in preparing the technical and financial review for Strategy 1 and attended the wrap-up meeting on the progress implementation with other collaborating partners on 30 June 2010.

- A new project secretary was recruited to replace the former staff who finished her contract on 31 March 2010. She started her assignment in the beginning of June 2010.
- The distribution of the IEC manuals and flipcharts was organized in conjunction with the implementation of VVW training of the WB project in April 2010.
- The Team Leader was in Bangkok, Thailand from 22 June to 25 June 2010 to participate in the following meetings and workshops:
 - meeting to discuss and consolidate the progress on the cross-border risk assessment works that have been conducted by Greater Mekong Subregion (GMS) member countries on 22 June 2010;
 - regional Communication Strategy Review Workshop on 23 June and 24 June 2010; and
 - meeting/discussion on the results of the cross-border studies conducted by the Royal Veterinary College on 25 June 2010.

Output 2: Strengthened surveillance

- The project conducted active surveillance in the yellow zone (3 km radius of the outbreak area) after the latest outbreak occurred in one commercial layer farm in Xaythany district, Vientiane Capital in May 2010.
- The second round of active surveillance in nine provinces (Luang Prabang, Champasack, Savannakhet, Vientiane, Vientiane, Luang Namtha, Xiengkhouang, Oudomxay and Phongsaly) was conducted from 21 June to 3 July 2010.
- The procurement of necessary equipment and supplies for surveillance and laboratory diagnosis has been finalized for all four rounds of active surveillance.
- The national consultant on laboratory diagnosis attended a training covering quality assurances, biosafety, biosecurity and phylogenetic analysis in AAHL in Geelong, Australia from 19 April to 30 April 2010.
- In collaboration with FAO RAP, a training workshop on animal influenza surveillance was conducted for 14 central and provincial staff from Lao PDR from 10 May to 14 May 2010.

Output 3: Strengthened emergency response

- A full scale simulation exercise for HPAI in Phongsaly province was carried out from 26 March to 19 April 2010.
- The printing of five SOPs on emergency response for HPAI is still awaiting MAF's approval.

Output 4: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry population

- A workshop to review the existing guidelines on biosecurity improvement at LBMs and duck farms was organized in Vientiane province on 17 June and 18 June 2010.
- The LBM, slaughter points and duck farms for pilot implementation of biosecurity improvement have been identified by the Provincial Agriculture and Forestry Office (PAFO) of Oudomxay based on the criteria given by the project. Activities such as training and preliminary baseline data collection will start at the beginning of July.

Output 5: Strengthening capabilities to manage cross-border trade

- The recruitment of an international coordinator for cross-border activities is underway.
- A scoping workshop was organized in Savannakhet province to discuss and identify HPAI risk in relation with domestic poultry value chain and cross-border trade on 19 April and 20 April 2010 and attended by local authorities and other stakeholders.
- In collaboration with ADB funded regional project (OSRO/RAS/601/ASB), a study tour was conducted starting from Quang Tri in Viet Nam through Savannakhet in Lao PDR to Mukdahan in Thailand from 7 June to 9 June 2010. The representatives from Thailand, Lao PDR and Viet Nam were accompanied by FAO ECTAD officers to meet and collect information from various stakeholders at each side of the border.
- As a follow up to the study tour, a tri-lateral cross-border zonal workshop was conducted in Kaysone, Savannakhet province on 10 June and 11 June 2010 to assess the risk of the spread of HPAI along the eastern section of the East-West Economic Corridor (EWEC) of the Greater Mekong Sub-region that includes provinces of Quang Tri (Viet Nam), Savannakhet (Lao PDR) and Mukdahan (Thailand).

Planned activities for the next quarter

Output 1: Coordinated project implementation and policy support

- continue the weekly meetings among the HPAI project staff
- conduct a national workshop on veterinary legislation framework on 22 July and 23 July 2010 in collaboration with the ADB funded regional project (OSRO/RAS/601/ASB)
- support two bilateral meetings with Thailand and Viet Nam, planned to be conducted in August 2010
- participation of Team Leader and the national Project Director in the USAID Partners' Meeting in September 2010

Output 2: Strengthened surveillance

- continue to conduct the third round of active surveillance in nine provinces from 30 August to 12 September 2010
- procure and distribute the laboratory equipment and supplies as per recommendations of the short-term international laboratory consultant to the central laboratory and two provincial laboratories in Luang Prabang and Champasack as planned
- initiate preparation and discussion with Kon Khaen University, Thailand to provide the Field Veterinary Epidemiology in Action training course for ten Lao staff comprised of central and provincial government officers and lecturers from Nabong Agricultural College
- conduct training on risk assessment for disease control from 8 August to 11 August 2010
- conduct training for laboratory staff to improve HPAI capacity at the provincial level in August 2010
- conduct a cross sectional study in pig population in four provinces (Vientiane Capital, Luang Prabang, Savannakhet and Champasack) and syndromic surveillance in two provinces (Bolikhamxay and Khammouane) from July to August 2010 in collaboration with the FAO TCP project on H1N1

Output 3: Strengthened emergency response

- conduct training courses for outbreak investigation and response for PAFO and District Agriculture and Forestry Office (DAFO) staff in the provinces of Champasack and Xiengkhouang in September 2010
- train the recruited international consultant on Incident Command System (ICS) from 6 September to 24 September 2010

- conduct training on ICS in September 2010
- provide necessary equipment and supplies for outbreak response

Output 4: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- start the pilot implementation on biosecurity improvement at selected LBMs and duck farms, as per reviewed guidelines, in Oudomxay province in July 2010
- conduct the first activity relating to the pilot implementation on biosecurity improvement to provide training on biosecurity for PAFO and DAFO officers from 6 July to 8 July 2010
- conduct a preliminary participatory survey to collect baseline information to determine present conditions on the LBMs and duck farms by the country team together with the PAFO Oudomxay staff from 6 July to 8 July 2010
- conduct a follow up activity on training for market vendors, cullers/slaughterers and duck farmers in July 2010
- conduct the monitoring of pilot activities by the project staff together with PAFO/DAFO staff on monthly basis to follow up on the progress of the biosecurity improvement at the LBMs and duck farms in Oudomxay province

Output 5: Strengthening capabilities to manage cross-border trade

- finalize the recruitment of an international coordinator for cross-border activities in charge of the organization and supervision of all cross-border activities planned for Phase IV of the project
- conduct a socio-economic workshop on cross-border trade in Luang Prabang on 18 August and 19 August 2010 in collaboration with the ADB funded regional project (OSR/RAS/601/ASB)

Main challenges encountered and response provided

- Failure to report HPAI outbreak early and insufficient outbreak investigation are still gaps that need to be overcome in order to improve the capacity to respond to HPAI outbreak and other transboundary animal diseases (TAD).
- The limited availability of national veterinary human resources is a constraint to the absorption capacity of the government services in the country. The activities carried out under Output 2 of the Phase III of this project have addressed some of the capacity building needed.
- For some time, the project used village chiefs and village veterinary workers as key contacts in conveying messages to poultry keepers. It is therefore essential that further training be carried out.
- There are gaps in knowledge on the process by which H5N1 virus enters Lao PDR and how it remains and spreads within the country due to insufficient outbreak investigation. More evidence is being gathered through active surveillance, but this needs to be reinforced by the specific socio-economic studies planned on cross-border movements and value chains.
- There is a very limited local capacity to manage and analyse data. The absence of an effective epidemiology unit at the central level and the heavy workload of the technical staff at the provincial level have exacerbated the problem. Phase IV of the project should help to address this issue.
- Legislative support to animal health control still remains a challenge - although progress is being made in this area.

Main progress made towards the achievement of project outcomes**Output 1: Coordinated project implementation and policy support**

- The project team revised further the work plan for 2010 and reached an agreement on the schedule of implementation of the work plan.
- The draft of sub-laws/decrees under the new Law on Livestock and Animal Health Matters has been developed and finalized.
- The National Animal Health Roadmap for Lao PDR has been drafted based on the inputs from the veterinary services staff.
- The HPAI prevention and control programme is incorporated into Strategy 1 of the National Avian Influenza Control and Pandemic Preparedness Plan 2006-2010 and will be further developed and expanded for the next five years.

Output 2: Strengthened surveillance

- The LoAs for four rounds of active surveillance during Phase IV were signed between the project and the nine provinces.
- The new design of risk-based active surveillance which incorporated the spatial and temporal distribution of HPAI has been finalized, and the first and second rounds have been conducted in nine provinces.
- The global positioning system (GPS) tools provided by the project have been utilized for recording the geo-coordinates of the active surveillance sites.
- The refresher training on TADinfo has supported the active surveillance data management system at central and four pilot provinces.
- The central and provincial laboratories' capabilities in animal virus influenza diagnosis were improved.

Output 3: Strengthened emergency response

- SOPs have been completed and are ready to be used for control zones, culling method, disease investigation in backyard poultry and commercial poultry farms and sample collection.

Output 4: Strengthened risk management measures, including biosecurity improvement among the high-risk poultry populations

- Practical biosecurity guidelines for LBMs, slaughter point and duck farms was developed with regard to the local situation. This will be used as operational guidance for pilot implementation in Oudomxay province.

Output 5: Strengthening capabilities to manage cross-border trade

- Cross-border trade flows and their links to domestic poultry value chain were mapped and documented for selected borders, such as with China (Luang Namtha and Oudomxay) and with Thailand and Viet Nam (Savannakhet).

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 05**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **October 2012 to March 2013**

Regional Component: Southeast Asia Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) Code: OSRO/RAS/604/USA Baby 05
Budget: USD 600 000 (Phase I), USD 1 435 000 (Phase II), USD 1 172 700 (Phase III), USD 937 800 (Phase IV), USD 1 000 000 (Phase V), USD 30 667 (from Mongolia Balance) USD 1 192 500 (Phase VI); USD 830 000 (Phase VII) Total budget: USD 7 198 667
Effective starting date: 1 August 2006
Planned end date: 30 September 2013
Context of the project <p>The Highly Pathogenic Avian Influenza (HPAI) epidemic, caused by H5N1 viruses, began in late 2003 and in early 2004 in Asia and Southeast Asia and spread to many countries in the region. The effects were particularly severe in Indonesia, Thailand and Viet Nam, which saw widespread outbreaks in poultry and also human cases of H5N1 infection. The Food and Agriculture Organization of the United Nations (FAO), through its Emergency Centre for Transboundary Animal Diseases (ECTAD), established a decentralized unit in Bangkok, Thailand, located in the Regional Office for Asia and the Pacific (RAP), to provide technical backstopping for countries in the Asia and the Pacific region that were experiencing outbreaks of the infection or were at risk of it. ECTAD RAP was supported through a preliminary, regional project (OSRO/RAS/505/USA) funded by the United States Agency for International Development (USAID). This support has continued under FAO's present project.</p>
Objectives of the project <p>The objective of this regional component is to coordinate project activities with the target countries and also to ensure continuity from the previous project (OSRO/RAS/505/USA) to the current one. The project also aims to strengthen regional level cross-sectoral coordination and communication for HPAI control.</p>
Planned activities for the reporting period (October 2012 to March 2013) Output 1: Strengthened cross-sectoral coordination at regional level <ul style="list-style-type: none"> • continue to provide technical and operational inputs to country-level projects in collaboration with country teams; • continue to provide technical inputs, resource persons or training support to the activities related to the existing regional HPAI Control Framework for the Association of South East Asian Nations (ASEAN), existing network systems or regional coordination mechanism related to HPAI and animal disease control; • continue to coordinate and collaborate with other agencies on activities related to HPAI control; and • continue to provide technical inputs to support the activities of the USAID Emerging Pandemic Threats (EPT) programme, which are conducted by various partners as well as the EPT+ programme.

Output 2: Strengthened regional and national human resources in the field of veterinary epidemiology

- continue activities to implement the Regional (Field Epidemiology Training Programme for Veterinarians) FETPV programme, including the seeking of additional support for the programme through other potential partners; and
- continue to provide support to the development of the China FETPV as well as related training programmes in Cambodia, Lao People's Democratic Republic (PDR) and South Asia.

Output 3: Strengthened coordination of the epidemiology and laboratory networks

- continue to support the implementation of the Emergency Prevention System (EMPRES)-i Asia to share expertise and information in a real-time manner across the network through meetings, workshops and online communication;
- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium; and
- continue to provide support for sample submission from Member States to international reference laboratories.

Output 4: Strengthened coordination of cross-border risk assessment and management for HPAI transmission

- support dialogue between or among Member States on cross-border cooperation and collaboration in the management of critical control points in key regional corridors.

Output 5: Established regional emergency response services

- continue to provide technical and operational assistance to Member States to contain the HPAI outbreaks in their respective countries.

Activities undertaken during reporting period (October 2012 – March 2013)
Output 1: Strengthened cross-sectoral coordination at regional level

- The ECTAD team continued to provide technical and operational inputs to country-level projects in collaboration with country teams:
 - The Regional Coordinator (RC) participated in the meeting between the delegation of the USAID Bureau for Global Health, Washington, USA and the Minister for the Ministry of Livestock and Fisheries from 24 to 25 October 2012 to discuss ongoing activities and future USAID support related to animal health and emerging infectious disease prevention and control.
 - The RC and the Regional Operation Officer visited Lao PDR from 29 to 30 October 2012 to assess the progress of the relocation of the National Animal Health Center (NAHC) Laboratory and to discuss activities related to the IDENTIFY project. The workplan, activities and budget of the USAID-funded HPAI project, as well as a new management structure for ECTAD-Laos, in the context of the departure of the International ECTAD Country Team Leader for Lao PDR, were discussed with the national team. Currently, the RC is providing technical backstopping to the USAID funded project in Lao PDR;
- The RC visited the ASEAN Secretariat Office in Jakarta, Indonesia from 12 to 14 November 2012 together with the coordinator of the Regional Support Unit (RSU) for ASEAN under the European Union (EU)-funded project to (i) support the activities related to the control of highly pathogenic emerging diseases; (ii) discuss the progress

- of ongoing activities related to the existing regional HPAI Control Framework for ASEAN and existing network systems or regional coordination mechanisms related to HPAI and animal disease control; and (iii) seek their support for the implementation of relevant project activities for the year 2013.
- The ECTAD team participated in FAO-World Organisation for Animal Health (OIE)-World Health Organization (WHO) tripartite events to strengthen collaboration and coordination among the three organizations. The tripartite events included teleconferences and the following meeting:
 - “The Third Regional Workshop on Multi-Sectoral Collaboration on Zoonoses Prevention and Control” was held from 26 to 28 November 2012 in Bali, Indonesia. The meeting was organized under the financial support of the EU Highly Pathogenic and Emerging and Re-emerging Diseases project with the aim to ensure the adoption of a One Health approach and promote collaboration among all relevant sectors.
 - The Seventh Annual Regional ECTAD Meeting (AREM) was held from 27 to 28 February and on 1 March 2013 in Bangkok, Thailand to review the H5N1 situation and the rapid spread and dominance of clade 2.3.2.1 and other co-circulating and interrelated influenza viruses (e.g. H9N2) in Asia as well as its implications for control and eradication of HPAI in the region and how to further broaden the ECTAD agenda from HPAI to One Health at the country level.
 - The ECTAD team coordinated and facilitated the participation of national animal health authorities to the Prince Mahidol Award Conference (PMAC 2013) or One Health Congress 2, which was an annual international conference hosted by the Royal Thai Government, the Prince Mahidol Award Foundation and other international organizations and foundations. The main objective of the Conference was to foster cooperation and communication across sectors and borders at the country, regional and global level to combat the threat of infectious diseases, existing or emerging, at the human-animal ecosystems interface. The Conference was held in Bangkok, Thailand from 31 January to 2 February 2013 and included 5 plenary sessions and 21 parallel sessions. The ECTAD team also provided technical inputs to the PMAC 2013 by serving as speakers and moderators of the parallel sessions.
 - The ECTAD team provided technical inputs to support the activities of the USAID EPT and EPT+ programmes. Specifically,
 - The RC and the Regional Laboratory Coordinator attended and provided inputs to the USAID-Avian and Pandemic Influenza (API) Partnership Meeting organized in Viet Nam on 9 October 2012. Objectives of the meeting were to review the USAID API Partners’ programme deliverables for the period of October 2012- September 2013 and to address coordination and communication plans and needs among the partners as well as EPT partners in Viet Nam.
 - The RC, ECTAD Animal Health Economists and the ECTAD Country Team in Myanmar participated in a Joint USAID-Australian Agency for International Development (AusAID)-FAO mission to introduce the PREVENT/EPT programme to support HPAI risk communication in Myanmar. In addition, the RC and the Country Team are providing technical and logistics support to PREVENT to organize the Consultative Workshop on HPAI Risk Communication in Myanmar; a scoping mission is to be organized during the week of 26-29 March 2013.
 - The ECTAD team provided technical and operational inputs to the organization of the IDENTIFY Inter-Regional Meeting from 4 to 6 March 2013 in Bangkok, Thailand. The objectives of the meeting were to review the activities and

progress of IDENTIFY in the Asian and African regions, to discuss specific technical and strategic issues implemented under IDENTIFY in both/each region(s) and attempt to develop a common approach/understanding on these technical issues.

- The ECTAD team provided technical and operational inputs to country projects, in collaboration with FAO country teams and national counterparts, for the following activities:
 - recruitment of international consultants;
 - procurement of equipment and supplies;
 - issuance of contracts to conduct field activities/research; and
 - provision of clearance to technical reports prepared by staff of ECTAD Country Teams or by consultants recruited for various project activities.

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- The Regional Veterinary Epidemiologist (RVE), the RC and the ECTAD team continued to work closely with the Thai Department of Livestock Development (DLD) on activities related to FETPV. These included:
 - serving as regional programme mentors to the trainees from China and Myanmar;
 - attending and providing technical inputs to the Workshop on Scientific Writing in Field Epidemiology; and
 - continuing to seek additional support for the programme and finalize the modality including the collaboration with the Faculty of Veterinary Medicine at Chiang Mai University (Thailand), the Animal Population Health Institute of the College of Veterinary Medicine and Biomedical Sciences at Colorado State University (USA) and the Center of Veterinary Public Health of the College of Veterinary Medicine at the University of Minnesota (USA).
- The RVE continued to provide support to the development of the China FETPV and India FETPV, as well as related training programmes in Cambodia. The activities included:
 - conducting missions to China in March 2013 to provide technical inputs for the FETPV-Executive Meeting with 24 Provincial Director-Generals and to advocate for sustainable sub-national implementation of the FETPV in China; and
 - providing technical support to the short course *Veterinary field epidemiology in action* which was conducted for 19 veterinarians from Bhutan, India, Nepal, Pakistan and Sri Lanka from 26 November to 14 December 2012 in Kathmandu.

Output 3: Strengthened coordination of epidemiology and laboratory networks

- The ECTAD team continued to provide technical inputs and coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks. This included:
 - A Consultative Meeting of the Epidemiology Consortium for Emerging Zoonotic and TAD Control in Asia, which is part of the activities to support the regional epidemiology networking, was held on 28 January 2013 as a part of preconference activities of the PMAC 2013. Objectives of the meeting were to (i) update participants on consortium activities related to capacity building, information sharing, research and knowledge utilization themes using a *One Health* approach; and (ii) define roles and responsibilities, including activities

that are most relevant and serve the needs of the member countries within the region of Asia and the Pacific.

- The Fourth Laboratory Directors' Forum was co-organized by FAO, OIE and Department of Animal Health (DAH), Viet Nam from 10 to 11 October 2012. The main objectives of the meeting were to update the laboratory directors on the ongoing activities related to laboratory policies, laboratory capacity building activities and laboratory networking in Southeast Asia. The Forum agreed that the outputs of this meeting would be reported to the ASEAN Sectoral Working Group on Livestock (ASWGL) by the representative from Viet Nam. The Forum also agreed that the ASEAN Secretariat be consulted on the potential mechanism for linking this Forum with an ASEAN mechanism through the recently endorsed Regional Strategic Framework for Laboratory Capacity Building and Networking in Southeast Asia.
- The ECTAD team continued to provide technical inputs to the disease tracking system EMPRES-i Asia and information sharing via the Transboundary Animal Disease Network Asia email circulation.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- The ECTAD team, particularly the Regional Animal Health Economist, participated in and provided inputs to the bilateral meeting between Cambodia and Viet Nam organized in Hanoi 20 and 22 January 2013. The meeting was held to discuss and agree on the integrated HPAI monitoring programme across the Cambodia-Viet Nam border in the lower Mekong delta.

Output 5: Established regional emergency response services

- The RVE conducted two missions to Cambodia from February to March 2013 to conduct a multi-disciplinary field risk assessment of recent outbreaks involving nine human cases. The team included the RVE, the Regional Animal Health Economist, a communications expert and the Regional Coordination Expert who provided inputs to the partners and to the donor coordination meeting.

Planned activities for the next six-month period (April – September 2013)

Output 1: Strengthened cross-sectoral coordination at regional level

- continue to provide technical and operational inputs to country-level projects in collaboration with country teams;
- continue to provide technical inputs, resource persons or training support to the activities related to existing regional HPAI Control Framework for ASEAN, existing network systems or regional coordination mechanism related to HPAI and animal disease control;
- continue to coordinate and collaborate with other agencies on activities related to HPAI control; and
- continue to provide technical inputs to support the activities of the EPT+ project as well as the other USAID EPT components implemented by various partners.

Output 2: Strengthened regional and national human resources in the field of veterinary epidemiology

- continue activities to implement the Regional FETPV programme, including the seeking of additional support for the programme through other potential partners; and

- continue to provide support to the development of field epidemiology related training programmes in Cambodia, Lao PDR and South Asia.

Output 3: Strengthened coordination of the epidemiology and laboratory networks

- continue to support the implementation of EMPRES-i Asia to share expertise and information in a real-time manner across the network through meetings, workshops and online communication;
- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium; and
- continue to provide support for sample submission from Member States to international reference laboratories.

Output 4: Strengthened coordination of cross-border risk assessment and management for HPAI transmission

- support the dialogue between or among Member States on cross-border cooperation and collaboration in the management of critical control points in key regional corridors

Output 5: Established regional emergency response services

- continue to provide technical and operational assistance to Member States to contain the HPAI outbreaks in their respective countries.

Main challenges encountered and response provided

- No major challenges were encountered during the reporting period.

Progress made towards the achievement of project outcomes *(from the start of activities)*

Output 1: Strengthened cross-sectoral coordination at regional level

- Coordination and collaboration between FAO and other international organizations and agencies were strengthened and continued. Engagement was strengthened with ASEAN through the adoption of strategies jointly developed by Member States and FAO. Coordination has been well established between the projects funded by USAID and the projects funded by other donors. Success stories and lessons learnt from HPAI can be used to further broaden the scope of action to prevention and control of TADs and emerging infectious diseases (EIDs) using a *One Health* approach at the regional and country levels.

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- The FETPV continued smoothly with additional collaborations at the national and international levels and approved joint funding for the programme. ASEAN Member States recognized the importance of integrating veterinary epidemiology activities in the national veterinary services and noted the fact that the Thai DLD has been hosting the Regional FETPV since 2009. Capacity building in the field of epidemiology has been included as one of the main components of the draft Regional Strategies for Veterinary Epidemiology Capacity Development and Networking to be considered for endorsement by ASWGL in their next meeting.
- There have been two graduating cohorts, in 2011 and 2012, consisting of 13 veterinary graduates. One hundred and thirty-four veterinarians from 11 countries were trained through the short course - *Veterinary Field Epidemiology in Action*. Eight training

modules, an FETPV trainee manual and four structured case studies were developed and used for the training. A total of 44 epidemiology reports (13 surveillance, 18 outbreak investigations and 13 field epidemiology studies) were developed and some of these reports were presented at international conferences including the Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE), the Conference of Research Workers in Animal Diseases (CRWAD) and the Melbourne *One Health* Conference.

Output 3: Strengthened coordination of the epidemiology and laboratory networks

- The Strategic Framework for Regional Laboratory Networks for Southeast Asia was endorsed by the ASEAN Working Group on Livestock. The international partners for the regional laboratory network in Southeast Asia were recognized by the Member States as the Technical Advisory Group. The Laboratory Directors' Forum has been used to advocate for the progression of ongoing activities to gain more support at the policy level.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- A coordinated effort has been launched to develop cross-border collaboration between China and Viet Nam, and Cambodia and Viet Nam.

Quarter II 2010

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 06**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to Viet Nam**

Reporting period: **April to June 2010¹**

Country: Viet Nam
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to Viet Nam
Code: OSRO/RAS/604/USA Baby 06
Budget: USD 2 million (Phase I), USD 3.1 million (Phase II), USD 3.3 million (Phase III), USD 1.075 million (cost extension) ²
Total budget: USD 9.475 million
Effective starting date: August 2006
Planned end date: September 2010
Context of the project The control and elimination of H5N1 Highly Pathogenic Avian Influenza (HPAI) demands a long-term approach. Viet Nam is moving from the control phase to the consolidation phase, with an ongoing need for capacity building in the veterinary services and livestock production sectors and support for vaccination and other risk reduction measures. This regional project supported by the United States Agency for International Development (USAID) is currently in its third year of implementation.
Objectives of the project The overall objective of the project is to address the urgent short-term actions that need to be undertaken by the countries in the region to strengthen their capacities to rapidly detect the introduction of HPAI into the country and minimize its spread in case of its occurrence.
Planned activities Component 1: Preparedness and Planning Component Output 1: Strategy development for HPAI control in 2006-2010 supported <i>Activity 1.1: Pandemic preparedness plan review</i> <ul style="list-style-type: none"> hold consultative meetings with the Department of Animal Health (DAH) and the World Health Organisation (WHO) on the feasibility of reviewing the animal health component unilaterally <i>Activity 1.2: Contingency plan for animal disease outbreak</i> <ul style="list-style-type: none"> revise this activity within the project work plan, as both the Food and Agriculture Organization of the United Nations (FAO) and DAH made a recommendation to review the HPAI contingency plan and shape it into an Animal Disease Emergency Preparedness Plan in view of the Operational Strategy described in the Green Book

¹ Quarter 5 of the Project Cycle.

² Project Cost Extension Request from October 2009 to September 2010.

Activity 1.3: National HPAI control strategy review

- following the presentation of the Green Book mid-term review on 8 March 2010 by the Government of Viet Nam (GoVN), there is a probability that the Green Book will be replaced with a 'Blue Book' delineating further strategy for HPAI control covering the period from 2011 to 2015. FAO will wait for GoVN decision before planning further actions

Output 2: Coordination and communication with donors and other HPAI implementing partners**Activity 2.1: Core FAO Viet Nam team supported**

- extend and renew contracts of the current personnel as and when necessary
- continue the coordination and planning meetings with all stakeholders

Activity 2.2: Annual project meetings supported

- not planned for this quarter

Activity 2.3: Provincial to national level team meetings supported

- hold the field quarterly reporting meeting during the second quarter of 2010

Component 2: Animal Surveillance Component**Output 3: Animal surveillance at the national, district and community level enhanced****Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported**

- continue providing technical inputs by national and international laboratory experts
- continue to provide support to the LabNet server and tele-hosting maintenance
- organize the maintenance of the laboratory equipment
- hold LabNet workshop from 11 May to 13 May 2010 in Hochiminh City (HCMC)
- support and coordinate the Regional Office for Asia and the Pacific (RAP) sponsored/organized training workshop on Animal Health Influenza Surveillance to be held in HCMC in April 2010

Activity 3.2: Strengthening of core capacities for animal health in five focus provinces, including surveillance activities supported

- continue providing technical inputs by national and international experts
- continue support for field activities.
- monitor the implementation of the passive surveillance programme
- a letter of agreement (LoA) with the Department of Animal Health (DAH) on the implementation of risk-based active surveillance will be prepared in April 2010
- continue providing stickers and calendars to veterinary medicine shops for distribution to farmers
- airing of TV commercials on local TV channels in each pilot province as planned (ongoing activity until the end of the project)
- monitor the LoA with the Rural Development Centre (RUDEC) on the cost-effectiveness study on surveillance
- final review of Standard Operating Procedures (SOPs) for outbreak investigation and response is planned in July 2010

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- organize a joint FAO-Abt Associates monitoring and evaluation (M&E) one-day training workshop in April 2010 targeting provincial coordinators, focal points in pilot provinces, Abt Associates staff and Provincial Department of Preventive Medicine on the main topics such as general M&E principles and the USAID Project Management Plan (PMP)

Activity 3.4: Veterinary epidemiology network supported

- continue to provide support to TADinfo
- continue supporting Applied Veterinary Epidemiology Training Programme (AVET) coordination and activities. The second AVET training is planned to start on 10 May 2010. Trainees of this second AVET course will be selected in particular from SDAH of the project's (OSRO/RAS/604/USA Baby 06) ten pilot provinces for Year II and Year III
- prepare tentative schedule for the two other AVET training courses to be conducted in September 2010

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- support lab equipment maintenance

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: Updating HPAI risk mapping at national level

- coordinate with the Risk Assessment Working Group (RAWG) on an approach to updating risk mapping for HPAI

Activity 5.2: Outbreak investigation capacity strengthened in five focus provinces

- coordinate the field teams and plan field visits to pilot provinces if suspicious cases are reported and if outbreak occurs
- continue providing support for the enhanced reporting and strengthened outbreak investigation and response

Activity 5.3: Capacity building for use of Standard Operating Procedures (SOPs) for response and investigation with linkage to human health activities

- the draft version of SOP for Outbreak Investigation and Outbreak Response to be tested and used under real conditions by the trained Regional Animal Health Office (RAHO), Sub-Department of Animal Health (SDAH) and District Veterinary Services (DVS) staff of the five pilot provinces; collect and consolidate their comments and feedback for the final review of these SOPs (planned in July 2010)
- identify field linkages with WHO with respect to human and animal health protocols

Activity 5.4: Cross border analysis using a value chain methodology, undertaken in three border areas

- review market risk analysis study (FAO-Royal Veterinary College (RVC)-DAH from OSRO/VIE/701/UNJ Project), risk assessment of market chain in Kien Giang and risk analysis work carried out by Abt Associates
- develop work plans for risk mitigation measures in the pilot poultry markets (Dong Ha Central market and Phu Ly Central market) through a stakeholder approach

Activity 5.5: Vaccine efficacy monitoring and virus surveillance supported at national level

- have DAH submit and finalize the report by May 2010 with the analysis of the data of the second round of 2009 post-vaccination monitoring and virus circulation surveillance programme for Influenza A/H5N1
- sign a new LoA with DAH for the first round of 2010 for post-vaccination monitoring and virus circulation surveillance
- review and finalize the report on vaccine efficacy trials

Activity carried over from Year II: vaccine inventory system

- finalize the development of a pilot excel spreadsheet-based system

Output 6: Improved bio-security practices in commercial and scavenging poultry raising settings supported*Activity 6.1: Support biosecurity strengthening in five pilot provinces*

- document an approach to hatchery registration based on experiences in the Can Tho district trial and launch a hatchery registration and mapping exercise in the remaining four provinces
- complete provincial profiling for future risk analysis assessment in Ha Nam and Can Tho using existing data and conclude with a series of stakeholder meetings and participatory mapping exercises
- conduct a risk analysis exercise for Region 7 including provincial risk analyses exercises for Can Tho and Kien Giang Provinces and pilot a regional approach to risk analysis, building capacity at the provincial level to carry-out risk assessments. The risk analysis exercise will utilize provincial profiles to develop a regional poultry profile. Outcomes of the risk analysis exercise will support strategic approaches and plans for vaccine, surveillance and other control measures within the region.
- commence implementation of monthly poultry commodity price monitoring in all five pilot provinces

Activity 6.2: Develop biosecurity guidelines and training for DAH and DLP

- develop a biosecurity training programme in the pilot provinces which will consist of the following three elements: (i) training for district level DAH and extension officers on biosecurity using a training module developed by FAO; (ii) training programme for private sector agri-vet store owners and vet pharmacies (those who advise commercial poultry farmers); and (iii) stakeholder *Field School like approach* which will develop and test biosecurity interventions at the farm level to ensure pilot approaches are effective and adopted by farmers
- continue to provide support to the Biosecurity Working Group through technical meetings and dissemination of documents
- provide technical biosecurity advice to partners
- consolidate the database of biosecurity materials
- carry out a review of biosecurity activities and provincial programmes to determine the nature of the activities that have been effective and the reasons for their effectiveness in order to support provinces in developing strategic approaches to biosecurity strengthening and good practices and lessons learned for biosecurity activities

Activity 6.3: Stakeholder review of biosecurity strengthening activities

- no planned activities for this quarter

Component 4: Communications Component

Output 7: Communication capacity supported at DAH and technical inputs to communications activities of other USAID implementing partners are provided

Activity 7.1: Support national communications officers

- continue to translate and disseminate the Disease Outbreak Update Report

Activity 7.2: Technical support for training and other materials for Animal Health Workers (AHWs) and Animal Extension Workers (AEWs)

- liaise with DAH and assess the need for technical and or financial support for the development and the production of a DAH bulletin
- compile all behavior change communication (BCC) material produced and transmit hard and /or soft copy to Abt Associates as requested by the BCC Working Group
- pilot a public-private sector model for the delivery of poultry farmer extension information

Activities undertaken during the reporting period

Component 1: Preparedness and Planning Component

Output 1: Strategy development for HPAI control in 2006-2010 supported

Activity 1.1: Pandemic preparedness plan review

Activity 1.2: Contingency plan for animal disease outbreak

- A meeting was held between FAO, WHO and DAH on 17 May 2010 followed by another meeting with FAO and DAH on 24 June 2010. One of the conclusions of this meeting was to revise Activity 1.1 and Activity 1.2 and to review the HPAI contingency plan, prepare a status paper on the strength and weaknesses of the current plan and shape it into Animal Disease Emergency Preparedness Plan. This approach would identify the national priorities, the gaps in capacity and an incident command system in the event of an unforeseen animal disease emergency. The proposed plan would be adopted under the upcoming cost-extension request.

Activity 1.3: National HPAI control strategy review

- FAO attended a meeting organized by the International Cooperation Department/Ministry of Agriculture and Rural Development (ICD/MARD) and Partnership for Avian and Human Influenza (PAHI), which was also attended by representatives of other UN agencies and international donors. The Government is still contemplating whether to develop a new plan or revise the existing plan in order to continue with the Avian and Pandemic Influenza (API) programme, possibly with a slightly larger focus to include other diseases threats emerging in human - animal ecosystem interface.

Output 2: Coordination and communication with donors and other HPAI implementing partners

Activity 2.1: Core FAO Viet Nam team supported

- The funding of core project staff has been extended.
- Regular meetings were held with DAH and the Department of Livestock Production (DLP) in MARD, USAID in Viet Nam, WHO and Abt Associates for coordination and planning of activities.

Activity 2.2: Annual project meetings supported

- The field quarterly reporting meeting did not take place as a result of the many field activities being implemented. However, submission of reports and regular interaction and feedback from the field has taken place.
- A joint mission was organized by Abt Associates and FAO with DAH in Hung Yen province on 14 May 2010 for monitoring projects activities and improving the coordination at the provincial level.

Activity 2.3: Provincial to national level team meetings

- The FAO and Abt Associates joint training workshop on monitoring and evaluation of USAID HPAI programs in Viet Nam was conducted on 16 April 2010 in Hanoi (refer to Activity 3.3).

Component 2: Animal Surveillance Component**Output 3: Animal surveillance at the national, district and community level enhanced***Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported*

- National and international laboratory continued to provide technical inputs.
- The project continued to provide support to LabNet server and tele-hosting maintenance.
- The LabNet Workshop review of the work carried out during last six months by the National Center for Veterinary Diagnosis (NCVD) and seven RAHO laboratories was held in HCMC from 11 May to 13 May 2010. The overall results of laboratories diagnostic for 2009 show a total of 71 samples submitted of which 45 percent were positive. On average, samples were sent 3.7 days after the onset of the disease. Laboratories received an average 2.4 birds per case. Information was given in 69 percent of the samples submitted. On average, laboratories reported within 1.7 days (with positive results reported in 1.1 days on average and negative results in 2.2 days).

Activity 3.2: Strengthening of core capacities for animal health in five focus provinces, including surveillance activities supported

- Continued support for field activities through a Field Project Assistant and provincial focal points.
- The LoA with DAH on the implementation of Risk-Based Active Surveillance in five pilot provinces has been signed. Training workshops were conducted for AHWs, with attendance of DVS and SDAH staff, in the pilot provinces for carrying out risk-based surveillance in the field and in coordination with community-based surveillance programme of Abt Associates. A reporting form was developed for the community animal health worker (CAHW) to collect information from informal interviews undertaken with key informants during each village visit and to quickly report any abnormal situation detected within a poultry flock. Another form was developed as a tool for CAHW for monitoring disease situation in poultry and in livestock in general for detecting any shift in the sale of medicine as an indirect indicator of an abnormal situation within the area covered by the veterinary drug stores.
- An FAO national Project Assistant joined Abt Community Based Surveillance (CBS) training in Kien Giang province on 27 and 28 May 2010 and in Quang Tri province

on 31 May 2010 to ensure good coordination and to identify any gap or overlap between FAO and Abt Associates CBS models at the commune-village levels. Based on the findings and recommendations from these field missions, FAO met with Abt Associates on 14 May 2010 and is strengthening the coordination between the two CBS models (sharing of the CBS reporting forms, the list of Abt Associates' collaborators and reinforcement of key roles of CAHWs as the junction point of the two CBS models).

- TV commercials are being aired on local TV channels in each pilot province for enhancing the reporting of any abnormal disease or mortality among poultry, and stickers and calendars have been provided to veterinary medicine shops for distribution to farmers. These activities are ongoing until the end of the project. Impacts of these activities have been assessed by looking into the log book/call register of emergency/hotline being maintained in the SDAH offices of the pilot provinces and by informal feedback from CAHW (who report receiving more phone calls since the communication materials have been distributed and since the TV commercials are being aired).
- RUDEC is carrying out the cost-effectiveness study on surveillance and had collected preliminary data from the field as well as from FAO project reports relating to surveillance activities. FAO provided comments on the first draft report submitted by RUDEC on the cost-effectiveness study on surveillance.
- Passive surveillance programme for HPAI has continued. So far, two outbreaks have been detected through the strengthened passive surveillance system in Quang Tri province (the first outbreak detected on 1 February 2010 in Trieu Phong district, Trieu Phuoc commune and the second outbreak detected on 22 April 2010 in Gio Linh district, Gio Mai commune).
- SDAH and DVS staff used the SOPs for Outbreak Investigation and Outbreak Response developed by FAO and DAH. Their experiences and feedback will be used and consolidated for the final review of these SOPs.
- The RAP sponsored/organized animal influenza surveillance training workshops held in HCMC in April 2010 was coordinated and supported.

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- FAO and Abt Associates carried out a joint training workshop on monitoring and evaluation of USAID HPAI programmes in Viet Nam on 16 April 2010 in Hanoi. The training included all five focal points, five province coordinators, field assistants, project coordinator, FAO staff and representation from DAH, Provincial Department of Preventive Medicine and USAID. The morning session consisted of an overview of Monitoring & Evaluation (M&E) and Performance Management Plans (PMP), while the afternoon session involved in-depth working groups' discussion of the human and animal health indicators outlined in the new 2009 USAID Viet Nam Highly Pathogenic Avian Influenza and Emerging Pandemic Threats Performance Management Plan.

Activity 3.4: Veterinary epidemiology network supported

- Continue providing support to TADinfo.
- The second AVET training programme started on 10 May 2010 and targeted SDAH staff from the 10 pilot provinces of the OSRO/RAS/604/USA project Year II and Year III. The other four trainees were selected from Dien Bien & Ca Mau SDAH (considered as high risk provinces for occurrence of HPAI outbreaks), from RAHO

VI and from the Veterinary Faculty. The third AVET course, overlapping with the second, started on 21 June 2010 and targeted SDAH staff from provinces which reported HPAI outbreaks within 2009-2010 (total of 12 trainees selected).

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1 Procurement and maintenance

- Work is currently ongoing to inspect the current 43 Biological Cabinet II (BSC II) that are located in nine laboratories throughout the whole country, with the objective of providing certification for each qualified BSC II and to recommend solution/correction for unqualified BSC II. Following the recommendation made under the inspection, the appropriate maintenance measures will be carried out in the next quarter.

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: Updating HPAI risk mapping at national level

- Coordination with the Risk Assessment Working Group (RAWG) and technical advisers for further inputs was carried out. The RAWG is largely focused on import of risk assessment and has limited capacity to focus on endemic disease. Through its risk capacity building work (OSRO/VIE/701/UNJ and OSRO/RAS/604/USA), FAO is seeking to engage the RAWG on regional risk assessments through the secondment of a technical officer from the RAWG. This is pending on identification by DAH of an appropriate technical officer, and FAO is now proposing that selecting a member of the epidemiology division may be a more practical solution.
- Region 7 Risk Analysis Exercise was conducted with representatives of SDAH in ten provinces in Region 7, two RAHOs (6 and 7) and DLP. This interactive workshop developed and tested a regional poultry sub-sector profiling methodology and introduced participants to applied risk analysis techniques building capacity in risk analysis at the province animal health offices and RAHOs (a second exercise in the final quarter will complete the Risk Analysis).

Activity 5.2: Outbreak investigation capacity strengthened in five focus provinces

- Passive surveillance activities supported veterinary staff to undertake field investigation whenever a rumor of HPAI is reported. The project funds the laboratory diagnostic of HPAI but also a differential diagnostic with testing for other main poultry diseases (Newcastle disease (ND), duck plague and pasterellosis). So far, two HPAI outbreaks have been detected and officially reported in Quang Tri province, since the launching of these field activities with project support.
- Based on the training courses on SOPs and Job Cards, public veterinary staff, from the five pilot provinces, are requested to start using and applying these documents at the field level in real conditions. The objective is to pilot this draft version for a six month period (from January to June 2010) before carrying out a final review. The Quang Tri province experience in using these SOPs for investigating and responding to the two recent outbreaks will be used for the final review of these SOPs.

Activity 5.3: Capacity building for use of Standard Operating Procedures (SOPs) for response and investigation with linkage to human health activities

- Preliminary discussions were held between FAO and WHO on how to include one section for the joint human animal response to HPAI outbreak in the final version of

the SOPs for outbreak investigation and outbreak response developed by FAO and under field trial in the country.

Activity 5.4: Cross border analysis using a value chain methodology, undertaken in three border areas

- FAO and the Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD) developed a draft policy paper on cross-border movement of poultry. This will be finalized when the outcomes of additional cross-border studies become available (next quarter).
- FAO has harmonized cross-border activities under an ADB funded regional project (OSRO/RAS/601/ASB) to ensure that activities were complimentary and mutually supportive. A preliminary analysis of the Quang Tri – Laos border carried out within the provincial profile for Quang Tri Province provided the basis of inputs into an ADB cross-border initiative covering the East-West economic corridor between Danang (invite Viet Nam) and Keysone (in Lao PDR). FAO provided significant technical inputs into that tri-nation exercise through information and methodologies developed under the USA funded project (OSRO/RAS/604/USA) cross-border work. Outputs include highlighted key risk pathways from Viet Nam to Lao PDR and identification of potential control points (namely border-area LBMs), plus a heightened awareness of local and national authorities of this risk corridor.
- A systems analysis approach has been developed through consultations with MARD policy unit RUDEC and FAO. This considers the different characteristics of cross-border movement in the Mekong area compared with the northern border movements.
- Monthly poultry commodity price monitoring has been carried out in all five pilot provinces. This pilot approach will test the viability and utility of price monitoring and identify regional and temporal fluctuations in poultry product prices.

Activity 5.5: Vaccine efficacy monitoring and virus surveillance supported at national level

- Technical report on the “Round II 2009 - Post-vaccination monitoring and virus circulation surveillance” has been reviewed and cleared. The result shows that about 65 percent of vaccinated poultry birds and about 46 percent of poultry flocks that have had appropriate vaccination generate a good protection against influenza virus. However, virus circulation surveillance demonstrates that AI virus H5N1 is circulating in two flocks out of 449 flocks sampled in 16 provinces of Viet Nam.
- The vaccine efficacy trial at NCVD, DAH including HPAI vaccine testing in 2009 and HPAI virus pathogenicity testing in ducks is ongoing.
- With the aid of an international consultancy, FAO developed a report with recommendations for implementation of a modified post-vaccination sero-monitoring and virus surveillance in Viet Nam in order to gain a better understanding of the impact of vaccination and the overall epidemiological situation. This report was passed onto DAH.
- FAO participated in a DAH workshop on 21 May 2010 for a revised Post-vaccination Monitoring (PVM) and Virus Circulation Surveillance (VCS) programme, taking into account recommendations provided by FAOVN. Based on this new programme for PVM and VCS, a new LoA has been signed with DAH for the first round of 2010 for PVM and VCS.

Activity carried over from Year II: vaccine inventory system

- The final draft version of a pilot excel spreadsheet-based system, which was developed through a national consultancy in the previous year, has been received by FAO and is currently under review.

Output 6: Improved bio-security practices in commercial and scavenging poultry raising settings supported

Activity 6.1: Support biosecurity strengthening in five pilot provinces

- Can Tho and Kien Giang provincial profiling contributed to the regional profiling exercise within the risk analysis carried out in Region 7. This included a poultry movement and infrastructure mapping exercise for the region.
- A methodology has been developed to engage farmers in setting technical advisory priorities and in engaging the private sector in supporting the dissemination of advice (through feed distribution systems) and additional advice and materials through agri-vet stores (point of sale advice). Four poultry producer focus groups have been identified and these will be launched in the next quarter.
- Preliminary results from risk assessments in the poultry market chain were shared between FAO and Abt Associates, and a plan was developed for coordinated action in Quang Tri province to support improved market hygiene.

Activity 6.2 Develop biosecurity guidelines and training for DAH and DLP

- A consultancy was carried out to develop a training programme to strengthen biosecurity. Key findings included the need to engage public and private sector actors and the need to address good poultry production practices more broadly rather than biosecurity (recognizing the need to meet producer priorities of improved performance, not solely disease control). The consultancy therefore re-directed biosecurity strengthening to a more balanced approach of public sector farmer training approaches and private sector poultry technical advisor capacity strengthening.
- The Biosecurity Working Group convened two technical meetings during the reporting period. The first focused on presenting experiences and lessons learned in using value chain methodologies to better understand the poultry sector, risk pathways and the ways in which sub-sector strengthening can contribute to higher production standards. The second meeting focused on sharing the outcomes of the two biosecurity related studies carried out by FAO and described in this report. It shared the outcomes of a WB funded FAO consultancy to develop minimum biosecurity standards for commercial farms.

Activity 6.3: Stakeholder review of biosecurity strengthening activities

- A review of biosecurity strengthening pilot projects was conducted. The review highlighted the difficulties in implementing such projects and challenged the current approach of model/demonstration farms by noting the limited value in direct farmer training and awareness raising. Instead, it recommended a greater use of private sector technical advisers and risk assessment to better determine and focus entry points. Furthermore, the review also emphasized the need to provide poultry health information as an overall package, not solely focusing on biosecurity and HPAL. Technical and extension programme shortcomings were found to contribute to limited impact. Results were shared with the Government and USAID implementing partners. As a result, FAO is incorporating key findings into a revised strategic approach towards the strengthening of the biosecurity programmes.

Component 4: Communications Component

Output 7: Communication capacity supported at DAH and technical inputs to communications activities of other USAID implementing partners are provided

Activity 7.1: Support national communications officers

- Disease outbreak update reports continued to be translated and disseminated.

Activity 7.2: Technical support for training and other materials for Animal Health Workers (AHWs) and Animal Extension Workers (AEWs)

- A number of technical advisory resources were identified as needed during the International Biosecurity consultancy, and these will now be developed together with a private sector extension system to enhance the delivery of such materials.
- Footage of high risk activities has been filmed under direction of a technical expert, and this will form the basis of visual training resources to highlight risk behaviour in a medium which will stimulate poultry producers.
- FAO filled in the BCC working group list for compiling all IEC materials produced within the AI programme (from all projects, between 2006 to the present). Electronic copies and available hard copies have been delivered to Abt Associates as requested by the BCC working group.

Planned activities for the next quarter**Component 1: Preparedness and Planning Component****Output 1: Strategy development for HPAI control in 2006-2010 supported****Activity 1.1: Pandemic preparedness plan review****Activity 1.2: Contingency Plan for animal disease outbreak**

- activity delayed and newly proposed under the cost-extension, with a revised approach to review the HPAI Contingency Plan and to shape it into Animal Disease Emergency Preparedness Plan

Activity 1.3: National HPAI control strategy review

- refer to the activities as outlined in section 1.3 on page 2 of this report

Output 2: Coordination and communication with donors and other HPAI implementing partners**Activity 2.1: Core FAO Viet Nam team supported**

- extend and renew contract of the current personnel as and when necessary
- funding support for international Technical Advisor for the monitoring of epidemiology, surveillance and outbreak response related activities
- continue the coordination and planning meetings with all stakeholders

Activity 2.2: Annual project meetings supported

- the field quarterly reporting meeting will be held in the second quarter of 2010

Activity 2.3: Provincial to national level team meetings supported

- hold the field quarterly reporting meeting

Component 2: Animal Surveillance Component**Output 3: Animal surveillance at the national, district and community level enhanced****Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported**

- continue providing technical inputs by national and international laboratory experts
- continue providing support to the LabNet server and tele-hosting maintenance
- organize the maintenance of the laboratory equipment (refer to section 4.1)

Activity 3.2: Strengthening of core capacities for animal health in five focus provinces, including surveillance activities supported

- continue providing technical inputs by national and international experts
- continue support for field activities
- continue providing stickers and calendars to veterinary medicine shops for distribution to farmers and promote the airing of TV spots
- the second draft report of the cost-effectiveness study on surveillance from RUDEC will be reviewed and finalized
- final review of SOPs for outbreak investigation and response is planned in July 2010
- monitor the implementation of the passive surveillance and the active surveillance (CBS) programmes in the five pilot provinces

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- FAO will continue to support M&E activities as outlined in the 2009 USAID Viet Nam Highly Pathogenic Avian Influenza and Emerging Pandemic Threats Performance Management Plan

Activity 3.4: Veterinary epidemiology network supported

- continue to provide support to the TADinfo
- continue to support AVET coordination and activities: the second and third AVET courses are expected to end on 9 July 2010 and on 20 August 2010, respectively
- prepare tentative schedule for the fourth AVET training course to be conducted from August to September 2010 (rolling over with the third AVET course)

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1 Procurement and maintenance

- carry out the appropriate maintenance measures following the recommendation made under the inspection

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: Updating HPAI risk mapping at national level

- coordinate with RAWG on an approach to updating risk mapping for HPAI
- complete the risk analysis exercise for region 7, including provincial risk analysis exercises for Can Tho and Kien Giang Provinces, piloting a regional approach to risk analysis and building capacity at the provincial level to carry out risk assessments. The risk analysis exercise will utilize provincial profiles to develop a regional poultry profile. Outcomes of the RA exercise will support strategic approaches and plans for vaccine, surveillance and other control measures within the region.
- carry out a short risk analysis training course for selected members of the RAWG and the Epidemiology Unit of DAH

Activity 5.2: Outbreak investigation capacity strengthened in five focus provinces

- coordinate the field teams and field visits to pilot provinces if suspicious cases are reported and if outbreak occurs
- continue providing support for the enhanced reporting and strengthened outbreak investigation and response

- collect feedback from Quang Tri SDAH on the use of SOPs in a real situation, during recent HPAI outbreaks, for the final review of SOPs for outbreak investigation and response in July 2010

Activity 5.3: Capacity building for use of Standard Operating Procedures (SOPs) for response and investigation with linkage to human health activities

- draft an additional SOP for a joint animal human response during HPAI outbreak linked to the human health sector during the final review of SOPs

Activity 5.4: Cross border analysis using a value chain methodology, undertaken in three border areas

- have FAO and IPSARD finalize a policy paper on cross-border movement of poultry to be completed when the outcomes of additional cross-border studies become available
- develop provincial profiles for Dong Thap and Long An Provinces to support understanding of poultry production and movements in border areas. The outputs of this work and the USAID funded risk analysis exercise will provide technical support to an ADB funded Viet Nam-Cambodia cross-border meeting.
- carry out a study to characterize the cross-border movement of poultry in the Mekong region, highlighting key risk pathways and identifying market chain nodes and potential control points

Activity 5.5: Vaccine efficacy monitoring and virus surveillance supported at national level

- provide support to DAH for undertaking a training on survey design and random selection for an improved implementation of the Post-Vaccination Monitoring programme, targeting SDAH staff from the provinces selected for the PVM programme implementation (based on the Guideline 987/TY-DT from 21 June 2010)
- DAH will submit and finalize the report with the analysis of the data of the first round of 2010 post-vaccination monitoring and virus circulation surveillance for influenza A/H5N1
- review and finalize the report on vaccine efficacy trials

Activity carried over from Year 2: vaccine inventory system

- finalize the development of a pilot excel spreadsheet-based system

Output 6: Improved bio-security practices in commercial and scavenging poultry raising settings supported

Activity 6.1: Support biosecurity strengthening in five pilot provinces

- document an approach to hatchery registration based on experiences in the Can Tho district trial and launch a hatchery registration and mapping exercise in the two southern provinces
- jointly present risk assessment findings with Abt Associates for the market chain in Quang Tri province and in conjunction with the stakeholders develop and agree on a risk mitigation plan
- develop an instructional guide on provincial poultry sector profiling and complete provincial profiles/assessments in Ha Nam and Can Tho to test the approach
- continue implementation of monthly poultry commodity price monitoring in all five pilot provinces

Activity 6.2: Develop biosecurity guidelines and training for DAH and DLP

- develop the biosecurity training programme for the pilot provinces, which will consist of three elements: (i) training for district level DAH and extension officers on biosecurity using a training module developed by FAO; (ii) training programme for private sector agri-vet store owners and vet pharmacies (those who advise commercial poultry farmers); and (iii) stakeholder *Field School* like approach which will develop and test biosecurity interventions at the farm level to ensure that pilot approaches are effective and adopted by farmers
- continue to provide support to the Biosecurity Working Group through one technical meeting, a strategic planning meeting and the dissemination of documents
- consolidate the database of biosecurity materials

Activity 6.3: Stakeholder review of biosecurity strengthening activities

- no activities planned

Component 4: Communications Component**Output 7: Communication capacity supported at DAH and technical inputs to communications activities of other USAID implementing partners are provided****Activity 7.1: Support national communications officers**

- continue to translate and disseminate the Disease Outbreak Update Report

Activity 7.2 Technical support for training and other materials for AHWs and AEWs

- liaise with DAH and assess the need for technical and or financial support for the development and production of a DAH bulletin
- pilot a public-private sector model for the delivery of poultry farmer extension information
- develop a DVD training resource to raise awareness of disease transmission and high risk practices and to promote good biosecurity and risk reduction

Main challenges encountered and response provided

No major challenges were encountered during the reporting period.

Main progress made towards the achievement of project outcomes (from the start of the project)**Output 1: Strategy development for HPAI control in 2006-2010 supported**

- A risk-based approach to disease control has been developed and the USAID project activities are being strengthened and developed to ensure that risk reduction is cross-cutting strategy in each. FAO is advocating and building capacity with partners for a progressive shift from mass application of disease control measures to smart disease control based on risk analysis and the optimum utilization of resources.
- Consideration of a regional approach to HPAI control rather than a provincial one has been promoted and is attracting interest as featured in Green Book review and several International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) documents.
- Provincial poultry sub-sector profiling has been effective in describing provincial poultry populations (including the Poultry Atlas) and DLP is considering adopting such an approach more widely.

Output 2: Coordination and communication with donors and other HPAI implementing partners

- Programme management and planning and coordination of activities with USAID and other partners have been maintained. FAO has made 11 major recommendations for the Green Book Review which were well received by the Government of Viet Nam. The recommendations were presented during the Government Green Book Review in November 2009 and presented in March 2010.
- The Biosecurity Working Group has networked information and lessons learned between a large number of agencies working on biosecurity and poultry production more widely. Significant capacity has been built through the information exchange and network created, which has now been taken over by the DLP.

Output 3: Animal surveillance at the national, district and community level enhanced

- The project is carrying out animal surveillance activities which include support in relation to the upgrading of TAD-info® and the Laboratory Information System (LabNet), development of Geographic Information Systems (GIS) at RAHO, Short Message Service (SMS) pilot study and Veterinary Epidemiology capacity building.
- TAD-info® has served as the official livestock disease reporting system of the Government of Viet Nam for HPAI and other priority diseases. The disease reporting system has been established in 64 provincial SDAHs.
- A database of the administrative map of Viet Nam has been procured and upgrading of TAD-info® modules has been completed and downloaded on DAH training server with technical support from FAO headquarters. Today 210 officers from SDAH, 14 RAHO staff and five DAH Epidemiology staff have increased their capacity to use this software through training.
- Seven units of Global Positioning System (GPS) and seven licenses of mapping software (ArcView/ArcGIS 9.2) have been provided to seven RAHOs (I-VII). A total of 55 participants from seven RAHOs were trained during the basic and refresher training course on ArcGIS and GPS along with on-site mapping which has increased the use of GIS application for animal surveillance in Viet Nam.
- The project has also developed a database system software for laboratory diagnostic management within the DAH's LabNet through the services of a local firm in Viet Nam. Laboratory biosafety and quality assurance is being upgraded and standardized by the introduction of powered air purification respirator and the homogenizer at NCVD at all diagnostic centres.
- The SOPs for H5N1 reverse transcriptase-polymerase chain reaction (RT-PCR) have been modified with new N1 primers. Genetic analysis of new virus isolates of early 2009 has been done for HA gene sequence, which showed that the similar virus continued to circulate in 2009. The initiative to add epidemiological information to the genetic sequence data from Viet Nam in the public domain has started. The follow-up on-site trainings at the NCVD and some RAHOs are ongoing including the validation of current protocol of molecular diagnosis with new viruses isolated in 2009.
- In 2009, FAO staff worked closely with DAH to finalize SOPs and Job Cards to create a sound foundation on which Viet Nam's veterinarians can standardize their approaches to the control of AI. This has been well received by the Government. DVS, SDAH and CAHW training will be carried out in 2010. Also, the animal health component can easily be modified for use with other important animal diseases such as duck plague, rabies and foot-and-mouth disease.
- The campaign to encourage poultry farmers to report any unusual occurrences in

poultry flocks, arising suspicion of an infectious disease, through TV spots and loudspeakers during the risk period (e.g. the TET festival), has created a better awareness on the necessity to report diseases on time.

- The AVET initiative, specifically on curriculum development and start up of short training courses, is one of the most important capacity building initiatives being undertaken to improve the planning, implementation and monitoring of HPAI control in Viet Nam. First batch of trainees have completed the AVET Programme and the second and third batches are ongoing. Availability of field staff with veterinary epidemiology training will enhance epidemiological skills at the field for a better understanding of HPAI disease transmission and maintenance cycle.

Output carried over from Year II: Wild bird surveillance

- More than 300 copies of the Wild Bird Manual have been translated into Vietnamese and distributed to 63 provinces.

Output 4: Priority procurement for animal surveillance and laboratory supported

- Procurement of vehicles, IT equipment, equipment sprayers and most lab consumables is complete to support AS3 and AR2, and all are in use.

Output 5: Effective and timely animal response efforts promoted

- Cross-borders study in the north of Viet Nam concluded that as a result of a high financial return for poultry, smuggling across the border has not decreased but has become more elaborate. The stakeholders place greater value on potential income than on the risk of disease infection for their flocks of domestic poultry. As a result, they do not apply adequate measures to prevent the disease. Prevention of cross-border movement is constrained by limited human resources, a large geographic area and active and sophisticated informal/illegal trading systems.
- Post-vaccination monitoring and virus circulating surveillance for influenza A/H5N1, supported by this project shows that about 65 percent of vaccinated poultry birds and about 46 percent of poultry flocks that have had appropriate vaccination generate a good protection against influenza virus. However, virus circulation surveillance demonstrates that AI virus is circulating widely throughout the national flock. FAO is providing epidemiological advisory to DAH to ensure that this important activity is carried out using a methodology which will meet the highest international standards.

Output carried over from Year II: Vaccine production

- A training course on good management practices (GMP) to key stakeholders, National Veterinary Company (NAVETCO), Viet Nam's Veterinary Vaccine Company (VETVACO) and DAH was conducted, which covered introductory-level Good Manufacturing Practice (according to the 2009 PIC/S³ Code of GMP) and quality systems applicable to the manufacture of AI⁴ vaccines. Audits of two vaccine production facilities were conducted, with a focus on the AI vaccine processes and emphasis on packaging of vaccines and the associated facilities including GMP compliance. The project has continued to provide technical support to the needs assessment and planning on domestic AI vaccine production, including hiring a national consultant to analyse the current situation of vaccine inventory at the field level and develop a database for vaccine inventory system.

Output carried over from Year II: cold chain appraisal

- The operational appraisal of cold chain integrity is complete, and 39 provinces were provided with walk-in cold rooms.

³ PIC/S = Pharmaceutical Inspection Convention / Pharmaceutical Inspection Co-operation Scheme

⁴ AI = Avian Influenza H5 N1

Output 6: Improved biosecurity practices in commercial and scavenging poultry raising settings supported

- Provincial profiling and risk analysis work is providing implementers with useful information to better target biosecurity initiatives. This includes assessments of LBMs and description of risk pathways to and from those markets.
- A Biosecurity Working Group has been established which provides a forum to network information and lessons learned and build technical understanding among a peer group of agencies working to strengthen biosecurity.
- A framework for a database on biosecurity materials has been developed and its consolidation is in progress. The approach to develop this database was developed during one of the Biosecurity Working Group's meetings and over 100 documents have now been compiled in a searchable format. This is now ready for dissemination. Biosecurity activities of all agencies engaged in related work have also been mapped.
- The working group also reviewed work on hatchery biosecurity, and training on the principles of biosecurity and on biosecurity auditing was provided to 16 members of the biosecurity working group. Longer-term, tailored biosecurity technical materials and risk communication approaches will be developed through focus groups and stakeholder discussions to ensure that biosecurity measures are more demand-driven and appropriate. The selection of provincial focal points is an important first step in facilitating the dialogue between the stakeholders and has contributed to enhance strengthening of biosecurity practices in the five pilot provinces.
- Conventional approaches to biosecurity strengthening have been reviewed and evidence gathered to support adoption of a supplementary approach focusing on private sector driven activities and adopting social marketing techniques from the human health sector.
- FAO and Abt Associates have liaised on hatchery technical training and registration schemes. The biosecurity coordinator will document existing registration practices in operation in selected provinces, and Abt Associates and FAO will jointly develop an approach to be piloted in USAID funded provinces.

Output 7: Communication capacity supported at DAH and technical inputs to communications activities of other USAID implementing partners are provided

- Three thousand copies of calendar 2008 with 12 key messages on AI prevention and control have been produced and distributed to 63 provinces, 45 districts, 503 communes and other relevant government agencies, donors and NGOs. FAO is repeating the calendar and sticker production and distribution for pre-TÉT festival 2010 sending out the message to call the hotline or the SDAH landline to report ill and dead poultry under the Enhanced Reporting component. The USAID partners are participating in the review of materials.
- In 2008, FAO also produced a 10-minute documentary about Viet Nam's experiences in dealing with HPAI from the animal health perspective. A total of 200 Video CDs in Vietnamese, 300 DVDs in English and 200 DVDs in Vietnamese were prepared and widely distributed. Under the GETS project, AED produced a commercial, for which the second part will be used in the pilot provinces for this project, which encourages poultry owners to report ill and dead poultry to SDAH via hotline or SDAH phone numbers.
- Support to DAH communications has been maintained.
- Technical support to Abt Associates in implementing the field activities has been maintained.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 06**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Viet Nam**

Reporting period: **October 2012 to March 2013**

Country: Viet Nam
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in Viet Nam
Code: OSRO/RAS/604/USA Baby 06
Budget: USD 2 million (Phase I), USD 3.1 million (Phase II), USD 3.3 million (Phase III), USD 1.075 million (cost extension), USD 2.2 million (Phase IV), USD 1.9 million (Phase V), USD 508 373 (transferred as balance from OSRO/VIE/801/USA to OSRO/RAS/604/USA Baby06), USD 1.7 million (Phase VI).
Total budget: USD 15 783 373
Effective starting date: 01 August 2006
Planned end date: 30 September 2013
Context of the project The control and move towards eradication of H5N1 Highly Pathogenic Avian Influenza (HPAI) demands a long-term approach. Viet Nam is moving from the control phase to the consolidation phase, with an ongoing need for capacity building in the veterinary services and livestock production sectors and support for vaccination and other risk reduction measures. This regional project of the Food and Agriculture Organization of the United Nations (FAO) is supported by the United States Agency for International Development (USAID) and is currently in its sixth phase of implementation.
Objectives of the project The overall objective of the project is to increase the capacity to prevent, detect and respond to HPAI and other high impact livestock and zoonotic diseases and to reduce the risks of disease outbreaks occurring.
Planned activities during the reporting period (October 2012 to March 2013) Component 1: Preparedness and Planning Component Output 1: Strategy development for HPAI control <i>Activity 1.1 Regional HPAI Control Strategy</i> <ul style="list-style-type: none"> • facilitate establishment of a coordination structure for the implementation of the regional strategy; • develop advocacy strategy for implementation in conjunction with the Partnership for Avian and Human Influenza (PAHI); • support development of work plans for two zones – activities should include improved surveillance, value chain mapping, risk planning and disease control; and • joint planning of activities with other partners to ensure linkage to zonal strategy. <i>Activity 1.2 Develop policy briefs for potential outcomes of the cessation of vaccination</i> <ul style="list-style-type: none"> • review previous scenario development and revise as necessary; • develop concise policy brief based on review and submit to DAH; and • develop concise brief on scenarios for advocacy at the provincial level. <i>Activity 1.3 Training in regional control plan management and evaluation</i> <ul style="list-style-type: none"> • conduct real-time training in regional control plan management in conjunction with the Regional Animal Health Office (RAHO) meetings.

Output 2: Coordination and communication with donors and other HPAI implementing partners

Activity 2.1 Core FAO Viet Nam team supported and manages project activities

Activity 2.2 Annual project meeting supported

Activity 2.3 Coordination meetings to support regional HPAI control strategy implementation

Activity 2.4 Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment, value chain and risk mitigation in the poultry sector

Component 2: Animal surveillance component

Output 3: Animal surveillance at the national, regional/zonal, provincial, district and commune levels enhanced

Activity 3.1 Strengthening of core capacities for animal disease control and disease control planning within regional control strategies

- support capacity building to develop work plans to implement regional control strategies;
- support capacity building in risk management along value chains relevant to regional control strategies;
- support the development of responses to risk analysis associated with value chains;
- outbreak investigation refresher training for Sub-Department of Animal Health (SDAH) and RAHO staff using a standardized approach to support strategy;
- outbreak response refresher training for SDAH and RAHO staff using a standardized approach to support strategy; and
- mentoring of epidemiology units in data analysis and interpretation.

Activity 3.2 Animal surveillance programme

- support national surveillance plan for live bird markets, including targeting spent hen trade where appropriate;
- support surveillance plan for live bird markets linked to regional strategic objectives;
- support passive surveillance system under regional control strategy, including employing smart phone technology;
- support linkages in passive surveillance from community level to formal animal health reporting systems;
- training for differential diagnosis of poultry disease outbreak at RAHO and SDAH, including poultry post-mortem examination;
- develop policy options for incentives to stimulate reporting of disease events and support advocacy for implementation; and
- support the Department of Animal Health (DAH) to conduct an expert consultation on the national surveillance system for HPAI and other priority diseases.

Activity 3.3 Strengthening of veterinary laboratories diagnostic activities, including biosafety and quality assurance supported

- supporting laboratory quality assurance through monitoring of performance and review of standard operating procedures (SOPs);
- continue support for rapid and differential diagnosis at the RAHO level, including other zoonoses/high-impact diseases;
- continue support for the full characterization of viruses isolated from outbreaks and live bird market surveillance;
- review the functions and role of the animal health laboratory system; and
- support the strategy for DAH to assume full technical responsibility for the HPAI laboratory programme.

Activity 3.4 Veterinary Epidemiology Network capacity supported

- continue support of the Applied Veterinary Epidemiology Training (AVET) programme with emphasis on an advanced course;
- define the framework for the epidemiology network at the national level and commence development;
- support regional level epidemiology networks and conduct regular meetings; and
- support the AVET alumni meeting.

Activity 3.5 Further development of Monitoring and Evaluation (M&E) expertise in animal health

- training of managers at RAHO and SDAH in the M&E principles that guide project management;
- support alignment of the overall Avian and Pandemic Influenza Initiative (APII) M&E framework to local strategic plans; and
- support managers at RAHO and SDAH in gathering and processing M&E data.

Output 4: Priority procurement for animal surveillance and laboratory supported*Activity 4.1 Procurement of essential supplies and maintenance of laboratory equipment**Activity 4.2 Procurement of consumables to support laboratory activities**Activity 4.3 Determine and support maintenance requirements for laboratories**Activity 4.4 Procurement of supplies to support field surveillance activities***Component 3: Animal response component****Output 5: Effective and timely animal response efforts promoted***Activity 5.1: HPAI risk mapping and risk analysis updated to support regional strategies*

- poultry sector profiling to support the regional strategy;
- applied risk analysis capacity building;
- updating risk assessment and mapping; and
- detailed characterization of high-risk value chains, including network analysis.

Activity 5.2: Outbreak control capacity strengthened under regional control strategy

- further review of SOPs for application to outbreak control, including local incident command system and culling principles;
- refresher training in outbreak control to support strategic control plans;
- assist partners to sensitize grassroots stakeholders to disease control activities;
- review application of carcass disposal in outbreak control in local situations within strategic plans; and
- prepare and conduct desktop exercises with public health counterparts.

*Activity 5.3 Conduct review of response capability in relation to scenarios developed under activity 1.2**Activity 5.4 Develop tailored compensation mechanisms to support control strategy*

- support the development of locally feasible and practical compensation mechanisms to support farmers reporting disease; and
- review outbreak control procedures to enable effective audits to support compensation packages.

Activity 5.5 Cross-border dialogue and coordinated surveillance

- support bilateral meetings with the Governments of China and Cambodia to exchange technical information, including surveillance and risk assessment findings, and risk reduction plans;
- review cross border value chains of high-risk commodities; and
- develop plans to conduct coordinated cross-border surveillance.

Activity 5.6 Vaccine efficacy assessments and virus surveillance supported at the national level

- conduct vaccine trials against key circulating clades with a range of vaccines, species and breeds; and
- monitoring pathogenicity of selected virus isolates from outbreaks and live bird market surveillance.

Activity 5.7 Institutional strengthening in poultry production and animal health advisory systems

- institutional and core function analysis for poultry production and support services;
- capacity needs assessment of key stakeholders; and
- develop the poultry sector advisory services model in collaboration with partners and the Extension Department.

Activity 5.8 Support engagement of private sector in the execution of regional control strategies

- develop a poultry industry forum at the regional level to support the regional control plan; and
- work with other APII partners to engage key value chain stakeholders in regional control strategy.

*Activity 5.9 Support DAH to conduct review of the current draft of the Veterinary Law**Activity 5.10 Support DAH to finalize guidelines to establish Veterinary Statutory Body, including structure, function and mechanism***Output 6: Improved poultry production practices in poultry value chains supported***Activity 6.1 Support programme to strengthen safe poultry production practices including biosecurity*

- develop materials and methods with partners, including extension service to scale up hatchery pilot programme in support of regional control strategies;
- facilitate the development of policy and advocacy brief to support practical measures to upgrade the production of day-old ducks;
- support implementing partners with high-level training and advice on hatchery pilot programme;
- collaborate with the Department of Livestock Production (DLP) to develop upstream standards for parent flocks supplying hatcheries conforming to guidelines and pilot test practical implementation at field level;
- continue support for development of poultry waste disposal systems:
 - review workshop on composting of duck waste; and
 - national workshop on composting of duck waste.
- develop materials and methods with partners including extension service to scale up the good production practices in support of regional control strategies.

Activity 6.2 Support ongoing activity of the Biosecurity Working Group

- support national and regional meetings of the Biosecurity Working Group; and
- support the dissemination of the Biosecurity Working Group findings by partners within the regional control strategy, including the extension service.

Activity 6.3 Provide policy support brief on the inactivation of H5N1 under environmental conditions

- investigate inactivation of H5N1 strains under simulated environmental conditions; and
- develop a policy brief related to the implications of virus survival in the environment.

*Activity 6.4 Pilot training programme for private sector in various guidelines and Good Poultry Production Practices (GPPP) developed**Activity 6.5 Training of provincial Department of Agriculture and Rural Development (DARD) staff in description and mapping of local poultry sector*

Activities undertaken during the reporting period (October 2012 to March 2013)

Component 1: Preparedness and Planning Component

Output 1: Strategy for HPAI control developed

Activity 1.1 Regional HPAI Control Strategy

- facilitated the establishment of a coordination structure for implementation of the regional strategy. It was proposed in the Regional HPAI Control Strategies that RAHO 3,6 and 7 have the coordination roles to implement Regional HPAI Control Strategies;
- two Regional HPAI Control Strategies developed, including the work plans on improved surveillance, value chain mapping, risk planning and disease control;
- agreement between FAO, Abt Associates and the World Health Organization (WHO) on joint planning of activities to ensure linkage to zonal strategy;
- guidelines for the application of Progressive Control Pathway approach finalized into the National Operational Plan on Avian Influenza Control and Prevention (2013-2017); and
- detailed comments provided to DAI1 and PAII1 on the National Operational Plan on Avian Influenza Control and Prevention (2013-2017) including incorporating the regional/zonal approach.

Output 2: Coordination and communication with donors and other HPAI implementing partners

Activity 2.1 Core FAO Viet Nam team supported and manages project activities

- arrival of a new Senior Technical Coordinator for the FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) Viet Nam team in December 2012;
- arrival of a new International Epidemiologist on 14 November 2012;
- continue to ensure that all required staff is in place;
- series of briefings, meetings and e-mails with many HPAI implementing partners for coordination, including both USAID and non-USAID partners;
- bi-weekly written briefings provided to USAID on HPAI activities;
- regular coordination meetings between USAID and FAO on a bi- or tri-weekly basis; and
- meetings between FAO and DAI1 (usually the Director-General) on a bi-weekly basis for coordination purposes.

Activity 2.2 Annual project meetings supported

- A project review and planning meeting was held in Hanoi on 21 November 2012 with a total of 31 participants (17 male and 14 female). In addition to FAO, DAI1 and DLP staff involved in project implementation, representatives from USAID, WHO, Abt Associates, PAII1 and the Livestock Competitiveness and Food Safety Project (LIFSAP) joined the afternoon session of the meeting.
- The ECTAD Viet Nam team meeting was held on 14 December 2012 to share information and update the project activities, both in technical and operational fields. All project staff took part in the meeting.
- The ECTAD Viet Nam team coordination meeting was held on 7 January 2013 to share information and update the project activities, both in technical and operational fields. All project staff, including those based at the DLP and DAI1, also took part in the meeting.
- Two more ECTAD Viet Nam team meetings were held on 22 January 2013 and 22 February 2013 to share information and update the project activities, both in technical and operational fields. All project staff took part in the meetings.

Activity 2.3 Coordination meetings to support regional HPAI control strategy implementation

- A consultation workshop for the national HPAI control programme was held on 24 October 2012 in Hanoi with a total of 49 participants (34 males and 15 females). This provided an effective

platform for dialogue and joint activities with national and international partners in a One Health context as well as sound technical linkage to overarching national strategies such as the Viet Nam Integrated National Operational Program on Avian Influenza, Pandemic Preparedness And Emerging Infectious Diseases (AIPED). A regional approach to disease control is also a key part of the ratified National Strengthening of Veterinary Services Strategy to 2020.

- Project staff participated in the USAID partners meeting held on 20 November 2012 in Hanoi.
- Project staff participated in the Workshop on Wildlife Farm Biosecurity Management and Supporting the Development of Good Production Practices on 25 January 2013 in Ho Chi Min City and gave an overview presentation and several supporting presentations.
- Project staff participated in the Good Emergency Practices (GEMP) training held in Bangkok in February 2013 and have approached DAH about their interest in having a Viet Nam GEMP training.
- Project staff participated in the Annual Regional ECTAD Meeting in Bangkok, Thailand from 26 February to 1 March 2013. The Annual Regional ECTAD Meeting:
 - (i) reviewed the H5N1 situation and the rapid spread and dominance of clade 2.3.2.1 and other co-circulating and interrelated influenza viruses (e.g. H9N2) in Asia as well as its implications on control and eradication of HPAI in the region;
 - (ii) discussed how to further broaden the ECTAD agenda from HPAI to One Health at the country level; and
 - (iii) discussed the modality of operating under the new system in light of decentralization and how to maintain synergy with FAO's corporate strategy.
- Project staff attended the FAO-USAID coordination meeting on 14 March 2013. The purpose of the meeting was to update the project progress from 2012 up to March 2013. The technical staff presented key project achievements from 2012 up to March 2013.
- Project staff participated in information sharing sessions including FAO-USAID, USAID-led swine influenza coordination, and United States Center for Disease Control and Prevention (CDC)-led Viet Nam influenza and presented updates about the phylogeography and clade information specific to 2.3.2.1.

Activity 2.4 Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment, value chain and risk mitigation in the poultry sector

- On 22 November, an FAO expert presented the HPAI H5N1 situation in Viet Nam from 2004 to 2012 to provide basic background knowledge on H5N1 in the animal sector to the media journalists attending the media training in Hanoi.
- On 23 November 2012, a meeting was held with Associated Professor, Viet Khong Nguyen and Ivo Claassen and Adriaan van Loon, a delegation from the Netherlands, visiting Viet Nam from 18 to 30 November 2012 on a feasibility study on avian influenza (AI) vaccine production in Viet Nam.
- A meeting was held with national experts from the Viet Nam Animal and Human Influenza Control and Preparedness Project (VAIHP) to discuss current HPAI surveillance programmes in Viet Nam.
- Project staff participated in a seminar at the National Institute of Veterinary Research, where a Dutch delegation presented their findings of "A feasibility study of avian influenza vaccine production in Viet Nam".
- A Senior Technical Coordinator and International Epidemiologists attended and contributed to the VAIHP surveillance workshop held in Hanoi from 19 to 20 December 2012.
- The fact sheet for the project – "Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza to Viet Nam" – has been updated.
- The final project document has been officially submitted to the Government of Viet Nam for approval.
- The annual project progress report for the period 1 October 2011 to 30 November 2012 (cycle 5) was prepared and sent to the DAH for submission to the Government of Viet Nam.
- Project staff participated in the Prince Mahidol Award Conference 2013 in Bangkok, Thailand from 28 January to 2 February 2013. Activities included 1) convening parallel sessions; 2) serving

as panelists in other sessions; and 3) supporting participation of VN government officials.

- Lectures on “One Health” and “Highly Pathogenic Avian Influenza in Viet Nam” was given at the Hanoi University of Agriculture on 24 January 2013, to an audience of teachers, professors and post-graduate students.
- FAO provided feedback through PAIH to DAH as suggested revisions to the National Operational Plan on Avian Influenza Control and Prevention (2013-2017).
- Project staff attended a meeting with Agriculture Research for Development (CIRAD) and DAH on 12 March 2013. The objective of the meeting was to discuss results and practical implications and future activities/collaborations. CIRAD presented results of the Research for Evaluation of Avian Influenza Surveillance in South East Asia (REVASIA) project and results on the evaluation of surveillance systems in avian diseases in Viet Nam. FAO presented surveillance activities and briefings on other activities on biosecurity, livestock production, and the regional strategy under the project “Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza to Viet Nam”.
- Project staff attended a small expert group conference call to review biosecurity assessment tools for wildlife farms.

Component 2: Animal surveillance component

Output 3: Animal surveillance at the national, regional/zonal, provincial, district and commune level enhanced

Activity 3.1 Strengthening of core capacities for animal disease control and disease control planning within regional control strategies

- Analysing information and data collected during field visits in Region 3 and Region 7 and results of FAO supported active and passive surveillance programmes showed that HPAI outbreak investigations are conducted satisfactorily. Currently there is no need to conduct outbreak investigation refresher training for SDAH and RAHO staff using the standardized approach to support strategy.
- Talking to stakeholders and analysing information and data collected during field visits in Region 3 and Region 7 showed that HPAI outbreak responses are conducted satisfactorily. Currently there is no need to conduct outbreak response refresher training for SDAHs and RAHOs staff using the standardized approach to support strategy.
- There is good communication and collaboration with the Epidemiology Departments at RAHO 3 and RAHO 7, through the FAO Regional Coordinators and with the Epidemiology Division at DAH through epidemiologists and national consultants employed by FAO. If needed, FAO assists in data analysis and in mentoring of these epidemiology units in data analysis and interpretation.

Activity 3.2 Animal surveillance programme

- A workshop on guidelines for AI surveillance for Region 6 and 7 was held on 29 October 2012 in Ho Chi Min City with a total of 60 participants (43 male and 17 female). The same workshop for Regions 3, 4 and 5 was held in Da Nang city on 1 November 2012 with a total of 48 participants (26 male and 22 female). The same workshop for Region 1 and Region 2 was held in Hanoi on 5 November 2012 with a total of 58 participants (32 male and 26 female).
- The Lead Epidemiologist made a field trip to Vinh city to explore current surveillance and reporting methods in Region 3. The different farming and marketing systems were investigated and levels of biosecurity were assessed.
- Ongoing analysis was carried out on the spatial distribution of VAHHP and FAO surveillance activities.
- The total number of HPAI outbreaks for 2012 was compiled and spatially referenced.
- A field mission was conducted from 14 to 18 January 2013 to the Mekong Delta to visit live bird markets at Can Tho and Ho Chi Minh City, RAHOs, Sub-departmental Animal Health offices, border area, EPT+ project sites and farms.

- Ha Vy Market was visited in order to:
 - (i) observe the collection of cloacal swabs from spent hens by staff of the SDAH office, as part of the FAO supported spent hens monitoring programme;
 - (ii) observe biosecurity implementation at HaVy market; and
 - (iii) study the marketing chains, hygiene and possible disease transmission pathways.
- A meeting was held with the Epidemiology Team at the DAH and the management of the National Center for Veterinary Diagnostics (NCVD), Hanoi. Three different animal health and surveillance data information systems were discussed and analysed and it was decided that a system currently developed in New Zealand by a Vietnamese PhD student was the most suitable and sustainable. The DAH has submitted a draft proposal for FAO consideration. This system will be developed and implemented on a small scale during 2013, with expansion of all RAHOs and SDAHs in 2014 and 2015.
- Analysing information and data collected from the FAO-supported active and passive surveillance programmes showed that there is a need to adjust the HPAI surveillance support. A meeting was organized with the DAH to discuss the future FAO support of HPAI-related surveillance and monitoring activities. It was decided that FAO will continue to support live bird market monitoring of virus circulation in ducks at 140 locations throughout the country. Support for passive surveillance and spent hen monitoring will discontinue.
- A meeting was held with DAH and counterparts from Cambodia, where it was decided to implement an HPAI support surveillance plan for live bird markets linked to regional strategic objectives. Live bird market monitoring in Viet Nam, in addition to duck sampling, also includes environmental sampling at selected markets in the Mekong region.
- FAO discontinued support of passive surveillance system under the regional control strategy.
- FAO recommended implementing smart phone technology as a reporting system at the community level. This advice was (politically) unacceptable for the Ministry of Agriculture and Rural Development (MARD). FAO will continue to support current linkages in passive surveillance from the community level to formal animal health reporting systems.
- Talking to stakeholders and analysing information and data collected during field visits in Region 3 and Region 7 showed that poultry disease investigations are conducted satisfactorily. Currently, there is no urgent need to conduct training for differential diagnosis of poultry disease outbreak at RAHOs and SDAHs, including poultry post-mortem examination.
- Several independent expert consultants conducted analysis and recommended improvements in the national surveillance system for HPAI and other priority diseases in 2009 and 2010. As the surveillance systems in place have not been adopted to the recommendations, there is currently no need to support DAH to conduct expert consultation on national surveillance system for HPAI and other priority diseases.

Activity 3.3 Strengthening of veterinary laboratories diagnostic activities, including biosafety and quality assurance supported

- Carried out efficiency test of real-time polymerase chain reaction (PCR) primers for the new variant of H5N1 clade 2.3.2.1 virus, the efficiency for which has been confirmed;
- Continued support for rapid and differential diagnosis at RAHO level including other zoonoses/high-impact diseases:
 - Laboratory training and needs assessment at the RAHO No. 5 was conducted from 26 to 28 November 2012. Seven staff participated in the hands-on training on the laboratory diagnosis for HPAI H5N1, Newcastle disease virus, and infectious bursal disease virus (IBDV). Needs for further training and small instruments were identified.
 - The NCVD has received samples of live bird market surveillance from RAHOs for virus isolation and characterization. A total of 80 viruses were isolated out of 175 samples that were positive for influenza A and confirmed by real-time PCR.
- Continued support for the full characterization of viruses isolated from outbreaks and live bird market surveillance:
 - HA gene of 171 H5 viruses collected from outbreaks during October 2012 to March 2013 was sequenced and analysed. The results showed that a variant of H5N1 clade 2.3.2.1 virus.

newly identified in July 2013 has made incursions to the south regions of Viet Nam in December 2012. It has spread to three provinces in the lower Mekong Delta by March 2013. During January and March 2013, three clusters of H5N1 clade 2.3.2.1 virus were circulating in the southern provinces.

- Sequencing of internal genes (PB2, PB1, PA, NP, MA, and NS) of selected H5N1 viruses started. Thirty-two Clade 1.1 viruses, collected during 2012-2013 from outbreaks and live bird markets, were selected for the first lot of sequencing. The results showed 3 out of 32 viruses had evidence of re-assortment with their internal genes.
- review the functions and role of the animal health laboratory system:
 - The discussion has initiated for the short-term and long-term targets of animal health laboratory system.
- support strategy for DAH to assume full technical responsibility for the HPAI laboratory programme:
 - The discussion is ongoing especially for the sustainability of both technical and financial aspects at diagnostic laboratories.

Activity 3.4 Veterinary Epidemiology Network capacity supported

- Continued support for the AVET programme;
- international epidemiologist attended and participated in the “Consultative meeting of epidemiology consortium for emerging zoonotic and transboundary animal disease” in Bangkok, to support regional level epidemiology networks;
- agreement from DAH for FAO including One Health and Risk Assessment and Modeling into the advanced AVET curriculum; and
- started liaising with internal and external partners to develop advanced AVET training course.

Activity 3.5 Further development of M&E expertise in animal health

- Project staff attended the M&E meeting held on 7 March 2013. The results of the meeting were: (i) list of issues, solutions and potential difficulties related to the Performance Management Plan (PMP) data for the period of 1 October 2009 to 31 March 2012 identified; (ii) some follow up actions agreed upon between FAO, WHO, Abt Associates and USAID to finalize the set of PMP indicators for the period of 1 October 2009 to 31 March 2012.
- The project is working together with the M&E Manager from another implementing partner (Abt Associates) on the improvement of the PMP reporting template and data analysis. As a result, the reporting template has been finalized.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.2 Procurement of consumables to support laboratory activities

- Procurement of lab consumables for NCVD initiated; and
- Developed a list of priority needs for labs, based on request from USAID.

Component 3: Animal response component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk mapping and risk analysis updated to support regional strategies

- Primary information for hatchery mapping has been collected. Data has been provided by the District Veterinary Stations and SDAH in five provinces in Region 3. Hatchery mapping of Region 3 has been completed.
- Data on hatcheries in Region 6 and 7 have been collected and hatchery mapping in Region 7 and part of Region 6 is ongoing.
- Mapping of live bird markets in region 3, 7 and part of region 6 is ongoing.
- The epidemiologist is periodically updating the risk assessment and mapping. Spatial and temporal, as well as clade analysis, is being conducted as needed.

Activity 5.2: Outbreak control capacity strengthened under regional control strategy

- All 17 existing SOPs were reviewed and crosschecked with the current HPAI situation, animal health situation and Government capacities. The procedures described in the SOPs are still applicable currently and no further review of SOPs for application to outbreak control, including local incident command system and culling principles is needed.
- Talking to stakeholders and analysing information and data collected during field visits in Region 3 and Region 7 showed that poultry disease investigations and HPAI outbreak control are conducted satisfactorily. Currently there is no urgent need to conduct refresher training in outbreak control to support strategic control plans.
- Frequent meetings were held with VAHIP, Abt Associates, PAHI and WHO to assist partners to sensitize grassroots stakeholders on disease control activities.

Activity 5.5 Cross-border dialogue and coordinated surveillance

- A technical consultation between the Department of Animal Health and Production in Cambodia and the DAH in Viet Nam regarding complimentary HPAI activities across the border was held on 21 January 2013 in Hanoi with a total of 25 participants (18 male and 7 female). A proposal was made to conduct parallel/joint activities on surveillance, diagnostics, and market movements.
- A lunch meeting between FAO-ECTAD Viet Nam and China teams was held on 28 February 2013 during the Annual Regional ECTAD Meeting (AREM) in Bangkok to discuss the next Viet Nam-China cross-border dialogue. The two teams agreed that the meeting would be in Viet Nam and targeted 1-15 June 2013 for dates. It was agreed that the meeting should reflect AI and other transboundary animal diseases.
- A meeting between FAO-ECTAD Viet Nam and Cambodia teams was held on 1 March 2013 during AREM in Bangkok to discuss the follow-up actions after the Viet Nam-Cambodia cross-border meeting in January 2013.
- During two international meetings, FAO Viet Nam met with cross-border stakeholders (WHO, FAO and USAID). Follow-up Viet Nam-Cambodia and Viet Nam-China cross-border collaboration meetings are planned for the first half of 2013.
- A rapid assessment/identification of live bird markets and poultry production, poultry movement and trading patterns in the Vietnamese parts of the Mekong bordering Cambodia was conducted. A meeting was held in Dong Thap from 28 to 29 November 2012 to gather information on poultry movement across borders between Viet Nam and Cambodia in Dong Thap with a total of 34 participants (28 male and 6 female). A field visit was made to Hong Ngu district, Dong Thap province from 29 to 30 November 2012. A report on rapid assessment of poultry movement across Viet Nam and Cambodia border has been prepared after the field mission. The findings from the survey were presented in the Viet Nam-Cambodia cross border meeting and will be used as a resource to develop a cooperation plan.

Activity 5.6 Vaccine efficacy assessments and virus surveillance supported at the national level

- Conduct vaccine trials against key circulating clades with a range of vaccines, species and breeds:
 - The vaccine efficacy trial with new H5N1 viruses of 2013 is to be carried out in May 2013. The detailed antigenic analysis is going on for the selection of challenge viruses.
- Monitoring pathogenicity of selected virus isolates from outbreaks and live bird market surveillance:
 - This activity will be carried out at the same time with the vaccine efficacy trial. The selection of H5N1 viruses for challenge is underway by analysis based on genetic characterization.
- Letter of Agreement (LoA) on "Influenza A virus characterization and H5N1 Vaccine Efficacy test" signed with DAH in February 2013.
 - The objective under this LoA is to strengthen the laboratory for the NCVD in conducting vaccine efficacy and pathogen testing as well as influenza A virus characterization.

Output 6: Improved poultry production practices in poultry value chains supported

Activity 6.1 Support programme to strengthen safe poultry production practices including biosecurity

- supported DLP to develop hatchery biosecurity technical guidelines;
- reports on the first and second training courses on Hatchery Biosecurity and Auditing in Can Tho (under the LoA signed with the DLP) have been cleared;
- interim report on Hatchery Improvement (under the LoA signed with DLP) has been cleared;
- regional workshop on composting of duck waste was conducted in Hue on 30 November 2012 under the Biosecurity Working Group meeting to review the duck waste composting model in Quang Tri province;
- report with observations of composting results finalized;
- draft poultry manure management technical guidance developed; and
- planning for developing parent flock biosecurity standards started.

Activity 6.2 Support ongoing activity of the Biosecurity Working Group

- *Support national and regional meetings of the Biosecurity Working Group:*
 - The 20th Biosecurity Working Group meeting with the topic: "Livestock Production Waste Management by Composting" was held in Hue city on 30 October 2012 with a total of 34 participants (24 male and ten female).
 - The 21st Biosecurity Working Group meeting on biosecurity at slaughter houses was jointly held by FAO, Abt Associates and DLP in Can Tho on 27 November 2012 with a total of 42 participants (31 male and 11 female).
 - The 22nd Biosecurity Working Group meeting on the topic of "Hatchery Biosecurity Minimum Standards and Certificate Model in Region 3" was held in Hue on 19 December 2012 with a total of 39 participants (26 male and 13 female).
 - The 23rd Biosecurity Working Group meeting with the topic "Hatchery biosecurity minimum standards and certificate model in Region 6 and Region 7" was held on 3 January 2013 in Ho Chi Min City with a total of 41 participants (34 male and 7 female).
 - The Biosecurity Core Technical Group meeting with the topic "Hatchery biosecurity minimum standards and fumigating procedures" was held in Hanoi on 29 January 2013 with a total of 15 participants (seven male and eight female).
 - The Biosecurity Core Technical Group meeting with the topic "Hatchery Biosecurity technical Guideline" was held in Hanoi on 25 March 2013 with a total of 12 participants (six male and six female).
 - The Biosecurity Working Group meeting with topic "Dissemination of the hatchery hygiene improvement programme results and lesson learnt to provinces in Region 7" was held in Can Tho on 28 March 2013 with a total of 47 participants (33 male and 14 female).

Activities proposed for the next reporting period (April 2013 to September 2013)

Component 1: Preparedness and Planning Component

Output 1: Strategy development for HPAI control

Activity 1.1 Regional HPAI Control Strategy

- develop advocacy strategy for implementation in conjunction with PAHI;
- joint planning of activities with other partners to ensure linkage to zonal strategy; and
- support review of progress and report to stakeholders.

Activity 1.2 Develop policy briefs for potential outcomes of the cessation of vaccination

- review previous scenario development and revise as necessary;
- develop concise policy brief based on review and submit to DAII; and
- develop concise brief on scenarios for advocacy at the provincial level.

Activity 1.3 Training in regional control plan management and evaluation

- conduct real-time training in regional control plan management in conjunction with RAHO meetings; and
- support real-time monitoring on the progress of the control plan and report

Output 2: Coordination and communication with donors and other HPAI implementing partners

Activity 2.1 Core FAO Viet Nam team supported and manages project activities

Activity 2.2 Annual project meeting supported

Activity 2.3 Coordination meetings to support regional HPAI control strategy implementation

Activity 2.4 Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment, value chain and risk mitigation in the poultry sector

Component 2: Animal surveillance component

Output 3: Animal surveillance at the national, regional/zonal, provincial, district and commune level enhanced

Activity 3.1 Strengthening of core capacities for animal disease control and disease control planning within regional control strategies

- support capacity building to develop work plans to implement regional control strategies;
- support capacity building in risk management along value chains relevant to regional control strategies;
- support the development of responses to risk analysis associated with value chains; and
- mentoring of epidemiology units in data analysis and interpretation as required.

Activity 3.2 Animal surveillance programme

- support national surveillance plan for live bird markets;
- support surveillance plan for live bird markets linked to regional strategic objectives;
- support linkages in passive surveillance from community level to formal animal health reporting systems;
- training for differential diagnoses of poultry disease outbreak at RAHO and SDAH including poultry post-mortem examination; and
- develop policy options for incentives to stimulate reporting of disease events and support advocacy for implementation.

Activity 3.3 Strengthening of veterinary laboratories diagnostic activities, including biosafety and quality assurance supported

- supporting laboratory quality assurance through monitoring of performance and SOP review;
- continue support for rapid and differential diagnosis at RAHO level including other zoonoses/high-impact diseases;
- continue support for the full characterization of viruses isolated from outbreaks and live bird market surveillance;
- review the functions and role of the animal health laboratory system; and
- support the strategy for DAH to assume full technical responsibility for HPAI laboratory programme.

Activity 3.4 Veterinary Epidemiology Network capacity supported

- FAO will continue to support for AVET programme. Three international experts will conduct an advanced epidemiology training on risk analysis and spatial epidemiology in May 2013. Two FAO international experts will conduct an eight-day One Health wildlife-farm animals-human

interphase workshop in May 2013 with two field visits included.

- During the planned third alumni meeting in August 2013 a framework for the epidemiology network at the national level will be defined and developed.
- To further support regional level epidemiology networks “The 5th International Workshop on Influenza Risk Assessment and Risk Modeling: Transitioning from Global to Local Assessments” meeting will be held in Hanoi in May 2013.
- The third AVET alumni meeting has been planned and will be supported by FAO in September 2013. This is part of FAO’s continuous support of AVET alumni meetings.

Activity 3.5 Further development of M&E expertise in animal health

- training of managers at RAHO and SDAH on the M&E principles that guide project management;
- support alignment of the overall APII M&E framework to local strategic plans; and
- support managers at RAHO and SDAH in gathering and processing M&E data.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1 Procurement of essential supplies and maintenance of laboratory equipment

Activity 4.2 Procurement of consumables to support laboratory activities

Activity 4.3 Determine and support maintenance requirements for laboratories

Activity 4.4 Procurement of supplies to support field surveillance activities

Component 3: Animal response component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk mapping and risk analysis updated to support regional strategies

- three international experts to conduct an advanced epidemiology training on risk analysis and spatial epidemiology in May 2013 to further enhanced analysis capacity building;
- implementation underway for an international expert to conduct a study in the Mekong region to provide detailed characterization of high-risk value chains including network analysis;
- poultry sector profiling to support the regional strategy;
- applied risk analysis capacity building;
- updating risk assessment and mapping; and
- detailed characterization of high-risk value chains including network analysis.

Activity 5.2: Outbreak control capacity strengthened under regional control strategy

- assist partners to sensitize grassroots stakeholders to disease control activities;
- review application of carcass disposal in outbreak control in local situations within strategic plans; and
- prepare and conduct desktop exercises with public health counterparts.

Activity 5.3 Conduct review of response capability in relation to scenarios developed under activity 1.2

Activity 5.4 Develop tailored compensation mechanisms to support control strategy

- support the development of locally feasible and practical compensation mechanisms to support farmers reporting disease; and
- review outbreak control procedures to enable effective audits to support compensation packages.

Activity 5.5 Cross-border dialogue and coordinated surveillance

- support bilateral meetings with the Governments of China and Cambodia to exchange technical information, including surveillance and risk assessment findings, and risk reduction plans;
- review cross border value chains of high-risk commodities; and
- develop plans to conduct coordinated cross-border surveillance.

Activity 5.6 Vaccine efficacy assessments and virus surveillance supported at the national level

- conduct vaccine trials against key circulating clades with a range of vaccines, species and breeds; and
- monitoring pathogenicity of selected virus isolates from outbreaks and live bird market surveillance.

Activity 5.7 Institutional strengthening in poultry production and animal health advisory systems

- institutional and core function analysis for poultry production and support service;
- capacity needs assessment of key stakeholders; and
- develop the poultry sector advisory services model in collaboration with partners and the Extension Department.

Activity 5.8 Support engagement of private sector in the execution of regional control strategies

- develop a poultry industry forum at the regional level to support the regional control plan; and
- work with other APII partners to engage key value chain stakeholders in regional control strategy.

*Activity 5.9 Support DAH to conduct review of the current draft of the Veterinary Law**Activity 5.10 Support DAH to finalize guidelines to establish Veterinary Statutory Body, including structure, function and mechanism***Output 6: Biosecurity improved and market hygiene practices in commercial and free-ranging poultry raising settings supported***Activity 6.1 Support programme to strengthen safe poultry production practices including biosecurity*

- develop materials and methods with partners, including extension service to scale up hatchery pilot programme in support of regional control strategies;
- facilitate the development of policy and advocacy brief to support practical measures to upgrade the production of day-old ducks;
- support implementing partners with high-level training and advice on hatchery pilot programme;
- collaborate with DLP to develop upstream standards for parent flocks supplying hatcheries conforming to guidelines and pilot test practical implementation at field level;
- continue support for the development of poultry waste disposal systems; and
- develop materials and methods with partners, including extension service to scale up the good production practices in support of regional control strategies.

Activity 6.2 Support ongoing activity of the Biosecurity Working Group

- support national and regional meetings of the Biosecurity Working Group
- support the dissemination of the Biosecurity Working Group findings by partners within the regional control strategy, including the extension service.

Activity 6.3 Provide policy support brief on the inactivation of H5N1 under environmental conditions

- investigate inactivation of H5N1 strains under simulated environmental conditions; and
- develop a policy brief related to the implications of virus survival in the environment.

*Activity 6.4 Pilot training programme for private sector in various guidelines and GPPP developed**Activity 6.5 Training of provincial DARD staff in description and mapping of local poultry sector*

Main challenges encountered and response provided

- The approval of the Government of Viet Nam of the Project Document by FAO and USAID for the project extension (October 2012–September 2013) is still in process. Consequently, many activities, which the counterpart Government agency had primary responsibility for implementing, could not be initiated, owing to this delay in project approval.
- In the country context, the regional approach to HPAI control is a new concept. The Government administrative structure does not provide for a regional mechanism in between the national and provincial authorities in Viet Nam. This is being resolved through advocacy with the Department of Animal Health at the central level, and with the Sub-Departments of Animal Health at the provincial levels, through RAHOs.

Main progress made towards the achievement of project outcomes (from the start of the project)
Output 1: Strategy development for HPAI control in 2006–2010 supported

- Consideration of a regional approach to HPAI control rather than a provincial one was promoted and is attracting interest as featured in the Green Book Review and several International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) documents. The final drafts of the regional HPAI control plans for the north-central region (Region 3) and the Mekong Delta region (Region 7+) were completed.
- A regional/zonal approach has been incorporated into the National Operational Plan on Avian Influenza Control and Prevention (2013–2017).
- A Livestock Emergency Preparedness Plan was developed and submitted to DAH for use in any unusual event in the livestock sector, keeping in view the state of unpreparedness that the Government experienced during the 2003–2004 emergence of HPAI.
- Provincial poultry subsector profiling was effective in describing provincial poultry populations (including the Poultry Atlas), and DLP is considering adopting such an approach more widely.
- Risk assessment and risk-based targeting of control measures are increasingly being included in technical and policy development (however still largely restricted to the control of HPAI). This approach is now expanded and was translated into an HPAI regional control plan particularly for two regions in Viet Nam.
- Guideline for the application of Progressive Control Pathway approach had been finalized.

Output 2: Coordination and communication with donors and other HPAI implementing partners

- Programme management, planning and coordination of activities with USAID and other partners were maintained. FAO made 11 major recommendations for the Green Book Review, which were well received by the Government of Viet Nam as is evident from the newly released follow-up version of the Green Book as an Action Programme on AIPED for the period covering 2011–2016.
- FAO and Abt Associates have a common strategy to risk reduction across the supply chain with a shared activity matrix consolidating the agencies' activities into a single overall approach.
- The first volume of DAH Animal Health bulletin was released in July 2011 (250 copies). The second volume of DAH Animal Health bulletin was released in August 2012 (210 copies).

Output 3: Animal surveillance at the national, district and community level enhanced

- The project provided support to the upgrading of TADinfo and LabNet, and the development of geographic information systems (GIS) at RAHO. A total of 210 officers from SDAH, 14 RAHO staff and five DAH epidemiology staff were trained to use this software. Seven global positioning systems (GPS) and seven licenses of mapping software (ArcView/ArcGIS 9.2) were provided to seven RAHOs (I–VII). A total of 55 SDAH/DAH staff was trained on its use.
- The project also developed a database system software for laboratory diagnostic management within the DAH's LabNet through the services of a local firm in Viet Nam. Laboratory biosafety and quality assurance are being supported and pursued. One laboratory (NCVD) was accredited for ISO17025, and the other laboratories are in the process of accreditation.
- The SOPs for H5N1 real-time PCR were developed and adopted. It has been used at nine veterinary laboratories extensively for passive and active surveillance. The use of real-time PCR was extended

to the differential diagnosis of HPAI, such as Newcastle disease and duck plaque.

- The capacity of genetic sequencing of H5N1 viruses was developed and applied. Genetic analysis of the viruses isolated from HPAI outbreaks in poultry in Viet Nam over several years indicates that Clade 1 is entrenched in south Viet Nam with sporadic forays to central Viet Nam. Clade 2.3.4 used to be the predominant clade for many years in north and central Viet Nam until the winter of 2009/2010. However, clade 2.3.2 viruses have totally replaced the dominance of clade 2.3.4 in late 2010, which continues today. Within the newly emerging clade of 2.3.2.1, an antigenic variant strain of the virus was detected. Adequate technical and material support significantly improved the HPAI diagnostic capacity in the laboratories and antigenic and genomic characterization of H5N1 viruses.
- A revised and updated SOPs for HPAI Outbreak Investigation and Control was developed, comprising 19 sections and 14 job cards for various officials involved in HPAI outbreak management. The English and Vietnamese versions of the SOPs were handed over to DAH for transmission to MARD for adoption as a national strategy.
- The awareness-raising campaign to encourage poultry farmers to report any unusual occurrences of an infectious disease in poultry flocks and the necessity to report it on time was carried out through TV spots and loudspeakers during the risk period (e.g. the TẾT festival).
- The AVET initiative to improve basic epidemiological investigation capacity through Viet Nam, specifically a nine-week-long tailor-made course curricula, resulted in the training of 160 veterinarians in 12 cohorts in the period of 2010–2012. At least one veterinarian of each of the 63 provinces of Viet Nam now has specialized basic skills in veterinary field epidemiology. Two AVET alumni workshops were organized for strengthening the animal health epidemiologist network in Viet Nam and improving the sharing of information.
- Active surveillance for HPAI and other poultry diseases launched to complement the community-based surveillance of Abt Associates yielded valuable insight on the efficacy of the surveillance.
- In the event of an outbreak, a new component was launched in March 2011 for the early detection of any potential secondary outbreaks in the neighbouring area of the index case.
- A cost effectiveness study on surveillance for HPAI was completed. Preliminary findings suggest that there is a qualitative value in surveillance, but the cost of surveillance per outbreak reported is going up with a decrease in the number of outbreaks of HPAI in Viet Nam.
- Live bird market surveillance for subclinical infection of ducks sold at the markets in 30 high-risk provinces indicated widespread circulation of AI virus and also H5N1 viruses, in particular.
- More than 300 copies of the Wild Bird Manual were translated into Vietnamese and distributed to 63 provinces.

Output 4: Priority procurement for animal surveillance and laboratory supported

- Procurement of vehicles, information technologies (IT) equipment, equipment sprayers and most laboratory consumables is complete, and all are in use.

Output 5: Effective and timely animal response efforts promoted

- A cross-border study in the north of Viet Nam concluded that as a result of a high financial return for poultry, smuggling across the border has not decreased, but has become more elaborate, which will pose a constant risk of disease transmission. The market chain is increasingly being recognized as critical to the control of HPAI, particularly in northern Viet Nam, and FAO's strategic targeting of live bird markets was validated.
- Hatchery data collection and mapping in five pilot provinces was completed. Hatchery minimum biosecurity standards were developed through a stakeholder consultation process. A hatchery audit and certification tool was developed, and training was provided to the Government staff on the procedure for hatchery auditing and certification. Hatchery data collection and mapping in five provinces in Region 3 (Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Thua Thien Hue) and all of Region 3 have been completed.
- Post-vaccination monitoring and virus circulating surveillance for influenza A/H5N1, supported by this project, shows that vaccinated poultry have a protection rate of 72.10 percent at the bird level. The protection rates of Muscovy ducks, turkey, other ducks, chicken and geese were: 80 percent, 80 percent, 78.90 percent, 68.05 percent and 50 percent, respectively. Prevalence of Type A and

H5N1 AI viruses in ducks were 0.94 percent and 0.67 percent, respectively, while in chickens, respective prevalence was 0.54 percent and 0 percent. There was no evidence of AI virus persistence found with the samples taken from Muscovy ducks. The AI positive samples were from Khanh Hoa and Quang Ngai provinces (Centre). Currently, the Government of Viet Nam halted mass vaccination of poultry against HPAI.

- A training course on good management practices to key stakeholders –the National Veterinary Company (NAVETCO), Viet Nam's Veterinary Vaccine Company (VETVACO) and DAH – was conducted, which covered introductory level good manufacturing practices (according to the 2009 Pharmaceutical Inspection Convention/Pharmaceutical Inspection Co-operation Scheme [PIC/S] Code of GMP) and quality systems applicable to the manufacture of AI H5N1 vaccines.
- The operational appraisal of cold chain integrity was completed, and 39 provinces were provided with walk-in cold rooms. Software for inventory maintenance of vaccine banks in provinces was developed.
- Capacity for animal challenge testing was developed, following the completion of a high biosecurity animal isolation unit at NCVD. The unit applied for vaccine efficacy tests since 2007 to monitor the adequacy of vaccines against the evolving H5N1 viruses. An antigenic variant of H5N1 virus was found in 2011, for which the vaccine currently in use was not effective.

Output 6: Improved biosecurity practices in commercial and scavenging poultry raising settings supported

- Poultry sector profiling provides important tools for risk-analysis and strategic disease control planning. A guide to provincial poultry sector profiling was developed. Poultry sector profiling was completed for four of the five project provinces. The guidelines are currently being tested externally by an implementing partner in three non-USAID pilot provinces.
- A Biosecurity Working Group was established, which provides a forum to network information and lessons learned, building technical understanding among a peer group of agencies working to strengthen biosecurity.
- A framework for a database on biosecurity materials was developed, and its consolidation is in progress. By now, over 100 documents were compiled in a searchable format. This is now ready for dissemination. Biosecurity activities of all agencies engaged in related work have also been mapped.
- The Working Group reviewed work on hatchery biosecurity. Training on the principles of biosecurity and on biosecurity auditing was provided to 16 members of the Biosecurity Working Group. Conventional approaches to biosecurity strengthening were reviewed and evidence gathered to support adoption of a supplementary approach focusing on private sector driven activities and adopting social marketing techniques from the human health sector.
- FAO and Abt Associates liaised on hatchery technical training and registration schemes.
- A regional risk analysis exercise was conducted, which provided information on the character of poultry movement and production in the lower Mekong region, identifying poultry movements and risk pathways for inter-provincial transmission of infection.

Output 7: Communication capacity supported at DAH and technical inputs to communication activities of other USAID implementing partners are provided

- FAO supported the calendar and sticker production and distribution for pre-TÊT festival 2010, sending out the message to call the hotline or the SDAH landline to report ill and dead poultry under the Enhanced Reporting component.
- Under the Gathering Evidence for a Transitional Strategy (GETS) project (closed in February 2012), the Academy for Educational Development produced a commercial, which encouraged poultry owners to report ill and dead poultry to SDAH via a hotline or SDAH phone numbers. This was used effectively in this project for awareness-raising purposes.
- Support to DAH communications and technical support to Abt Associates in implementing the field activities was maintained.
- The interim Team Leader completed his assignment with the ECTAD Viet Nam programme in November 2012. The new Senior Technical Coordinator commenced his assignment as Senior Technical Coordinator/Team Leader for the ECTAD Viet Nam programme in December 2012.

Project Monitoring Sheet: **OSRO/RAS/605/USA Baby 03**

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: April to September 2012

Country: Nepal
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/605/USA Baby 03
Budget: USD 1 215 000 (Phases I-V) and USD 279 000 (Phase VI)
Total budget: USD 1 494 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2013
<p>Context of the project</p> <p>The project is supporting the Government of Nepal in strengthening its capacity to detect and contain Highly Pathogenic Avian Influenza (HPAI). The first outbreaks of HPAI in Nepal occurred during the period from January to March 2009. In 2010, multiple outbreaks occurred during the same months, with another single outbreak detected in the poultry-producing hub of Chitwan in October. The 2009 outbreaks were caused by H5N1 virus of clade 2.2, prevalent in West Bengal, while the 2010 outbreaks were attributed to clade 2.3.2.1, previously unrecorded in South Asia. Clade 2.3.2.1 reappeared in the Kathmandu valley in November 2011 (backyard poultry), and in January 2012 (crows) and again in March 2012 (commercial). Nine outbreaks occurred in the eastern region in January and February 2012. All isolates from 2010 onwards have been shown to be closely related, and this clade is now endemic in Nepal. The Government's resources, including those provided by international donors, have been severely stretched. The project has provided essential capacity building for preparedness and response.</p>
<p>Objectives of the project</p> <p>The overall objective of the project is that HPAI and other emerging infectious diseases are effectively prevented and controlled on a national scale, thereby minimizing risks to human health, food security and livelihoods. The anticipated outcome is that the Department of Livestock Services (DLS) is enabled for early detection, prompt and accurate diagnosis, and effective response to HPAI at national level.</p>
<p>Activities planned for the reporting period (April to September 2012)</p> <p>Output 1: Cross-sectoral coordination at national level strengthened</p> <p><i>Activity 1.1. Conduct regular meetings with DLS, the Directorate of Animal Health (DAH), Central Veterinary Laboratory (CVL) and Veterinary Epidemiology Centre (VEC)</i></p> <ul style="list-style-type: none"> While some progress was made towards the standardization of reporting procedures for outbreaks of disease to internationally accepted standards and making use of reference laboratories to confirm or expand on CVL diagnostic outputs, questions remain over the failure to detect H5N1 in the western parts of the country or in Chitwan, and this demands further analysis at high level. <p><i>Activity 1.2. Maintain coordination with the subregional Emergency Centre for Transboundary Animal Diseases (ECTAD) management and regional support unit of the European Union (EU)-South Asian Association for Regional Cooperation (SAARC) Highly Pathogenic and Emerging Diseases (HPED) programme</i></p> <ul style="list-style-type: none"> Continued support of and strengthened links between regional and national programmes, including ECTAD's ongoing commitment to the One Health approach.

Activity 1.3. Advise and support DLS in planning and implementing a sustainable programme for the prevention, early detection and rapid response to HPAI and other emerging infectious diseases

- Continue to work with the DLS to establish processes that meet scientific criteria, while being financially accessible (in the longer term, the department must target the development of self-supported and sustainable programmes to implement its activities as both disease surveillance and response are resource-hungry procedures).

Output 2: Aspects of disease surveillance related to outbreak investigation strengthened

Activity 2.1. Reinforce the use of enhanced surveillance at an additional four sites in targeted districts

- Continue the programme into April, collate and analyse data with a view to efficiency and effectiveness, and provide guidance on any adjustments to be made to the methodology or its implementation.

Activity 2.2. Provide technical guidance to the DLS, DAH and VEC on the planning, setup and monitoring of targeted active surveillance

- Continue to support VEC as the key DAH unit for designing and managing both active and passive disease surveillance and reporting, and ensure that the unit is fully staffed and adequately resourced.

Activity 2.3. Review the current surveillance strategy

- Organize a review workshop to match the surveillance approach to the realities of the epidemiology of HPAI in Nepal.

Output 3: Emergency preparedness and response capacity strengthened

Activity 3.1. Evaluate the appropriateness of current policies, strategies and standard operating procedures (SOPs) for response

- Review, and if necessary, update policies, strategies and SOPs considering the issues, such as culling strategies, compensation levels and possible use of vaccination.

Activity 3.2. Reinforce rapid response training in eight districts

- Conduct the planned training during the coming semester.

Activities undertaken during the reporting period (April to September 2012)

Output 1: Cross-sectoral coordination at national level strengthened

Activity 1.1. Conduct regular meetings with DLS, DAH, CVL and VEC

- The project team met monthly with the officers in charge of the technical units at DAH, CVL and VEC and relevant scientific officers both centrally and in the regions. The Country Team Leader (CTL) liaised with visiting scientific missions from the Food and Agriculture Organization of the United Nations (FAO) headquarters (Foot-and-Mouth Disease [FMD] field training), the IDENTIFY project (CVL biosafety audit) and Massey University (One Health project). Topics addressed during this period included the following:
 - April 2012: Procurement of Virkon S and personal protective equipment (PPE) (through the United States Agency for International Development [USAID] DELIVER project)
 - April 2012: Procurement of the International Air Transport Association (IATA)-approved virus transport containers for VEC (through FAO's Regional Office for Asia and the Pacific [RAP])
 - April 2012: Procurement of avian influenza Rapid Antigen Detection Kits for VEC and the Regional Veterinary Laboratories (RVLs) (through RAP)

- May 2012: Report on the outcome of HPAI surveillance from November to April.
- May/June 2012: Planning and logistics for FMD real-time training (FAO Rome)
- June 2012: Progressive control of FMD (DAH and the European Commission [EC]/FAO SAARC Regional Support Unit [RSU])
- June 2012: Avian Influenza vaccination policy (DAH with inputs from FAO Rome)
- July 2012: Biosafety at CVL (CVL staff in coordination with USAID IDENTIFY project)
- July 2012: Rabies control in Nepal (DAH in coordination with the Australian Animal Health Laboratory [AAHL])
- August 2012: One Health approach (in coordination with Massey University)

Activity 1.2. Maintain coordination with the subregional ECTAD management and regional support unit of the EU-SAARC HPED programme

- The CTL works closely with the EU-SAARC HPED project manager and facilitates the link between RSU members and relevant country programmes, participating in meetings at DAH on the progressive control of FMD and contributing to the regional workshop on communication.

Activity 1.3. Advise and support DLS in planning and implementing a sustainable programme for the prevention, early detection and rapid response to HPAI and other emerging infectious diseases

- The project provided the Director-General of DLS with a progress report of the targeted active surveillance programme including detailed conclusions and recommendations. In addition, reports have been made available of the recommendations on the outbreak response table-top exercises carried out regionally and of the training for village animal health workers and other community contact persons, which will assist the department in planning future interventions in this area. The CTL also worked with the DAH chief in preparing a response to poultry producers in relation to H9 virus vaccination.

Output 2: Aspects of disease surveillance related to outbreak investigation strengthened

Activity 2.1. Reinforce the use of enhanced surveillance at an additional four sites in seven targeted districts

- Data gathering was completed in April and monitoring visits were made to each site on a two monthly schedule, after which the data was collated and analysed. In May, round-up meetings with the participating district officers and field staff provided feedback on adjustments to be made to the methodology and implementation. Two one-day training sessions for 42 site technicians were held, and their community contacts were well received.

Activity 2.2. Provide technical guidance to the DLS/DAH/VEC on the planning, set-up and monitoring of targeted active surveillance

- The project management continued to advocate the adoption of the VEC as the key DAH unit for designing and managing both active and passive disease surveillance. Technical meetings took place monthly, and DAH/VEC officers fully participated in the field exercise and monitoring missions. VEC was strengthened through the placement of an additional officer.

Activity 2.3. Review the current surveillance strategy

- The surveillance data gathered during the first semester was assimilated into a review document, while a review workshop held in September with 45 participants provided a forum for additional consideration of the present strategies for detection.

Output 3: Emergency preparedness and response capacity strengthened

Activity 3.1. Evaluate the appropriateness of current policies, strategies and SOPs for response

- The current Bird Flu Order does not permit the use of avian influenza vaccination in Nepal.

Poultry entrepreneurs, through their associations, have pressed for an amendment to this policy to allow the vaccination against H9N2 avian influenza virus, as this is widespread in some areas (e.g. Chitwan and Kaski districts) and is of concern to producers. During field missions to Chitwan district, the project management was made aware of the use of a vaccine sourced from India said to contain avian influenza antigen while FAO forwarded information on inquiries directed at international procurement. The project management sought and provided to DAH information on H9 vaccine availability and use.

- The level of preparedness and response capacity achieved through project-led interventions may now be regarded as satisfactory, but the nature of the evolving threat from HPAI in Nepal necessitates a continual review of the DAH strategies and SOPs.

Activity 3.2. Reinforce rapid response training in eight districts

- The training was completed for field staff from five districts during September 2012. Districts participating were as follows:
 - Dhangadhi: Bajhang, Bajura and Achari districts (52 participants of which two were women)
 - Nepalgunj: Rolpa and Jarjokot districts (31 participants of which two were women)

Planned activities for the next six-month period (October 2012 to March 2013)

Output 1: Planning and cross-sectoral coordination at national level strengthened

In order to achieve the above output, the following activities will be carried out:

- Activity 1.1 Support the Government in planning and coordinating inputs at national level. Working closely with DLS, DAH, CVL, VEC and the World Bank-funded zoonoses control project team, the project management will seek to attain a holistic and synergistic government programme that adequately addresses the evolving challenges of avian influenza in Nepal and successfully coordinates the participating stakeholders.
- Activity 1.2 Support regional and international coordination related to disease control. Facilitating links between regional and international projects and programmes with national programmes to encourage effective and efficient use of available resources for disease prevention and control under a One Health approach.

Output 2: Surveillance methodologies assimilated and integrated into DLS' regular programmes

In order to achieve the above output, the following activities will be carried out:

- Activity 2.1 Conduct assessment and planning stakeholder workshops at development region level with inclusion of animal and human health and civil authorities. This activity will focus upon those districts currently deemed to be most at risk of appearance or re-appearance of HPAI and will benefit from the inclusion of local stakeholders and development partners to ensure that available resources are effectively applied to implement national strategies and SOPs.
- Activity 2.2 Provide technical guidance to VEC in designing, setting up, implementing and monitoring disease surveillance activities. The aim will be to ensure that all surveillance activities, however funded, fall under the guidance and overview of the VEC, such that data can be effectively collated and analysed to provide the Director-General of DLS through DAH with evidence-based information upon which control strategies can be dynamically directed. The principal mechanism to effect this will be through programmed meetings of a technical group under the chairmanship of the Programme Director, Animal Health through which the project management will provide technical guidance and links to appropriate ECTAD Technical Units.
- Activity 2.3 Provide technical orientation to the concerned field staff at district and regional level on the effective implementation of targeted active surveillance for HPAI.

The aim will be to encourage the incorporation of surveillance activities into the district and regional programmes to engender sustainability beyond the period of project support. This will build upon the experience of the development of this programme over the preceding three project years as well as reflect the current knowledge on the epidemiology of the disease in Nepal.

- **Activity 2.4** In coordination with DAH conduct six-monthly reviews and adjust programmes as necessary.

The challenges presented by HPAI have varied from a cross-border incident in 2009, appearing in the western districts through introduction via infected migratory birds, and more recently re-appearing in the eastern districts and in the capital city itself. This demands continuous assessment. To this end, the Project Management will present DAH with a report reviewing the situation at the conclusion of the major risk period and towards the conclusion of the project year. A workshop will be held to assist the Department in defining its strategy for the next risk period.

Output 3: VEC achieves a comprehensive and evidence-based knowledge on the endemicity of HPAI in Nepal.

In order to achieve the above Output, the following activities will be carried out:

- **Activity 3.1** Support and facilitate epidemiology working groups to analyse available data (national and international) and make recommendations.

Reflecting the need to gain a complete understanding of the epidemiology of H5N1 infection in Nepal to correctly align control measures, the project will facilitate and support epidemiology working groups to consider the implications arising from the information gathered through surveillance activities, laboratory diagnostic findings and also phylogenetic associations submitted to reference laboratories.

- **Activity 3.2** Provide technical guidance to field studies with particular emphasis on market chains and live bird markets in southeastern districts with reference to cross-border chains and Gangetic plain association.

As more government veterinarians are exposed to basic epidemiology training through the Field Epidemiology Training Programme for Veterinarians, the project will seek to guide and mentor epidemiological studies in the field of avian influenza to fill gaps in the knowledge base and provide an additional source of information to feed into the epidemiology working group.

Main challenges encountered and response provided

- Maintaining coordination at DLS level between all actors and agencies involved with the avian influenza programme remains a challenge, even to a greater extent with the entry of the latest World Bank-funded zoonoses project. Other smaller projects, such as the Massey University One Health project also overlap with certain HPAI control objectives while USAID's IDENTIFY element of the EPT project as well as the EU-funded FAO implemented regional SAARC project includes HPAI as one of its target diseases. FAO is well positioned through its ECTAD Unit in Nepal to support and assist the DLS in the task of coordinating animal health aspects, keeping abreast of developments and interacting with relevant partners.
- The pattern of HPAI outbreaks from year to year continues to pose questions to the authorities responsible for detection, diagnosis and control. The reappearance of the disease in the eastern region in 2012 was not anticipated, as the focus of disease in the preceding two years had been in the central and western regions. However, the 2012 outbreaks were shown to be owing to the same clade of the H5N1 virus that had caused the 2012 and 2011 outbreaks, but different from the clade associated with the earlier 2009 outbreaks. A full picture of the dispersal of avian influenza virus in Nepal is still lacking. The project has contributed significantly to the existing knowledge through support of an effective targeted active surveillance programme to enhance the information gathered through passive reporting of suspect HPAI cases, and continues to encourage the integration of this methodology into the regular government programme.

Main progress made towards the achievement of project outcomes**Output 1: Cross-sectoral coordination at national level strengthened**

- Notwithstanding its modest annual operating budget provisions, this USAID-funded project, active in Nepal over a six-year period, has developed a comprehensive understanding of the issues that bear upon HPAI prevention, detection and control in Nepal. The Project Management's close working relationship has ensured fruitful collaboration with DLS and the technical units of DAH, while FAO's standing in the forefront of global HPAI control strategy development and its leading position in adopting a One Health approach has contributed to the Project Management maintaining an overarching and effective communication with development partners and national stakeholders.

Output 2: Aspects of disease surveillance related to outbreak investigation strengthened

- In close collaboration with VEC, the project developed a comprehensive HPAI surveillance programme, including country-wide passive surveillance supported by active surveillance targeting districts categorized as high risk. Combined with support to the veterinary diagnostic laboratories, this has provided a basis for monitoring the avian influenza situation. The results from this programme have guided continued evaluation of national strategy and the mechanisms for its implementation.

Project Monitoring Sheet: **OSRO/RAS/605/USA Baby 03**

Project Title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **October 2012 to March 2013**

Country: Nepal
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/605/USA Baby 03
Budget: USD 1 494 000 (Phases I-VI) and USD 100 000 (Phase VII)
Total budget: USD 1 594 000
Effective starting date: 1 August 2006
Planned end date: 30 September 2013
<p>Context of the project</p> <p>The project supports the Government of Federal Democratic Republic of Nepal in strengthening its capacity to detect and contain Highly Pathogenic Avian Influenza (HPAI). The first outbreaks of HPAI in Nepal occurred during the period from January to March 2009. In 2010, multiple outbreaks occurred during the same months, with another single outbreak detected in the poultry-producing hub of Chitwan in October. The 2009 outbreaks were caused by H5N1 virus of clade 2.2, prevalent in West Bengal, while the 2010 outbreaks were attributed to clade 2.3.2 and is presently classified as 2.3.2.1. During the period from November 2011 to March 2012, nine outbreaks were detected in poultry in the eastern region and three in the Kathmandu valley. Two cases were also recorded in wild birds. Towards the end of 2012 two further outbreaks in the Kathmandu valley were confirmed as H5N1 in reference laboratories while during the first months of 2013, 14 suspected outbreaks were diagnosed as H5 infections at the Central Veterinary Laboratory (CVL), Kathmandu. All isolated cases from 2010 onward have been shown to be closely related; this clade is now endemic in Nepal. The Government's resources, including those provided by international donors, have been severely stretched. The project has provided essential capacity building for preparedness and response.</p>
<p>Objectives of the project</p> <p>The overall objective of the project is for HPAI and other emerging infectious diseases to be effectively prevented and controlled on a national scale, thereby minimizing risks to human health, food security and livelihoods. The anticipated outcome is that the Department of Livestock Services (DLS) is enabled for early detection, prompt and accurate diagnosis, and effective response to HPAI at the national level.</p>
<p>Activities planned for the reporting period (October 2012 to March 2013)</p> <p>Output 1: Planning and cross-sectoral coordination at national level strengthened</p> <p>In order to achieve the above output, the following activities were planned:</p> <p>Activity 1.1 Support the Government in planning and coordinating inputs at the national level.</p> <p>Working closely with DLS, CVL, Directorate of Animal Health (DAH) and the Veterinary Epidemiology Centre (VEC), the project management will seek to attain a holistic and synergistic government programme that adequately addresses the evolving challenges of avian influenza in Nepal and successfully coordinates the participating stakeholders.</p> <p>Activity 1.2 Support regional and international coordination related to disease control.</p> <p>Facilitating links between regional and international projects and programmes with national programmes to encourage effective and efficient use of available resources for disease prevention and control under a One Health approach.</p>

Output 2: Surveillance methodologies assimilated and integrated into DLS' regular programmes

In order to achieve the above output, the following activities were planned:

Activity 2.1 Conduct assessment and planning stakeholder workshops at development region level with the inclusion of animal health, human health and civil authorities.

This activity will focus on those districts currently deemed to be most at risk of appearance or re-appearance of HPAI and will benefit from the inclusion of local stakeholders and development partners to ensure that available resources are effectively applied to implement national strategies and standard operating procedures (SOPs).

Activity 2.2 Provide technical guidance to the VEC in designing, setting up, implementing and monitoring disease surveillance activities.

The aim will be to ensure that all surveillance activities, however funded, fall under the guidance and overview of the VEC, such that data can be effectively collated and analysed to provide the Director-General (DG) of DLS through DAH with evidence-based information upon which control strategies can be dynamically directed. The principal mechanism to effect this will be through programmed meetings of a technical group under the chairmanship of the Programme Director, Animal Health (PD-AH), through which the project management will provide technical guidance and links to appropriate ECTAD technical units.

Activity 2.3 Provide technical orientation to the concerned field staff at district and regional level on the effective implementation of targeted active surveillance for HPAI.

The aim will be to encourage the incorporation of surveillance activities into the district and regional programmes to engender sustainability beyond the period of project support. This will build upon the experience of the development of this programme over the preceding three project years and also reflect the current knowledge on epidemiology of the disease in Nepal.

Activity 2.4 In coordination with DAH conduct six-monthly reviews and adjust programmes as necessary.

The challenges presented by HPAI have varied from a cross-border incident in 2009, appearing in the western districts through introduction via infected migratory birds, and more recently re-appearing in the eastern districts and in the capital city itself. This demands continuous assessment. To this end, the Project Management will present DAH with a report reviewing the situation at the conclusion of the major risk period and towards the conclusion of the project year. A workshop will be held to assist the Department in defining its strategy for the next risk period.

Output 3: VEC achieves a comprehensive and evidence-based knowledge on the endemicity of HPAI in Nepal.

In order to achieve the above Output, the following activities were planned:

Activity 3.1 Support and facilitate epidemiology working groups to analyse available data (national and international) and make recommendations.

Reflecting the need to gain a complete understanding of the epidemiology of H5N1 infection in Nepal in order to correctly align control measures, the project will facilitate and support epidemiology working groups to consider the implications arising from the information gathered through surveillance activities, laboratory diagnostic findings and also phylogenetic associations submitted to reference laboratories.

Activity 3.2 Provide technical guidance to field studies with particular emphasis on market chains and live bird markets in south-eastern districts with reference to cross-border chains and Gangetic plain association.

Activities undertaken during the reporting period (October 2012 to March 2013)

Output 1: Planning and cross-sectoral coordination at national level strengthened

Activity 1.1 Support the Government in planning and coordinating inputs at the national level.

The project team has worked closely with DLS, DAH, CVL and VEC particularly in addressing the challenges posed by the several outbreaks of HPAI identified during the reporting period.

Activity 1.2 Support regional and international coordination related to disease control.

The project has facilitated participation of DLS officers in the Prince Mahidol Award Conference to encourage a One Health approach to disease control. In addition to ongoing coordination between the Food and Agriculture Organization of the United Nations (FAO) regional Emergency Centre for Transboundary Animal Diseases (ECTAD) unit and the DLS, the project team has assisted in the organization and implementation of real time foot-and-mouth clinical and epidemiological studies organized by FAO headquarters. Links have been maintained with the European Unions-Highly Pathogenic Emerging Diseases (EU-HPED), South Asian Association for Regional Cooperation (SAARC) regional project. A meeting with officers from the United States Embassy together with colleagues from the United States Agency for International Development (USAID) served to update the latter on the developing HPAI situation in Nepal.

Output 2: Surveillance methodologies assimilated and integrated into DLS' regular programmes

Activity 2.1 Conduct assessment and planning stakeholder workshops at development region level with the inclusion of animal health, human health and civil authorities.

This activity has been rescheduled to April and May 2013 owing to the prior demands on the regional and district offices of the re-emerging HPAI outbreaks during the winter semester.

Activity 2.2 Provide technical guidance to VEC in designing, setting up, implementing and monitoring disease surveillance activities.

The national project director has collaborated extensively with the PD-AH and the staff of the VEC in the planning and implementation of the HPAI surveillance programme. A joint monitoring programme has been set up with field visits to 19 district livestock service offices (DLSOs) and 26 service centres in three of the five development regions operating as active surveillance sites.

Activity 2.3 Provide technical orientation to the concerned field staff at district and regional levels on the effective implementation of targeted active surveillance for HPAI.

Nine surveillance orientation workshops have been completed to date, benefiting 265 field staff (including 10 female staff members), from 20 high-risk and 21 medium-risk districts in the five development regions. Information was given on the national surveillance programmes (both passive and active) and the methodology and practice of the active surveillance system was reinforced.

Activity 2.4 In coordination with DAH conduct six-monthly reviews and adjust programmes as necessary.

The project team has drawn on multiple data sources through: (i) face-to-face interaction with technical unit officers at the central, regional and district levels; (ii) interaction with field staff and farmers; (iii) results gathered from regional and central laboratories; and (iv) confirmatory and analytical tests conducted in overseas reference laboratories. This was aimed at assembling an accurate picture of the worrying developments and apparent expansion of the disease in the country. Project Management will present DAH with a report reviewing the situation at the conclusion of the major risk period (Oct-Mar) and

again towards the conclusion of the project year. The information presently at hand has been communicated to the Nepal office of USAID (Feb 2013) and also through the Annual Regional ECTAD-RAP (Regional Office for Asia and the Pacific) Meeting in Bangkok (28 Feb – 1 March 2013).

Output 3: VEC achieves a comprehensive and evidence-based knowledge on the endemicity of HPAI in Nepal.

Activity 3.1 Support and facilitate epidemiology working groups to analyse available data (national and international) and make recommendations.

In coordination with the regional support unit of the FAO-EU-SAARC programme, and with guidance from the relevant regional experts at ECTAD-RAP, the project encouraged the forming of the epidemiology working group which is now active and is conducting investigation into the status and relevance of the apparent high prevalence of H9N2 in the country and particularly in the major poultry production zones. The outcome is intended to guide the DLS on its attitude towards vaccination against this sub-type as demanded by the commercial producers.

Activity 3.2 The project team has provided technical guidance to the concerned parties based on the project's own poultry market chain studies in order to assist in the elaboration of study proposals on market chains involving other food producing species.

Planned activities for the next six-month period (April 2013 to September 2013)

Output 1: Planning and cross-sectoral coordination at national level strengthened

Activity 1.1 Support the Government in planning and coordinating inputs at national level.

The project team will work closely with the DLS and particularly with the DAH, CVL and VEC to address concerns relating to the HPAI diagnostic capability at the CVL and related Regional Veterinary Laboratories (RVLs). Together with FAO colleagues from the Kathmandu-based Regional Support Unit (RSU) of the FAO-EU-SAARC regional programme, the project team will facilitate the collection of data to assist in decision making on the question of vaccination against the H9N2 sub-type virus prevalent in Nepal and consider the findings in relation to the effects on poultry production and possible interference with H5N1 detection.

Activity 1.2 Support regional and international coordination related to disease control.

The project team will continue the coordination with FAO-ECTAD-RAP to provide an emergency expert mission to examine and investigate variations in the laboratory findings between the CVL and reference laboratories to identify possible causes and to make recommendations for improvement. As a first step, an FAO virologist is anticipated to be fielded in early April 2013 with financial support from this project. At the request of the PD-AH, the Country Team Leader will continue efforts to identify international technical assistance and associated funding to implement a follow-up mission to the IDENTIFY- funded bio-safety mission with particular regard to the completion of the post-mortem room facilities and the adoption of satisfactory SOPs to reduce possible cross contamination in that unit. Similarly, efforts will be continued to identify an appropriate expert and required funding to support a longer-term (one month) duration mission to review and upgrade the operating procedures in the CVL virology section. The Country Team Leader will continue interaction with relevant FAO-ECTAD-RAP experts to provide necessary tools to analyse the need for action to control H9N2 infection. The project team will coordinate with the USAID country office to ensure the latter is kept informed of developments and FAO's analysis of the situation and needed responses.

Output 2: Surveillance methodologies assimilated and integrated into DLS' regular programmes

Activity 2.1 Conduct assessment and planning stakeholder workshops at development region level

with inclusion of animal health, human health and civil authorities.

During the period, the project will organize three workshops, one each in the central, eastern and western development regions in advance of the next risk period. The focus will be on those districts currently deemed to be most at risk of appearance or re-appearance of HPAI and will benefit from the inclusion of local stakeholders and development partners to ensure that available resources are effectively applied to implement national strategies and SOPs.

Activity 2.2 Provide technical guidance to the VEC in designing, setting up, implementing and monitoring disease surveillance activities.

The project team will extend the gains already achieved in the handover of avian influenza surveillance activities to the VEC through technical collaboration with the PD-AH and joint field work with the VEC.

Activity 2.3 Provide technical orientation to the concerned field staff at district and regional level on the effective implementation of targeted active surveillance for HPAI.

The process of incorporation of surveillance activities into the district and regional programmes is advancing but the methodology is less well understood in some districts that have not benefited from direct FAO surveillance management in the past. The VEC will be supported in monitoring the implementation in those districts deemed deficient and training of surveillance site community contact persons will be conducted in two eastern region locations during this period.

Activity 2.4 In coordination with DAH conduct six-monthly reviews and adjust programmes as necessary.

The reappearance of H5N1 HPAI during the risk period of October to March appears to be well established. While the disease favours poultry-dense districts, it has shown the ability to appear over a wide area of the country from the far east to the far west. The department is tasked with maintaining stakeholder alertness and ensuring that the Government services are efficient in confirming infection and responding accordingly. The project will coordinate with the DAH in conducting six-monthly lessons learned review workshops.

Output 3: VEC achieves a comprehensive and evidence-based knowledge on the endemicity of HPAI in Nepal.

Activity 3.1 Support and facilitate epidemiology working groups to analyse available data (national and international) and make recommendations.

Earlier work has indicated that Nepal faces three significant risks for introduction of HPAI. Cross border introduction through informal trading patterns and introduction by infected migratory birds add to the possible resurgence from virus maintained in domestic duck populations. Value chain studies have given an understanding of the movement patterns that facilitate spread. The project team will assist the department in building on this basic knowledge with the additional information obtained through analysing the outbreak pattern from each new wave of outbreak and to interpret this data to identify required adjustments to the controls in place.

Activity 3.2 Provide technical guidance to field studies with particular emphasis on market chains and live bird markets in south-eastern districts with reference to cross-border chains and Gangetic plain association.

The project team has acquired a considerable database of information and extensive field based knowledge of the factors concerned in the maintenance of H5N1 infection in Nepal and is ready to share and discuss this information with colleagues within the department in order to contribute to efforts that throw light on issues that demand further study.

Main challenges encountered and response provided

- The early identification of outbreaks calls not only for awareness and alertness on the part of poultry keepers but also for their understanding of the importance of this poultry disease in terms of pandemic prevention and their cooperation with government policies and strategies for its control and elimination. Such cooperation is only possible if: (i) the measures imposed on the producers can be seen by them as reasonable in relation to the degree of threat; (ii) the compensation offered is adequate; and (iii) the assistance given in re-establishing production in commercial units is sympathetic to the economics of production. Without these inducements, owners will be tempted to limit their financial losses either by destroying their own flocks with a view to immediate replacement or, when possible, marketing their birds, even at reduced returns, which contributes to disease spread. Government policy with regard to response and compensation has moved significantly over time to reduce the negative impact of control measures on flock owners. Culling zones have been curtailed from a three kilometre radius around an infected premises to the actual premises itself and in contact properties. Although, compensation has been increased, in many cases, it remains below actual market value. Furthermore, restocking periods have been reduced. The adjustments made are still below producers' expectations and more needs to be achieved.
- Critical to the Government's strategy of early detection and rapid response is the capability to provide a rapid and accurate mechanism for confirming the presence of the H5N1 avian influenza virus. To this end, specific capacity development has been a corner stone of international assistance, mediated through technical assistance, in-house training and overseas placements in accredited reference centres. To some extent, this investment has been undermined through transfer of skilled staff members from the core diagnostic facilities to other units. Concerns have been raised over recent diagnostic outcomes that merit urgent attention to allay challenges. The project has responded by arranging for a short-term training mission by an FAO virologist skilled in this area. In the long term, there is a need for CVL participation in regional or international proficiency testing programmes to maintain confidence.

Main progress made towards the achievement of project outcomes

1: Planning and cross-sectoral coordination at national level strengthened

Notwithstanding its modest annual operating budget provisions, this USAID-funded project, active in Nepal over a six-year period, has developed a comprehensive understanding of the issues that bear upon HPAI prevention, detection and control in Nepal. The Project Management's close working relationship has ensured fruitful collaboration with DLS and the technical units of DAH, while FAO's standing in the forefront of global HPAI control strategy development and its leading position in adopting a One Health approach has contributed to the Project Management maintaining an overarching and effective communication with development partners and national stakeholders.

2: Aspects of disease surveillance related to outbreak investigation strengthened

In close collaboration with the VEC, the project developed a comprehensive HPAI surveillance programme, including country-wide passive surveillance supported by active surveillance targeting districts categorized as high risk. Combined with support to the veterinary diagnostic laboratories, this has provided a basis for monitoring the avian influenza situation. The results from this programme have guided continued evaluation of national strategy and the mechanisms for its implementation.

Quarter II 2010

Project Monitoring Sheet: **OSRO/RAS/605/USA Baby 03**

Project Title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) – Phase IV

Reporting period: April to June 2010

Country: Nepal
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) – Phase IV Code: OSRO/RAS/605/USA
Budget: USD 815 000 (Phase I) and USD 150 000 (Phase II) Total budget: USD 965 000
Effective Starting Date: October 2006
Planned End Date: September 2010
<p>Context of the Project</p> <p>The project is addressing the short- and medium-term actions that are to be undertaken by the Government of Nepal to strengthen its capacity in preventing the introduction of Highly Pathogenic Avian Influenza (HPAI) into the country and minimize its spread in the case of its occurrence. HPAI is presently a serious problem of regional dimensions with continuing outbreaks occurring in the sub-region. During the first quarter of 2009, the first outbreaks in Nepal were recorded. After a ten month period that was free of clinical disease, multiple outbreaks occurred during the period of January to March 2010. In contrast to the previous year, the 2010 outbreaks were attributed to clade 2.3.2 of the H5N1 virus, previously unrecorded in South Asia, suggesting introduction through infected migrating wildfowl rather than cross-border. The Government's resources, including those provided by international donors, have been severely stretched. Under these circumstances, the project has provided an invaluable lifeline for preparedness and response. However, the scenario of declining international support for HPAI control is alarming, coupled with an increasing danger of the disease becoming endemic in Nepal with negative consequences for the livelihoods of smallholder farmers and the control efforts of neighbouring countries.</p>
<p>Objectives of the Project</p> <p>The execution of this project ensures assistance to the Ministry of Agriculture and Cooperatives (MOAC) to implement the National Contingency Plan for HPAI. The project is contributing to the rural development in the country by preventing and controlling the detrimental consequences of HPAI and other emerging infectious diseases in poultry.</p> <p>The outcome of the project is to create an effective mechanism for planning and coordination across sectors and key stakeholders involved in HPAI control activities, particularly with the United States Agency for International Development (USAID) supported projects in Nepal.</p>
<p>Planned activities</p> <p>Output 1: The avian influenza (AI) situation in the country is monitored and the national strategy and plans are updated.</p>

Activity 1.1. Working groups on Animal Health provided with appropriate guidance and technical assistance.

Activity 1.2. Workshops and training exercises conducted in each region to explain new surveillance modalities and facilitate planning of field work.

Activity 1.3. Simulation exercises conducted – one in each of the regions.

Activity 1.4. Emergency Disease Investigation Teams (EDIT) supported through material and logistical support.

Activity 1.5. Review of live bird markets (LBMs) conducted and model facilities established.

Activity 1.6. Design and construct new post-mortem facility at the central veterinary laboratory.

Activity 1.7. Enhanced surveillance programme developed for high risk districts.

Output 2: Improved communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

Activity 2.1. Functional linkages strengthened between projects funded by USAID and other key stakeholders.

Activity 2.2. Assist the Government in the improvement of the dissemination of information (i.e. bulletins, reports and updates).

Activities undertaken during the reporting period

Output 1: The avian influenza (AI) situation in the country is monitored and the national strategy and plans are updated.

Activity 1.1. Working groups on Animal Health provided with appropriate guidance and technical assistance.

- The enhanced surveillance programme, expanded in November 2009 to 12 districts funded through this project with the remaining 14 high risk districts funded through the Avian Influenza Control Project (AICP), played a major role in detecting outbreaks in the previous quarter. There is room for improvements in some districts, emphasizing the need for adequate monitoring and follow up. Overall, this targeted surveillance in the field is proving to be an effective tool, but it is costly and unlikely to be prioritized by the government once donors' support lapses. The targeted six months duration during the period of highest threat terminated at the end of April.
- The national strategy remains focused on early detection and effective response based on culling poultry on affected properties. The culling zone is restricted to the immediate area and drawn up using natural barriers where possible. Compensation is paid and the level of compensation has recently been raised although still well below market value. Secondary outbreaks detected through surveillance around outbreaks are similarly culled although the cull is further restricted, often to the affected household/farm. Standard Operating Procedures (SOPs) are under constant scrutiny. Presently, the Department of Livestock Service (DLS) is shackled by the need to declare outbreaks in newly affected districts through cabinet decision in order to activate the emergency provisions for resource provision to affected districts. Secondary outbreaks in the same or immediately

adjoining districts do not present this obstacle and are referred to as “hotspots”.

Activity 1.2. Workshops and training exercises conducted in each region to explain new surveillance modalities and facilitate planning of field work.

- Rapid response team (RRT) training modules (culling, disposal, decontamination, sampling and surveillance) were conducted in Biratnagar for field technicians from Panchthar, Dhankutta, Udayapur and Morang districts. Among the total of 49 trainees were five female technicians.

Activity 1.3. Simulation exercises conducted – one in each of the regions.

- Two simulation exercises were conducted during this quarter. These were carried out in Mahottari (in the Terai belt of the central region) and in Surkhet in the mid-western region. Three simulations have now been conducted in the central region which is the main poultry production area and one each in the western, mid-western and far-western development regions. The USAID funded STOP AI project has conducted short simulations in the eastern region districts.

Activity 1.4. Emergency Disease Investigation Teams (EDIT) supported through material and logistical support.

- The EDIT programme has been supported by the provision of a mobile laboratory which has been handed over to the Department of Animal Health (DAH). This facility will strengthen the Department's ability to cope with multiple outbreaks, especially in districts with no or limited laboratory support. At the central veterinary diagnostic laboratory, a new post mortem room facility and incinerator room to allow safe and efficient handling of potentially infected poultry carcasses has been designed, tendered and contracted with construction now underway.

Activity 1.5. Review of live bird markets (LBMs) conducted and model facilities established.

- The poultry market chain study is continuing. An interim report has been received and reviewed through a short workshop resulting in a number of recommendations mainly directed at the quality of presentation. The study will produce updated information on poultry market chains and particularly on volumes, modalities and risks. The international consultant on poultry markets made two further missions to Nepal. Designs and costs for a model LBM have been prepared and the Kathmandu Municipality has fully supported this initiative. The market location has been agreed and scope of work completed to permit signature of a Letter of Agreement (LoA) with the Municipality for construction of LBM. Operational guidelines are in hand and the needs for training both municipality inspectors and vendors using the facility are under discussion.

Activity 1.6. Design and construct new post-mortem facility at the central veterinary laboratory.

- Following agreement on the design issues, detailed cost estimates and bid documents were prepared in April. After completing the selection process, a contract was signed with the selected construction company in May and work on the site commenced in early June.

Activity 1.7. Enhanced surveillance programme developed for high risk districts.

- The enhanced active surveillance programme operating in 12 key high risk districts at four strategic sites in each district during the anticipated high risk period (November to April) was brought to a close and the final sets of reports collected and analysed.

Output 2: Improved communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

Activity 2.1. Functional linkages strengthened between projects funded by USAID and other key stakeholders.

- Coordination meetings with the AICP and DAH take place routinely.
- A field visit to Chitwan in April was undertaken to follow up the HPAI outbreak control in that district and interchange ideas with the DLS Office and avian diseases laboratory staff. Every opportunity is taken during field missions to share information with regional and district stakeholders, from both technical and civil authorities.
- A number of meetings were held with officers from the marketing directorate and the Kathmandu municipality relating to the LBM programme in addition to a small workshop to discuss the expert's initial findings, which was held on 13 April 2010.
- Discussions with the Chief District Officer, Surkhet were held during the preparations for the mid-western region HPAI simulation exercise.
- A brainstorming session to discuss phase five activities was held with senior officers of the DLS and attended by a representative from the USAID office.
- The USAID office at the US Embassy was the location for the meeting to update USAID on the investigations into the causal virus of the 2010 outbreaks.
- Meetings to discuss funding gaps and other related issues have taken place with relevant staff at the Asian Development Bank (ADB) office in Kathmandu and with members of World Bank (WB) monitoring missions.
- Meetings have been maintained with the MOAC Secretary and Joint Secretary, Planning.
- Information sharing with the USAID funded cross-border project (OSRO/RAS/701/USA) and the Food and Agriculture Organization of the United Nations (FAO) Representative have also taken place frequently.

Activity 2.2. Assist the Government in the improvement of the dissemination of information (i.e. bulletins, reports and, updates).

- The production of training films on simulation exercises using material gathered during the Kaski simulation with some additional footage is nearing completion.
- Continued updating of SOPs for dealing with outbreaks and further modification of the legislation for HPAI control have raised the need to update the existing compendium of documents on HPAI, which has been found so useful by concerned stakeholders and government staff. Updated documentation is being assembled with a view to producing a new edition during the next quarter.
- Reports and recommendations from short term consultants have been produced and distributed to appropriate sections of the DLS and a laboratory manual for real time reverse transcription – polymerase chain reaction (RT-PCR) work has been made available.

Planned activities for the next quarter

Output 1: The avian influenza (AI) situation in the country is monitored and the national strategy and plans are updated.

Activity 1.1. Working groups on Animal Health provided with appropriate guidance and technical assistance.

- No outbreaks were detected in the quarter under review. Climatic conditions in the coming quarter will not favor virus survival and consequently we believe the risk of

H5N1 outbreaks to be low. Taking into account economic constraints, the operation of the surveillance sites will be suspended during this period and reliance made on passive reporting of unusual mortality in susceptible species. The fate of the virus following the January to March epidemic is unknown. Outbreaks detected (or reported) were predominantly in backyard/village flocks with involvement of small commercial units in some villages. Control measures applied in conjunction with mortality caused directly by the infection combined with adverse climatic conditions for virus survival may have completely eliminated the virus, and the country may be truly free of infection. However, it is also possible that the virus may be surviving in ducks or other domestic or wild species capable of asymptotically harboring the infection. Under the conditions that are favourable to the virus survival, the environmental load builds up to a point where susceptible species succumb to the disease. Alternatively, the stresses of the winter period, both nutritional and climatic may lower the resistance of carriers and precipitate clinical disease or at least enhanced shedding of the virus. Subject to available funding, the project will seek to shed light on this issue through the conduct of sero-surveillance of ducks in areas where the disease was confirmed and also in buffer zones around wetlands and lakes known to be stop-over points for migrating wildfowl.

Activity 1.2. Workshops and training exercises conducted in each region to explain new surveillance modalities and facilitate planning of field work.

- The remaining RRT training planned for this year will be conducted.

Activity 1.3. Simulation exercises conducted – one in each of the regions.

- The planned field AI simulations have been completed. A manual will be prepared to facilitate future simulation exercise implementation.

Activity 1.4. Emergency Disease Investigation Teams (EDIT) supported through material and logistical support.

- The mobile lab has been delivered and may be employed on the planned surveillance exercise mentioned in 1.1. above.

Activity 1.5. Review of live bird markets (LBMs) conducted and model facilities established.

- The project management will work with the contracted consultants to ensure that anticipated outcomes of the poultry market chain study are met and the study is concluded during the coming quarter. Upon completion of the input from the LBM safety expert and conclusion of an LoA for construction of the facility by the Kathmandu Municipality, the project will follow through to completion of the construction phase. Working with the Directorate of Marketing and the municipality public health authorities, it will develop and implement a training and orientation programme for both inspectors and vendors.

Activity 1.6. Design and construct new post-mortem facility at the central veterinary laboratory.

- The construction of the new post mortem facility is underway and will be monitored by the civil engineer engaged under the WB funded project.

Activity 1.7. Enhanced surveillance programme developed for high risk districts.

- The expanded enhanced surveillance programme in the twelve districts now under the project's responsibility will be suspended through the low risk period. A report on the surveillance activities will be prepared and future surveillance plans, taking into account lessons learned from this year, will be developed and discussed with AICP, the Veterinary Epidemiology Centre and DAH.

Output 2: Improved communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

Activity 2.1. Functional linkages strengthened between projects funded by USAID and other key stakeholders.

- Coordination between stakeholders will continue to be encouraged by the project management through frequent interactions with the Director General-DLS, joint secretary, planning, MOAC, USAID office, the directorates of markets and promotion and of animal health. Also engaged will be the AICP management team and FAO Representative as well as related United Nations bodies, particularly the World Health Organisation (WHO) and United Nations Children's Fund (UNICEF) ad hoc meetings with representatives of non-governmental organizations working in the animal and human health field and from visiting missions may be anticipated. Close coordination and sharing of information with USAID funded cross-border project will continue as before.

Activity 2.2. Assist the Government in the improvement of the dissemination of information (i.e. bulletins, reports and updates).

- The production of a training video utilizing the material captured during the Kaski district simulation exercise should be completed during the coming quarter.

Activity 2.3. Provide technical advice to the Department of Livestock Services (DLS) concerning the national HPAI program improvement and implementation.

- The project will organize and fund a series of planned workshops including lessons learned from the 2010 outbreaks and share the outcomes of the market chain study and the programme to develop safe LBMs in the Kathmandu valley. A meeting to review the outcome of the Crisis Management Centre (CMC) mission of March 2010 will be organized with a view to discussing the adoption of recommendations.

Activity 2.4. Provide assistance to the project's working groups on animal health including annual plan, strategic meetings, monitoring and evaluation, translation and publication.

- The Compendium of AI documents will be updated.

Activity 2.5. Upgrade management and operation of Veterinary Epidemiology Units.

- Working groups will be facilitated as necessary with further work on the SOP and support to the laboratory and epidemiology unit development possible target areas.

Main challenges encountered and response provided

- While it appears most likely that the outbreaks experienced during 2010 were introduced through infected migratory wildfowl, it is, nonetheless, acknowledged that the major risk for Nepal is through cross-border trade practices. Current legislation bans the import of poultry or poultry products from infected countries and prohibits licensed imports across land borders with import, mainly of day old chicks, allowed only through the international airport in Kathmandu. Costs of production maintain a higher selling price for both eggs and birds in Nepal in comparison to neighbouring India. This, combined with a deficit in national supply relative to consumer demand, encourages cross-border trade. The prohibition of this trade leads to a substantial and profitable clandestine trade. The nature of the border and other factors that facilitate overcoming border point controls results in this trade while substantial are not being subject to veterinary or public health inspection. Government's strategy of endeavouring to limit or eliminate this trade through a strengthened quarantine service and legislation is doomed to failure. The

project management, supported by international consultant advice, has advocated examining alternative approaches which might include free entry through nominated border points subject to examination by department officials combined with disinfection procedure and allied to advise on monitoring the birds for signs of ill health. This approach may be further enhanced by negotiation on compartments from which importation could be permitted. Accepting this cross-border trade as a reality, the project has focussed upon strengthening surveillance in high risk (mainly border) districts. The ability to deal with outbreaks has been fine tuned through a programme of outbreak simulation exercises and training of field technicians in rapid response activities.

- The likely role of wild birds in the transmission of the 2010 HPAI epidemic poses an added dimension for the animal health authorities. It may be impossible to prevent such transmission of HPAI to Nepal in the future, but the system must be better able to detect cases at the earliest opportunity and to take measures which prevent or limit further spread.
- The outcome of the poultry market study may be important in refining control measures. At the same time, the control measures adopted must be as efficient and cost effective as possible in order to be sustainable by the Government and the role and participation of the private sector in developing and funding these controls addressed.
- Government's lack of adequate financial resources to properly implement the SOPs has lead to reluctance to declare outbreaks because of the financial implications, leaving district offices to struggle with controls with limited district resources.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

Output 1: The AI situation in the country is monitored and the national strategy and plans are updated.

- The project programme involving capacity building of district staff in relation to disease identification, sampling, use of rapid tests, reporting, biosecurity and surveillance methodology as well as the support given to the diagnostic services have contributed significantly to the early detection and effective response to the recent outbreaks. Table top and particularly field simulation exercises have strongly contributed to this progress.

Output 2: Improved communication between key stakeholders that share data, information and knowledge, including reports and publications on HPAI.

- The project has established effective links with all the bodies concerned with delivering HPAI prevention and control programmes and is assisting the government in the management and dissemination of information relating to AI.

Quarter II 2010**Project Monitoring Sheet: OSRO/RAS/703/USA Baby 1 and 2**

Project title: Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan

Reporting period: April – June 2010

Regional component: Central Asia
Project title: Highly Pathogenic Avian Influenza: strengthening cross-border surveillance and containment activities between Afghanistan and Pakistan
Code: OSRO RAS 703 USA
Budget : 1 300 000 (Phase I), 1 300 000 (Phase II), USD 600 000 (Phase III)
Total budget: USD 3 200 000
Effective starting date: 1 April 2008
Planned end date: 30 September 2010
<p>Context of the project</p> <p>The Highly Pathogenic Avian Influenza (HPAI) H5N1 has been detected in the recent past, both in Afghanistan and Pakistan. In Afghanistan, the disease has had a limited spread in time and space, and outbreaks were all detected within a time frame of two months. In Pakistan, outbreaks have been occurring without a clear pattern, and it is likely that the disease is under-reported in the country. It was observed that the outbreaks in Afghanistan were preceded by the outbreaks detected in Pakistan. The introduction of the virus in Afghanistan could have originated from Pakistan, but this information was not confirmed. Therefore, there has been a need to develop joint activities to strengthen the veterinary collaboration between the two countries and to formulate common approaches and strategies.</p>
<p>Objectives of the project</p> <p>Impact</p> <p>The project aims at building a strategic platform where shared approaches - taking in consideration cultural and social features - can be jointly developed by the two countries. This will contribute to the intensification of information exchange and confidence building on both sides. The project aims at improving HPAI surveillance systems and enhance local capacities for early detection and control of HPAI to avoid further spread to non-infected areas of the countries.</p> <p>Outcomes</p> <ul style="list-style-type: none"> • inter-country consensus built on containment measures, communication interventions and socio-economic issues; • laboratory and field services capacity enhanced in Federal Administered Tribal Areas (FATA), Khost, Balochistan, Kandahar, Nangarhar, North Western Frontier Province (NWFP) in Peshawar and Abbotabad districts, Sindh and Balkh provinces; • procedures for border control inspections standardized; • strengthening of the surveillance activities in the different sub-sectors; and • common methodological approach to surveillance in live-birds markets (LBMs) elaborated and agreed upon.

Planned activities

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.1 Regional training workshop on socio-economic issues;

- prepare agenda, select experts, identify the venue and conduct the workshop

Activity 1.1.2 Socio-economic studies on farming practices and market chains.

- after the workshop, prepare the questionnaires to be used for conducting socio-economic studies

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for avian influenza and other poultry diseases;

- enhance laboratory diagnostic capacity in the identified provinces in both countries (FATA, Balochistan, Herat, Kandahar, Nangarhar, NWFP [Peshawar and Abbotabad districts], Sindh and Balkh) through training and setting up of the laboratory equipment
- renovate facilities in the National Reference Laboratory for Poultry Diseases (NRLPD) in Islamabad

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- hold the bi-national training course on recognition of major poultry diseases (the venue will be identified in accordance with the security conditions, and therefore it may be held in a third country, should the security situation in Afghanistan and Pakistan not be improved)

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export of animals and products of animal origin;

- review the current legislation in both countries

Activity 3.1.2 Review and upgrade inspection methodologies.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.1 Regional training workshop on surveillance methods;

- conducted

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector;

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector);

- identify the most suitable candidates for the Master Course in Epidemiology and the respective university to conduct the studies

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (Participatory Disease Surveillance [PDS] training);

- develop Standard Operating Procedures (SOPs) and the manual for the establishment of the sentinel farms and sentinel vendor shops according to the risk factors “likely to be infected” in both countries in order to improve surveillance of avian influenza (AI) and monitoring of the vaccinated farms

Activity 4.1.5 Workshop on communication strategies for villagers; and

Activity 4.1.6 Field activities.

- initiate surveillance activities in the two new provinces (Balkh in Afghanistan and Sindh in Pakistan) after the recruitment of the field veterinarians and para-veterinarians.

Output 5.1 Surveillance in live-birds markets (LBMs) strengthened.*Activity 5.1.1 Workshop on methodology of surveillance in LBMs;**Activity 5.1.2 National training workshop for veterinarians operating in LBMs; and**Activity 5.1.3 Surveillance activities in LBMs.*

- evaluate the effects of LBMs on the trade movement in all provinces that are important for risk assessment purposes in case of outbreaks and have an economic impact on the areas

Activities undertaken during the reporting period**Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.***Activity 1.1.1 Regional training workshop on socio-economic issues;*

- The bi-national training workshop on the economics of disease outbreaks was held in Istanbul, Turkey from 26 to 30 April 2010. The workshop was conducted by Dr Jonathan Rushton, Senior Lecturer in Animal Health Economics Veterinary Epidemiology and Public Health Group, and Barbara Häslar from Royal Veterinary College (RVC), UK. Eleven veterinarians from Pakistan and Afghanistan attended the training workshop. The workshop covered the following aspects: (i) update on FAO activities on HPAI control; (ii) HPAI risk factors and disease mitigation options in Pakistan and Afghanistan; and (iii) concepts of economics, such as opportunity cost, partial analysis, production and productivity. In addition, presentations were delivered on the economics of surveillance, cost benefit analysis and the impact of HPAI. All participants passed an evaluation test that was administered at the end of the training.

Activity 1.1.2 Socio-economic studies on farming practices and market chains;

- A template for LBM and Farm survey was designed and is used in the field to collect data for a descriptive study of the farming and marketing chains extending until the end of the project.

A bi-national (Afghanistan-Pakistan) Training of Trainers (ToT) on communication:

- The Emergency Centre for Transboundary Animal Diseases and Operations (ECTAD) Communication Team, with support from the ECTAD staff from the Headquarters, the South Asia Sub-regional office and the Afghanistan-Pakistan office, conducted a four-day training workshop for provincial level veterinary services participants from Afghanistan and Pakistan. The training workshop on communication strategies for the prevention and control of HPAI and other transboundary animal diseases (TADs) was held in Istanbul, Turkey from 6 to 9 April 2010. The focus of the workshop was to provide capacity development to participants in the fundamentals of current communication approaches. During this workshop, the participants were asked to identify priority areas for strategic communication, policy advocacy support and interventions and to assess the capacity gaps and practical solutions to overcome these gaps.

Field activities.

- The candidate for the position of the System Data Manager was hired in Afghanistan. The newly appointed system data manager attended a four-day training in Islamabad on the Avian Influenza Surveillance Information System (AI-SIS). In Pakistan, the system is undergoing technical and formal evaluation in order to ensure its proper performance and to make improvements to the original format according to the recommendations obtained from the workshop conducted in Pakistan and reviewed in Afghanistan. The

technical evaluation of the system is taking place with respect to the specifications of the software used to link the system to the Geographical Information System (GIS). The computers were distributed in the regions, and the training for the capture of the field information will be conducted in the next quarter.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for avian influenza (AI) and other poultry diseases;

- A national workshop was organized in Islamabad, Pakistan on 4 June 2010 to harmonize the lab testing for AI in the project laboratories together with those laboratories involved in public and private sectors. Ten participants from different sectors participated in this workshop where the procedures adopted by the laboratories for haemagglutination inhibition (HI) and enzyme-linked immunosorbent assay (ELISA) were discussed for harmonization. As a follow-up, guidelines for undertaking proficiency testing in the participating laboratories will be initiated under the project in line with the harmonization procedures.
- Two day-long national training workshops were organized in Karachi and Hyderabad towns in Sindh province on 7 and 8 June 2010 to train district level laboratory technicians of livestock and poultry departments in disease surveillance, field sampling and rapid response practices. Twenty-five persons participated in each workshop.
- One laboratory technician training workshop was conducted in Quetta on 9 June 2010 with 20 participants, and a similar training was conducted in Peshawar (NWFP Province) on 12 June 2010 with nine participants. The trainees were exposed to relevant technical “know how” to undertake sample testing during AI surveillance activities.
- The renovation of the facilities at NRLPD in Pakistan was completed, and they are now used for processing samples from the field taken for virus isolation.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- The training on recognition of major poultry diseases for differential diagnosis of AI was conducted in Istanbul, Turkey from 19 to 23 April 2010 with the participation of six veterinarians from both countries. The objective was a ToT in security measures for field veterinarians.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of animals and products of animal origin;

- The review of the current legislation to import and export poultry and poultry products was completed in both countries, and now the recruitment is underway to identify an international regulations expert to prepare the August bi-national workshop with senior officials from the two countries. Approvals from the Chief Veterinary Officers (CVOs) from both countries were done, and they are working to select the senior officials for participation in the workshop.

Activity 3.1.2 Review and upgrade inspection methodologies.

- After the seminar, the proposal to upgrade the inspection methodologies will be prepared by the expert in trading regulations.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector;

- A one-day meeting was organized in Pakistan on 2 May 2010 to review the on-going AI

surveillance format in different areas of the project. In this regard, both project field veterinarians and those affiliated with national AI control programme participated in a meeting (of eight participants in total) to review and update the in-use surveillance protocols and data collection formats.

- In Afghanistan, the formats were reviewed based on the results obtained from the meeting in Pakistan and changed accordingly.

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector);

- CVOs from both countries were requested to nominate the candidates to conduct Master of Sciences Course in Epidemiology; the School of Veterinary Medicine in Melbourne, Australia has been identified as the most convenient school to conduct the formal course, since they offer the program to be completed in one scholar year.
- Trainings in the field were not conducted during this period since other activities were done in other subjects.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (PDS training);

- a ten-days national training course on PDS was conducted in Mazar-e-Sharif, Afghanistan from 1-10 April, 2010 for 16 provincial officers at the end of the course a questionnaire was developed to initiate the PDS activities with MAIL
- One-week training was conducted in Mazar-e-Sharif (12-16 April) for women involved in poultry production on how to establish PDS activities, as women are responsible for raising poultry in villages..

Activity 4.1.6 Field activities.

Afghanistan:

- During the reporting period, 1 639 serum samples were collected and 2 265 swabs were tested in the laboratory for ELISA and agar gel immunodiffusion (AGID). HI test, rapid serological test and real-time reverse transcriptase – polymerase chain reaction (rRT-PCR) for swabs were used. The samples tested positive for the matrix protein type A influenza.
- In Mazar-e-Sharif, the capital city of the Balkh province in Afghanistan, the European Union-funded project will finance the construction of a new laboratory facility, consisting of three rooms for serological diagnosis of AI. The selection of the company was finalized, and the construction work will start soon.
- The Central Veterinary Diagnostic and Research Laboratory (CVDRL) in Afghanistan, participated in a proficiency panel testing organized by FAO through PADOVA reference laboratory together with the other labs in the region. CVDRL demonstrated a success rate of 75 percent in identifying the un-known samples.
- The current security situation did not allow for the planned technical visit by the project Chief Technical Advisor (CTA) to Kandahar and Khost laboratories to monitor the progress made in the laboratory facilities.

Pakistan:

- A total of 3 843 serum samples, 6 391 swabs and 744 organs infected with suspicious cases of influenza were collected during the reporting period, and the laboratory results indicated a continuous circulation of AI H9N2 and Newcastle disease (ND) in the region. In this regard, all standard tests of virus isolation, ELISA, HI, PCR and gene sequencing were carried out to identify the causal agent in suspect cases. During this period, field isolates of H5 and H7 recovered from previous outbreaks were also sequenced, and data was submitted to the related gene bank.
- Training of the provincial laboratories technicians was conducted, as indicated before,

and antigen, antisera and ELISA kits were delivered to the laboratories in Peshawar, Abbottabad, Quetta and Karachi.

- Pakistan is producing its own antigen and antisera for HI test and has distributed them among the participating labs, including the central laboratory in Afghanistan.
- The NRLPD in Pakistan participated in a proficiency panel testing organized by FAO through PADOVA reference lab together with the other labs in the region. NRLPD demonstrated a success rate of 98 percent in identifying the un-known samples.
- The current security situation did not allow for the planned technical visit by the project CTA to Abbottabad and Peshawar laboratories to monitor the progress made in the laboratory facilities.

Output 5.1 Surveillance in live-birds markets strengthened.

Activity 5.1.3 Surveillance activities in LBMs.

- A two-day workshop was organized on 27 and 28 May 2010 in Islamabad, where ten veterinarians from different parts of the project were trained in conducting LBM surveillance.
- The surveillance outputs (for both countries) during the reporting period were included in the 4.1.6 activity above.

Planned activities for the next quarter

Third Project Steering Committee meeting:

As planned in the project document, the objectives of the third project Steering Committee meeting will be to review the project activities and achievements and to identify pending issues. The CVOs of Afghanistan and Pakistan, the project CTA, the project national managers and FAO- ECTAD relevant officers will attend this meeting.

Output 1.1 Common strategies and approaches to surveillance developed in the different sub-sectors in the concerned areas.

Activity 1.1.2 Socio-economic studies on farming practices and market chains.

- Questionnaires will be used in the field during the next quarter.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

Activity 2.1.1 Training on laboratory methods for avian influenza (AI) and other poultry diseases;

- Short-term training on a joint reference FAO/ the World Organization for Animal Health (OIE) laboratory will be arranged for a person from the central laboratory in Pakistan involved in the production of AI reagents for the provincial diagnostic and surveillance units.
- National training courses will continue in Afghanistan and will be organized at the central and provincial laboratories to train the provincial laboratory staff to conduct serological tests.
- Pilots test will be used in provincial laboratories for conducting serological tests and reporting results to the central laboratory.
- The SOPs are under review, and the laboratory manual will be completed in the next reporting period.

Activity 2.1.2 Training on clinical recognition of main poultry diseases.

- The national trainings will be conducted during the next quarter.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

Activity 3.1.1 Seminar on the legislation framework and procedures for import-export issues of

animals and products of animal origin;

- The bi-national review will be completed in the meeting on the subject that has been scheduled for 5 August and 6 August 2010 in Dubai.

Activity 3.1.2 Review and upgrade inspection methodologies.

- The review will take place after the seminar with the recommendations obtained.
- Trainings in both countries for inspectors on international inspection procedures will be conducted during the next quarters.

Output 4.1 Capacity enhanced to improve the overall surveillance system.

Activity 4.1.1 Regional training workshop on surveillance methods;

- The up-dated formats for AI will be distributed to the surveillance teams.
- A short training course will be conducted for data collection by using the new AI-SIS surveillance system developed in the project.
- Pilot tests will be conducted in both regions to facilitate the exchange of information between the regional epidemiological units, the central pilot unit and the central laboratory.
- Pilot tests for the analysis of the results collected under the AI-SIS will be conducted in the following quarter.
- The most suitable candidates for the Master Course in epidemiology will be identified, and the terms of the LoA will be finalized with the selected university to conduct the studies.

Activity 4.1.2 National training for the surveillance teams operating in the commercial sector;

- National trainings will continue in the provinces of both countries.

Activity 4.1.3 National training for field veterinarians (from the government, NGOs, private sector);

- National trainings on sample methodologies will be provided.

Activity 4.1.4 Training for the surveillance teams that will operate in the rural areas (PDS training);

- The PDS report formats will be distributed to the veterinary officials to conduct the studies.

Activity 4.1.5 Field activities.

- Surveillance activities will continue.

Output 5.1 Surveillance in live-birds markets strengthened.

Activity 5.1.1 Workshop on methodology of surveillance in LBMs;

- The workshop on methodology of surveillance in LBMs will be conducted in each country.

Activity 5.1.2 National training workshop for veterinarians operating in LBMs;

- A workshop will be conducted in both countries during the next quarter.

Activity 5.1.3 Surveillance activities in LBMs.

- The evaluation of the LBM with respect to the trade movement will be implemented in all provinces that can provide information on risk assessment in case of an outbreak and on economic impact on the areas.

Main challenges encountered and response provided

- The current situation related to the new Animal Health and Production Directorate structure that will be established soon in Afghanistan will need to be addressed, as the FAO actions have been discussed with the Technical Deputy Minister of Agriculture.
- The appointment of the new CVO in Pakistan has taken place, and care needs to be

taken to ensure that the newly appointed CVO is fully informed about the ongoing and planned project activities.

- As a result of the upcoming elections of the parliament authorities, the present security conditions in Afghanistan need to be taken into consideration while organizing the upcoming project activities. In Pakistan, the threats to international activities are also to be considered. Restrictions to the movement of UN staff may hinder the implementing of project activities.
- Central epidemiology units in both countries are not participating in the project despite the efforts made in the past to incorporate them. The central epidemiology unit in Afghanistan, in particular, needs to be re-established and provided with trained personnel in order to generate reliable disease information needed to implement a prevention and control plan.
- More time will be required to implement the earlier planned objectives because of the difficulties encountered as a result of the security reasons in both countries. As most of the provisions are on the ground, it may require a few more months to make them operational. As a result of this, the project activities may continue beyond the stipulated time period of September 2010 with the already allocated funds.

Main progress made towards the achievement of project outputs

Output 1.1 Common strategies and approaches to surveillance developed in the different subsectors in the concerned areas.

- Considering the high risk of virus transmission, the surveillance activities in the cross-border region were improved. During this reporting period, no evidence of the presence of HPAI virus in the countries was found. However, there is a need for awareness about the pandemic potential of H9N2 viruses, H7 viruses and ND, and an evaluation of the control strategies should be carried out.

Output 2.1 Diagnostic ability of field and laboratory staff enhanced.

- Routine surveillance in project areas detected consistent circulation of H9N2 AI virus and ND virus at their laboratories. It is, thus, recommended to establish a control program to reduce the incidence of the virus circulation.
- The new facility, established in Pakistan, for virus isolation at a level of biosecurity that is higher than level 2 will conduct the biosafety diagnosis for the region.
- A mission from OIE will review the conditions of the laboratory in Pakistan and its suitability in becoming a twin laboratory of the joint FAO/OIE reference laboratory, which will be important for the regional diagnosis of AI.

Output 3.1 Procedures for inspection of poultry and poultry products at border control posts standardized.

- Progress was limited as a result of a severe security situation at the border areas.

Output 4.1 Capacity building developed to improve the overall surveillance system.

- The advances made to the data management system for surveillance that will be implemented in both countries will facilitate the analysis of the results of laboratory and field research.

Quarter II 2010

Project Monitoring Sheet: OSRO/RLA/901/USA

Reporting period: April - June 2010

Regional Component: Latin America and the Caribbean

Project Title: Strengthening regional capacity for surveillance of influenza A H1N1 virus and other subtypes of swine flu in pig populations in Central America and other countries in Latin America

Code: OSRO/RLA/901/USA

Budget: USD 700 000

Effective Starting Date: 28 July 2009

Planned End Date: 30 September 2010

Context of the Project:

Pandemic H1N1 2009 has been reported in animals (pigs and turkeys) in several countries, including Argentina, Canada, Chile and the United States on the American continent, raising the concern of the international community. Pigs can harbour influenza viruses of both avian and mammalian origin and act as "mixing vessels" in which the re-assortment of human, swine influenza (SI) and avian influenza (AI) virus may occur, producing a virus capable of human-to-human transmission leading to human pandemics.

Studies in the developed countries have shown that various subtypes (H1N1, H3N2 and H1N2) co-circulate in pig populations in those countries. However, it is still unknown whether these subtypes are also widespread in swine populations in Central America and the neighbouring countries because of the lack of appropriate monitoring and surveillance networks for SI.

Objectives of the Project:

The project aims at strengthening the surveillance capacities of the affected countries, or the countries at risk, to deal with Influenza A/H1N1, other influenza viruses and other transboundary animal diseases (TADs) in Central America and neighbouring countries.

Specifically, the project will improve the knowledge of the epidemiology and ecology of Influenza type A viruses in swine populations in the target countries.

Planned activities for the reporting period:

Output 1: The ECTAD Decentralized Coordination Unit (DCU) for Central America is established and operational.

Activity 1.4: Provision of services to the Central American and neighbouring countries.

The Emergency Center for Transboundary Animal Diseases Operations (ECTAD) Decentralized Coordination Unit (DCU) in Panama is responsible for continuing the backstopping of the veterinary services of the beneficiary countries and reinforcing the regional epidemio-surveillance network in order to improve communication and the exchange of information on TADs and other respiratory diseases in swine populations, as well as to provide special support to countries facing outbreaks, if needed.

Output 2: Surveillance activities implemented and the extent and intensity of possible influenza viruses type A in circulation better understood and a proposal for contingency plans prepared.

Activity 2.1: Signing of a Letter of Agreement (LoA) with a research institution for field investigation/ training.

Signing of an agreement with the National Veterinary Services Laboratory (NVSL) in Ames, USA is underway. This institution has agreed to provide: (i) diagnostic training to LADIVES (Vesicular Disease Diagnostic Laboratory, Panama City, Panama) premises; (ii) training of a LADIVES expert on virus sequencing; and (iii) its services as a reference laboratory for positive cases detected in LADIVES.

Activity 2.3: Training and conducting of field investigations and finalization of the guidelines.

A regional workshop is held in Panama on 13 and 14 May 2010 with participation of all national project coordinators to discuss biosecurity measures in the pig sector and to agree on common procedures for the forthcoming surveillance and sample collection activities to be carried out at the national level. The joint FAO/ International Office of Epizootics (OIE)/ World Bank (WB) document on good practices for biosecurity in the pig sector (<http://www.fao.org/docrep/012/i1435e/i1435e00.htm>) is used as a reference guide for the meeting.

Activity 2.5: Awareness raising and reporting of respiratory cases.

A regional workshop to be held in Panama on 11 and 12 May 2010 with the participation of 19 experts from all beneficiary countries (see activity 5.1). Participants will be requested to organize national workshops on awareness raising and reporting in collaboration with the International Regional Organization for Plant and Animal Health (OIRSA). First national workshops are organized in the beneficiary countries.

Output 3: National animal health information systems to collect, process and analyse data from surveillance activities reinforced.

Activity 3.1: Procurement and distribution of equipment and software.

Funds have been allocated and technical specifications have been prepared to purchase the necessary equipment to install TADInfo in four countries and to strengthen information management capacities in the others. Because the computers become outdated rapidly, the project is handling the purchase of the computers after the customization of the software is finalized.

Activity 3.3: Promotion and use of other animal health information systems including TADInfo and others.

TADInfo software is customized for Belize, Honduras, Guatemala and El Salvador. An international workshop to train the key staff on installation, use and maintenance of this information system is intended for the third quarter of this year.

Output 4: Laboratory diagnostic capacities reinforced and network established between national laboratories and international reference laboratories.

Activity 4.2: Procurement and distribution of laboratory equipment and supplies.

More than 100 items for laboratory diagnosis in three countries and sample collection in all beneficiary countries are being procured and distributed in order to enable the field surveillance, collection of samples from suspected pigs and laboratory diagnosis.

Activity 4.3: Signing of a Letter of Agreement (LoA) with a specialized laboratory.

The LoA with LADIVES, a Panamanian laboratory is underway. Under this agreement, LADIVES will provide the training at the national level on reverse transcriptase – polymerase chain reaction (RT-PCR) diagnosis and diagnose samples collected in Belize, El Salvador, Honduras, Nicaragua, Panama and the Dominican Republic. Guatemala and Costa Rica have agreed to diagnose their own samples and to send positive cases to LADIVES for confirmation.

Output 5: Early detection and notification of A/H1N1/2009.

Activity 5.1: Support national services and organizations in education and communication and reporting of respiratory cases in pigs.

A regional workshop is held in Panama on 11 and 12 May 2010 with the participation of 19 experts from all beneficiary countries. The aim of the workshop is to help improve the communication techniques of the participants in order to raise awareness and to promote the reporting of suspected cases in pigs in their countries.

Activities undertaken during the reporting period:

Output 1: The ECTAD Decentralized Coordination Unit (DCU) for Central America is established and operational.

Activity 1.4: Provision of services to the Central American and neighbouring countries.

The ECTAD DCU in Panama continued playing a major role in coordinating the information exchange on TADs among the countries in the region and timely reported any important issues to the relevant early warning

systems, including an outbreak of Equine Encephalitis in Panama in June 2010. To provide the required technical assistance, the ECTAD DCU staff has been in contact with the Panamanian veterinary authorities and the representatives of El Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA) and Pan American Health Organization (PAHO).

Output 2: Surveillance activities implemented and extent and intensity of possible influenza viruses type A in circulation better understood and a proposal for contingency plans prepared.

Activity 2.1: Signing of a Letter of Agreement (LoA) with a research institution for field investigation/training.

A final version of an agreement with the NVSL in Ames, USA has been submitted to the United States Animal and Plant Health Inspection Service (APHIS) authorities for final review and signature in May 2010. The NVSL has agreed to provide diagnostic training to beneficiary countries and act as a reference laboratory.

Activity 2.3: Training and conducting of field investigations and finalization of the guidelines.

The activities as outlined on page two of this report were carried out. The regional workshop was held in Panama on 13 and 14 May 2010 with participation of all national project coordinators to discuss biosecurity measures in the pig sector. The joint FAO/OIE/WB document on good practices for biosecurity in the pig sector (<http://www.fao.org/docrep/012/i1435c/i1435c00.htm>) was used as a reference guide for the meeting. Furthermore, the participants agreed on common procedures for the surveillance and sample collection activities to be carried out at the national level during the next quarter.

Activity 2.5: Awareness raising and reporting of respiratory cases.

Following the request addressed to participants during the regional workshop on communication held in Panama on 11 and 12 May 2010, the first national workshop, aimed at raising awareness and promoting the reporting of suspected cases in swine populations, was held in Honduras at the end of May with the participation of 50 veterinarians and physicians. Events in other countries will follow.

Output 3: National animal health information systems to collect, process and analyse data from surveillance activities reinforced.

Activity 3.1: Procurement and distribution of equipment and software.

A tender was launched to purchase the necessary computers to install TADInfo in four countries and to strengthen the information management capacities in the others. As soon as the results are evaluated, computers will be purchased and delivered to relevant countries.

Activity 3.3: Promotion and use of other animal health information systems including TADInfo and others.

A home-based specialist was recruited in June 2010 and is currently customizing TADInfo maps for Belize, Honduras, Guatemala and El Salvador. A Spanish-speaking TADInfo trainer has also been identified. The international workshop to train key staff on installation, use and maintenance of this information system will be carried out in Honduras during the third week of August 2010.

Output 4: Laboratory diagnostic capacities reinforced and network established between national laboratories and international reference laboratories.

Activity 4.2: Procurement and distribution of laboratory equipment and supplies.

The procurement process has been finalized. Three major international suppliers were selected. Goods for laboratory diagnosis and field surveillance are expected to arrive in the countries in July 2010.

Activity 4.3: Signing of a Letter of Agreement (LoA) with a specialized laboratory.

The LoA with LADIVES has been finalized, and it is ready to be signed. LADIVES has agreed to the terms as outlined on page two, activity 4.3 of this progress report: (i) the training at the national level on RT-PCR diagnosis; and (ii) analysis of samples collected in Belize, El Salvador, Honduras, Nicaragua, Panama and the Dominican Republic, with the exception of Guatemala and Costa Rica, who have agreed to diagnose their own samples and to send positive cases to LADIVES for confirmation.

Output 5: Early detection and reporting of A/H1N1/2009.

Activity 5.1: Support national services and organizations in education and communication and reporting of respiratory cases in pigs.

A regional workshop was held in Panama on 11 and 12 May 2010 with participation of 19 experts from all beneficiary countries. Participants learned communication techniques to raise awareness and to promote the reporting of suspected cases in pigs in their countries. Participants were requested to organize national workshops on this matter with the collaboration of the OIRSA.

During the workshop, communication materials (such as posters, brochures, leaflets and commercial breaks for radio stations) promoting the reporting of suspected cases and addressing different target groups (field veterinarians, small and commercial producers) were discussed and validated.

Planned activities for the next quarter:*Output 1: The ECTAD DCU for Central America is established and operational.*

Activity 1.4: Provision of services to the Central American and neighboring countries.

The ECTAD DCU in Panama will continue backstopping the veterinary services of the beneficiary countries and reinforcing the regional epidemic-surveillance network in order to improve the communication and exchange of information on TADs and other respiratory diseases in swine populations. All activities will be conducted in close coordination with other organizations, such as OIRSA and PAHO. Special support will be provided to countries facing outbreaks, if needed.

Output 2: Surveillance activities implemented and the extent and intensity of possible influenza viruses type A in circulation better understood and a proposal for contingency plans prepared.

Activity 2.1: Signing of Letter of Agreement (LoA) with a research institution for field investigation/training.

Upon finalization of the review and approval process by the counterpart, an agreement will be signed with the NVSL in Ames, USA. This institution will provide diagnostic training in LADIVES premises for three lab experts and will train a LADIVES staff on virus sequencing as well as will act as a reference laboratory for 25 samples of positive cases detected in LADIVES.

Activity 2.3: Training and conducting of field investigations and finalization of the guidelines.

Field investigations will be carried out in beneficiary countries and up to 500 samples (per country) of suspected swine populations will be collected and sent to LADIVES for RT-PCR diagnosis. Required field equipment and shipping costs will be covered by the project.

Activity 2.5: Awareness raising and reporting of respiratory cases.

National workshops aimed at raising awareness and reporting of suspected cases in pigs will be carried out with support of OIRSA, according to the methodology provided to the participants of the regional workshop on communication held in Panama in May 2010. FAO will provide assistance and follow up to these activities.

Output 3: National animal health information systems to collect, process and analyse data from surveillance activities reinforced.

Activity 3.1: Procurement and distribution of equipment and software.

Two desktop computers will be distributed to veterinary services in Guatemala, San Salvador, Honduras, Belize, the Dominican Republic and Panama to strengthen their capacity to process animal health-related information and to install TADInfo software.

Activity 3.2: Revision and updates of national animal health information systems used by countries (provided by FAO).

Customization of TADInfo maps for Belize, El Salvador, Guatemala and Honduras will be finalized. A one-week regional workshop on TADInfo will be carried out in August 2010 to train the key staff in the installation and use of this tailor-made software.

Output 4: Laboratory diagnostic capacities reinforced and network established between national laboratories and international reference laboratories.

Activity 4.2: Procurement and distribution of laboratory equipment and supplies.

Over 100 items will be distributed to beneficiary countries, especially those that will carry out RT-PCR diagnostic (Costa Rica, Guatemala and Panama). In addition, LADIVES in Panama will receive equipment (including a second block for PCR) in order to be able to process samples from other beneficiary countries and act as a project regional laboratory.

Activity 4.3: Signing of a Letter of Agreement (LoA) with a specialized laboratory.

Upon signature of the agreement with NVSL (see activity 2.1), an agreement will be signed with LADIVES. Under the agreement, this Panamanian laboratory will process up to 3 000 samples of suspected swine populations from Belize, El Salvador, Honduras, Nicaragua, Panama and the Dominican Republic.

Activity 4.4: Training of personnel working in animal health diagnostic laboratories at national level.

Under the framework of the agreement with NVSL and LADIVES, laboratory staff from Panama, Guatemala and Honduras will be trained on RT-PCR diagnostic and sequencing according to the protocol developed by NVSL.

Activity 4.6: Transport of samples to international reference laboratories for analysis, sequencing and molecular epidemiological analysis.

An agreement with an international carrier has been reached to enable national veterinary services to ship samples of suspected swine to LADIVES for RT-PCR diagnosis. Up to 25 of those samples diagnosed positively will be forwarded to NVSL for confirmation, sequencing and quality control.

Output 5: Early detection and notification of A/H1N1/2009.

Activity 5.1: Support national services and organizations in education and communication and reporting of respiratory cases in pigs.

FAO will provide assistance and follow up to the national workshops aimed at raising awareness and promoting the reporting of suspected cases in pigs to be carried out by the participants of the regional workshop on communication techniques conducted in May 2010. Moreover, communication materials developed under a consultancy on communication covered by TCP/RLA/3206 will be printed and distributed.

Activity 5.2: Coordination of veterinary authorities with national public health authorities to improve disease field investigation, detection and reporting of cases in particular from rural areas.

A final workshop will be organized in September 2010 in Panama with the participation of Chief Veterinary Officers (CVOs) and national coordinators in order to present the results of the project and to discuss continuity of activities and achievements beyond the end of the project.

Main challenges encountered and response provided:

- The signing of the agreement with NVSL/USDA is delayed owing to the counterpart's long approval procedures. Contacts have intensified with key USDA/APHIS staff to try to speed up the process. On the other side, the agreement with LADIVES is ready to be signed, but this laboratory is reluctant to provide diagnostic services as long as the training with NVSL has not been granted. As soon as the agreement between FAO and NVSL/USDA/APHIS is signed, the agreement with LADIVES will be signed, as well.
- The technical and financial evaluations of the tender for laboratory equipment and supplies have taken longer than initially planned owing to a large number of high-specific laboratory items to be purchased which required a detailed evaluation of offers. The process is finalized now, and goods are expected to be delivered to beneficiary countries during July 2010.

Main progress made towards the achievement of project outcomes:

- The ECTAD DCU in Panama has been established in the framework of this project and provides technical support to the national veterinary services in all beneficiary countries, including situations of outbreaks of TADs such as rabies, classical swine fever and equine encephalitis. Furthermore, the ECTAD DCU in Panama acts as a regional hub for reception and exchange of real-time information of animal health issues,

linked to the Global Early Warning and Response System (GLEWS) FAO team.

- Technical backstopping missions have been carried out to all beneficiary countries, especially to support the preparation of surveillance guidelines in the framework of national workshops with key staff, and as a first step in carrying out the surveillance and sample collection activities intended under the project.
- LADIVES of Panama has agreed to provide RT-PCR diagnostic services to other beneficiary countries and serve as a regional laboratory for swine influenza in the future. The diagnostic capacity of this laboratory (and other laboratories in Costa Rica and Guatemala) is being strengthened through training by NVSL (USA) and purchasing of a large number of laboratory equipment and supplies.
- The veterinary services of Belize, El Salvador, Guatemala and Honduras have decided to strengthen their capacities to analyse epidemiological information and are receiving support to install and properly operate TADInfo as their tailor-made animal health information system. Related equipment is also being procured and delivered to final users.
- Communication specialists from all beneficiary countries were trained on how to develop national trainings to raise awareness of respiratory diseases in swine and promote notification of suspected cases. Materials such as posters, radio commercial breaks, leaflets and brochures have been prepared considering countries' feedback and are being made available to all national veterinary services.
- Two documents on good practices for biosecurity in the pig sector and preparation of African swine fever contingency plans (<http://www.fao.org/docrep/012/i1435e/i1435e00.htm>) have been translated into Spanish and adapted to the region for distribution among key staff from the beneficiary countries.
- An agreement with OIRSA has been reached to include the differential diagnosis of other respiratory diseases in swine, in addition to pandemic influenza H1N1/2009, to the diagnostic activities to be carried out under the framework of the project. This is crucial not only to determine whether the pandemic influenza H1N1/2009 is circulating in the region but also to determine which other viral and bacterial diseases are more prevalent in swine populations.

I Quarter 2010

Project Monitoring Sheet: OSRO/UGA/711/USA

Project title: Support to the implementation of the National Plan of Action for Preparedness and Response to Highly Pathogenic Avian Influenza in Uganda

Reporting period: January-March 2010

Country: Uganda
Code: OSRO/UGA/711/USA
Budget: USD 417 850 (Phase I)
Total budget: USD 417 850
Effective starting date: 1 December 2007
Planned end date: 30 June 2010
<p>Context of the project</p> <p>Highly Pathogenic Avian Influenza (HPAI) is a highly infectious and contagious zoonotic viral disease and has the potential to cause a large-scale epizootic situation in Africa and subsequently a global human influenza pandemic. The threat in Africa has increased following detection of the avian influenza (AI) virus in several African countries, including the Republic of the Sudan. Uganda, one of the Sudan's southern neighbours, is at high risk of infection because it lies along major wild bird migratory routes and has large masses of water bodies and extensive wetlands. Moreover, the majority of the poultry in the country are raised in the free-range system with minimal or non-existent disease biosecurity.</p>
<p>Objectives of the project</p> <p>This project will improve the poultry production practices of smallholder farmers, contribute to the development of prevention strategies against HPAI, improve livelihoods and provide the relevant platform for collaboration on the prevention of HPAI and other transboundary animal diseases (TADs) and thereby contribute significantly to the achievement of the Millennium Development Goals.</p> <p>The specific objectives of the project are to enhance surveillance capacity for HPAI, to progressively reduce risk factors favourable to HPAI introduction and transmission, and to therefore reduce risk of human HPAI pandemic and to improve food security for the rural poor who rely on small-scale backyard poultry. There will also be increased local, regional and international trade in safe poultry products and strengthened and effective veterinary services.</p>

Activities planned for the reporting period January-March 2010

Output 1: Strengthening of the HPAI epidemio-surveillance network, including laboratory diagnostics

- Continue to support the government in surveillance as needed.

Output 2: Enhancement of rapid response and outbreak containment capabilities

- Continue to follow up on the compensation policy with the government.

Output 3: Promotion of biosecurity and hygiene in market chains and the community

- Consultant to complete the development of biosecurity guidelines in poultry production and marketing in the country.
- Consultant to complete the development of by-laws for enforcing the developed biosecurity guidelines along the poultry value chain in the country.

Output 4: Communication and public awareness

- Identify key areas from the Knowledge, Attitude and Practice (KAP) study for improving communication aspects for government communication strategies.

Output 5: Support of the national command and control centre

- Facilitate payment of utility bills (hotline, fax and email).
- Monitoring of the project and reporting to the National Task Force (NTF), the National Security Council (NSC), the United States Agency for International Development (USAID) and other partners.

Activities undertaken during the reporting period January-March 2010

Output 1: Strengthening of the HPAI epidemio-surveillance network, including laboratory diagnostics

- No surveillance activities were supported during this period; however, the Ministry continued to watch for any suspicious reports from the districts.

Output 2: Enhancement of rapid response and outbreak containment capabilities

- The compensation policy is still with the cabinet and is being followed up to get it through.

Output 3: Promotion of biosecurity and hygiene in market chains and the community

- The biosecurity guidelines on poultry production and marketing in the country were developed and are under review.
- The national consultant developing by-laws for enforcing biosecurity guidelines along the poultry value chain in the country was recruited and this work is in progress.

Output 4: Communication and public awareness

- The KAP study report undertaken under FAO project GCP/INT/010/GER has been cleared and will be shared with the communication technical working group of the national influenza task force.
- The national communication strategy plan developed by the communication technical working group of the national influenza task force was received with the request to be printed and distributed.

Output 5: Support of the national command and control centre

- Payment of utility bills (hotline, fax and email).
- Monitoring of the project and reporting to NTF, NSC, USAID and other partners.

Main challenges encountered and responses provided

- The consultant in charge of developing the by-laws started one month late, which delayed this output. The work is expected to be completed early in the next quarter, so it can be shared with the district local councils for inclusion in their district by-laws.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

More personnel at local government level have been trained and have acquired knowledge and expertise in disease recognition, biosecurity, surveillance and outbreak response. This has further improved the national preparedness and response capacity.

The completion of the biosecurity study will enable the development of biosecurity guidelines in the poultry value chain, which is a critical element in the control of HPAI.

The KAP study completed under the project GCP/INT/010/GER will also help in redesigning the communication strategies to be more effective in the future.

The development of biosecurity guidelines and by-laws to be used by local authorities to improve biosecurity in the poultry production value chain is a significant step towards improving HPAI control and other diseases affecting poultry production in the country.

The revision of the work plan and its approval by the USAID will also ensure that all planned activities are implemented before the project's revised end date.

Quarter II 2010

Project Monitoring Sheet: OSRO/VIE/801/USA

Project title: **Gathering Evidence for a Transitional Strategy (GETS) for Highly Pathogenic Avian Influenza (HPAI) H5N1 vaccination in Viet Nam**

Reporting period: April to June 2010¹

Country: Viet Nam
Project title: Gathering Evidence for a Transitional Strategy (GETS) for Highly Pathogenic Avian Influenza (HPAI) H5N1 vaccination in Viet Nam
Code: OSRO/VIE/801/USA
Budget: USD 4 million (Phase I)
Total budget: USD 4 million
Effective starting date: October 2008
Planned end date: March 2011
Context of the project <p>Viet Nam has been carrying out vaccination of poultry twice a year (October and April) since autumn of 2005 to control epidemic HPAI H5N1 with some considerable empirical evidence of success. However, it has been recognized that this control strategy is not sustainable over the whole country in the long term. Mass vaccination entails a large amount of financial resources from the government and ties up significant human resources in the agriculture sector. Therefore, an alternative or more likely a parcel of complementary alternative control strategies will have to be devised as Viet Nam moves from initial emergency measures to a period of consolidation and ultimately on to the stated aim of control/eradication beyond 2010 (Green Book). This project is investigating and gathering evidence on alternative vaccination strategies in provinces with high and low risk for HPAI H5N1 outbreaks.</p>
Objective of the project <p>The main objective of the project is to provide field data to the Ministry of Agriculture and Rural Development (MARD) by testing a number of alternative vaccination strategies and the complementary strategy of improved surveillance. This data will assist MARD in its selection of a future vaccination strategy.</p>
Planned activities for this quarter <p>Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1), and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1)</p> <p><i>Activity 1.1&2.1 Needs assessment undertaken and work plan finalized</i></p> <ul style="list-style-type: none"> undertake implementation of the new letter of agreement (LoA) with the Department of Animal Health (DAH) on enhanced surveillance, reporting and outbreak response and sentinel duck monitoring <p><i>Activity 1.2&2.2 Public awareness campaigns</i></p> <ul style="list-style-type: none"> commence the round II of the public awareness campaign with radio announcements via loud speaker <p><i>Activity 1.3&2.3 & 1.4&2.4 Farms identified/sampled</i></p> <ul style="list-style-type: none"> sign contracts with sentinel duck flock owners to ensure commitment to the programme commence the serum sampling component of the programme

¹ Quarter VI of the project cycle

Activity 1.5&2.5 Equipment procured including vaccine

- provide further equipment as required to ensure smooth operation of the project
- provide a computer to each of the provinces for data entry activities with the Access database and provide auto-vaccinators to the districts for HPAI vaccination

Activity 1.6&2.6 Training undertaken

- implement and complete global positioning system (GPS) training for District Veterinary Service (DVS) staff
- implement and complete Access database training for the project assistants at each of the Sub-Department of Animal Health (SDAH) offices
- develop and commence a training programme, including workshops at the village level as well as events at the markets, for farmers and village animal health workers (AHWs), utilizing industry groups and unions
- implement the second phase of the community animal health worker (CAHW) training that will coincide with the end of the 2010 first round of vaccination and include training on data collection and completion of the revised data forms

Activity 1.7&2.7 Data gathering

- undertake the first round vaccination data gathering and the second round post-vaccination monitoring for 2010
- streamline data collection activities with an introduction to the Access database in each of the SDAH offices in the GETS provinces and provide training on the use of the database

Output 3: Cost-effectiveness of ‘Novel versus Standard’ (V2/V1) and ‘Standard versus Withdrawal’ (V1/V0) Vaccination Strategies undertaken*Activity 3.1 Component planning/oversight*

- implementation of the second phase of the cost-effectiveness programme by the national implementing agency, the Southern Office of the Institute of Policy Strategy for Agricultural and Rural Development (SCAPS)

Activity 3.2 Team recruited

- sign an LoA with the implementing partner for the second phase of the cost-effectiveness programme

Activity 3.3 Data gathering

- complete data gathering for the second phase of the cost-effectiveness programme

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial*Activity 4.1 Component planning/oversight*

- complete the supply chain analysis across the five GETS provinces and GPS mapping using the GPS units supplied to each district veterinary station
- continue monitoring of high risk mobile duck flocks in all communes in the GETS provinces and ensure vaccination of these flocks, which present a high risk for disease transmission owing to the shedding of the virus with minimal clinical signs if not adequately vaccinated
- commence a detailed poultry industry survey to assist in determining risk factors

Activity 4.2 Training DAH-Regional Animal Health Office (RAHO) and Ministry of Health (MoH)-Regional Health Office (RHO)

- undertake training of DVS staff in GPS use to prepare for the GPS mapping activities
- implement the second round of CAHW training workshops as well as the training for village animal health workers and extend invitations to public health workers and livestock extension officers as in Round 1 where attendance of these groups was high

Activity 4.3 Operational funds arranged/distributed

- continue to support outbreak investigation activities and supply chain mapping for risk factors

through operational funds

Activity 4.4 Data gathering from outbreaks nationwide (64 provinces)

- continue outbreak investigation activities with attendance at all outbreaks in the GETS and neighbouring provinces by the GETS regional coordinators with the aim of providing accurate disease investigation reports

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

Activity 5.1 Component planning/oversight

- following the poultry industry survey that will provide detailed data on farm activities and practices, plan behaviour studies that will evaluate potential motivation factors and key determinants for animal health workers and producers, the barriers to behaviour change and the behavioural changes that have occurred as a result of the project intervention

Activity 5.2 Team recruited

- recruit a sociologist to undertake behavioural case studies with AHWs and poultry producers

Activity 5.3 Data gathering

- continue data collection with attitudinal questions included in the chief animal health worker post-training questionnaire

Output 6: Policy analysis of HPAI strategy including public private sector collaboration and partnerships is undertaken

Activity 6.1 Component planning/oversight

- undertake supply chain analysis and mapping in the second quarter of 2010, identify the location of animal health product suppliers and undertake case studies to determine the governance of their activities
- investigate the governance of private/public partnerships and monitor the effect of the interventions on them
- following the completion of the supply chain analysis, design a detailed case study, including tracking of activities, of the meat trader system and investigate the governance of their activities

Activity 6.2 Team recruited

- complete the recruiting of a national partner to commence on the project at the end of January

Activity 6.3 Data gathering

- continue data gathering with the commencement of supply chain analysis and mapping to assist in the identification of private/public operations that will be used in the governance studies and policy analysis.

Activities undertaken during the reporting period

Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1) and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1)

Activity 1.1&2.1 Needs assessment undertaken and work plan finalized

- Implementation of the new LoA with DAH on “Enhanced surveillance, reporting and outbreak response and sentinel duck monitoring” was completed and funds were provided to DAH to support ongoing activities under the new LoA. Amendments were made to the DAH LoA for re-imbursement to provide support to the sentinel duck flock owners.

Activity 1.2&2.2 Public awareness campaigns

- Preliminary project findings were presented to the United States Agency for International Development (USAID), DAH and other partners including World Health Organization (WHO),

Abt Associates and SCAPS at a meeting at the USAID office in June 2010. Input was given by DAH as to their preferred format for the interim report.

- During the International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI), the FAO GETS team arranged a site visit for the US delegation to IMCAPI and accompanied the delegation to the field. This included a presentation at the Sub-Department of Animal Health (SDAH) office in Ninh Binh explaining project activities as well as a field visit to a duck farm to view the vaccination process.
- The second round of the public awareness campaign with radio announcements of three key messages via 717 commune loudspeaker system was undertaken with the campaign reaching an estimated three million people.

Activity 1.3&2.3 & 1.4&2.4 Farms identified/sampled

- Contracts with sentinel duck flock owners were signed to ensure commitment to the programme. Sentinel ducks were identified with leg tags and a unique numbering system.
- The serum sampling component of the programme was initiated.

Activity 1.5&2.5 Equipment procured including vaccine

- A computer was provided to each of the provinces for data entry activities with the Access database.
- The procurement of auto-vaccinators for HPAI vaccination has commenced.

Activity 1.6&2.6 Training undertaken

- Five GPS training courses for 59 district and provincial veterinary staff were completed in five provinces.
- Access database training for the project assistants at each of the SDAH offices was implemented and completed.
- Expressions of interest have been sought for the training of village AHWs and CAHWs.

Activity 1.7&2.7 Data gathering

- Collection of supply chain data by DVS staff using GPS units was completed in four of the five GETS provinces.
- The first round of vaccination data gathering for 2010 was undertaken.
- The second round post-vaccination monitoring samples for 2010 have been collected.
- Data collection activities are being streamlined with the introduction of an Access database in each of the SDAH offices in the GETS provinces, and training has been provided in the use of the database.
- Data collection forms were revised and issued to the field to assist in gathering adequate data for analysis.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

Activity 3.1 Component planning/oversight

- The second phase of the cost-effectiveness programme was implemented by SCAPs - the national implementing agency.

Activity 3.2 Team recruited

- An LoA was signed with the implementing partner for the second phase of the cost-effectiveness programme.

Activity 3.3 Data gathering

- Data gathering for the second phase of the cost-effectiveness programme is underway.
- The report for the first phase of the cost-effectiveness programme was completed.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

Activity 4.1 Component planning/oversight

- Supply chain analysis commenced across the five GETS provinces and GPS mapping using the GPS units supplied to each district veterinary station has been completed in four of the five GETS provinces.
- Monitoring of high risk mobile duck flocks will continue in all communes in the GETS provinces and vaccination of mobile duck flocks has been undertaken. These flocks present a high risk for disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated.
- A detailed poultry industry survey will commence to assist in determining risk factors.

Activity 4.2 Training DAH-RAHO and MoH-Regional Health Office (RHO)

- Training of 59 provincial and district veterinary staff in GPS use was undertaken to prepare for the GPS mapping activities.

Activity 4.3 Operational funds arranged/distributed

- Operational funds have continued to support outbreak investigation activities as well as supply chain mapping for risk factors.

Activity 4.4 Data gathering from outbreaks nationwide (64 provinces)

- No outbreaks were recorded in the five GETS provinces during the second quarter. Outbreak investigation activities will continue with attendance at all outbreaks in the GETS and neighbouring provinces by the GETS regional coordinators with the aim of providing accurate disease investigation reports.

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

Activity 5.1 Component planning/oversight

- A set of attitudinal and behavioural questionnaires were designed and integrated in the Poultry Industry Survey. It aims at understanding attitude and behaviours of poultry producers, motivation and/ barriers to behaviour change and the behavioural changes that have occurred as a result of the project interventions.

Activity 5.2 Team recruited

- A national partner was chosen to undertake the poultry industry survey and a service contract was finalized and signed.

Activity 5.3 Data gathering

- The national partner has begun training interviewers who will undertake the data gathering.

Output 6: Policy analysis of HPAI strategy including public private sector collaboration and partnerships is undertaken

Activity 6.1 Component planning/oversight

- Supply chain analysis and mapping has been carried out to identify the location of animal health product suppliers so that case studies can be undertaken to determine the governance of their activities.

Activity 6.2 Team recruited

- Discussions were held with the Centre for Agricultural Policy (CAP) regarding central policy decision making procedures.

Activity 6.3 Data gathering

- Data gathering on supply chain mapping was completed in four of the five GETS provinces in support of identifying private/public operations that will be used in the governance studies and policy analysis.

Planned activities for the next quarter

Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1) and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1)

Activity 1.1&2.1 Needs assessment undertaken and work plan finalized

- Field activities will be monitored and amendments made to agreements as required.

Activity 1.2&2.2 Public awareness campaigns

- The second round of the public awareness campaign will continue with TV announcements via five provincial TV stations.

Activity 1.3&2.3 & 1.4&2.4 Farms identified/sampled

- Sentinel duck flocks will be monitored to ensure continued commitment to the programme.
- The serum sampling and revised swabbing component of the programme will commence.

Activity 1.5&2.5 Equipment procured including vaccine

- Auto-vaccinators will be procured and provided to the provinces for HPAI vaccination.
- Cold chain extension will be provided to the three new communes in the project provinces.

Activity 1.6&2.6 Training undertaken

- A training programme, utilizing industry groups and unions, has been developed for farmers and village AHW's. This will include workshops at the village level as well as events at the local poultry markets.
- The second phase of the CAHW training will be implemented to coincide with the end of the 2010 first round of vaccination. It will include training on data collection and completion of the revised data forms.
- A training programme for village paravets, utilizing industry groups and unions, will be contracted to a national partner.

Activity 1.7&2.7 Data gathering

- The first round of vaccination data and the second round post-vaccination monitoring data for 2010 will be analysed.
- Data collection and data entry activities will be monitored in each province to ensure that the Access database is being utilized efficiently.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

Activity 3.1 Component planning/oversight

- The second phase of the cost-effectiveness programme will be completed by the national implementing agency, SCAPS.

Activity 3.2 Team recruited

- The national partner will complete activities for phase II.

Activity 3.3 Data gathering

- Data gathering for the second phase of the cost-effectiveness programme will be completed and a report provided as per the conditions of the LoA.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

Activity 4.1 Component planning/oversight

- Supply chain analysis will be completed across the five GETS provinces and an atlas produced for the five GETS provinces. GPS mapping using the GPS units will be completed in the Ninh Binh.
- Monitoring of high risk mobile duck flocks will continue in all communes in the GETS provinces and vaccination of these flocks will be ensured. These flocks present a high risk for

disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated.

- A detailed poultry industry survey will be completed to assist in determining risk factors.

Activity 4.2 Training DAH-RAHO and MoH-Regional Health Office (RHO)

- The second round of CAHW training workshops will be implemented as well as the training of VAHWs. Invitations will be extended to public health workers and livestock extension officers as in the first round where attendance of these groups was high.

Activity 4.3 Operational funds arranged/distributed

- Operational funds will continue to support outbreak investigation activities as well as supply chain mapping for risk factors.

Activity 4.4 Data gathering from outbreaks nationwide (64 provinces)

- Outbreak investigation activities will continue with attendance at all outbreaks in the GETS and neighbouring provinces by the GETS regional coordinators with the aim of providing accurate disease investigation reports.

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

Activity 5.1 Component planning/oversight

- The attitudinal component of the poultry industry survey will be completed and analysed.

Activity 5.2 Team recruited

- A national partner will be contracted to undertake behavioural case studies with animal health workers (AHW) and poultry producers.

Activity 5.3 Data gathering

- Data collection will continue with attitudinal questions included in the chief animal health worker post-training questionnaire and the poultry industry survey.

Output 6: Policy analysis of HPAI strategy including public private sector collaboration and partnerships is undertaken

Activity 6.1 Component planning/oversight

- Supply chain analysis and mapping will be finalized in third quarter of 2010 and will identify locations of animal health product suppliers. Case studies will then be undertaken to determine the governance of their activities. The governance of private / public partnerships will be investigated and the effect of the interventions on this will be monitored.
- A detailed case study, including tracking of activities and of the meat trader system will investigate the governance of their activities. This component will commence following the completion of the supply chain analysis.

Activity 6.2 Team recruited

- Further discussions will be held with CAP with a view to contracting their services.

Activity 6.3 Data gathering

- Data gathering will continue with the commencement of supply chain analysis and mapping. This will assist in the identification of private/public operations that will be used in the governance studies and policy analysis.

Main challenges encountered and response provided

Difficulties were encountered in the Sentinel Duck Programme with contracting of flock owners and tagging and identification of individual sentinel ducks. Revised guidelines were provided to the field to clarify the duck tagging procedure and the reimbursement LoA was amended to support sentinel flock owners for production losses during sampling procedures.

During the first round of the public awareness programme, the release of the TV segment by provincial TV channels was appreciated by the SDAHs; however, it was recommended that local dialects should be dubbed to make it more appealing to poultry farmers. The TV spot therefore will be dubbed with Vietnamese central and western accents in the second round of the public awareness campaign.

Main progress made towards the achievement of project outcomes

Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (VI) and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (VI)

- Field missions to all provinces and the vaccine intervention plans have been completed.
- The project work plan has been completed and agreement has been gained from DAH/MARD for the intervention programme and the work plan.
- Implementation partners have been chosen and guidelines for all field activities have been completed. LoA's have been prepared and signed.
- The intervention was implemented to coincide with the second round of the Government of Viet Nam vaccination programme in October and November 2009.
- Implementation partners for the public awareness programme have been contracted and the initial capacity building training for over 900 district and commune veterinary staff, livestock extension officers and district public health officials has been completed.
- "A New Stage" public awareness campaign with the production of TV media, audio and leaflets has been completed. The media release commenced with the local TV advertisements started on the last week of October 2009, and they ran four times per day until the end of December 2009 in the five pilot provinces.
- Implementation partners for the second stage of the public awareness programme have been contracted. The media release, consisting of three key audio spots, was aired across 717 commune loudspeaker systems reaching an estimated three million people and was completed in May 2010.
- Enhanced surveillance, reporting and outbreak response activities, as well as sentinel duck monitoring and post-vaccination monitoring are ongoing in the field, and funds have been transferred to the provinces to support these activities. These activities have been reviewed during field missions to each of the five GETS provinces in March 2010 and revised agreements have been adopted to streamline project activities.
- Procurement and distribution of five vehicles, 42 GPS and 714 fridges were completed with the distribution of these to the provinces. For the first time in Viet Nam, continuous cold chain for vaccine storage has been extended to the commune level throughout the five GETS provinces.
- Data collection activities are being streamlined with the introduction of an Access database in each of the SDAH offices in the GETS provinces, and training will be provided in the use of the database.
- Field data collection and data entry procedures have been reviewed across the five project provinces and a database designed and commissioned to assist in streamlining the data entry procedure.
- Preliminary findings were presented to USAID, DAH and other partners including WHO, Abt Associates and SCAPS at a meeting at the USAID office in June 2010. Input was given by DAH as to their preferred format for the interim report.
- During IMCAPI, the FAO GETS team arranged a site visit for the US delegation to IMCAPI and accompanied the delegation to the field. This included a presentation at the SDAH office in Ninh Binh explaining project activities as well as a field visit to a duck farm to view the vaccination process.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

- The design of the cost-effectiveness component was subsequently reviewed and finalized with assistance from an international rural economist. Discussions were pursued with a national partner to implement this component and a work plan and budget were reviewed and finalized.
- Completion and signing of the LoA with the national partner, SCAPS, facilitated the commencement of field activities and data gathering. The SCAPS team, accompanied by the GETS regional coordinators, visited each of the five pilot provinces and commenced data collection activities. Phase I of the programme has been completed.
- Phase II of the cost-effectiveness programme has now been implemented, and data collection is underway.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

- Outbreak response activities have been finalized and accompanying documents completed.
- Training has been undertaken for the GETS Regional Coordinators whose role includes attending all outbreaks within the GETS provinces and the in bordering provinces to undertake disease investigation activities.
- An LoA with DAH has been finalized and signed and funds have been available for provincial staff for outbreak activities.
- An agreement has been signed with DAH detailing the reimbursement terms for poultry producers in the GETS provinces following culling of their flocks for HPAI outbreaks. Funds have been made available for provincial authorities to fund the reimbursement for eligible flocks.
- Workshops detailing enhanced disease reporting activities were held at the 42 districts involved in the project, and these were attended by 713 chief animal health officers, 178 district veterinary officers, 39 agricultural extension officers and 38 district public health officers - 48 were from SDAH and 14 were from RAHOs.
- Supply chain analysis has been implemented and completed across four of the five GETS provinces as well as GPS mapping using the GPS units supplied to each district veterinary station.
- A detailed case study of the meat trader system to investigate potential risk factors in outbreaks will be undertaken following completion of the poultry industry survey. Meat traders are a high-risk group because they constantly move from farm to farm and handle birds at each farm. Monitoring of high-risk mobile duck flocks is ongoing and is being undertaken by CAHWs throughout the GETS provinces and vaccination of these flocks is being pursued. These flocks present a high-risk for disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated.

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

- Data collection consists of attitudinal questionnaires has commenced. A national partner has been chosen to continue with the implementation of this component, and a contract and TOR's were finalized and the partner commenced in January 2010.
- Data collection has commenced with an attitudinal questionnaire included in the chief animal health worker post-training questionnaire, and the attitudinal component of the poultry industry survey will address reaction to changes in the vaccination programme in the GETS provinces. Following completion of the survey, a national partner will be contracted to undertake behavioural case studies with animal health workers (AHW) and poultry producers. These studies will evaluate potential motivation factors and key determinants for AHW and the producers, the barriers to behavioural change and the behavioural changes that have occurred as

a result of the project intervention.

Output 6: Policy analysis of HPAI strategy including public private sector collaboration and partnerships is undertaken

- The governance of private/public partnerships will be investigated, and the effect of the interventions on this will be monitored. Supply chain analysis and mapping has been completed in four of the five GETS provinces and will identify the location of animal health product suppliers.
- Case studies will be undertaken to determine the governance of their activities. A detailed case study, including tracking of the activities of the meat trader system will be undertaken to investigate the governance of their activities. A national partner has been selected to continue with the implementation of this component. This component will commence following the completion of the supply chain analysis, which will assist in the identification of private/public operations that will be used in the governance studies and policy analysis. Discussions have been held with the Center for Agricultural Policy (CAP) in Hanoi regarding central policy decision making procedures.

Quarter II 2010

Project Monitoring Sheet: **OSRO/MYA/702/USA**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: April-June 2010

Country: Myanmar
Project: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/MYA/702/USA
Budget: USD 500 000 (Phase I), USD 750 000 (Phase II), USD 375 000 (Phase III)
Total budget: USD 1 625 000
Effective starting date: January 2008
Planned end date: September 2010
Context of the Project <p>Myanmar experienced three waves of Highly Pathogenic Avian Influenza (HPAI) outbreaks in 2006 and 2007 and a resurgence of outbreaks in the first quarter of 2010. A national duck survey conducted from November 2009 until January 2010 showed that 40 percent of surveyed duck flocks had been exposed to the H5 virus, suggesting that avian influenza (AI) is endemic in duck flocks throughout the country. These issues resulted in a shift in strategy during the last quarter, with an emphasis on expanding the surveillance programme. The Food and Agriculture Organization of the United Nations (FAO) is implementing an integrated AI control programme, consisting of three projects with complementary activities: OSRO/MYA/702/USA, OSRO/MYA/801/WBK and OSRO/MYA/601/AUL. The report describes activities funded or co-funded by the project in the context of the overall programme.</p>
Objectives of the project <p>The major objective of the project is to address the urgent short-term actions to strengthen Myanmar's capacity to rapidly detect HPAI and minimize its spread. Specifically, the project aims to provide necessary assistance in:</p> <ul style="list-style-type: none"> • strengthening HPAI prevention and control in Myanmar, particularly the capacity to effectively contain the outbreak, including animal surveillance, collaboration and communication between the animal and human health sectors; • strengthening the capacity of the veterinary services at the field level; and • mobilizing stakeholders towards building a community-based rapid warning and response system to meet the challenge of an AI outbreak in Myanmar.
Planned activities <p>Output 1: Strengthened cross-sectoral coordination at the national level <i>Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the Government.</i></p> <ul style="list-style-type: none"> • develop a management team and recruit an international operations officer • recruit six national consultants co-funded by the project

Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals.

- organize National Steering Committee (NSC) meetings with the Department of Animal Health (DoH) and the World Health Organisation (WHO)

Activity 1.3: Support the review and revision of the National Strategy, Contingency plan and Standard Operating Procedures (SOPs) related to HPAI control measures.

- finalize the SOPs to support the expanded surveillance programme, including management guidelines and technical guidelines such as outbreak investigation
- review the SOPs on outbreak management in light of the recent outbreaks and conduct an assessment on outbreak management in backyard or duck farms

Activity 1.4: Support national staff of the Livestock Breeding and Veterinary Department (LBVD) to participate and give presentations/share information in international conferences, meetings or workshops.

- no activities planned

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level.

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- no activities planned

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- training workshops are planned in Upper and Lower Myanmar

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- see 2.2.

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- purchase large quantities of syringes, masks, gloves, swab tubes, plastic bags, marker pens, containers and antibiotics

Activity 2.5: Support national staff to participate in Regional FETPV.

- have one LBVD staff member attend second session of the Field Epidemiology Training Programme for Veterinarians (FETPV) in Bangkok at the end of May for two months and the first session trainee undertake field work in Myanmar

Activity 2.6: Support passive and active surveillance for the high risk areas including wetlands, duck-raising and border areas.

- complete the investigation programme in 76 townships and begin field activities
- support a new letter of agreement (LoA) with LBVD for disease control/epidemiology, which will provide technical support to the field activities
- draft an additional LoA to support management of data generated from the recently-completed national duck survey, the soon-to-be completed national global positioning systems (GPS) census of commercial poultry farms and FETV related field activities

Output 3: Strengthened capacity in HPAI laboratory diagnosis

Activity 3.1: Organize local training by trainees previously trained overseas.

- ongoing through on the job training

Activity 3.2: Conduct semi-annual proficiency testing (PT) and quality assessment (QA) for serological and rapid tests by linking national labs with the Australian Animal Health Laboratory (AAHL).

- obtain lab results from samples submitted to AAHL and the National Institute of Animal Health, Thailand (NIAH) and take action for further QA accordingly

Activity 3.3: Manage a local quality assessment/quality control (QA/QC) program for the national laboratory network.

- see 3.4. Domestic QA/QC program is ongoing. Central Lab staff will travel to regional laboratories to conduct QA/QC on serology, virology and poultry post mortem under the LoA supporting the Surveillance and Outbreak Investigation Programme.

Activity 3.4: Procure necessary laboratory equipment and supplies.

- support the upgrading of cooling infrastructure at Yangon laboratory, including a larger chilling machine and larger ducts

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected live bird markets (LBMs).

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- complete the LoA on risk assessment in Yangon and Mandalay and continue drafting the LoA on Ayeyewaddy and Inle Lake area for completion in the following quarter

Activity 4.2: Support activities related to biosecurity improvement in selected LBMs and production zones.

- complete the LoA on production zones biosecurity improvement and draft a follow-up LoA

Activity 4.3: Recruit an international consultant (epidemiology).

- no activity planned

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- see 4.1.

Activities undertaken

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the Government.

- Management team was put in place with the addition of an international operations officer, who started her assignment in April 2010.
- Six national consultants were recruited throughout the quarter, with one of them (Risk assessment and management expert) funded by the project.

Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals.

- The NSC meeting was held on 10 June with participation of all major institutional

stakeholders, including DoH. Discussions are ongoing with WHO and the Ministry of Health (MoH) to make progress on cross-sector collaboration on epidemiology, labs and zoonoses.

Activity 1.3: Support the review and revision of the National Strategy, Contingency plan and Standard Operating Procedures (SOPs) related to HPAI control measures.

- SOPs to support the expanded surveillance programme were completed and distributed to 78 townships in 17 States/Division. The SOPs included management guidelines and technical guidelines such as outbreak investigation.
- Discussions are ongoing on the structure of a compensation/relief system, on SOPs on outbreak management in light of the recent outbreaks and on assessment of outbreak management in backyard or duck farms.

Activity 1.4: Support national staff of LBVD to participate and give presentations/share information in international conferences, meetings or workshops.

- No activities were initially planned under 1.4. However, the opportunity arose for LBVD staff to take part in two international workshops under the programme.
- One senior staff member attended a meeting on “Learning exchange event on Avian and Human Pandemic Influenza (AHPI): the way forward” held in Ho Chi Minh City, Viet Nam. This meeting was sponsored by the World Bank and the Government of Viet Nam.
- One staff of the Myanmar Livestock Federation participated in a cross-border workshop held in Bangkok, Thailand on 28 and 29 April 2010.

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level.

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- No activities undertaken.

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- No SRRT took place during the reporting period. However, in the framework of the planning meetings on the expanded surveillance and outbreak investigation programme held in all 17 States/Divisions, on-the-job training was provided to State/Division district and township staff.

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- See 2.2.

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- The project procured the following supplies: gloves, masks, needles and antibiotics for swabs preservation.

Activity 2.5: Support national staff to participate in Regional FETPV.

- One LBVD staff participant in the first FETPV training course is undertaking field work on outbreak reporting and field studies in Myanmar. The participant in the second training course attended the FETPV sessions in Bangkok, Thailand in May.

Activity 2.6: Support passive and active surveillance for the high risk areas including wetlands, duck-raising and border areas.

- The surveillance and outbreak investigation programme, focusing on 78 townships, began in late June 2010.
- The LoA with LBVD for technical support to surveillance and outbreak investigation programme was signed and began implementation in June 2010. The LoA supports epidemiology and laboratory staff to provide technical support to field teams.
- The LoA on Epidemiology Activity Improvement was finalized and will support management of data generated from the recently-completed national duck survey, the soon-to-be completed national GPS-integrated census of commercial poultry farms, the FETPV related field activities and data from risk assessment studies.

Output 3: Strengthened capacity in HPAI laboratory diagnosis.

Activity 3.1: Organize local training by trainees previously trained overseas.

- Ongoing through on the job training.

Activity 3.2: Conduct semi-annual PT and QA for serological and rapid tests by linking national labs with Australian Animal Health Laboratory.

- Lab results from samples submitted to AAHL and NIAH showed that the virus causing the recent outbreaks in Yangon were of clade 2.3.4, similar to the virus in Yangon outbreaks in 2007. Sera from the duck survey sent to AAHL reacted to N1-type virus, suggesting the ducks had been exposed to H5N1 virus.

Activity 3.3: Manage a local QA/QC program for the national laboratory network.

- Domestic QA/QC programme is ongoing in its attempts to have uniform standards of technology and staff expertise for all the laboratories (two main diagnostic laboratories and six regional laboratories). During the reporting period, an additional LoA with LBVD has been finalized, which will include support to the ongoing domestic QA/QC.

Activity 3.4: Procure necessary laboratory equipment and supplies.

- The project supported the upgrading of cooling infrastructure at Yangon laboratory. This included a larger chilling machine and larger ducts.

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected live bird markets.

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- The LoA on risk assessment in Yangon and Mandalay is in final stages with final draft report received. The LoA on Ayeyewaddy and Inle Lake area is ongoing and is expected to be completed in the following quarter.

Activity 4.2: Support activities related to biosecurity improvement in selected live bird markets and production zones.

- The LoA on production zones biosecurity improvement has been completed. It included an assessment of the probability of introduction of HPAI in the production zones and of its potential impact and provided recommendations and training on risk management (including study tours and a post training survey). Technical advice was given on the establishment of a Zone Development Fund Account and on possible cost-sharing for zone infrastructures. Planning is well underway for a follow-up LoA, which will focus on additional production zones and concentrated poultry production areas.

Activity 4.3: Recruit an international consultant (epidemiology).

- No activities undertaken.

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- See 4.1.

Future Planned Activities

Output 1: Strengthened cross-sectoral coordination at the national level

Activity 1.1: Recruit an International Technical Advisor (CTA) to assist in coordinating the project implementation with the Government.

- the entire project team will continue through the quarter

Activity 1.2: Organize coordination meetings of the working groups related to HPAI control in animals.

- meetings planned with WHO and the MoH on cross-sectoral collaboration

Activity 1.3: -Support the review and revision of the National Strategy, Contingency plan and Standard Operating Procedures (SOPs) related to HPAI control measures.

- ongoing review of SOPs on compensation and surveillance and outbreak guidelines

Activity 1.4: Support national staff of LBVD to participate and give presentations/share information in international conferences, meetings or workshops.

- no activities planned

Output 2: Strengthened capacity in HPAI disease surveillance and response at the field level

Activity 2.1: Recruit an international short term consultant (epidemiologist).

- no activities planned

Activity 2.2: Surveillance Rapid Response Team (SRRT) refresher training courses and cooperation between animal and human health sectors.

- have national consultants continue to provide support to the expanded surveillance and outbreak investigation program

Activity 2.3: Strengthen SRRTs on effective investigation of AI outbreaks and response.

- ongoing implementation of LoA providing epidemiology support to the expanded surveillance and outbreak investigation program

Activity 2.4: Procure necessary equipment and supplies for surveillance and response.

- no activities planned

Activity 2.5: Support national staff to participate in Regional FETPV.

- have the LBVD staff in the first FEPTV course continue in-country field work, and the second course candidate continue FETPV studies in Thailand until the end of July 2010

Activity 2.6: Support passive and active surveillance for the high risk areas including wetlands, duck-raising and border areas.

- see 2.3

Output 3: Strengthened capacity in HPAI laboratory diagnosis

Activity 3.1: Organize local training by trainees previously trained overseas.

- ongoing on the-job training

Activity 3.2: Conduct semi-annual PT and QA for serological and rapid tests by linking national labs with AAHL.

- no planned activities

Activity 3.3: Manage a local QA/QC program for the national laboratory network.

- finalize the LoA with the LBVD providing laboratory support to the expanded surveillance programme and to the ongoing domestic QA/QC programmes
- coordinate a two-day training on QA/QC in July 2010 for 20 participants from all the laboratories and with trainers from the Yangon laboratory that will include: sample collection, post mortem examination and HA-HI for harmonizing disease investigation with practical exercises
- undertake field visits to the laboratories to monitor sample testing and post mortem examination
- distribution of the QA/QC proficiency testing samples among laboratories in the country to start in August 2010 and to be completed by the end of the year

Activity 3.4: Procure necessary laboratory equipment and supplies.

- review the requirements for supplies and equipment with a view to the findings of the expanded surveillance programme

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected live bird markets

Activity 4.1: Organize meetings/workshops among the stakeholders to discuss risk management for poultry production zone and cross-border trade.

- incorporate meetings and workshops on planning within the planned biosecurity LoA, which will focus on production zones and market areas

Activity 4.2: Support activities related to biosecurity improvement in selected LBMs and production zones.

- finalize and implement a follow-up LoA focused on production zones that may also include market areas in Yangon and Mandalay and finalize the LoA on risk assessment in the Ayeyarwaddy and Inle Lake areas

Activity 4.3: Recruit an international consultant (epidemiology).

- no activities planned

Activity 4.4: Conduct studies to assess risk along the poultry supply chain.

- see 4.2

Main challenges encountered and response provided

The major challenge has been how to adequately respond to the findings of the cross-sectional studies. This challenge has been addressed by expanding the surveillance and outbreak investigation programme to include it as one of the project's main activities.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

Output 1: Strengthened cross-sectoral coordination at the national level

The project team has now been stabilized with a CTA, an international operations officer, five national consultants and three national operations staff. There continue to be good relations with the Government, and the coordination between the FAO programme and the national AI programme is very good. Coordination between the animal-human sectors seems quite good, when there is an outbreak, but at other times remains a challenge, although some progress has been made.

Output 2: Strengthened capacity in HPAI disease surveillance

The finalization of the national duck survey, with improved data collection and management systems including the use of GPS and computer technology, was a major achievement. Expanding surveillance into 76 townships, utilizing community animal health workers and township veterinary officers in a systematic fashion, is a new approach for LBVD. Epidemiology capacity is steadily building, with the second FETPV trainee being accepted, and the first trainee making good progress. LBVD has attained a fair understanding of the value of good data management. The recent outbreaks indicated that disease reporting is adequate and response is well managed and transparent.

Output 3: Strengthened capacity in HPAI laboratory diagnosis

There is good capacity for HPAI diagnosis and HA/HI testing in Myanmar. The domestic QA/QC program is developing well. The prompt shipment of sera to AAHL for N testing and of the virus samples to AAHL and NIAH is a testament to the readiness of Myanmar to seek international support when needed. The results showed that the most recent outbreaks in Yangon were caused by clade 2.3.4, the same clade that caused the 2007 outbreaks in Yangon. The results from the third outbreak are still awaited.

Output 4: Enhanced risk management measures including biosecurity improvement among the high risk poultry population and selected live bird markets

The LBVD has developed a range of risk management strategies, most significant of them being the development of production zones and permit systems for poultry movement. The recently-developed risk assessment/management framework and its initial application has been a significant achievement that has received strong government support. On the basis of studies conducted, the LBVD is in a much better position to assess and manage risk. The LBVD now has a good understanding of risks in the major border areas, and of duck raising areas, based on the results of the duck survey. Recent studies have also elucidated risks in the Mandalay and Yangon market areas, and studies are ongoing in the Ayeyarwaddy and Inle Lake areas.

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 02

Project Title: **Immediate technical assistance to strengthen emergency preparedness for highly pathogenic avian influenza (HPAI)**

Reporting Period: **October 2012 to March 2013**

Country: The People's Republic of China
Project title: Immediate technical assistance to strengthen emergency preparedness for highly pathogenic avian influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 02
Budget: USD 500 000 (Phase I), USD 500 000 (Phase II), USD 650 000 (Phase III), USD 1 150 000 (Phase IV), USD 1 250 000 (Phase V), USD 1 005 500 (Phase VI), USD 670 000 (Phase VII)
Total budget: USD 5 725 500
Effective starting date: 1 August 2006
Planned end date: 30 September 2013
<p>Context of the project</p> <p>Despite efforts by the Government of the People's Republic of China to improve the surveillance and control of highly pathogenic avian influenza (HPAI) through the commitment of resources and development of widespread and comprehensive programmes in both animal disease surveillance and preventive vaccination, the disease remains endemic in some areas of the country. More specifically, the virus is still circulating widely in agro-ecological zones and traditional production systems where the implementation of the control policy requires major effort and commitment of human and financial resources at national and provincial levels. This project was designed to improve the country's capacities to detect and control HPAI in identified high-risk ecological and production systems at an early stage, through the implementation of intensified surveillance activities, epidemiological studies, socio-economic activities, capacity building and training. Ultimately, the project aims to reduce the spread of H5N1 in poultry in the country thus minimizing the risk of contagion to other mammals and humans and the possibility of a pandemic.</p>
<p>Objectives of the project</p> <p>The main objective under Phase VII of the project is to continue the improvement of China's capacities and capabilities to understand HPAI epidemiology, to acquire and analyze relevant information and, overall, to effectively prevent, prepare for, and respond to HPAI outbreaks in the animal population. A significant part of Phase VII of the project will revolve around training and capacity building through the China Field Epidemiology Training Programme for Veterinarians (FETPV). The project will also follow up on new activities and approaches that have been initiated in previous phases, including improvement of public-private partnerships (PPPs), biosecurity in live bird markets (LBMs) and investigation and reporting of outbreaks. Other activities include fostering exchanges of knowledge and good practices with neighboring countries on vaccination strategies, cross-border issues and controlling risks of transboundary animal diseases (TADs) using HPAI as a model, operationalizing the <i>One Health</i> concept, and addressing health issues at the human-animal-ecosystem interface with a special emphasis on a multi-disciplinary and cross-sectoral approach.</p>

Planned activities for the reporting period (October 2012 to March 2013)**Output 1: Cross-sectoral coordination at the national and international levels strengthened**

- 1.1 Support the country team including national and international consultants to assist in coordinating project implementation with the government.
- 1.2 Ensure active participation as appropriate and facilitate coordination of the country programme with other projects or programmes including the Emerging Pandemic Threats Plus (EPT+) and EPT programmes.
- 1.3 Organize regular meetings with the Chinese Ministry of Agriculture (MoA) – the Veterinary Bureau and Department of International Cooperation (DIC) – and the State Forestry Administration (SFA) to discuss project activities and implementation issues.
- 1.4 Strengthen cooperation with relevant laboratories and epidemiology networks.
- 1.5 Coordinate the United Nations Theme Group on Health (UNTGH) sub-working group on diseases at the human-animal interface using avian influenza coordination as a model.

Output 2: Veterinary epidemiology capacity strengthened

- 2.1 Organize stakeholder meeting/mentors workshop/Steering Committee meeting for the second cohort of China FETPV.
- 2.2 Organize three training modules under the framework of the China FETPV for the second cohort.
- 2.3 Arrange Trainings through Service (TTS) activities in the field: field surveillance and outbreak investigation.
- 2.4 Support the Veterinary Bureau and China Animal Health and Epidemiology Center (CAHEC) to organize epidemiology training at the national and provincial levels.
- 2.5 Support the participation of national staff in the Regional FETPV training in Bangkok, Thailand.
- 2.6 Engage the MoA and mobilize stakeholders support for a strategic plan for epidemiological capacity building.
- 2.7 Enhance practical *One Health* approaches in China FETPV training.

Output 3: Knowledge of HPAI epidemiological, ecological and socio-economic risk factors improved

- 3.1 Produce monthly bulletin, HPAI Disease Update, technical/scientific papers and analytical reports on HPAI situation.
- 3.2 Assist national authorities in investigating disease outbreaks, analyze national surveillance results and provide guidance on improving national and provincial surveillance policies.
- 3.3 Discuss with MoA, SFA, local agencies in Jiangxi Province and other national implementing partners the implementation of surveillance and epidemiological studies.

Output 4: HPAI surveillance and control strategies improved

- 4.1 Assist in refining the strategic vision for the national vaccination campaign, provide guidance on improving the progressive control of H5N1 HPAI through vaccination and share views on establishing vaccination exit strategies where appropriate.
- 4.2 Identify remaining difficulties and gaps of national and provincial surveillance through trainees'

implementation of TTS activities under China FETPV.

- 4.3 Assist MoA and provincial partners to establish models of good practice for disease control (this will include promoting the scaling up of the PPP project in Guangdong Province through the demonstration of a model market – Guangzhou Jiangcun Market).

Activities undertaken during the reporting period (October 2012 to March 2013)

Output 1: Cross-sectoral coordination at the national and international levels strengthened

Activity 1.1: Support by country team in coordinating project implementation:

- Recruitment of one National Project Coordinator (six months) and co-funding of one Programme Assistant (three months from July-September 2013) under Personal Service Agreement (PSA) contracts under the EPT+ project; and
- Recruitment of one National Consultant on PPP to work for the promotion and roll-out of the PPP project in Guangzhou LB (50 working days under a PSA contract).

Activity 1.2: Implementation of the EPT+ project in the country:

- Consultation with the MoA (Veterinary Bureau and DIC) for the official endorsement of the project proposal;
- Field mission to Harbin Veterinary Research Institute (HVRI), Chinese Academy of Agricultural Sciences (CAAS), negotiated with National Animal Influenza Laboratory for swine surveillance from 14 to 15 November 2012;
- A letter of agreement (LoA) on surveillance in Guangzhou and Hunan with HVRI prepared, approved and signed (total amount USD193856.55, cleared by the Procurement Service of the Food and Agriculture Organization of the United Nations [FAO]);
- Procurement of animal influenza Test Kits and laboratory equipment (total amount USD 50 948.86) with delivery completed and accepted by HVRI;
- Detailed sampling plans were discussed and confirmed with Guangdong and Hunan Animal Centers for Disease Control (CDCs) during the mission from 20 to 21 December 2012;
- The first-round of sampling was carried out by the sampling team from HVRI in January 2013 in Guangzhou and Hunan Provinces. A coordination meeting was organized at the Hunan Animal CDC on 17 January 2013 before the work commenced. In total 5800 sets of swine nasal swab and blood samples were collected. Among them, 2800 sets were from Changde (Dongting Lake area) and Changsha city, Hunan Province, and 3000 sets were from three cities in Guangdong Province. Samples were collected at slaughterhouses and pig farms;
- Virus isolation and Enzyme-linked immune-sorbent assay (ELISA) tests for two batches of samples were under testing in Harbin laboratory. Some preliminary results will be shared in the mid-term technical report in May-June 2013;
- An internal side-meeting for EPT+ country teams was organized during the seventh Annual Regional ECTAD [Emergency Centre for Transboundary Animal Diseases] RAP [Regional Office for Asia and the Pacific] Meeting (AREM) in Bangkok to review progress and share future arrangements;
- The second round of sampling will be carried out from 11 to 14 March 2013. A total of 2 000 set of samples were taken from two cities in Guangdong Province and 2200 sets of samples from the Dongting Lake area and Changsha city in Hunan Province. The total number of samples for the project will be more than 10000 from both provinces; and

- Human blood samples were collected by local CDCs, in Guangzhou and Hunan as part of a joint surveillance activity on farms and at slaughterhouses.

Activity 1.3: Meetings with national government partners for project/programme implementation:

- An official meeting with the Veterinary Bureau and the DIC of the MoA was held in the MoA's conference room on 19 September 2012. A number of important issues were discussed with Dr Song Junxia, the new Acting Director of the Division of Science, Technology and International Cooperation within the Veterinary Bureau; and
- A Strategic Planning Workshop for the ECTAD China Office was organized from 14 to 15 January 2013. Representatives from the FAO Representation Office, MoA (Veterinary Bureau) and CAHEC were actively engaged. Future programme/project priorities and directions were identified and agreed upon with the key national partners. These will be incorporated into plans for the next year.

Activity 1.4: cooperation with laboratories and epidemiology networks:

- Coordinate with the MoA and HVRI for the designation of the Animal Influenza Laboratory (AIL) as the FAO Reference Centre for Animal Influenza; and
- After the National Animal Influenza Laboratory, the Harbin Veterinary Research Institute was recognized by FAO as the FAO Reference Centre for Animal Influenza. A celebration ceremony was held in Harbin and attended by Dr Juan Lubroth (FAO Chief Veterinary Officer), Dr Subhash Morzaria (Regional Manager of ECTAD RAP), Mr Percy W. Misika (FAO Representation in China) and high level officials from the MoA and its affiliated institutes, including the CAAS, China Animal Disease Control Center (CADC) and CAHEC, as well as technical and administrative officials for the provincial and municipal governments.

Activity 1.5: UNTGH sub-working group meetings:

- A meeting of the Executive Committee held in December 2012;
- The second Rabies Technical Advisory Board meeting held on 17 January 2013, chaired by Prof. Edwards the outcomes of which included joint plans to assist the Government with planning for rabies control; and
- A sub-working group meeting organized on 5 March 2013 with the participation of Dr Subhash Morzaria, Regional Manager of ECTAD RAP. The annual Action Plan and a scoping paper on *One Health* Event, which is scheduled to be held in June-July 2013 were reviewed and discussed among all participants. There has been good progress with implementation of the action plan.

Output 2: Veterinary epidemiology capacity strengthened

Activity 2.1: The seventh Steering Committee Meeting was organized in January 2013. Representatives from the Veterinary Bureau, CAHEC, China Field Epidemiology Training Programme (FETP), United States Center for Disease Control and Prevention and European Union (EU)-China Trade Project Phase II attended the meeting to discuss key issues of programme development.

Activity 2.2: The activities of first cohort of the China FETPV are:

- The trainees from the first cohort completed their field practice assignments by the end of October 2012 as the training framework required. In total, trainees conducted

16 epidemiological studies and 14 outbreak investigations during the two-year programme; and

- Fourteen trainees graduated on 11 October 2012 after completion of the two-year training programme and a graduation ceremony for the China FETPV first cohort was held in Qingdao.

Activity 2.3: A four-week introductory course on basic epidemiology was held at Qingdao from 19 November to 14 December 2012. A total of 29 trainees from 17 provinces, three national institutions and one university attended the course. They were selected out of 60 applications from around the country according to established criteria.

Activity 2.4: A joint workshop on epidemiology of zoonotic disease and the interface between animal and human health was held from 14 to 15 December 2012. This involved 29 trainees of China FETPV and 48 trainees of China FETP. This was co-funded by the EU Trade project.

Activity 2.5: Following the recruitment criteria and process which was approved by the Steering Committee, 20 trainees were selected to enrol in the two-year training programme. They are from 12 provincial animal CDCs, three municipality animal CDCs, one university and CAHEC. The launching ceremony of the second cohort was held on 9 March 2013 in Beijing and formal training commenced in Qingdao on 11 March 2013.

Activity 2.6: A two-day Veterinary Epidemiology Training for Executives was organized from 9 to 10 March 2013 under the China FETPV framework. The workshop aimed to enhance senior Government officials' understanding of the basics of veterinary epidemiology and its role in disease control and thus strengthen their ability to develop effective animal and public health programmes. A total of 53 senior officials from national and provincial animal CDCs participated in the workshop which was facilitated by Prof. Edwards, Prof. Dirk Pfeiffer and Dr David Castellán. Participants indicated a high level of satisfaction and a commitment to support ongoing epidemiological activities in their provinces/workplaces.

Activity 2.7: The activities to strengthen the Chinese partners' capacity were organized both at the national and provincial levels:

- Prof. Edwards presented at the Sino-Dutch Veterinary Science and Technology Seminar organized by the Netherlands Embassy and the Veterinary Bureau on 12 December 2012;
- A training on epidemiological mapping and spatial analysis was organized for CADC in February 2013; and
- A training request from Beijing General Station on animal husbandry and veterinarians was proposed at the cooperation meeting held on 7 March 2013.

Activity 2.8: Nomination of national participants to attend the Regional FETPV training.

Output 3: Knowledge of HPAI epidemiological, ecological and socio-economic risk factors improved

Activity 3.1: In total, 12 issues of the Monthly Bulletin-China HPAI Highlights (six in English and six in Chinese) and one HPAI Disease Update and analysis report on the HPAI situation were produced during the past six months. These products were disseminated to all relevant stakeholders on a regular basis.

Activity 3.2: A template form for outbreak investigation was developed by the office to assist national authorities in investigating disease outbreaks, analyzing national surveillance results and providing guidance on improving national and provincial surveillance policies.

Activity 3.3: Consultation with the MoA, SFA and provincial partners to carry out surveillance and epidemiological studies were continued through technical workshops/meetings.

Output 4: HPAI surveillance and control strategies improved

Activity 4.1: A technical workshop on animal influenza research was organized with HVRI on 4 March 2013, during which Dr Subhash Morzaria gave a lecture on FAO's initiatives on HPAI and other influenzas in Asia. Dr Li Chengjun from HVRI shared information on research and vaccination development of the HVRI.

Activity 4.2: National and provincial partners agreed to provide support to facilitate trainees' field epidemiology surveillance and outbreak investigation under the second cohort of China FETPV.

Activity 4.3: The promotion of the PPP project in Guangzhou will start between March and June 2013 through demonstration of the model market – Guangzhou Jiangcun Wholesale Market.

Other activities:

- Consultation with the MoA to confirm the training on Good Emergency Management Practice (GEMP) in China. The training will be organized in Beijing from 13 to 15 May 2013;
- Discussion on China-Vietnam Bilateral Meeting was carried out between ECTAD Viet Nam and ECTAD China during the AREM meeting in Bangkok. The preferred date will be in June 2013 and the venue will be in Vietnam; and
- Provided technical advice to the World Bank funded emerging infectious diseases (EIDs) project in the country and participate in the joint missions in Inner Mongolia from 20 to 23 November 2012.

Main challenges encountered and responses provided

There was no significant challenge encountered during the reporting period. In most areas, there was a high level of completion of agreed activities.

Main progress made towards the achievement of project outcomes

The project has made considerable progress towards achieving the expected outcomes, which can be summarized as follows:

- Adoption of FAO recommendations on the control of HPAI was included in the National Medium- and Long-term Plan for Animal Epidemic Prevention and Control (2012-2020), thanks to the ECTAD China Office's ongoing efforts to provide technical advice to the national Government. The National Plan has included FAO's recommendations on the national surveillance programme, vaccination and exit strategies, risk-based animal control strategies, and the management of LBMs consistent with international standards for animal health. The beneficiaries of the new policy not only includes China itself, but also neighboring countries and other nations in the world, due to the profound implication on food safety and trade of animals and animal products;
- China FETPV is recognized by high-level officials from both the central and provincial

governments as a pivotal training programme for the development of veterinary epidemiology in the country. The MoA and its affiliated institute – CAHEC – have increased commitment and funding for the second cohort. China FETPV has gradually institutionalized and integrated into the Government's national programme, while successfully attracting support and commitment from other collaboration partners, such as the EU;

- Under the UNTGH umbrella, the ECTAD China Office is now taking the lead in coordination with national institutions and international partners in the country on zoonotic diseases and the application of *One Health* approaches. A platform of information exchange and coordination among the public health and the animal health sectors now exists among FAO, the World Health Organization, the MoA, Ministry of Health and SFA;
- The successful and effective implementation of this project has won trust from not only the central and local governments, but also great support from the private sectors, including the market management and the individual vendors. With future commitment from both the public and private sectors, the experience and practice of this project can be further promoted in another seven LBMs in Guangzhou, and can also be duplicated in other provinces in the country; and
- The Office also obtained full support from national partners by organizing a joint strategic planning workshop for 2013/14, for which a set of principles were agreed to. They include alignment with priorities of key stakeholders and international good practices in each activity, applying *One Health* approaches wherever possible, achievement of results within current budgets and with affiliated projects.
- The relationships with MOA and CAHEC have been enhanced during this period.

II Quarter 2010

Project monitoring sheet: OSRO/EGY/701/USA

Project title: Strengthening avian influenza detection and response (SAIDR) in Egypt

Reporting period: January – March 2010

Country: Egypt Title: Strengthening avian influenza detection and response (SAIDR) in Egypt Code: OSRO/EGY/701/USA
Budget: USD 3 000 000 (Phase I), USD 3 000 000 (Phase II), USD 3 000 000 (Phase III) Total budget USD 9 000 000
Effective starting date: October 2007
Planned end date: September 2010
<p>Context of the project</p> <p>Outbreaks of Highly Pathogenic Avian Influenza (HPAI) have spread in Egypt since February 2006 and the disease has become endemic. The Food and Agriculture Organization of the United Nations (FAO) has been providing technical assistance to the Ministry of Agriculture and Land Reclamation (MALR) through the implementation of the animal health component of the SAIDR project funded by the United States Agency for International Development (USAID).</p>
<p>Objectives of the project</p> <p>The overall objective of the project is to minimize human health risks and reduce the livelihood impacts posed by HPAI through its effective prevention and control. The specific objectives of the project are to:</p> <ol style="list-style-type: none"> 1. ensure the regular updating of the national HPAI control/response plan; 2. facilitate the improvement of biosecurity measures to reduce virus circulation in poultry populations and bird-to-human transmission; 3. facilitate the improvement of surveillance activities of H5N1 in poultry and wild birds; and 4. facilitate the improvement of HPAI outbreak investigation and response measures in poultry populations.
<p>Planned outputs and activities</p> <ul style="list-style-type: none"> • An international consultant will review and update the animal health component of the integrated national Avian and Human Influenza (AHI) Plan. A consultative high-level workshop will be organized to discuss and agree on the updated national plan. • A draft active and passive HPAI surveillance plan will be prepared based on identified critical control points, covering all poultry production sectors and in accordance with the integrated national plan. • A technical workshop will be organized, involving relevant stakeholders and partners to gather inputs and to enrich the draft HPAI surveillance plan.

- Follow up will be carried out on the proper implementation of the various Letters of Agreement (LoAs) by national and international partners.
- The sampling and testing of domestic ducks residing near important resting sites for migratory bird (Al Fayoum) and around wetlands in Lake Manzala will be completed.
- An evaluation of the Participatory Epidemiology (PE)/Participatory Disease Surveillance (PDS) programme will be conducted (analysis of data collected from the pilot governorates since the start of the PDS programme in Egypt in November 2008).
- A one-day workshop will be organized for key decision-makers to present and discuss the results and lesson learned from the PDS activities and the way forward.
- The implementation of the current LoA with the International Livestock Research Institute (ILRI) will be re-assessed and a second agreement entered into with ILRI for the implementation of the remaining project activities.
- Three training courses will be carried out on the new community-based animal health outreach (CAHO) approach, each lasting for five days, involving 12 existing PDS trainers and 42 practitioners.
- Two consultative workshops will be conducted on the principles, linkage with other project activities and management of the CAHO programme in Egypt.
- The biosecurity guidelines will be finalized (with inputs from other FAO-implemented projects), translated into Arabic, printed and disseminated to downstream users.
- A workshop will be organized to gather inputs and enrich the draft biosecurity measures.
- Four training courses will be conducted for field veterinarians to support the improvement of biosecurity measures at the farm level.
- The HPAI hotlines system, established within the General Organization for Veterinary Services (GOVS) premises, will be operationalized.

Activities undertaken during the reporting period (October to December 2009)

Objective 1: Ensure the regular updating of the national HPAI control/response plan

- An international consultant (Dr. Antony Forman) was recruited to review and update the animal health component of the integrated national plan for controlling HPAI in Egypt.
- FAO, in collaboration with the MALR and the National AHI Supreme Council, revised the national strategy for the control of HPAI. The draft content of a revised strategy was discussed in two workshops:
 - The first was a technical workshop and took place in Cairo on 15-16 February 2010 with 80 participants from GOVS, the National Laboratory for Quality Control on Poultry Production (NLQP), the animal production sector, the Central Laboratory for Evaluation of Veterinary Biologics (CLEVB), FAO, United Nations System Influenza Coordination (UNSIC), the World Organisation for Animal Health (OIE), the United States Department of Agriculture (USDA), regional laboratories and veterinary directorates, and the Egyptian Poultry Producers Association.
 - The second workshop was organized on 18 February 2010, with attendance by over 100 stakeholders, including high-level political authorities, United Nations agencies, international organizations, donors, non-governmental organizations (NGOs), representatives of poultry producers and private service/input suppliers.

The strategy emphasizes the need for longer-term risk reduction interventions with a key focus on biosecurity, improving market chain management, and strengthening veterinary services. The strategy will be implemented over five years and requires an estimated USD 100 million. The English and Arabic versions of the revised strategy have been prepared

and will soon be officially submitted to MALR and the National AHI Supreme Council for formal endorsement.

- ECTAD, GOVS and NLQP have continued to produce and distribute the *Monthly HPAI News Review* to stakeholders in Egypt and worldwide via print and the Internet¹. The *Review* continues to provide relevant information on HPAI and related project activities in Egypt.
- The process for the refurbishment of 120 decentralized epidemiology units had been initiated through an assessment of local needs. Procurements required for these units are:
 - 50 desktop computers (already received and delivered to GOVS for distribution to various epi-units); and
 - 50 UPSs, 50 printers, 120 air conditioners, 120 computer tables and 240 chairs (in process).

Objective 2: Improvement of biosecurity measures to reduce virus circulation in poultry populations and bird-to-human transmission

- FAO signed 14 LoAs with governorate veterinary services identified as high-risk areas (Assuit, Banisuef, Beheira, Dakahlia, Fayoum, Gharbia, Helwan, Kafr El-Sheikh, Minya, Monufia, Qena, Sharqia, Six October, and Souhag). The aim of these LoAs is to provide financial assistance to the recipient organizations to support running costs for field implementation of approved biosecurity measures.
- Biosecurity guidelines for the different poultry production sectors and farming types are in the process of being finalized by other FAO-implemented projects.

Objective 3: Improvement of surveillance activities of A/H5N1 in poultry and wild birds

- The international surveillance expert, Dr Yvon Lebrun (seconded by the French Ministry of Foreign and European Affairs to FAO,) has started reviewing and updating the HPAI surveillance plan.
- An LoA was signed with ILRI. The main purpose of this is to support the development of professional modular courses and conduct of tailored short-term group training sessions for teams participating in the CAHO (formerly referred to as PDS) programme in selected governorates.
- The evaluation of the process of PE/CAHO introduction and impact of the methodology employed on the national surveillance system in Egypt was conducted by ILRI (consultant from the Royal Veterinary College [RVC] – Dr. Jonathan Rushton) in collaboration with FAO. The evaluation mission concluded that the CAHO approach has had a very positive short-term impact on disease detection and the data generated by these field trips has also stimulated the Egyptians involved to examine how the disease is spread and maintained. However, there is a need for the Egyptian Government to financially support this new approach and provision of continuous training for staff involved.
- A one-day workshop for key animal health decision-makers on CAHO was organized on 7 March 2010. The main objective was to present and discuss the results obtained to-date and lessons learned from CAHO field activities, as well as to agree on the way forward.
- From 8 to 12 March 2010, a four-day orientation workshop on the CAHO approach was organized, involving 12 CAHO practitioners from three governorates (Gharbia, Sharkia and Behera). The aim of the workshop was to provide support to carry out subsequent CAHO orientation and introductory training courses.
- A further two training workshops on the CAHO approach, each lasting five days, was organized. The purpose of these was to launch the CAHO programme in previously targeted governorates through the consolidation of achievements and adding value to the existing

¹ FAO ensures the newsletter is featured on SAIDR and United Nations Development Programme web sites.

programme, which was started in previous SAIDR project phases. The first workshop took place from 14 to 18 March and involved 19 CAHO practitioners, while the second workshop was held from 21 to 25 March and involved 21 CAHO practitioners.

- 22 CAHO teams continue to work in ten governorates. These teams visited 226 villages and detected 89 suspected HPAI outbreaks, of which 66 were confirmed by real-time polymerase chain reaction (RT-PCR) tests. During the reporting period, 41 percent of the HPAI reported from the household poultry sector was detected through the CAHO programme.
- In collaboration with GOVS and NLQP, sampling and testing of domestic ducks residing near important migratory bird resting sites around wetlands in Lake Manzala were completed.
- Diagnostic kits for RRT-PCR for testing 2 000 pool samples were received and delivered to NLQP. The kits are meant to support NLQP to enable it to play its role in HPAI surveillance activities in poultry.
- Two vehicles procured to support increased Emergency Centre for Transboundary Animal Diseases Operations (ECATD)-FAO field activities of the unit in Egypt were received.
- Procurement of the following items is in process:
 - consumables/plastic ware for RRT-PCR for NLQP to meet its requirements for routine HPAI diagnosis in poultry;
 - sampling kits and transport media as required by GOVS; and
 - various consumables required for outbreak investigation and response (disinfectants, detergents, gloves, masks, aprons, shoe covers).

Objective 4: Improvement of HPAI outbreak investigation and response measures in poultry populations

- FAO signed 22 LoAs with Directorates of Veterinary Services in infected governorates (Alexandria, Assuit, Aswan, Banisuef, Beheira, Dakahlia, Damietta, Fayoum, Gharbia, Giza, Helwan, Ismalia, Kafr El-Sheikh, Luxor, Matrouh, Minya, Monufia, Qena, Sharqia, Six October, Souhag, and Suez). The Agreements enable the provision of financial assistance to support recipient organizations (ROs') running costs for HPAI outbreak investigation and implementation of response measures.
- Eight technical training courses were provided to rapid response teams (RRTs) from 19 governorates (representing 154 districts). The main aim of the training was to enhance their performance and efficiency in responding to HPAI outbreaks.

Project management issues

- The Chief Veterinary Officer (CVO) in Egypt has been replaced. As the SAIDR project is jointly implemented with GOVS, it is assumed that the new CVO will take some time to thoroughly understand the nature and scope of the project. The ECTAD Team Leader and Programme Operations Officer held a meeting with the new CVO and explained the various collaborative projects that FAO is implementing with the Government of Egypt.
- A renovation of GOVS premises for the establishment of a HPAI hotline system is near completion.

Planned activities for the next quarter:

- Prepare a draft active and passive HPAI surveillance plan based on identified critical control points, covering all poultry production sectors and in accordance with the integrated national plan.
- Organize a technical workshop involving relevant stakeholders and partners to gather inputs and for the enrichment of the draft HPAI surveillance plan.
- Follow up on the proper implementation of the various LoAs by national and international

<p>partners.</p> <ul style="list-style-type: none"> • Re-assess the implementation of the current LoA with ILRI and enter a second agreement with the same for the implementation of the remaining project activities. • Conduct an introductory CAHO course (ten days) for 20 new practitioners. • Conduct a refresher workshop (five days) for the 20 new CAHO practitioners who will receive the introductory course mentioned above. • Conduct a training of trainers (ToT) course (six days) for 12 CAHO practitioners. • Organize and conduct two consultative workshops on principles and management of the CAHO programme in Egypt involving veterinary directors and other decision-makers at governorate level. • Finalize the procurement process for the remaining items to be delivered to GOVS and NLQP on time. • Operationalize the HPAI hotline system established within the GOVS premises.
<p>Main challenges encountered and solutions</p> <ul style="list-style-type: none"> • Lack of capacity in governorate veterinary services to implement and report according to terms specified in the various LoAs signed with FAO. ECTAD teams are regularly following up the implementation and reporting status of ROs and provide technical assistance as necessary. • Kalubiyia Governorate, being one of the high-risk governorates identified, declined to sign two LoAs. There has been no official reason provided for this. Therefore, ECTAD-FAO decided to leave out the LoAs for the specified governorate.
<p>Main progress made towards the achievement of project outcomes</p> <ul style="list-style-type: none"> • FAO has implemented, analyzed and compiled numerous field-level studies on livelihoods, poultry value chains and disease control constraints for use by GOVS. Project outputs have strengthened the institutional capacities (manpower, infrastructure, etc.) of veterinary services at both central and governorate levels. • The assessment study conducted in the framework of the SAIDR project on avian influenza vaccination of poultry in Egypt indicated that vaccination coverage and flock immunity level is low. The organization of vaccination campaigns is poorly managed. The study suggested that vaccination should be seen as only one of the many efforts required to make significant improvements to HPAI control and prevention in the country. FAO has developed and handed over to GOVS a risk-based, targeted vaccination scheme for the different production sectors, as well as an operational plan and exit strategy. • The strategic HPAI review meeting held in June 2009, jointly organized by USAID, GOVS, the Ministry of Health and FAO, urged stakeholders to refocus efforts for the future. As a result, the SAIDR project is focusing the majority of its efforts on the following key areas: i) sustainable and cost-effective biosecurity in all production sectors; ii) risk-based targeted surveillance; and iii) improved outbreak investigation and disease management capacities. • In close consultation with the primary stakeholders, FAO continually evaluated its project implementation. Government counterparts operating at various levels and private sector actors appreciated FAO's approach and demonstrated a high level of confidence. In close consultation with relevant partners, FAO has completed the process of reviewing the animal health component of the integrated national plan that needs to reflect the endemic nature of the disease and the need for longer-term risk reduction measures.

II Quarter 2010Project monitoring sheet: **OSRO/EGY/801/USA**Project title: **Avian influenza vaccine efficacy project (AIVEP) in Egypt**Reporting period: **January to March 2010**

Country: Egypt Title: Avian influenza vaccine efficacy project (AIVEP) in Egypt Code: OSRO/EGY/801/USA
Budget: USD 2 416 500 (Phase I) Total budget: USD 2 416 500
Effective Starting Date: October 2008
Planned End Date: September 2010
Context of the project <p>Outbreaks of Highly Pathogenic Avian Influenza (HPAI) spread in 18 governorates in Egypt within less than three months after the disease was originally diagnosed in three Governorates on 17 February 2006. The Government attempted to control the outbreak through a stamping-out procedure, which included culling of all poultry within a 1 km radius of the confirmed diagnosis. By the end of 2006, nearly 30 million birds had been culled. Outbreaks continue to be reported in 23 of the 29 governorates in the country and the disease has become endemic.</p> <p>In response to the continued threat of HPAI to Egypt, the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) have been providing technical assistance through the joint OIE/FAO Influenza Network (OFFLU) and other initiatives. Specifically, FAO has been providing the Ministry of Agriculture and Land Reclamation (MALR) with major technical assistance through the implementation of the AIVEP and the strengthening avian influenza detection and response (SAIDR) project, both funded by the United States Agency for International Development (USAID).</p> <p>In collaboration with the Government of the Arab Republic of Egypt, FAO, OFFLU and USAID are working together to conduct virus characterization and mapping of Egyptian antigenic variants with intensified HPAI field isolate collection and analyses. Through antigenic mapping, challenge testing and transmission studies, this project has been developing strategic recommendations for Egypt, including on the development of clear criteria for the selection of vaccinal strains.</p> <p>FAO is providing key technical support through the AIVEP as vaccination is considered part of the overall efforts to reduce HPAI infections and spread of the virus in Egypt, with the potential to benefit other countries in the region and worldwide.</p>

Objectives of the project

The overall project objective is to assist the Government of Egypt in its efforts to control HPAI in the domestic poultry population and avoid the risks of human infection.

The specific project objectives are to conduct:

1. screening and evaluation of genetic and antigenic variants among existing H5N1 HPAI field strains previously collected from 2006 until early 2008;
2. intensified collection of H5N1 HPAI field isolates from newly confirmed outbreaks (since mid-2008);
3. challenge testing of antigenic variants in specific pathogen free (SPF) birds and currently used avian influenza (AI) vaccines in Egypt; and
4. controlled transmission trials in the laboratory on birds raised and vaccinated in commercial poultry farms.

Planned activities

Output 1.1: Screening and evaluation of genetic and antigenic variants among existing field strains previously collected from 2006 until early 2008;

- Activity 1.a: Screening and evaluation of genetic and antigenic variants among existing field strains (2006 – early 2008 collections)
- Activity 1.b: Carry out sequencing and phylogenetic analysis
- Activity 1.c: Conduct antigenic profiling
- Activity 1.d: Perform antigenic cartography
- Activity 1.e: Selection of variants for challenge studies as specified under Output 1.3 below
- Activity 1.f: Assessment of biosecurity and biosafety of the National Laboratory for Veterinary Quality Control on Poultry Production (NLQP) and laboratory operations
- Activity 1.g: Capacity building (i.e. training of Egyptian scientists)

Output 1.2: Intensified collection of H5N1 HPAI field isolates from newly confirmed outbreaks (since mid-2008).

- Activity 2.a: Intensified HPAI field isolate collection
- Activity 2.b: Conduct real-time polymerase chain reaction (RT-PCR) analysis (support for laboratory consumables provided through SAIDR project)
- Activity 2.c: Identify all H5N1 HPAI isolates collected since mid 2008 to 2009
- Activity 2.d: NLQP conduct sequencing and analysis of 100 isolates under the supervision of and assessment by the Southeast Poultry Research Laboratory (SEPRL)
- Activity 2.e: Perform antigenic profiling and cartography

Output 1.3: Challenge testing of antigenic variants in SPF birds and currently used AI vaccines in Egypt

- Activity 3.a: Safety, purity and potency testing of currently used avian influenza vaccines in Egypt conducted at the Central laboratory for Evaluation of Veterinary Biologics (CLEVB)
- Activity 3.b: Selection and testing of vaccinal seed strains for challenge testing (planned to test six vaccinal seed strains against four challenge viruses [requiring a total of 24 isolation units] carried out at SEPRL [USA]).
- Activity 3.c: Second-year challenge testing carried out at NLQP (Egypt)
- Activity 3d: Capacity building (refurbishing one of the existing NLQP units to biosafety

	level 2+ [BSL2 +] animal facility)
Output 1.4:	Controlled transmission trials in the laboratory on birds raised and vaccinated in commercial poultry farms
Activities:	FAO to organize and provide support through training and workshop (during the last quarter of the project) to enhance skills of NLQP staff in transmission trials.
Activities undertaken during the reporting period	
Output 1.1: Screening and evaluation of genetic and antigenic variants among existing field strains previously collected from 2006 until early 2008;	
1. a .05 Selection of variants for challenge studies as specified under Output 1.3 below	
<ul style="list-style-type: none"> • HI test and cartography analysis were conducted on 20 isolates submitted to SEPRL. Based on these results, a challenge test design was prepared, which was used to select three challenge isolates and four vaccinal seed strains. • The test was suppose to be completed as per the plan. However, some groups need to be re-tested (test repeated) due to the fact that some chickens had no antibodies after vaccination, implying that they may have not been vaccinated correctly. 	
Output 1.2: Intensified collection of H5N1 HPAI field isolates from newly confirmed outbreaks (since mid-2008).	
1. b Intensified HPAI field isolate collection 2009	
1. b. 01 Intensify field sampling (SAIDR project)	
From January to March 2010, NLQP, in close collaboration with the SAIDR project staff, has collected 110 676 samples from 5 718 suspected cases. Of these, 229 cases tested positive for HPAI avian influenza by RRT-PCR.	
1. b. 02 RRT-PCR analysis.	
Results of RRT-PCR tests undertaken from January to March 2010 include:	
<ul style="list-style-type: none"> • All collected samples from 5 718 suspected cases were tested for common gene by RT-PCR, and 229 of the cases were found positive for avian influenza. • All the above-indicated positive cases for common gene of avian influenza were also tested positive for H5 gene. However, the positive cases for common gene of avian influenza were tested negative for H7 gene. • The database of the new avian influenza-positive samples has been updated on a daily basis. 	
1. b. 03 Identifying all avian influenza isolates available from mid-2008 to 2009	
<ul style="list-style-type: none"> • Compilation of the list of positive samples and isolates from 2008 has been completed while the process for isolates from 2009 is still underway. • The trial for isolation of the 125 positive tested cases (with RRT-PCR) was started during the reporting period and is still underway. • Virus propagation and reactivation of 69 positive samples was carried out at NLQP. • Isolated samples were titrated using HA test and kept in -80°C; the database was updated daily. • NLQP finalized the sequencing of H5 gene for 3 and 24 isolates from 2009 and 2010 collections respectively. 	

- NLQP finalized the sequencing of N1 gene for 10, 8 and 8 isolates from 2008, 2009 and 2010 collections, respectively.
- A total of 65 HA genes (7 from 2008, 33 from 2009 and 25 from 2010 collections) and 45 NA genes (12 from 2008, 25 from 2009 and 8 from 2010 collections) were submitted to the Gene Bank and currently under publication.

Non-intermediate results (IRs) activities:

- Preparation of international bid to select consultant company for establishment of air ventilation system in animal facility area at NLQP to reach BSL3 quality, which is required for the challenge test.

Planned Activities for the next quarter:

1.b.01 Intensified field sampling – SAIDR project

- Collection and testing of laboratory samples will continue during the next reporting period.

1.b. 02 RT-PCR analysis – SAIDR project. SEPRL could provide assessment if partially covered in AIVEP

- Specific laboratory assays to be carried out include:
 - RNA extraction for the collected samples;
 - real-time RT-PCR to identify the common gene;
 - real-time RT-PCR to identify the H5 gene for the common gene positive samples;
 - real-time RT-PCR to identify the H7 gene for the common gene positive samples;
 - the positive samples will be subjected to further propagation and identification; and
 - updating the new AI positive samples list.

1.b.03 Identifying all AI isolates available mid-2008 to 2009

- NLQP will sequence and analyze 100 isolates.
- SEPRL will provide supervision and assessment.
- Phylogenetic analysis will be performed on the viruses. In addition, the viruses will be categorized as to virulence:
 - RNA extraction for 100 isolate;
 - PCR amplification and electrophoresis;
 - purification of the PCR product;
 - sequencing of the obtained PCR products; and
 - sequence analysis and submitting the sequences to the Gene Bank database.

1.b.04 Antigenic profiling and cartography.

- NLQP will conduct antigenic profiling on 100 representative isolates:
 - preparation and standardization of all reagents and equipment needed;
 - arrange the work plan according to the isolates list database;
 - record the results and analysis of the tested positive isolates; and
 - share the results of analysis with other partners.

2 Challenge testing of antigenic variants and existing vaccines

2.01 Safety, purity and potency testing of current AI vaccines

- SEPRL will interact with CLEVB on an evaluation of currently licensed vaccines to assess them against international standards.
- Initial testing will be done at SEPRL, but the majority of this work should be done at CLEVB with the interaction of SEPRL scientists.

- This includes providing training at CLEVB.

2.03 NLQP, SEPRL and Erasmus examine antigenic, genetic, potency, efficacy; and make recommendations to the Government of Egypt on the appropriateness of existing vaccine seed strains and currently used AI vaccines in Egypt.

Other:

- The project will continue developing the BSL3 capacity at NLQP through the technical assistance of NAMRU3.

Main challenges encountered and response provided

- The SEPRL scientists, for the second or third time, cancelled a mission to NLQP (Egypt) to conduct specialized training and to visit laboratory facilities in Egypt (NLQP, CLEVB). However, NLQP has managed to conduct the HI testing in accordance with the protocols set by SEPRL. SEPRL scientists were due to arrive on mission to Egypt in April 2010 and arrangements started where three scientists will visit Egypt from 3 to 18 April 2010.
- Re-testing of some groups of the challenge test conducted at SEPRL will be started in July 2010. This will lead to rescheduling of some activities, affecting the time plan of the project. As a result, a no-cost extension of the project beyond the scheduled end date is required and the same application was already received from SEPRL.
- Difficulties were faced in searching and finding a local experienced company specialized in design, construction, and follow up on the delivery of BSL3 laboratory and air ventilation systems. This has led to the delay in finalizing reconstruction of the animal facility area to reach BSL3 quality, an aspect essential for conducting challenge tests in order to determine the efficacy of vaccines. An international bid has been prepared and four companies were invited to deliver offers (one local and three non-Egyptian companies). This may also be a factor to be considered for a no-cost extension of the project time beyond the planned end date (30 September 2010), as the timeframe offered by the winning company may dictate events.

Project Monitoring Sheet: OSRO/RAS/604/USA Baby 05

Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: October 2010–March 2011

Regional Component: Southeast Asia
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)
Code: OSRO/RAS/604/USA Baby 05
Budget: USD 600 000 (Phase I), USD 1 435 000 (Phase II), USD 1 172 700 (Phase III), USD 937 800 (Phase IV), USD 1 000 000 (Phase V), USD 30 667 (from Mongolia Balance)
Total budget: USD 5 176 167
Effective starting date: 1 August 2006
Planned end date: 30 September 2011
<p>Context of the project</p> <p>The Highly Pathogenic Avian Influenza (HPAI) epidemic, caused by H5N1 viruses, began in late 2003 and in early 2004 in Asia and Southeast Asia and spread to many countries in the region. The effects were particularly severe in Indonesia, Thailand and Viet Nam, which saw widespread outbreaks in poultry and also human cases of H5N1 infection. The Food and Agriculture Organization of the United Nations (FAO), through its Emergency Centre for Transboundary Animal Diseases (ECTAD), established a decentralized unit in Bangkok, Thailand, located in the Regional Office for Asia and the Pacific (RAP), to provide technical backstopping for countries in the Asia and the Pacific region that were experiencing outbreaks of the infection or were at risk of it. ECTAD RAP was supported through a preliminary, regional project (OSRO/RAS/505/USA) funded by the United States Agency for International Development (USAID). This support has continued under FAO's present project.</p>
<p>Objectives of the project</p> <p>The objective of this regional component is to coordinate project activities with the target countries and also to ensure continuity from the previous project (OSRO/RAS/505/USA) to the current one. The project also aims to strengthen regional level cross-sectoral coordination and communication for HPAI control.</p>
<p>Planned activities (for the reporting period)</p> <p>Output 1: Strengthened cross-sectoral coordination at regional level</p> <ul style="list-style-type: none"> • continue to provide technical and operational inputs to country-level projects in collaboration with country teams • continue to provide support to the Association of Southeast Asian Nations (ASEAN) to finalize the roadmap for HPAI Progressive Control and Eradication in Southeast Asia • continue to coordinate and collaborate with other agencies on activities related to HPAI control <p>Output 2: Strengthened regional and national human resources in epidemiology through regional Field Epidemiology Training Program for Veterinarians (FETPV)</p> <ul style="list-style-type: none"> • continue providing technical support to the Thai Department of Livestock Development (DLD), Ministry of Agriculture and Cooperatives (MoAC) in implementing regional Field Epidemiology Training Program for Veterinarians (FETPV)

- support the necessary operational research to be conducted by trainees of FETPV as part of the curriculum requirement and support the trainees to present their work at international conference/meeting/seminar
- support study visit conducted by regional FETPV trainees to international animal health centres or research institutes as part of the curriculum requirement
- continue to provide support to the development of China-FETPV, as well as related training programmes in Cambodia, Lao People's Democratic Republic (PDR) and Nepal

Output 3: Strengthened coordination of epidemiology and laboratory network

- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks
- continue to provide technical inputs for the establishment of a disease tracking system, the Global Animal Disease Information System (EMPRES-i) Asia, in collaboration with the senior technical adviser of FAO's HPAI programme in China and Information Technologies (IT) expert in FAO headquarters

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- continue to provide coordination for country teams conducting risk assessment studies on HPAI transmission through the cross-border poultry trade

Activities undertaken during reporting period

Output 1: Strengthened cross-sectoral coordination at regional level

- FAO continued to maintain international and national regional support staff for the project.
- The Regional Coordinator (RC) continued to coordinate and collaborate with other United Nations (UN) agencies, donors and international humanitarian actors by attending meetings in the region to ensure that support and approaches to HPAI control were harmonized at country and regional levels. Specifically, the RC:
 - attended UN system workshop on Animal and Pandemic Influenza in Asia and the Pacific organized by the United Nations System Influenza Coordination (UNSIC) on 3 and 4 February 2011 in Bangkok, Thailand. The objectives of the workshop were to provide a platform for UN country teams in Asia and the Pacific region to review the UN system response to animal and pandemic influenza since 2005, share lessons learned and experiences gained and identify ways for work in this area to continue in a coordinated and unified way in support of national governments.
- The regional team consisting of the RC, Regional Veterinary Epidemiologist (RVE) and operations team continued to provide technical and operational inputs to country-level projects in collaboration with country teams.
- The RC attended the side meeting of the 32nd ASEAN Ministerial of Agriculture and Forestry (AMAF) meeting. The theme for this meeting was "ASEAN cooperation on animal health and zoonosis: AI and beyond," which was held in Phnom Penh, Cambodia on 24 October 2010 to present the achievements of the HPAI campaign in ASEAN member countries. In addition, the ASEAN roadmap for HPAI prevention, control and eradication was launched during this side event.

- The RC attended “FAO- Animal Production and Health Commission for Asia (APHCA)- UK Department for International Development (DFID) pro-poor HPAI risk reductions: lessons from Southeast Asia and Africa workshop,” which was held in Phuket, Thailand from 25 to 28 October 2010.
- The ECTAD regional team organized an informal technical discussion among FAO technical staff at country levels and the World Organisation for Animal Health (OIE) experts on “HPAI vaccines and vaccination” on 11 and 12 January 2011.
- The ECTAD regional team organized the 5th annual regional ECTAD meeting among FAO technical country staff for information and experience sharing from 22 to 24 February 2011.
- The RC and RVE attended and provided technical inputs to the China and Viet Nam Forum on HPAI Risk Management and Control on 8 and 9 March 2011 in Beijing, China.
- The ECTAD team provided technical inputs to support the activities of USAID Emerging Pandemic Threat (EPT) program, which are conducted by various partners.
- The ECTAD team provided technical and operational inputs to country projects, in collaboration with FAO country teams and national counterparts, for the following activities:
 - recruitment of international consultants;
 - procurement of equipment and supplies; and
 - issuance of contracts to conduct field activities/research.

Output 2: Strengthened regional and national human resources in epidemiology through regional Field Epidemiology Training Program for Veterinarians (FETPV)

- The RVE and RC worked closely with DLD on activities related to FETPV. These included:
 - organizing the one-month course “Veterinary epidemiology in action” from 17 January to 11 February 2011;
 - organizing the second-round visit of the FETPV trainees who were enrolled in the class of 2010 in Thailand for a series of trainings and workshops; and
 - conducting a mission to Khon Kaen, Thailand to provide inputs to the Lao Country Team to organize a one-month course in collaboration with Khon Kaen University.
- The Letter of Agreement (LoA) was finalized to support Thai DLD to implement the regional FETPV during the year 2011.
- The RC and RVE provided technical support to the trainees of the regional FETPV to present the results of their operational research at the “One Health Congress” from 14 to 16 February 2011 in Melbourne, Australia.
- In collaboration with Thai DLD, the ECTAD team arranged a study visit to be conducted by regional FETPV trainees to the Center of Epidemiology and Animal Health, Colorado, USA as part of the curriculum requirements.
- The RVE continued to provide support to the development of China-FETPV and India-FETPV, as well as related training programmes in Cambodia, Lao PDR and Nepal.

Output 3: Strengthened coordination of epidemiology and laboratory network

- The RC continued to provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks.
- ECTAD RAP continued to provide technical inputs to the disease tracking system, EMPRES-i Asia.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- A joint work plan for a pilot project on management of HPAI risks along the market chain at the cross-border level between Thailand and Lao PDR was developed in collaboration with the Academy for Educational Development (AED) and Kenan Institute Asia (KIA). In addition, meetings were conducted to discuss joint activities in detail in November and December 2011.
- Methodology to monitor poultry and other livestock prices as an indicator for animal movement between Thailand and Lao PDR was developed by the Animal Health Economist based at ECTAD RAP.

Planned activities for the next six-month period

Output 1: Strengthened cross-sectoral coordination at regional level

- continue to provide technical and operational inputs to country-level projects in collaboration with country teams
- continue to provide technical inputs, resource persons or training support to the activities related to existing regional HPAI Control framework for ASEAN or existing network systems related to HPAI
- continue to coordinate and collaborate with other agencies on activities related to HPAI control
- continue to provide technical inputs to support the activities of the USAID EPT programme, which are conducted by various partners

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- continue activities to implement the two-year FETPV programme, including the seeking of additional support for the programme through other potential partners
- continue to provide support to the development of China-FETPV, as well as related training programmes in Cambodia, Lao PDR and Nepal
- organize a regional workshop to develop the regional strategy to assist the countries to improve animal disease control systems at the grassroots level focusing on the "Community Animal Health Worker System".

Output 3: Strengthened coordination of epidemiology and laboratory network

- continue to support the implementation of EMPRES-i-Asia to share expertise and information in a real-time manner across the network through meetings, workshops and on-line communication
- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium
- continue to provide support for sample submission from member countries to international reference laboratories

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- continue to support the in-depth studies on the risks of HPAI spread along the poultry production and market chains at the border between Thailand and Lao PDR (Mukdaharn and Savannakhet Provinces)
- support the organization of a bilateral meeting between the Government of Thailand and

<p>Lao PDR to discuss cross-border risk management</p> <ul style="list-style-type: none"> organize regional coordination meetings on risk management at cross-border level among key potential partners including the representatives from participating governments
<p>Main challenges encountered and response provided</p> <ul style="list-style-type: none"> There were no major challenges during the reporting period.
<p>Progress made towards the achievement of project outcomes (from the start of activities)</p> <p>Output 1: Strengthened cross-sectoral coordination at regional level</p> <ul style="list-style-type: none"> Coordination and collaboration between FAO and other international organizations and agencies – as well as with regional political organizations such as ASEAN –continued and was strengthened. Linkages were established between the projects funded by USAID and the projects funded by other donors. <p>Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV</p> <ul style="list-style-type: none"> FETPV continued smoothly with additional collaborations at national and international levels and approved joint funding for the programme. ASEAN member countries advocated for the importance of integrating veterinary epidemiology activities in the national veterinary services and approval by ASEAN working group on livestock, which is expected in the next six months. <p>Output 3: Strengthened coordination of the epidemiology and laboratory network</p> <ul style="list-style-type: none"> In order to facilitate collaboration among key international partners, a matrix was drafted with the aim of strengthening epidemiology and laboratory networks for HPAI in Southeast Asia. This matrix was adapted and endorsed as a Strategic Framework for Regional Laboratory Network for Southeast Asia. Approval by the ASEAN working group on livestock is expected in the next six months. <p>Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade</p> <ul style="list-style-type: none"> A detailed work plan for AED, FAO and KIA for cross-border activities at Mukdahan Province was drafted and agreed upon by the three partners and USAID/Regional Development Mission for Asia (RDMA).

Project Monitoring Sheet: **OSRO/INT/805/USA**

Project title: Developing and maintaining public-private partnerships for the prevention and control of Highly Pathogenic Avian Influenza H5N1 and other emerging infectious animal diseases and improved biosecurity and hygiene at production, collection points and live bird markets, including decontamination

Reporting period: October 2010 to March 2011

Global component: Global cross-country
Countries: Bangladesh, Cambodia, China, Indonesia, Lao People's Democratic Republic (PDR), Myanmar, Nepal and Viet Nam
Project title: Developing and maintaining public-private partnerships for the prevention and control of Highly Pathogenic Avian Influenza (HPAI) H5N1 and other emerging infectious animal diseases and improved biosecurity and hygiene at production, collection points and live bird markets, including decontamination
Code: OSRO/INT/805/USA - no cost extension
Budget: USD 765 690 ¹
Effective starting date: 1 January 2009
Planned end date: 30 September 2011
<p>Context of the project</p> <p>The Public-Private Partnership (PPP)-Biosecurity Project (October 2010-September 2011) is a no-cost extension of two projects: OSRO/INT/805/USA - <i>Developing and Maintaining Public-Private Partnerships for the Prevention and Control of HPAI H5N1 and other Emerging Infectious Animal Diseases (EIADs) (PPP Project)</i> and OSRO/GLO/802/USA - <i>Improved biosecurity and hygiene at production, collection points and LBMs, including decontamination (Decon Project)</i>. The no-cost extension has a duration of 12 months, from 1 October 2010 to 30 September 2011 with a total budget of USD 765 690. Through project OSRO/INT/805/USA, the United States Agency for International Development (USAID) contributed in financial year 2009 an amount of USD 1 600 000 and an amount of USD 2 500 000 through project OSRO/GLO/802/USA. The unspent balances of these two projects amounting to USD 115 341 and USD 650 349 make up the budget of the no-cost extension.</p> <p>While USAID continues to support activities related to PPP and biosecurity, it has requested that new funding be provided at the country level. As a result, countries have integrated PPP and biosecurity-related activities in their 2010-2011 proposals for the period from October 2010 to September 2011. The no-cost extension allows HQ/the Regional Office for</p>

¹ The Government of the United States of America contributed in Financial Year 2009 to FAO a total of USD 1 600 000 through project OSRO/INT/805/USA and a total of USD 2 500 000 through project OSRO/GLO/802/USA; the unspent balances of these two projects amounting to USD 115 341 and USD 650 349 constitutes the budget of the no cost-extension.

Asia and the Pacific (RAP) to provide technical expertise to high-burden countries in Asia, and to a smaller extent to the high-risk countries in Asia, for their activities involving collaboration between the public and private sector and involving work on biosecurity/good hygiene practices on farm and along marketing chains. The no-cost extension also allows implementation of a limited number of activities that have not been included in country proposals in Bangladesh, China, Lao People's Democratic Republic (PDR), Myanmar and Nepal for a total amount of USD 255 000, distributed in the following way: Bangladesh (USD 80 000), Cambodia (USD 20 000), China (USD 100 000), Lao PDR (USD 25 000), Myanmar (USD 25 000) and Nepal (USD 25 000).

Objectives of the project

To create, strengthen and maintain PPP and biosecurity to support poultry health and production systems in countries affected by Highly Pathogenic Avian Influenza (HPAI), within a functional animal health system led by official veterinary services.

Planned activities

Output A: Expertise, technical advice and organizational support on PPPs and biosecurity will be available to countries for implementation of activities funded under Amendment 6 (countries' project proposals).

An expert in commercial poultry production and biosecurity will operate from HQ. Consultant time for a PPP specialist will be available. They will:

- Provide information and guidance on PPPs to government departments, the private sector and Food and Agriculture Organization of the United Nations (FAO) country teams.
- Assist in the improvement of biosecurity (including cleaning and disinfection) in commercial production and marketing chains, as biosecurity has proven to be a major area of interest to the private commercial poultry sector, as well as the public sector.

Output B: PPPs for safer poultry production will be supported. Poultry production and marketing will be made safer in high-burden and high-risk countries.

VIET NAM

Output A - Activities:

- Participate in a review of a pilot poultry supply chain strengthening project as part of a multi-project biosecurity review process being implemented by FAO and the Department of Livestock Production (DLP). This will also serve as an orientation to the field situation and current situation in Viet Nam and highlight the challenges of upgrading poultry supply chains.
- Provide technical support to a collaborative approach to hatchery strengthening in two select provinces (in close collaboration with FAO's implementing partner Abt Associates). This will include a review of existing hatchery management and biosecurity training materials and the development of a province-level training programme for hatcheries.
- Develop a training-of-trainers (ToT) biosecurity training course for public and private sector veterinarians to strengthen biosecurity practices in small-scale commercial farms.
- Develop an approach to strengthen technical support provided to small scale commercial poultry farmers through strengthening technical and advisory capacity of private agrivet store owners in two/three pilot districts of Ha Nam Province.
- Conduct a rapid assessment of two to three key live bird markets (LBMs) in Quang Tri province including a stakeholder mapping analysis and develop options for risk reduction

control measures in those markets (the potential control options will be reviewed through a stakeholder process, finalized into an action plan and implemented over the coming seven months).

- Participate in a technical consultation meeting on experiences and lessons learned on upgrading LBMs, focusing on Viet Nam, but the adviser will provide additional lessons learned from Bangladesh and Egypt, where considerable progress has been made.
- Support the establishment of a National Poultry Quality Improvement Plan.

LAO PDR

Output A - Activities:

- Assess the biosecurity situation in selected LBMs in Vientiane capital and Savanaket.
- Provide recommendations for biosecurity improvements at LBMs.
- Train LBM authorities and traders associations on biosecurity.
- Training workshop for the public and private sectors about poultry production and biosecurity measures to be implemented in commercial poultry farms in Vientiane and Savanaket areas for better production and profitability.

CAMBODIA

Output A - Activities:

- Assess the biosecurity situation in selected LBMs in Phnom Penh.
- Provide recommendations for biosecurity improvements or restructuring of LBMs.
- Train LBM traders in the Phnom Penh area on biosecurity.
- Assess the biosecurity situation of housed duck farms in Sihanouk Ville.
- Provide recommendations for farm biosecurity improvements.

NEPAL

Output A - Activities:

- Facilitate the development of national biosecurity guidelines.
- Train private & DLS veterinarians and poultry producers on farm biosecurity.
- Train selected veterinarians on biosecurity auditing and reviews.
- Assess the biosecurity situation in LBMs in eastern provinces (their gaps and needs) and provide recommendations for biosecurity improvements.

BANGLADESH

Output A - Activities:

- Assist in the improvement, organize and facilitate a workshop for the development of biosecurity standard operating procedures (SOPs) that will support the implementation of the national biosecurity guidelines.
- Develop, update, revise training materials on biosecurity for layer farms and LBMs.
- Support the establishment of National Poultry Improvement Plans.
- Facilitate and extend the process related to farm registration and licensing, including the revision of the existing farm registration protocol and link the farm registration system with the geospatial database of commercial farms and LBMs.
- Facilitate dialogue on compartmentalization and develop SOPs for the implementation of

disease-free compartments.

- Support the upgrade of selected LBMs.
- Support biosecurity (including cleaning and disinfection) in commercial production and marketing chains, as biosecurity has proven to be the major area of interest to the private commercial poultry sector, as well as the public sector.
- Develop a new and equitable compensation plan.

INDONESIA

Indonesia has not requested any assistance from the project.

CHINA

Output A – Activities: as planned.

Output B - Activities:

- Map stakeholders in selected LBMs, analyse existing platforms to establish a dialogue among the public and private stakeholders, propose platform improvements if required, use the platform to plan the restructuring of the markets.
- Develop monitoring and evaluation tools and indicators of success of impact of restructuring on livelihood of producers, sellers and impact of restructuring on virus circulation and spread.
- Provide training to public sector staff on PPPs and explore opportunities to work on compartmentalization.

MYANMAR

Output A - Activities:

- Review biosecurity practice at poultry production zones in Yangon, Monywa and Shwebo Districts and provide recommendations for biosecurity improvement at poultry production zones in Myanmar.
- Review biosecurity practice at the live poultry wholesale market in Yangon and provide recommendations for biosecurity improvement.
- Develop and deliver biosecurity ToT for government veterinarians and poultry producers.

Activities undertaken during the reporting period

BANGLADESH

Output A

Activity 1: Organize and facilitate a workshop for the development of biosecurity SOPs that will support the implementation of the national biosecurity guidelines.

During the first semester, the biosecurity SOPs writing workshop was conducted in Sirajganj from 19 to 21 January 2011, with 22 participants from the Department of Livestock Services (DLS) and the private sector, including broiler and layer producers, breeding farm managers, feed and poultry dealers. The objective of the workshop was to compile a booklet with a set of biosecurity SOPs for poultry producers and allied service providers that will support the implementation of the national biosecurity guidelines. An additional objective was the formation of a core group of participants and steering committee that would have a stake in the

process of implementing the national biosecurity plan for the poultry industry. Each step in the SOP describes three levels of biosecurity:

Minimum standard

- This includes the standardized protocols the industry should develop and implement to reduce the biosecurity risks on their farms. The implementation of the minimum standards is mandatory and linked to farm registration and licensing.

Best practices

- These are procedures for those individuals or companies that strive toward the most effective disease control systems on their farms, or by service providers who work together with their farmer-customers to provide a higher level of security. Implementation of these practices requires a higher financial investment and should lead to a farm accreditation programme for marketing purposes.

Enhanced security

- Includes the practices that should be put in place by producers and service providers working or driving through the area during the grey period, when a serious disease is suspected but not yet confirmed by the veterinary authorities (such as the DLS).
- The protocols were designed to be practical and written in simple and effective ways to prevent the transmission of diseases and to ensure maximum compliance.

Activity 2: Develop, update and revise training materials on biosecurity for layer farms and LBMs.

Assistance was provided for the development of training materials on biosecurity for the egg production industry. A segment of the poultry industry appeared to be particularly vulnerable to HPAI outbreaks, owing to production practices that facilitate large volume of traffic on and off the farms. Therefore, a specific training programme for this sector was developed and delivered.

MYANMAR

Output A:

Activity 1: Review biosecurity practice at poultry production zones in Yangon, Monywa and Shwebo Districts and provide recommendations for biosecurity improvement at poultry production zones in Myanmar.

During this period the poultry production zones in Yangon, Monywa and Shwebo Districts were visited, their biosecurity practises were reviewed and recommendations for biosecurity improvements were provided, which include the following:

- Production zone committees must play a crucial role in the coordination and collaboration between all stakeholders involved in the production zone, such as producers, veterinary services, day-old chicks suppliers, feed suppliers, egg traders and others. The Livestock Breeding and Veterinary Department (LBVD) and FAO should closely collaborate and empower these committees.

- All production zones should aim to keep only one type of poultry in the zone, and separate production zones should be established and dedicated to layers, broilers or quails.
- Number of age groups at the zone should be reduced to two or three. A separate, highly biosecured area within the zone should be created for the establishment of pullet rearing farm/s that will supply the egg production farms within the zone. This will ensure better quality and healthier pullets, reduced number of age groups at the zone and reduced cost of pullet production.
- The development of future production zones should be planned with biosecurity in mind. High-risk production zones, such as the Shwebo production zone, must be avoided. No production zone should be constructed, spread along a main road, with farms on both sides of the road and with a large feed mill that sell feed across the district inside the zone.
- Stricter control over vehicle and visitor entry into the production zone and/or the farms is required. All vehicles should be parked outside the zone. If their entry is absolutely necessary, they should go through rigorous washing and disinfection procedures. Similarly, all visitors, including “special visitors”, should wash hands and feet and change clothes and footwear, provided at the main gate by the hosting farm, prior to entry into the zone.
- Plastic egg trays used on farm must stay on farm at all times and should not be rotated with traders’ trays that may have originated at diseased farms. All the collected eggs should be transferred into traders’ trays or into single use wooden boxes. Alternatively, disposable paper trays can be used.
- Water quality should be tested regularly (every six months) for total bacterial count, coliforms, salmonella and mineral contents.
- Regular laboratory testing of feed quality and serological tests to ensure vaccines intake should be encouraged.
- Integrated pest control for rodents, flies and wild birds should be implemented and monitored on zone and farm levels.
- The planting of trees and shrubs in the zone and around farms should take into consideration issues of wild birds and rodent control. Trees should be selected according to their ability to provide ample shade, while they should not attract wild birds. That is to say, they should be free of attractive fruits or nesting facilities. Low shrubs should not be planted near poultry houses, as they provide an attractive environment for rodent breeding.

Activity 2: Review biosecurity practice at the live poultry wholesale market in Yangon and provide recommendations for biosecurity improvement.

The wholesale LBM of Yangon was visited, and upon the observations and interviews made at the market, the following recommendations for biosecurity improvements were provided:

- All trucks and plastic crates should be washed and disinfected before leaving the market. This should be done to minimize the risk of carrying disease agents from the market back to poultry farms. A washing station should be established at the LBM exit gate. The market authorities were provided with a washing station plan and SOPs that had been previously developed by FAO in Indonesia.
- Within the market area, a designated corner for the housing of ducks and spent layers – high risk birds – in cages should be established, separated from the broilers and native chickens’ areas.
- The use of plastic crates should be encouraged, as they are easy to wash and disinfect. Bamboo cages, which are very difficult to wash or disinfect, should be used only once for transportation of poultry from the farm to the market. Additional use of these cages

may be permitted only for transportation of poultry from the wholesale market to retail markets.

- Traders' plastic and/or metal cages should be washed with detergent and then immersed into a disinfecting solution, for example: in a large plastic tub on wheels. This practice should replace the current practice of only spraying disinfectants. Dipping cages in disinfectant solution provides better destruction of disease agents.
- No live birds should be allowed to leave the market for individual home slaughter. All birds must be slaughtered and processed at the market.
- The slaughter area should be washed and disinfected daily. The current use of lime as a disinfectant should be replaced by chlorine products. These have better disinfection qualities and will also neutralize bad smells, while not affecting the characteristics or smell of slaughtered poultry meat.
- Disposal bins for dead birds, feathers and other slaughter leftovers should be placed at the market.

VIET NAM

Output A

Activity 1: Provide technical support to a collaborative approach to hatchery strengthening in two selected provinces (working closely with Abt Associates). This will include a review of existing hatchery management and biosecurity training materials and the development of a province-level training programme for hatcheries.

Traditional duck hatcheries were visited and biosecurity risks were assessed. Recommendations for biosecurity improvements were provided. The available training materials were reviewed, and due to lack of suitability of these materials, a new set of training materials were developed.

The following are the recommendations provided for biosecurity improvement in traditional duck hatcheries:

- The most effective way to reduce pathogen contamination of eggs and day-old ducklings (DODs) (HPAI included) would be achieved through egg fumigation with formalin and potassium permanganate in a fumigation chamber.
- When the breeding farm is attached to the hatchery and the only source of eggs, a single fumigation at the hatchery will suffice. Hatcheries that buy eggs from multiple breeding farms should ensure that eggs are fumigated at the breeding farms, and then a second fumigation should be applied at the hatchery upon the arrival of the eggs.
- Fumigation should replace any eggs cleaning/wiping by cloth practice that probably cause pathogen spread from egg to egg. A design of fumigation cabinet and SOPs for safe operation were provided.

When possible

- Two smaller setters should be used instead of a large one. This will enable periodical depopulation, cleaning and disinfection of setters.
- Erecting a separation wall between setting and hatching areas, with enclosed area for chicks take off (last two to three days of hatch), will enable trickle fumigation that will minimize cross-contamination between chicks during piping and take off.
- The hatchery should have clear procedures for washing and disinfection (possibly fumigation) of egg trays, baskets, equipment, etc.

- Hatchery specific cloth and footwear should be used inside the hatchery.
- Customers should use a well designated and marked door/window for DODs delivery.

Activity 2: Develop a ToT biosecurity training course for public and private sector veterinarians to strengthen biosecurity practices in small scale commercial farms.

A set of biosecurity training materials for small scale commercial farms that was developed for producers in Egypt was modified and adopted to suit local conditions.

Activity 3: Conduct a rapid assessment of two to three key LBMs in Quang Tri province including a stakeholder mapping analysis and develop options for risk reduction control measures in those markets (the potential control options will be reviewed through a stakeholder process, finalized into an action plan and implemented over the coming seven months).

LBMs (wholesale and retail markets) were assessed for biosecurity risks and recommendations for improvements were provided. An action plan for training and infrastructure improvement was initiated with the Abt Associates.

The following are the recommendations provided:

Recommendations for wholesale markets

- Establish a washing station for washing of vehicles and empty crates that leave the market. The washing station should consist of pressure washer and a draining system possibly linked to a septic tank.
- Set up a large tub for the soaking of holding cages at the end of the trading day in detergent disinfectant solution.

Recommendations for retail markets

- Set up a washing station for vehicles and cages to be washed and disinfected prior to leaving the market area to minimize transfer of pathogens back to farms.
- Establish a dedicated area solely for poultry trading.
- Daily washing and cleaning of the whole LBM area.
- A possible use of the market organic solid waste materials by a digester for the production of bio gas, which can be used for boiling water for cleaning/disinfection by steam. This will eliminate the need for the ongoing purchase of chemicals and reduce environmental impact of the run off of the chemicals.
- Special attention should be paid to the safe slaughter and waste disposal at the home-based slaughter points. A design for an alternative centralized slaughter point was provided.

Planned activities for the next six-month period

BANGLADESH

Output A - Activities:

- Support the establishment of National Poultry Improvement Plans.
- Facilitate and extend the process related to farm registration and licensing, including the revision of the existing farm registration protocol and link the farm registration system with the geospatial database of commercial farms and LBMs.
- Facilitate dialogue on compartmentalization and develop SOPs for the implementation of disease free compartments.
- Support the upgrade of selected LBMs.
- Support the development of a new and equitable compensation plan.

NEPAL

Output A - Activities:

- Facilitate the development of national biosecurity guidelines.
- Train veterinarians (private & DLS) and poultry producers on farm biosecurity.
- Train select veterinarians on biosecurity auditing and reviews.
- Assess the biosecurity situation in LBMs in eastern provinces (their gaps and needs) and provide recommendations for biosecurity improvements.

LAO PDR

Output A - Activities:

- Assess the biosecurity situation in selected LBMs in Vientiane capital and Savanaket.
- Provide recommendations for biosecurity improvements at LBMs.
- Train LBM authorities and traders associations on biosecurity.
- Training workshop for the public and private sectors about poultry production and biosecurity measures to be implemented in commercial poultry farms in Vientiane and Savanaket areas for better production and profitability.

CAMBODIA

Output A - Activities:

- Assess the biosecurity situation in selected LBMs in Phnom Penh.
- Provide recommendations for biosecurity improvements or restructuring of LBMs.
- Train LBM traders in the Phnom Penh area on biosecurity.
- Assess biosecurity situation of housed duck farms in Sihanouk Ville.
- Provide recommendations for farm biosecurity improvements.

CHINA

Output A

Output B - Activities:

- Develop monitoring and evaluation tools (M&E) and indicators of success of impact of restructuring on livelihood of producers, sellers and impact of restructuring on virus circulation and spread.

- Provide training to public sector staff on PPPs and explore opportunities to work on compartmentalization.

MYANMAR

Output Activities:

- Develop and deliver biosecurity training TOT for private and public veterinarians and leading producers at poultry production zones.
- Support the establishment of washing station at the wholesale LBM of Yangon.

VIET NAM

Output A – Activities:

- Participate in a review of a pilot poultry supply chain strengthening project as part of a multi-project biosecurity review process being implemented by FAO and DLP.
- Provide technical support to a collaborative approach to hatchery strengthening in two selected provinces (working closely with FAO's implementing partner Abt Associates). This will include a review of existing hatchery management and biosecurity training materials and the development of a province-level training programme for hatcheries, including ToT at the Quang-Tri province.
- Develop an approach to strengthen technical support provided to small scale commercial poultry farmers through strengthening technical and advisory capacity of private agrivet store owners in two to three pilot districts of Ha Nam Province.
- Participate in a technical consultation meeting on experiences and lessons learned on upgrading LBMs, focusing on Viet Nam, but the adviser will provide additional lessons learned from Bangladesh and Egypt where considerable progress has been made.
- Support the establishment of a National Poultry Quality Improvement Plan.

Main challenges encountered and response provided

- The candidate for the PPP consultancy position declined the offer, which left the project without a dedicated person to coordinate activities and support the countries in this area. The biosecurity consultant fills this role in biosecurity activities that overlap with PPP activities.

Main progress made towards the achievement of project outcomes**BANGLADESH**

- A biosecurity SOPs writing workshop for poultry producers and allied service providers was successfully conducted with the participation of members of the public and private sectors. A set of SOPs is under development and will support the implementation of the national biosecurity guidelines.
- Biosecurity training material for egg producing farms was developed and training was delivered to layer producers.

MYANMAR

- The biosecurity practices at production zones in three districts were reviewed and recommendations for biosecurity improvements provided.
- The biosecurity practices at the Yangon wholesale market were reviewed and recommendations for biosecurity improvements were provided, including the support in establishment of a washing station for the departing vehicles and crates. This will greatly reduce the risk of disease transmission (HPAI) from markets to farms.

VIET NAM

- The biosecurity practices in traditional duck hatcheries were reviewed and recommendations for biosecurity improvements provided. Egg fumigation appeared to be the single most effective method for the reduction in hatchery contamination, therefore a design for fumigation cabinet and SOPs for the safe use of the cabinet were developed. FAO Viet Nam will contract local manufacturer to build a model fumigation cabinets that will be used for demonstration purposes.
- The available training materials were reviewed and found to be inadequate, therefore a new set of training materials were developed.
- The biosecurity practices and the infrastructure needs at retail and wholesale LBMs were assessed and recommendations were provided. These include the formation of a washing station for vehicles and cages and the construction of a centralized slaughter point that will replace the current practice of home-based slaughter points. A design for a proposed centralized slaughter point was developed.

Quarter II 2010

Project Monitoring Sheet: **OSRO/RAS/701/USA**

Project title: **Strengthening cross-border activities among Bangladesh, India, Nepal and Myanmar to control possible cross-border spread of HPAI**

Reporting period: **April-June 2010**

Regional component: Subregional cross-border activities in Bangladesh, India, Nepal and Myanmar
Project Title: Strengthening cross-border activities among Bangladesh, India, Nepal and Myanmar to control possible cross-border spread of HPAI
Code: OSRO/RAS/701/USA
Budget: USD 1 000 000 (Phase I), USD 1 000 000 (Phase II) Total budget USD 2 000 000
Effective starting date: October 2007
Planned end date: 30 September 2010
<p>Context of the project</p> <p>Porous, long and continuous land borders between the project's four countries (Bangladesh, India, Nepal and Myanmar), with minimal control points and quarantine facilities, continue to pose risks for the spread of Highly Pathogenic Avian Influenza (HPAI) in the region as a whole. Hence, it is necessary to have a better understanding of the pattern of the poultry supply chain and trade taking place across borders. There is also a lack of sufficient capacity both in terms of skilled human resources and also facilities to conduct effective management of transboundary movements of poultry and poultry products. Sharing expertise, information and biological samples among laboratories in the region is key for effective planning to prevent or prepare for cross-border outbreaks.</p> <p>It is envisaged that a longer-term national strategy will be drafted in consultation with various stakeholders during the implementation of this project to deal with the longer-term cross-border issues relevant to the avian influenza (AI) threat.</p>
<p>Objectives of the project</p> <p>The main goal of the project is to prevent HPAI spreading across borders because of the movements of poultry and poultry products. Specifically the project aims to: (i) develop a platform for dialogue and information exchange between countries in the region on issues related to potential cross-border spread of HPAI; (ii) strengthen capacities of institutions to deal with the threat of transboundary spread of HPAI; and (iii) increase the understanding of ways to manage cross-border trade to reduce the risk of HPAI outbreaks.</p>
<p>Planned activities for the reporting period</p> <p>Output 1: Project management and coordination mechanisms established and operating</p> <ul style="list-style-type: none"> • retain key technical personnel until the end of project date (i.e. September 2010) • further strengthen the modalities for better communication and dialogue in order to facilitate project coordination • continue to prepare bi-monthly information bulletins

- participate in regional and global meetings
- hold meetings of technical- and policy-level committees in the next quarter

Output 2: High-risk areas for introduction of HPAI via cross-border introduction routes identified and mapped

- finalize the study report on poultry value chain analysis across India, Nepal and Bangladesh's borders and also India and Myanmar's border (to date, the agency contracted to perform this study has not been performing satisfactorily)

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- conduct the study tour in India for staff from each participating country, from 26 to 29 April 2010, to strengthen emergency response capacities
- conduct trainings and workshops for border control personnel in Bangladesh in rapid confirmation of outbreaks
- upon receipt of technical clearance from the Emergency Centre for transboundary Animal Diseases – Regional Office for Asia and the Pacific (ECTAD-RAP), circulate the finalized standard operating procedures (SOPs) and recommendations for response in high-risk cross-border trade areas
- conduct two more rounds of training for laboratory personnel in India on the use of rapid antigen test kits in April 2010

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- conduct a study on livestock marketing systems in high risk corridors with a view to establishing monitoring processes for production and market chains of poultry, linked with animal disease monitoring data. The project is currently awaiting governmental clearances from Bangladesh and India.

Output 3: Developed policy and harmonized risk management procedures

- review and analyse country reports on policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management, through locally contracted experts
- conduct a sub-regional workshop on gaps in legislative frameworks for cross-border trading

Output 4: Improved capacity for response to cross-border emergencies

- convene meetings of provincial and district officers in high-risk cross-border corridors in India and Bangladesh
- provide rapid response training to host government personnel of India and Bangladesh at local levels in the selected high-risk movement corridors
- hold a special advocacy initiative in target border districts, as part of emergency response activities in India and Bangladesh, to mobilize and sensitize the following groups: (i) local, district-level and decentralized veterinarians; (ii) private and public news channels, journalists and media-persons; (iii) non-governmental organizations (NGOs); (iv) farmers; (v) traders; and (vi) women's groups
- conduct sensitization workshops for print and electronic media at the national level and

also in India's West Bengal and Tripura states for the prevention and control of HPAI in order to strengthen cross-border emergency preparedness and response mechanisms

Activities undertaken during the reporting period

Output 1: Project management and coordination mechanisms established and operating

- The meeting of technical and policy-level committees to monitor the project's progress was held on 12 May 2010 in New Delhi, India.
- The sixth volume of Information Bulletin (February-March 2010) was published and circulated. The seventh volume (April-May 2010) is under preparation.
- The subregional manager participated in the "Strategic communication for the prevention and control of Highly Pathogenic Avian Influenza (HPAI) and other transboundary animal diseases (TADs)" meeting in Istanbul, Turkey from 6 to 9 April 2010 to exchange experiences gained through the South Asia cross-border project.
- The subregional manager participated in the inception workshop for the "Regional risk assessment of HPAI in South and Southeast Asia: a socio-economic perspective" on 28 and 29 April 2010 in Bangkok, Thailand.
- The subregional manager participated in the inception workshop of OSRO/IND/802/USA project "Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India" on 10 and 11 May 2010 in New Delhi, India.
- The subregional manager and subregional advocacy coordinator participated in the regional communication workshop from 23 to 25 June 2010 in Bangkok, Thailand.

Output 2: High-risk areas for introduction of HPAI cross-border routes identified and mapped

- To date, the agency contracted to perform the poultry value chain mapping across India-Nepal, India-Bangladesh and India-Myanmar has not been performing satisfactorily and has not submitted the final report. The Food and Agriculture Organization of the United Nations (FAO) office in India is trying to obtain the report.

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- The study tour to West Bengal, India for staff from Bangladesh, India, Nepal and Myanmar to strengthen emergency response capacity was conducted from 26 to 29 April 2010. Four participants each from Bangladesh and Myanmar, five from India and six from Nepal participated in the study tour.
- The cross-border trade SOPs for response in high-risk areas were finalized in consultation with the Technical and Policy Level Committee at the meeting held on 28 and 29 January 2010 in Pokhara, Nepal. The finalized SOPs were circulated in the district level workshops to strengthen emergency preparedness and response mechanisms for HPAI in India and Bangladesh.
- A series of trainings and workshops in rapid confirmation of outbreaks in high-risk cross-border corridors were held in Bangladesh for district veterinarians and paraveterinarians. These trainings/workshops were held on 9 and 10 June (in Chapai Nababganj), 13 and 14 June (in Dinajpur) and 16 and 17 June (in Lalmonirhat).
- The two remaining rounds of training for laboratory personnel in India, on the use of rapid antigen test kits, were held on 3 and 4 May and on 6 and 7 May 2010 at the India's Western and Northern Regional Disease Diagnostic Laboratories. Thirty

laboratory personnel were trained on the use of rapid antigen kits.

Phase II

Output 2: Strengthened production and market systems approach, to improve cross-border movement management and reduce HPAI risks

- A series of orientation/sensitization workshops on strengthening cross-border emergency preparedness and response mechanisms for HPAI were held for provincial and district officers in high-risk cross-border corridors of Bangladesh. These workshops were held in the districts of Rajshahi Division on 9 and 10 June (in Chapai Nababganj), on 13 and 14 June (in Dinajpur), and on 16 and 17 June (in Lalmonirhat). Approximately 90 to 100 persons participated in each workshop. Very few participants were females. The objectives of these workshops were to:
 - orient/sensitize participants on key issues of risk/outbreak communication and advocacy interventions to prevent and control HPAI outbreaks; and
 - present district-level findings of the poultry value-chain mapping exercise conducted by the project.

To strengthen emergency response preparedness, the workshops were also used as an advocacy platform to sensitize the following border-district groups: (i) local, district-level and decentralized veterinarians; (ii) private and public news channels; (iii) journalists and media-persons; (iv) NGOs; (v) farmers; (vi) traders; (vii) women's groups; and (viii) police and border forces.

- The subregional animal health economist undertook the proposed study on livestock marketing systems in high-risk corridors of Bangladesh with a view to establishing poultry production- and market-chain-monitoring processes linked with animal disease monitoring data between 13 and 21 April 2010. The border markets of three districts (Chapai Nababganj, Dinajpur and Lalmonirhat) were covered in the first cycle. A similar study proposed for high-risk corridors in India could not be started because governmental clearance was not received from India.

Output 3: Developed policy and harmonized risk management procedures

- Experienced consultants in Bangladesh, India and Nepal were hired to review and analyse policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management. The reports were received from India and Nepal in May 2010.
- The reports from India and Nepal were cleared by the ECTAD regional manager.
- The subregional workshop on gaps in legislative frameworks in the context of cross-border trading will be organized in the next quarter, once the report from Bangladesh consultant is received and analysed.

Output 4: Capacity for response to cross-border emergencies improved

- A series of workshops were held in Bangladesh (in Rajshahi Division) to provide rapid response training to host government personnel, at local levels, in high-risk cross-border corridors of Bangladesh. These workshops were held on 9 and 10 June (in Chapai Nababganj), on 13 and 14 June (in Dinajpur), and on 16 and 17 June (in Lalmonirhat). Approximately 90 to 100 persons participated at each workshop. Very few participants were females. The objectives of these workshops were to:
 - determine which measures had been taken for the prevention and control of

- HPAI and provide sensitization on the clinical picture of HPAI; and
- provide technical guidance and training to veterinarians on the investigation of HPAI outbreaks.

To strengthen emergency response preparedness, the workshops were also used as an advocacy platform to sensitize the specific border-district groups as outlined in Output 2 on page 4 of this progress report.

Planned activities for the next quarter

Output 1: Project management and coordination mechanisms established and operating

- retain key technical personnel until the end of project date (i.e. September 2010)
- further strengthen the modalities for better communication and dialogue to facilitate project coordination
- continue to prepare bi-monthly information bulletins
- participate in regional and global meetings

Output 2: High-risk areas for introduction of HPAI via cross-border routes identified and mapped

- finalize the study report on poultry value-chain analysis across India, Nepal and Bangladesh's borders and also India and Myanmar's border (to date, the agency contracted to perform this study has not been performing satisfactorily)

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- conduct trainings and workshops on how to rapidly confirm outbreaks for border control personnel in Bangladesh

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- continue the study on livestock marketing systems in high risk corridors in Bangladesh, with a view to establishing monitoring processes for production and market chains of poultry, linked with animal disease monitoring data. The project is currently awaiting governmental clearance from India.

Output 3: Developed policy and harmonized risk management procedures

- review and analyse country report on policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management from Bangladesh
- conduct a subregional workshop on gaps in legislative frameworks for cross-border trading

Output 4: Improved capacity for response to cross-border emergencies

- convene meetings of divisional and district officers in high-risk cross-border corridors in Bangladesh
- provide rapid response training to host government personnel of Bangladesh, at local levels, in the selected high-risk movement corridors

- conduct a special advocacy initiative in target border districts, as part of emergency response activities in India and Bangladesh, in order to mobilize and sensitize the following groups: (i) local, district-level and decentralized veterinarians; (ii) private and public news channels, journalists and media-persons; (iii) NGOs; (iv) farmers; (v) traders; and (vi) women's groups
- conduct sensitization workshops for print and electronic media in India's West Bengal State for the prevention and control of HPAI to strengthen cross-border emergency preparedness and response mechanisms

Main challenges encountered and response provided

- delayed clearances from participating governments

Progress made towards the achievement of project outcomes (from the start of the project activities)

Output 1: Project management and coordination mechanisms established and operating

- All project staff have been recruited, and the coordinating office in Kathmandu, Nepal has been established and equipped. Coordinating units in Bangladesh, India and Myanmar have also been equipped. A vehicle has been procured for the project coordinating unit in Kathmandu.
- A project workshop, attended by high-level administrative and technical personnel from participating countries, was held on 24 and 25 March 2008.
- The project inception workshop was held on 2 and 3 July 2008. A related report has been provided to all countries and participants.
- A United States Agency for International Development (USAID) partners' meeting, on HPAI in South Asia, was organized on 17 and 18 November 2008 in New Delhi, India to discuss the progress of Fiscal Year (FY) 2007 activities and a work plan for FY 2008 funding.
- Technical and policy-level committees have been constituted. A meeting of these committees to monitor the project progress was held on 17 April 2009 in Kolkata, India, on 28 and 29 January 2010 in Pokhara, Nepal and on 12 May 2010 in New Delhi, India. A meeting of a technical-level committee to monitor the project's progress was held on 19 July 2009 in Dhaka, Bangladesh. The Governments of the three countries were very appreciative of these meetings and wished to continue these in the future.
- A poster prepared on the progress of the project was presented during the USAID Partners' Meeting held from 1 to 3 April 2009 in Bangkok.
- Six volumes of bi-monthly information bulletins were released, from May 2009 to March 2010, and circulated to ECTAD members, donors, countries and other agencies as an information sharing/knowledge management initiative.
- Engagement with the South Asia Association for Regional Cooperation (SAARC) was continued through organization of a FAO/World Organisation for Animal Health (OIE) subregional meeting of the Global Framework for the Progressive Control of Transboundary Animal Diseases (for the SAARC Region) on 4 and 5 June 2009 in Kathmandu, Nepal.
- The subregional manager participated in a meeting in Bangkok, on 16 and 17 July 2009, to develop a strategic framework, entitled "FAO regional strategy for Highly Pathogenic Avian Influenza and other emerging infectious diseases of animals in Asia and the Pacific: 2009 – 2014".
- A report on the progress of the project, from April to September, was presented at the USAID partners' meeting held on 24 and 25 September 2009 in Bangkok.

- The subregional manager participated in the second real-time evaluation of FAO's work on HPAI in the Asian region, held from 30 November to 1 December 2009 in Bangkok, Thailand. The evaluation team was briefed on the activities and impact of the South Asia cross-border project.
- The subregional manager and subregional advocacy coordinator participated in the fourth regional ECTAD meeting, from 23 to 25 February, and the ECTAD Asia information system workshop on 26 February 2010 in Bangkok, Thailand.
- The subregional manager participated in the inception workshop on the "Regional risk assessment of HPAI in South and Southeast Asia: a socio-economic perspective" on 28 and 29 April 2010 in Bangkok, Thailand.
- The subregional manager participated in the inception workshop of OSRO/IND/802/USA project "Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to India" on 10 and 11 May 2010 in New Delhi, India.
- The subregional Manager and subregional advocacy coordinator participated in the regional communication workshop from 23 to 25 June 2010 in Bangkok, Thailand.

Output 2: High-risk areas for introduction of HPAI via cross-border routes identified and mapped

- The draft final report of the study on poultry value-chain analysis across Nepal and India's border and mapping of high-risk areas was received and cleared.
- The draft final report of the study on poultry value-chain analysis across Bangladesh, India and Myanmar's border and mapping of high-risk areas was received and cleared.
- The draft final report of the study on poultry value-chain analysis across Myanmar, India and Bangladesh's borders and mapping of high-risk areas was received and cleared.
- A study on the livestock marketing system in high risk corridors of Nepal, with a view to establishing monitoring processes of poultry production and market chains (linked with animal disease monitoring data), was conducted from 8 to 14 November 2009.
- The first round study on the livestock marketing system in high-risk corridors of Bangladesh, with a view to establishing monitoring processes of poultry production and market chains (linked with animal disease monitoring data), was conducted from 13 to 21 April 2010. The border markets of three districts, viz. Chapai Nababganj, Dinajpur and Lalmonirhat were covered.

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- Laboratory training for participants from Bangladesh, India, Nepal and Myanmar was held from 19 to 24 January 2009 in Bhopal, India.
- A subregional workshop to develop SOPs for emergency response to disease in high-risk cross border trade areas was held on 21 and 22 May 2009 in Kathmandu, Nepal. These SOPs were further discussed (and accepted by each party) in Bangladesh, India and Nepal through a series of brainstorming workshops from 4 to 6 November 2009 (in Nepal), on 4 December (in India) and on 10 December (in Bangladesh), and finally at the Technical and Policy Level Committees meeting on 28 and 29 January 2010 in Pokhara, Nepal. The finalized SOPs were circulated in the district level meetings held in the high risk corridors in India and Bangladesh.
- At the request of Government of the Republic of India, rapid antigen detection kits were procured and delivered for use, in high risk corridors, for the rapid screening of

outbreaks. Furthermore, in response to the Government's request, five cycles of laboratory trainings were conducted on the use of rapid antigen kits for 80 laboratory personnel. The kits were successfully used in the recent HPAI outbreaks in Murshidabad district, West Bengal, and were appreciated by the Government.

- Enzyme-linked immunosorbent assay kits (ELISA) were procured and delivered to the Government of Federal Democratic Republic of Nepal for surveillance of HPAI in ducks in Nepal's far eastern region, which formed a part of the project study area.
- A study tour to West Bengal, India for staff from Bangladesh, India, Nepal and Myanmar to strengthen emergency response capacity was conducted from 26 to 29 April 2010. Four participants each from Bangladesh and Myanmar, five from India and six from Nepal participated in the study tour.

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- Stakeholder meetings to present the results of poultry value-chain mapping across Nepal and India's border were held on 10 July 2009 in Kathmandu, Nepal; and for the Bangladesh–India and Bangladesh–Myanmar borders on 21 July 2009 in Dhaka, Bangladesh. The meetings were attended by senior staff representing the Department of Livestock Services (DLS) including the Chief Veterinary Officer (CVO), private sector representatives, national and international NGOs, Academy for Educational Development (AED) and FAO.
- A subregional workshop, entitled "Understanding and use of poultry value chain analysis in poultry production and marketing in the context of cross border trading", was held from 14 to 18 September 2009 in Kathmandu, Nepal. Delegates from Bangladesh, India and Nepal participated. The workshop was facilitated by FAO staff from headquarters, ECTAD-RAP Bangladesh and Nepal and also by the Royal Veterinary College, London.

Output 3: Developed policy and harmonized risk management procedures

- Consultancy reports from consultants in India and Nepal to review and analyse policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management were received and technically cleared by ECTAD-RAP.

Output 4: Improved capacity for response to cross-border emergencies

- A series of orientation and sensitization workshops, on strengthening cross-border emergency preparedness and response mechanism for HPAI, were held for provincial and district officers in high-risk cross-border corridors of Nepal (Jhapa and Morang districts) and India (Araria/Kishanganj, Darjeeling, Cooch Behar, Dakhshin Dinajpur, Malda, North 24 Parganas and West Tripura districts) between January and March 2010. Similar workshops were held in Bangladesh on 9 and 10 June (in Chapai Nababganj), on 13 and 14 June (in Dinajpur), and on 16 and 17 June (in Lalmonirhat) districts. Approximately 90 to 100 persons participated at each workshop. The workshops, which were part of the emergency response, were also used as a platform to sensitize local, district-level and decentralized veterinarians, private and public news channels, journalists, media-persons, NGOs, farmers, traders, border security personnel and women's groups in border districts.

I Quarter 2010**Project Monitoring Sheet: OSRO/RAS/701/USA**

Project title: Strengthening cross-border activities among Bangladesh, India, Nepal and Myanmar to control possible cross-border spread of HPAI

Reporting period: January–March 2010

Regional component: Sub-Regional cross-border activities in Bangladesh, India, Nepal and Myanmar
Project Title: Strengthening cross-border activities among Bangladesh, India, Nepal and Myanmar to control possible cross-border spread of HPAI Code: OSRO/RAS/701/USA
Budget: USD 1 000 000 (Phase I), USD 1 000 000 (Phase II) Total budget: USD 2 000 000
Effective starting date: October 2007
Planned end date: 30 September 2010
<p>Context of the project</p> <p>Porous, long and continuous land borders between the project's four countries (Bangladesh, India, Nepal and Myanmar), with minimal control points and quarantine facilities, continue to pose risks for the spread of Highly Pathogenic Avian Influenza (HPAI) in the region as a whole. Hence, it is necessary to have a better understanding of the pattern of the poultry supply chain and trade taking place across borders. There is also a lack of sufficient capacity both in terms of skilled human resources and also facilities to conduct effective management of transboundary movements of poultry and poultry products. Sharing expertise, information and biological samples among laboratories in the region is key for effective planning to prevent or prepare for cross-border outbreaks.</p> <p>It is envisaged that a longer-term national strategy will be drafted, in consultation with various stakeholders during the project's implementation, to deal with longer-term cross-border issues relevant to the HPAI threat.</p>
<p>Objectives of the project</p> <p>The main goal of the project is to prevent HPAI spreading across borders because of movements of poultry and poultry products.</p> <p>Specifically the project aims to: (i) develop a platform for dialogue and information exchange between countries in the region on issues related to potential cross-border spread of HPAI; (ii) strengthen capacities of institutions to deal with the threat of transboundary spread of HPAI; and (iii) increase understanding of ways to manage cross-border trade to reduce the risk of HPAI outbreaks.</p>

Planned activities for the reporting period

Output 1: Project management and coordination mechanisms established and operating

- Finalize the recruitment of an international operations consultant.
- Further strengthen modalities for communications and dialogue to facilitate project coordination.
- Continue to prepare bi-monthly information bulletins.
- Participate in regional and global meetings.
- Hold technical- and policy-level committee meetings from 28 to 29 January 2010.

Output 2: High-risk areas for introduction of HPAI via cross-border routes identified and mapped

- Finalize the study report on poultry value chain analysis across the India-Bangladesh and India-Myanmar borders, as well as the mapping of high-risk areas requiring further intervention.
- Seek technical clearances from the Food and Agriculture Organization of the United Nations (FAO) Emergency Centre for Transboundary Animal Diseases – Regional Office for Asia and the Pacific (ECTAD-RAP) and FAO headquarters.

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- Conduct the study tour in India for staff from each participating country, from 1 to 5 February 2010, to strengthen emergency response capacities.
- Conduct trainings/workshops for border control personnel in the rapid confirmation of outbreaks.
- Finalize standard cross-border trade operating procedures (SOPs) and recommendations for response in high-risk areas, in consultation with technical- and policy-level committees.
- Train laboratory personnel in India on the use of rapid antigen test kits in February 2010.

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- Conduct a study on livestock marketing systems in high risk corridors, with a view to establishing monitoring processes for production and market chains of poultry, linked with animal disease monitoring data. The project is currently awaiting governmental clearances from Bangladesh and India.

Output 3: Developed policy and harmonized risk management procedures

- Review and analyse policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management, through locally contracted experts.
- Conduct a sub-regional workshop on gaps in legislative frameworks for cross-border trading.

Output 4: Improved capacity for response to cross-border emergencies

- Convene meetings of provincial and district officers in high-risk cross-border corridors

in India and Bangladesh.

- Provide rapid response training to host government personnel of India and Bangladesh, at local levels, in the selected high-risk movement corridors.
- Conduct a special advocacy initiative to mobilize and sensitize the following groups: local, district-level and decentralized veterinarians; private and public news channels, journalists and media-persons; non-governmental organizations (NGOs); farmers; traders; and women's groups. Hold this initiative in target border districts, as part of emergency response activities in India and Bangladesh.

Activities undertaken during the reporting period

Output 1: Project management and coordination mechanisms established and operating

- An International Operations Officer was recruited and joined the project on 22 February 2010.
- The meeting of technical and policy-level committees to monitor the project's progress was held from 28 to 29 January 2010 in Pokhara, Nepal.
- The fifth volume of Information Bulletin (December 2009–January 2010) was published and circulated. The sixth volume (February–March 2010) is under preparation.
- The Subregional Manager and Subregional Advocacy Coordinator participated in the fourth regional ECTAD meeting, from 23 to 25 February 2010 and the ECTAD-Asia Information System Workshop on 26 February in Bangkok, Thailand.

Output 2: High-risk areas for introduction of HPAI cross-border routes identified and mapped

- The draft final report, received from the recipient organization in India, to study poultry value-chain mapping across India, Bangladesh, Nepal and Myanmar's borders, was reviewed for technical contents. The finalized report is being awaited.
- The draft final report of poultry value-chain mapping between Myanmar, India and Bangladesh was received and cleared at the project level. The report will be ready for distribution during the next reporting period.

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- The study tour to India for staff from each participating country, to strengthen emergency response capacity, which was scheduled for first week of February 2010, was postponed by the West Bengal Government (in India) due to the occurrence of new outbreaks in the state. The new dates of 26 to 29 April 2010 have now been agreed by the West Bengal government.
- The cross-border trade SOPs, for response in high-risk areas, were finalised in consultation with the Technical and Policy Level Committee at the meeting held from 28 to 29 January in Pokhara, Nepal. Finalized SOPs are in the process of circulation.
- A series of trainings and workshops, in rapid confirmation of outbreaks in high risk cross-border corridors, were held in Bihar and in India's West Bengal and Tripura states, for district veterinarians and para-veterinarians. These trainings/workshops were held on 14 and 15 January (in Siliguri), on 18 and 19 February (in Agartala), on 4 and 5 March (in Kishanganj), on 8 and 9 March (in Malda), on 11 to 12 March (in South Dinajpur), on 15 and 16 March (in Cooch Behar) and on 19 and 20 March (in North 24 Parganas).

- Three rounds of training for laboratory personnel in India, on the use of rapid antigen test kits, were held on 8 and 9 February, on 11 and 12 February and on 22 and 23 March 2010 at the India's Regional Disease Diagnostic Laboratories. Fifty laboratory personnel were trained on the use of rapid antigen kits. Twenty-two percent of participants were females.

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- A series of orientation/sensitisation workshops on strengthening cross-border emergency preparedness and response mechanisms for HPAI were held for provincial and district officers in high-risk cross-border corridors of India. These workshops were held in India, in Bihar, West Bengal and Tripura states on 14 and 15 January (in Siliguri), on 18 and 19 February (in Agartala), on 4 and 5 March (in Kishanganj), on 8 and 9 March (in Malda), on 11 and 12 March (in South Dinajpur), on 15 and 16 March (in Cooch Behar) and on 19 and 20 March (in North 24 Parganas). Approximately 90–100 persons participated in each workshop. Around 5–10 percent participants were females. The objectives of these workshops were to:
 - orient/sensitize participants on key issues of risk/outbreak communication and advocacy interventions, to prevent and control HPAI outbreaks;
 - present district-level findings of the poultry value-chain mapping exercise conducted by the project.

To strengthen emergency response preparedness, the workshops were also used as an advocacy platform to sensitise the following border-district groups: local, district-level and decentralised veterinarians; private and public news channels; journalists and media-persons; NGOs; farmers; traders; women's groups; and border security forces. Some of the workshops were also attended by partner institutions, particularly the Academy for Educational Development (AED) and the United Nation Children's Fund (UNICEF).

- The proposed study on livestock marketing systems in high risk corridors – with a view to establishing poultry production- and market-chain-monitoring processes, linked with animal disease monitoring data – could not be started because governmental clearances were not received from Bangladesh and India. The project is working to resolve this issue.

Output 3: Developed policy and harmonized risk management procedures

- Experienced consultants in Bangladesh, India and Nepal were hired to review and analyze policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management. Their reports are expected by early April 2010.
- Subregional workshop on gaps in legislative frameworks, in the context of cross-border trading, will be organized in the next quarter, once the consultants' reports are received and analysed.

Output 4: Capacity for response to cross-border emergencies improved

- A series of workshops were held in India (in Bihar, West Bengal and Tripura states) to provide rapid response training to host government personnel, at local levels, in high-risk cross-border corridors of India. These workshops were held from 14 to 15 January

(in Siliguri), 18–19 February (in Agartala), 4–5 March (in Kishanganj), 8–9 March (in Malda), 11–12 March (in South Dinajpur), 15–16 March (in Cooch Behar) and 19–20 March (in North 24 Parganas). Approximately 90–100 persons participated at each workshop. Around 5–10 percent participants were females. The objectives of these workshops were to:

- orient/sensitize participants on key issues of risk/outbreak communication and advocacy interventions, to prevent and control HPAI outbreaks;
- present district-level findings of the poultry value-chain mapping exercise conducted by the project.

Planned activities for the next quarter

Output 1: Project management and coordination mechanisms established and operating

- Retain key technical personnel until the end of project date (i.e. September 2010).
- Further strengthen the modalities for better communication and dialogue, to facilitate project coordination.
- Continue to prepare bi-monthly information bulletins.
- Participate in regional and global meetings.
- Hold meetings of technical- and policy-level committees in the next quarter.

Output 2: High-risk areas for introduction of HPAI via cross-border routes identified and mapped

- Finalize the study report on poultry value-chain analysis across India, Nepal and Bangladesh's borders and also India and Myanmar's border (to date, the agency contracted to perform this study has not been performing satisfactorily).

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- Conduct the study tour to India for staff from each participating country between 26 and 29 April 2010 to strengthen emergency response capacities.
- Conduct trainings and workshops on how to rapidly confirm outbreaks for border control personnel in Bangladesh.
- After receipt of technical clearance from ECTAD-RAP circulate the finalized SOPs and recommendations for response in high-risk cross-border trade areas.
- Conduct two more rounds of training for laboratory personnel in India in April 2010 on the use of rapid antigen test kits.

Phase II

Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks

- Conduct a study on livestock marketing systems in high risk corridors, with a view to establishing monitoring processes for production and market chains of poultry, linked with animal disease monitoring data. The project is currently awaiting governmental clearances from Bangladesh and India.

Output 3: Developed policy and harmonized risk management procedures

- Review and analyse country reports on policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management, through locally contracted experts.

- Conduct a sub-regional workshop on gaps in legislative frameworks for cross-border trading.

Output 4: Improved capacity for response to cross-border emergencies

- Convene meetings of provincial and district officers in high-risk cross-border corridors in India and Bangladesh.
- Provide rapid response training to host government personnel of India and Bangladesh, at local levels, in the selected high-risk movement corridors.
- Conduct a special advocacy initiative to mobilise and sensitise the following groups: local, district-level and decentralised veterinarians; private and public news channels, journalists and media-persons; NGOs; farmers; traders; and women's groups. Hold this initiative in target border districts, as part of emergency response activities in India and Bangladesh.
- Conduct sensitization workshops for print and electronic media at the national level, and also in India's West Bengal and Tripura states, for the prevention and control of HPAI. This should be done, in particular, to strengthen cross-border emergency preparedness and response mechanisms.

Main challenges encountered and response provided

- None

Progress made towards the achievement of project outcomes (from the start of the project activities)

Output 1: Project management and coordination mechanisms established and operating

- All project staff have been recruited and the coordinating office in Kathmandu, Nepal has been established and equipped. Coordinating units in Bangladesh, India and Myanmar have also been equipped. A vehicle has been procured for the project coordinating unit in Kathmandu.
- A project workshop, attended by high-level administrative and technical personnel from participating countries, was held from 24 to 25 March 2008.
- The Project Inception Workshop was held from 2 to 3 July 2008. A related report has been provided to all countries and participants.
- A USAID Partners' Meeting, on HPAI in South Asia, was organized from 17 to 18 November 2008 in New Delhi, India, to discuss the progress of FY 2007 activities and a work plan for FY2008 funding.
- Technical and policy-level committees have been constituted. A meeting of these committees, to monitor the project progress, was held on 17 April 2009 in Kolkata, India and from 28 to 29 January 2010 in Pokhara, Nepal. A meeting of a technical-level committee, to monitor the project's progress, was held on 19 July 2009 in Dhaka, Bangladesh.
- A poster prepared on the progress of the project was presented during the USAID Partners' Meeting, held from 1 to 3 April 2009 in Bangkok.
- Five volumes of bi-monthly information bulletins were released, from May 2009 to January 2010, and circulated to ECTAD members, donors, countries and other agencies, as an information sharing/knowledge management initiative.
- Engagement with the South Asia Association for Regional Cooperation (SAARC) was continued through organization of a FAO/World Organisation for Animal Health sub-regional meeting of the Global Framework for the Progressive Control of Transboundary Animal Diseases (for the SAARC Region) on 4–5 June 2009, in Kathmandu.

- The Sub-regional Manager participated in a meeting in Bangkok, from 16 to 17 July 2009, to develop a strategic framework, entitled “FAO Regional Strategy for Highly Pathogenic Avian Influenza and other Emerging Infectious Diseases of Animals in Asia and the Pacific: 2009 – 2014”.
- A report on the progress of the project, from April to September, was presented at the USAID Partners’ Meeting held on 24 and 25 September 2009 in Bangkok.
- The Subregional Manager participated in the second real-time evaluation of FAO’s work on HPAI in the Asian region, held from 30 November to 1 December 2009 in Bangkok, Thailand. The evaluation team was briefed on the activities and impact of the South Asia cross border project.
- The Subregional Manager and Subregional Advocacy Coordinator participated in the Fourth Regional ECTAD Meeting, from 23 to 25 February, and the ECTAD Asia Information System Workshop on 26 February 2010, in Bangkok, Thailand.

Output 2: High-risk areas for introduction of HPAI via cross-border routes identified and mapped

- The draft final report of the study on poultry value-chain analysis across Nepal and India’s border, and mapping of high-risk areas, was received and cleared.
- The draft final report of the study on poultry value-chain analysis across Bangladesh, India and Myanmar’s border, and mapping of high-risk areas was received and cleared.
- The draft final report of the study on poultry value-chain analysis across Myanmar, India and Bangladesh’s borders, and mapping of high-risk areas, was received and cleared.
- A study on the livestock marketing system in high risk corridors of Nepal, with a view to establishing monitoring processes of poultry production and market chains (linked with animal disease monitoring data), was conducted from 8 to 14 November 2009.

Output 3: Increased capability for emergency response to HPAI outbreaks owing to cross-border spread of the disease

- Laboratory training for participants from Bangladesh, India, Nepal and Myanmar was held from 19 to 24 January 2009 in Bhopal, India.
- A sub-regional workshop to develop standard operating procedures for emergency response to disease in high risk, cross border trade areas was held from 21 to 22 May 2009 in Kathmandu, Nepal. These SOPs were further discussed (and accepted by each party), in Bangladesh, India and Nepal, through a series of brainstorming workshops from 4 to 6 November 2009 (in Nepal), on 4 December (in India) and on 10 December (in Bangladesh), and finally at the Technical and Policy Level Committees meeting between 28 and 29 January 2010 at Pokhara, Nepal.
- At the request of Government of the Republic of India, rapid antigen detection kits were procured and delivered for use, in high risk corridors, for the rapid screening of outbreaks. Furthermore, in response to the Government’s request, three cycles of laboratory trainings were conducted on the use of rapid antigen kits for 50 laboratory personnel. The kits were successfully used in the recent HPAI outbreaks in Murshidabad district, West Bengal, and were appreciated by the Government.
- Enzyme-linked immunosorbent assay kits were procured and delivered to the Government of Federal Democratic Republic of Nepal for surveillance of HPAI in ducks in Nepal’s far eastern region, which formed a part of the project study area.

Phase II**Output 2: Strengthened production and market systems approach to improve cross-border movement management and reduce HPAI risks**

- Stakeholder meetings to present the results of poultry value-chain mapping across Nepal and India's border were held on 10 July 2009 in Kathmandu, Nepal; and for the Bangladesh–India and Bangladesh–Myanmar borders, on 21 July 2009 in Dhaka, Bangladesh. The meetings were attended by senior staff representing the Department of Livestock Services including the Chief Veterinary Officer, private sector representatives, national and international NGOs, AED and FAO.
- A sub-regional workshop, entitled “Understanding and Use of Poultry Value Chain Analysis in Poultry Production and Marketing in the Context of Cross Border Trading”, was held from 14 to 18 September 2009 in Kathmandu, Nepal. Delegates from Bangladesh, India and Nepal participated. The workshop was facilitated by FAO staff from headquarters, RAP, Bangladesh and Nepal, and also by the Royal Veterinary College, London.

Output 3: Developed policy and harmonized risk management procedures

- Experienced consultants in Bangladesh, India and Nepal were hired to review and analyse policy issues, legislative frameworks and the development of legislative instruments to fill key gaps related to cross-border trade and risk management were relevant.

Output 4: Improved capacity for response to cross-border emergencies

- A series of orientation and sensitization workshops, on strengthening cross-border emergency preparedness and response mechanism for HPAI, were held for provincial and district officers in high-risk cross-border corridors of Nepal (Jhapa and Morang districts) and India (Araria/Kishanganj, Darjeeling, Cooch Behar, Dakhshin Dinajpur, Malda, North 24 Parganas and West Tripura districts) between January and March 2010. Approximately 90–100 persons participated at each workshop. The workshops, which were part of the emergency response, were also used as a platform to sensitise local, district-level and decentralised veterinarians, private and public news channels, journalists, media-persons, NGOs, farmers, traders, and women's groups in border districts.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 05**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza**

Reporting period: **April to September 2013**

Regional Component: Southeast Asia Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza Code: OSRO/RAS/604/USA Baby 05
Budget: Phase I: USD 600 000 Phase II: USD 1 435 000 Phase III: USD 1 172 700 Phase IV: USD 937 800 Phase V: USD 1 000 000 Mongolia Balance: USD 30 667 Phase VI: USD 1 192 500 Phase VII: USD 830 000 Phase VIII (current): USD 1 000 000 Total budget: USD 8 198 667
Effective starting date: 1 August 2006
Planned end date: 30 September 2014
Context of the project The Highly Pathogenic Avian Influenza (HPAI) epidemic, caused by the H5N1 virus, began to affect Asia and Southeast Asia late 2003 and early 2004 and spread to many countries in the region. The effects were particularly severe in Indonesia, Thailand and Viet Nam, which saw widespread outbreaks in poultry as well as human cases of H5N1 infection. The Food and Agriculture Organization of the United Nations (FAO), through its Emergency Centre for Transboundary Animal Diseases (ECTAD), established a decentralized unit in Bangkok, Thailand, located in the Regional Office for Asia and the Pacific (RAP), to provide technical backstopping for countries in the Asia and the Pacific region that were experiencing outbreaks of the infection or were at risk of it. ECTAD RAP was supported through a preliminary regional project (OSRO/RAS/505/USA) funded by the United States Agency for International Development (USAID). This support has continued under the current FAO project.
Objectives of the project The objective of this regional component is to coordinate project activities with the target countries and also to ensure continuity from the previous project (OSRO/RAS/505/USA) to the current one. The project also aims to strengthen regional level cross-sectoral coordination and communication for HPAI control.
Planned activities for the reporting period (April 2013 to 30 September 2013) Output 1: Strengthened cross-sectoral coordination at regional level <ul style="list-style-type: none"> Continue to provide technical and operational inputs to country-level projects in collaboration with country teams. Continue to provide technical inputs, resource persons or training support to the activities related to the existing regional HPAI Control Framework for ASEAN, existing network systems or regional coordination mechanism related to HPAI and animal disease control.

- Continue to coordinate and collaborate with other agencies on activities related to HPAI control.
- Continue to provide technical inputs to support the activities of the Emerging Pandemic Threats Plus (EPT+) project as well as the other USAID EPT components implemented by various partners.

Output 2: Strengthened regional and national human resources in the field of veterinary epidemiology

- Continue activities to implement the Regional Field Epidemiology Training Programme for Veterinarians (FETPV), including the seeking of additional support for the programme through other potential partners.
- Continue to provide support for the development of field epidemiology related training programmes in Cambodia, Lao People's Democratic Republic (PDR) and South Asia.

Output 3: Strengthened coordination of the epidemiology and laboratory networks

- Continue to support the implementation of FAO's EMPRES-i (Emergency Prevention System-i) Asia to share expertise and information in a real-time manner across the network through meetings, workshops and online communication.
- Provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium.
- Continue to provide support for sample submission from member countries to international reference laboratories.

Output 4: Strengthened coordination of cross-border risk assessment and management for HPAI transmission

- Support the dialogue between or among member countries on cross-border cooperation and collaboration in the management of critical control points in key regional corridors.

Output 5: Established regional emergency response services

- Continue to provide technical and operational assistance to member countries to contain the HPAI outbreaks in their respective countries.

Activities undertaken during the reporting period (April 2013 – September 2013)

Output 1: Strengthened cross-sectoral coordination at regional level

- The ECTAD team continued to provide technical and operational inputs to country-level projects in collaboration with country teams:
 - The Regional Coordinator continued to provide technical backstopping to the USAID funded project in Lao PDR and Myanmar in the absence of the International Team Leader.
- The Regional Coordinator made technical contribution to the following ASEAN meetings which are related to regional coordination mechanism for animal health and zoonoses in Southeast Asia:
 - **ASEAN Coordinating Center for Animal Health and Zoonoses (ACCAHZ) Advocacy Meeting** was organized on 22 August 2013 in Melaka, Malaysia. The Advocacy meeting aimed to: (i) familiarize the Senior Officers and Director General or Chief Veterinary Officer for the National Animal Health Authority from ASEAN Member States with ACCAHZ; and (ii) provide them with a more in-depth

understanding of its relevance, intent, status and future direction. The Meeting was also expected to provide a venue for the participating officials to provide invaluable insights and comments on ACCAHZ, as well as guidance on its establishment within the context of ASEAN.

- The **35th ASEAN Ministerial Meeting on Agriculture and Forestry** included the launching of the ASEAN Animal Health Collaboration Website. The Regional Coordinator provided technical inputs for the website, which was developed as an information-sharing platform for ASEAN, supported by the FAO component of the European Union's Highly Pathogenic Emerging Diseases Programme. The platform is envisaged to be a data warehousing facility that will facilitate dissemination and sharing of relevant documents and/or information relating to animal health initiatives in the region among the member countries, stakeholders, and relevant partners.
- The Regional Coordinator provide inputs to prepare for a FAO-World Organisation for Animal Health (OIE)-World Health Organization (WHO) tripartite event – the Fourth Asia-Pacific Workshop on Multisectoral Collaboration for Prevention and Control of Zoonoses, which will be held during 27-29 November 2013 in Kathmandu, Nepal to strengthen collaboration and coordination the three organizations and their members using a *One Health* approach.
- The Regional Coordinator and the National Operations Officer prepared the project document for the 8th Phase of the RAP component of the USAID funded project which was subsequently approved by USAID.
- The ECTAD team in Asia provided technical and operational inputs for the organization of the **Avian Influenza and Emerging Pandemic Threats Programme Discussions** organized in Bangkok, Thailand on 26 June 2013. The meeting brought the team leaders from ECTAD country programmes to review and discuss reprogramming the regional projects to address the current situation of HPAI.
- The ECTAD team provided technical inputs to support the activities of the USAID EPT and EPT+ programmes. Specifically:
 - The ECTAD team attended and provided inputs to the USAID EPT Program - Asia Regional Meeting organized by USAID during 18-19 June 2013 in Bangkok, Thailand. The objectives were to give updates on the status of project deliverables, share information among partners on proposed final-year work plans to achieve deliverables, and to brainstorm on how to better integrate emerging pandemic threats activities within existing host-country platforms.
 - The ECTAD team provided technical and operational inputs to the organization of the IDENTIFY Tripartite Meeting on 20 June 2013 in Bangkok, Thailand. The objectives of the meeting were to review the activities and progress of IDENTIFY FAO, OIE and WHO components in the Asian regions, to discuss specific technical and strategic issues implemented under IDENTIFY by each partner and attempt to develop a common approach/understanding and collaboration on these technical issues.
- The ECTAD team provided technical and operational inputs to the activities related to H7N9 emergency surveillance in the region, including the organization of four meetings:
 - **H7N9 Technical and Programmatic Coordination Meeting**, 2-3 May 2013 in Bangkok, Thailand. The objectives of the meeting were to review the current status of H7N9 in human and animal health sectors; review the preliminary risk analysis of H7N9 spread including information from the poultry supply chain and social network analysis; determine short-, medium- and longer-term surveillance strategies

including status diagnostic tests and protocols for H7N9 for at-risk countries; identify the opportunities for synergies of the human and animal health sectors as well as other sectors among the countries in the region and synergies between the countries and the relevant international organizations.

- **USAID Partners Meeting for China**, 6-7 May 2013 in Guang Zhou. The meeting discussed the H7N9 situation and identified opportunities for synergies between the human and animal health sectors as well as other sectors in China in order to deal with the H7N9 crises.
- **Technical and Policy Discussion on the Prevention and Control of Avian Influenza A(H7N9) in Asia**, 24-25 June 2013, Bangkok, Thailand. The meeting was jointly hosted by USAID and the Royal Thai Government. The objectives were to: share the lessons learned from actions undertaken by the Government of China in preventing and managing the situation of H7N9 influenza infections in poultry and humans as well as monitoring H7N9 influenza viral evolution; discuss specific unresolved issues related to viral transmission, surveillance, risk assessment and management as well as appropriate and practical interventions for H7N9 influenza infection based on capacity developed from the H5N1 crisis; discuss risks and scenarios of the H7N9 situation in the region and the possible mitigation measures in short-, medium- and longer-term; and identify the opportunities for synergies of the human health, animal health and other sectors among the countries in the region and between the countries and the relevant international organizations.
- **H7N9 Technical and Programmatic Meeting**, 12-13 September 2013, Rome, Italy. The meeting discussed the current disease situation in China, updated scientific information related to laboratory diagnosis and transmission of H7N9 virus and identified the ways forward to proactively deal with H7N9 in Asia.
- Implementation of the USAID funded project "Emergency surveillance of Influenza A(H7N9) virus in South and Southeast Asia" was carried out from May to September 2013 in collaboration with country teams and US Centers of Disease Control and Prevention.
- Other technical and operational inputs that the ECTAD team provided to country projects, in collaboration with FAO country teams and national counterparts, included:
 - recruitment of international consultants;
 - procurement of equipment and supplies;
 - issuance of contracts to conduct field activities/research; and
 - provision of clearance to technical reports prepared by staff of ECTAD Country Teams or by consultants recruited for various project activities.

Output 2: Strengthened regional and national human resources in the field of veterinary epidemiology

- The Senior Veterinary Epidemiologist, the Regional Coordinator and the ECTAD team continued to work closely with the Thai Department of Livestock Development on activities related to FETPV. These included:
 - serving as regional programme mentors to the trainees from Thailand and other countries;
 - attending and providing technical inputs to the Trainings/Workshops/Discussions during the first module of the training which was the joint training course with the Regional Field Epidemiology Training Programme organized by the Thai Ministry of Public Health for the public health personnel; and
 - continuing to seek additional support for the programme.
- The Senior Veterinary Epidemiologist continued to provide support to the training

programmes at the country and regional levels in South Asia including:

- The SAARC 2nd Epidemiology Network Workshop during 12-15 August 2013 in Bhutan; and
- The 2nd Regional Field Epidemiology Training Programme for Veterinarians in Nepal.

Output 3: Strengthened coordination of the epidemiology and laboratory networks

- The ECTAD team continued to provide technical inputs and coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks. This included:
 - The **First Meeting of ASEAN Ad-hoc Veterinary Epidemiology Group (AVEG)** in Phuket, Thailand, 27-29 August 2013. The objectives of the meeting were to discuss and develop the draft Terms of Reference, and to discuss on the roadmap to establish a sustainable epidemiology group within ASEAN mechanisms.
- The ECTAD team continued to provide technical inputs to the disease tracking system EMPRES-i Asia and information sharing via the Transboundary Animal Disease Network Asia email circulation.

Output 4: Strengthened coordination of cross-border risk assessment and management for HPAI transmission

- The Regional Animal Health Economist, participated in and provided inputs to the following meetings:
 - The **Cross-border Livestock Value Chain Workshop** in South Asia in collaboration with the members from SAARC Regional Support Unit, was organized from 29 April to 1 May 2013 in Kathmandu, Nepal.
 - The **Viet Nam and China Bilateral Meeting on Collaboration to Address Transboundary Animal Diseases and Diseases of Public Health Concern** organized at Halong Bay 22 and 24 August 2013. The meeting was held to share information of situation and activities relevant to diseases with transboundary nature and to define technical collaboration between the two countries.

Output 5: Established regional emergency response services

- The Regional Veterinary Epidemiologist and Regional Animal Health Economist conducted missions to Cambodia and Nepal during the reporting period to conduct a multidisciplinary field risk assessment of recent outbreaks in these two countries. The team provided inputs to the partners and to the donor coordination meeting.
- The ECTAD team provided technical and operational inputs to:
 - Liaise with USAID Washington to distribute the personal protective equipment to member countries in Asia upon the request;
 - Assist the ECTAD Country team in Nepal procuring personal protective equipment as part of preparedness for further outbreaks in Nepal.

Planned activities for the next six-month period (October 2013 – March 2014)

Output 1: Strengthened cross-sectoral coordination at regional level

- Continue to provide technical and operational inputs to country-level projects in collaboration with country teams.
- Continue to provide technical inputs, resource persons or training support to the activities related to existing regional the HPAI Control Framework for ASEAN,

existing network systems or regional coordination mechanism related to HPAI and animal disease control.

- Continue to coordinate and collaborate with other agencies on activities related to HPAI and H7N9 surveillance and response.
- Continue to provide technical inputs to support the activities of the EPT+ project as well as the other USAID EPT components implemented by various partners.

Output 2: Strengthened regional and national human resources in the field of veterinary epidemiology

- Continue activities to implement the Regional FETPV, including the seeking of additional support for the programme through other potential partners.
- Continue to provide support to the development of field epidemiology related training programmes in Cambodia, Lao PDR and South Asia.

Output 3: Strengthened coordination of the epidemiology and laboratory networks

- Continue to support the implementation of EMPRES-i Asia to share expertise and information in a real-time manner across the network through meetings, workshops and online communication.
- Provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks, as well as the epidemiology consortium.
- Continue to provide support for sample submission from member countries to international reference laboratories.

Output 4: Strengthened coordination of cross-border risk assessment and management for HPAI transmission

- Support the dialogue between or among member countries on cross-border cooperation and collaboration in the management of critical control points in key regional corridors.

Output 5: Established regional emergency response services

- Continue to provide technical and operational assistance to member countries to contain the HPAI outbreaks in their respective countries.

Main challenges encountered and response provided

- No major challenges were encountered during the reporting period.

Progress made towards the achievement of project outcomes *(from the start of activities)*

Output 1: Strengthened cross-sectoral coordination at regional level

- Coordination and collaboration between FAO and other international organizations and agencies were strengthened and continued. Engagement was strengthened with ASEAN through the adoption of strategies jointly developed by member countries and FAO. Coordination has been well established between the projects funded by USAID and the projects funded by other donors. Success stories and lessons learnt from HPAI can be used to further broaden the scope of action to prevention and control of transboundary animal diseases (TADs) and emerging infectious diseases (EIDs) using a *One Health* approach at the regional and country levels.
- Building on the existing capacities for H5N1, emergency surveillance for H7N9 incursion in the bordering countries and having poultry value chain connections with

China has been conducted. Such activities will be continuously conducted for the upcoming winter season.

Output 2: Strengthened regional and national human resources in epidemiology through regional FETPV

- The FETPV continued smoothly with additional collaborations at the national and international levels and approved joint funding for the programme. ASEAN Member States recognized the importance of integrating veterinary epidemiology activities in the national veterinary services and noted that the Thai Department of Livestock Development has been hosting the Regional FETPV since 2009. Capacity building in the field of epidemiology has been included as one of the main components of the draft Regional Strategies for Veterinary Epidemiology Capacity Development and Networking which has been endorsed at the Senior Official and Ministerial levels.
- There have been two graduating cohorts, in 2011 and 2012, consisting of 13 veterinary graduates. One hundred and thirty-four veterinarians from 11 countries were trained through the short course, *Veterinary Field Epidemiology in Action*. Eight training modules, an FETPV trainee manual and four structured case studies were developed and used for the training. A total of 44 epidemiology reports (13 surveillance, 18 outbreak investigations and 13 field epidemiology studies) were developed and some of these reports were presented at international conferences including the Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE), the Conference of Research Workers in Animal Diseases (CRWAD) and the Melbourne *One Health* Conference. The training programme has now been revised to use a modular approach consisting of three modules, which are in logical sequence: 1) analysis of secondary data derived from surveillance system; 2) outbreak investigation; and 3) field epidemiology study.

Output 3: Strengthened coordination of the epidemiology and laboratory networks

- The Strategic Framework for Regional Laboratory Networks for Southeast Asia was endorsed by the ASEAN Working Group on Livestock. The international partners for the regional laboratory network in Southeast Asia were recognized by the Member States as the Technical Advisory Group. The Laboratory Directors' Forum has been used to advocate for the progression of ongoing activities to gain more support at the policy level.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- A coordinated effort has been launched to develop cross-border collaboration between China and Viet Nam, and Cambodia and Viet Nam.

Quarter II 2010**Project Monitoring Sheet: OSRO/RAS/604/USA Baby 05**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)**

Reporting period: **April – June 2010**

Regional Component: Southeast Asia Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) Code: OSRO/RAS/604/USA Baby 05
Budget: USD 600 000 (Phase I), USD 1 435 000 (Phase II), USD 1 172 700 (Phase III), USD 937 800 (Phase IV) Total budget: USD 4 145 500
Effective starting date: 1 August 2006
Planned end date: 30 September 2010
Context of the project <p>The Highly Pathogenic Avian Influenza (HPAI) epidemic, caused by H5N1 viruses, began in late 2003 and in early 2004 in Asia and Southeast Asia and spread to many countries in the region. The effects were particularly severe in Indonesia, Thailand and Viet Nam, which saw widespread outbreaks in poultry and also human cases of H5N1 infection. The Food and Agriculture Organization of the United Nations (FAO), through its Emergency Centre for Transboundary Animal Disease Operations (ECTAD), established a decentralized unit in Bangkok, Thailand, located in the Regional Office for Asia and the Pacific (RAP), to provide technical backstopping for countries in the Asia and the Pacific region that were experiencing outbreaks of the infection or were at risk of it. ECTAD RAP was supported through a preliminary, regional project (OSRO/RAS/505/USA) funded by the United States Agency for International Development (USAID). This support has continued under FAO's present project.</p>
Objectives of the project <p>The objective of this regional component is to coordinate project activities with the target countries and also to ensure continuity and a smooth transition from the previous project (OSRO/RAS/505/USA) to the current one. The project also aims to strengthen regional level cross-sectoral coordination and communication for HPAI control.</p>
Planned activities (for the reporting period) Output 1: Strengthened cross-sectoral coordination at regional level <ul style="list-style-type: none"> • continue to provide technical and operational inputs to country-level projects in collaboration with the country teams • continue to provide implementation support to the Association of Southeast Asian Nations (ASEAN) for activities under the Second Regional Strategic Framework for HPAI Control in Southeast Asia • continue to coordinate and collaborate with other agencies on activities related to HPAI

control

Output 2: Strengthened regional and national human resources in epidemiology through Regional FETPV

- continue the activities to implement the two-year regional field epidemiology training programme for veterinarians (FETPV) and seek additional support for the programme through other potential partners

Output 3: Strengthened coordination of epidemiology and laboratory network

- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks
- continue to provide support for sample submission from member countries to international reference laboratories
- continue to provide technical inputs for the establishment of a disease tracking system, ECTAD Asia, in collaboration with the senior technical adviser of FAO's HPAI programme in China

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- continue to provide coordination for country teams conducting risk assessment studies on HPAI transmission through the cross-border poultry trade

Activities undertaken during reporting period

Output 1: Strengthened cross-sectoral coordination at regional level:

- FAO recruited or continued to recruit international and national staff for the project.
- The Regional Coordinator (RC) continued to coordinate and collaborate with other United Nations (UN) agencies, donors and international humanitarian actors by attending meetings in the region to ensure that support and approaches to HPAI control are harmonized at country and regional levels. Specifically, the RC:
 - participated and provided technical inputs to the "Second FAO/OIE/WHO Joint Scientific Consultation on Influenza and Other Emerging Infectious Diseases at the Human-Animal Interface" which was organized in Verona, Italy from 26 April to 30 April 2010.
 - attended the "Emerging Pandemic Threat (EPT) Planning Meeting," which was organized by USAID in Siem Reap, Cambodia on 4 June 2010.
 - attended an informal meeting with the United States' Centers for Disease Prevention and Control (US CDC) and RESPOND group to discuss the harmonization and collaboration of the work plans.
 - participated and provided technical inputs to the "Consultative Meeting on Regional Communication and Advocacy" organized under the support of the Asian Development Bank (AsDB), held from 23 June to 25 June 2010 in Bangkok, Thailand.
- The RC provided technical inputs to ASEAN HPAI Task Force in drafting the "ASEAN Roadmap for HPAI Progressive Control and Eradication" and participated in the "Second Meeting of Technical Working Group" responsible for drafting of the roadmap held in Hanoi, Viet Nam from 30 June to 1 July 2010.
- The RC provided inputs to the FAO country teams on the preparation of the project proposals for further funding by USAID in fiscal year 2010.
- The ECTAD team provided technical and operational inputs to country projects, in

collaboration with FAO country teams and national counterparts, for the following activities:

- recruitment of international consultants;
- procurement of equipment and supplies; and
- issuance of contracts to conduct field activities/research.

Output 2: Establishment of regional and national resource personnel in epidemiology

- In collaboration with the Regional Veterinary Epidemiologist (RVE), the RC worked closely with the Department of Livestock Development (DLD) on activities related to FETPV. These included:
 - meeting with the teams from US CDC, which are based in Thailand, to discuss collaboration in supporting FETPV and strengthening the linkage between FETP and FETPV at the regional and country level. The RVE joined the country visit jointly conducted by FAO and CDC to Lao PDR. During the mission in Bangkok, the RC and RVE attended the meeting held among CDC, FAO and EPT-RESPOND to discuss possible collaboration on capacity building in the Southeast Asia;
 - attending the steering committee on FETPV appointed by DLD to discuss programme management as well as the human and financial resources to be provided by DLD;
 - organizing the first-round visit of the FETPV trainees who were enrolled in the class of 2010 in Thailand for a series of trainings and workshops. The RVE jointly prepared with DLD a case study to be used for outbreak investigation for the training;
 - preparing for the “Animal-Human-Environment Interface Workshop: Socio-economic and Communication Module” to be held from 24 August to 26 August 2010; and
 - assisting the RVE in conducting a mission to China to provide inputs to the country team on the on-going efforts in the development of China-FETPV.

Output 3: Strengthened coordination of epidemiology and laboratory network

- The RC continued to provide technical inputs to help organize sub-regional and in-country workshops on surveillance and laboratory networks for HPAI and other forms of influenza in Asia. These workshops were supported by other regional projects (GCP/RAS/221/JPN, funded by the Government of Japan, and TCP/RAS/3211, funded by FAO) which were implemented by FAO from February to March 2010.
- ECTAD RAP continued to provide technical inputs to assist in the establishment of the disease tracking system. ECTAD Asia, in collaboration with the senior technical adviser of FAO’s HPAI programme in China. The system is now to be called “Global Animal Disease Information System (EMPRES-i)-Asia,” as it is part of EMPRES-i.
- The RC provided inputs to facilitate the planning and implementation of “EPT-IDENTIFY” project, which is related to regional laboratory networking initiative.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- The RC, in collaboration with a socio-economic expert from FAO headquarters, organized a meeting among CTAs of GMS countries (Cambodia, Lao PDR, Myanmar and China) and a national consultant from Thailand to consolidate the studies on risk of HPAI spread along poultry production and market chains at cross-border level conducted at regional and country levels on 22 June 2010.

- The RC facilitated the discussion among USAID partners including FAO, Academy for Educational Development (AED) and Kenan Institute Asia to develop a collaborative framework on joint activities to be jointly conducted at the border point between Mukdahan Province of Thailand and Savannakhet of Lao PDR.

Planned activities for the next reporting period

Output 1: Strengthened cross-sectoral coordination at regional level

- prepare the project proposal of the “regional component” for further funding by USAID during the fiscal year of 2010 and continue to provide inputs to country teams in preparing the proposals for the country components
- continue to provide technical and operational inputs to country-level projects in collaboration with country teams
- continue to provide support to ASEAN to finalize the roadmap for HPAI Progressive Control and Eradication in Southeast Asia
- continue to coordinate and collaborate with other agencies on activities related to HPAI control

Output 2: Strengthened regional and national human resources in epidemiology through Regional FETPV

- continue activities to implement the two-year FETPV programme, including the seeking of additional support for the programme through other potential partners
- continue to provide support to the development of China-FETPV as well as related training programme in Cambodia and Lao PDR

Output 3: Strengthened coordination of epidemiology and laboratory network

- provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks
- continue to provide support for sample submission from member countries to international reference laboratories
- continue to provide technical inputs for the establishment of a disease tracking system, EMPRES-i Asia, in collaboration with the senior technical adviser of FAO’s HPAI programme in China and IT expert in FAO headquarters

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- continue to provide coordination for country teams conducting risk assessment studies on HPAI transmission through the cross-border poultry trade

Main challenges encountered and response provided

- There were no major challenges during the reporting period.

Progress made towards the achievement of project outcomes (from the start of activities)

Output 1: Strengthened cross-sectoral coordination at regional level

- Coordination and collaboration between FAO and other international organizations and agencies – as well as with regional political organizations such as ASEAN – has continued and has been strengthened. Linkages have been made between the projects

funded by USAID and the projects funded or (or about to be funded) by other donors.

Output 2: Strengthened regional and national human resources in epidemiology through Regional FETPV

- FETPV has continued smoothly with additional collaborators at national and international levels and approved joint funding for the programme.

Output 3: Strengthened coordination of the epidemiology and laboratory network

- In order to facilitate collaboration among key international partners, a matrix was drafted with the aim of strengthening epidemiology and laboratory networks for HPAI in Southeast Asia.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- A key operational research approach to study HPAI risk in the poultry sector, and the value chain at cross-border level, was discussed through consultative meetings between FAO country teams and key USAID partners, including Abt Associates, Academy for Educational Development and Development Alternatives, Incorporated. Methodology guidelines were finalized and the plans to conduct regional studies, focusing on two major poultry production areas, were discussed and are being finalized. Additional data has been collected at country and regional levels.

I Quarter 2010**Project Monitoring Sheet: OSRO/RAS/604/USA Baby 05**

Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI)

Reporting period: January – March 2010

Regional Component: Southeast Asia Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) Code: OSRO/RAS/604/USA Baby 05
Budget: USD 600 000 (Phase I), USD 1 435 000 (Phase II), USD 1 172 700 (Phase III), USD 937 800 (Phase IV) Total budget: USD 4 145 500
Effective starting date: 1 August 2006
Planned end date: 30 September 2010
Context of the project <p>The highly pathogenic avian influenza (HPAI) epidemic, caused by H5N1 viruses, began in late 2003 and in early 2004 in Asia and Southeast Asia, and spread to many countries in the region. The effects were particularly severe in Indonesia, Thailand and Viet Nam, which saw widespread outbreaks in poultry, and also human cases of H5N1 infection. The Food and Agriculture Organization of the United Nations (FAO), through its Emergency Centre for Transboundary Animal Disease Operations (ECTAD), established a decentralised unit in Bangkok, Thailand, located in the Regional Office for Asia and the Pacific (RAP), to provide technical backstopping for countries in the Asia and the Pacific region that were experiencing outbreaks of the infection or were at risk of it. ECTAD RAP was supported through a preliminary, regional project (OSRO/RAS/505/USA) funded by the United States Agency for International Development (USAID). This support has continued under FAO's present project.</p>
Objectives of the project <p>The objective of this regional component is to coordinate project activities with the target countries, and also to ensure continuity and a smooth transition from the previous project (OSRO/RAS/505/USA) to the current one. The project also aims to strengthen regional-level cross-sectoral coordination and communication for HPAI control.</p>
Planned activities (for the reporting period) <p>Output 1: Strengthened cross-sectoral coordination at the regional level</p> <ul style="list-style-type: none"> • Continue to provide technical and operational inputs to projects at the country level, in collaboration with the country teams. • Continue to provide support to the Association of Southeast Asian Nations (ASEAN) to implement activities under the Second Regional Strategic Framework for HPAI Control in Southeast Asia.

- Continue to coordinate and collaborate with other agencies on activities related to HPAI control.

Output 2: Strengthened regional and national human resources in epidemiology through Regional FETPV

- Continue the activities to implement the two-year regional field epidemiology training programme for veterinarians (FETPV) and seek further support for the programme through additional potential partners.

Output 3: Strengthened coordination of the epidemiology and laboratory network

- Provide coordination, in collaboration with other FAO regional projects, to strengthen existing epidemiology and laboratory networks.
- Continue to provide support for sample submission from member countries to international reference laboratories.
- Continue to provide technical inputs for the establishment of disease tracking systems, through ECTAD Asia, in collaboration with FAO's senior technical adviser for the HPAI Programme in China.

Output 4: Conducting risk assessment for HPAI transmission through the cross-border poultry trade

- Continue to provide coordination for country teams that are performing risk assessments of HPAI transmission through the cross-border poultry trade.

Activities undertaken during reporting period

Output 1: Strengthen cross-sectoral coordination at the regional level:

- FAO recruited or continued to recruit international and national staff for the project.
- The Regional Coordinator (RC) continued to coordinate and collaborate with other United Nations (UN) agencies, donors and international humanitarian actors by attending meetings in the region to ensure that support and approaches to HPAI control are harmonized at country and regional levels. Specifically, the RC:
 - in collaboration with World Organization for Animal Health (OIE), led a session related to animal health during a regional workshop on the UN System for avian and pandemic influenza control, which was organized by the United Nations System Influenza Coordination (UNSIC), in January 2010 in Bangkok, Thailand; and
 - attended the following events organized by USAID's Regional Development Mission for Asia (RDMA):
 - a discussion with Dr Dennis Carroll on the launching of the Emerging Pandemic Threat programme;
 - a planning meeting on technical discussions, which were being organized to take place in Bali on 30 and 31 March 2010, among five endemic countries;
 - a Chief of Party meeting to update USAID partners on work progress; and
 - a planning discussion on a USAID partners' meeting to be organized in June 2010.
- The RC provided technical inputs for the report submitted by the real-time evaluation team for FAO's Programme on Avian Influenza Control in Asia.

- The RC provided technical inputs, on the drafting of a regional wildlife strategy for Asia and the Pacific, to the Wildlife group of FAO's Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases.
- In collaboration with the Asian Development Bank, the project supported the organization of the Fourth Annual Regional ECTAD Meeting, held from 23 to 25 February 2010 in Bangkok, Thailand.
- The RC provided inputs to the Crisis Management Centre (CMC) mission, which was helping Bhutan to prepare for HPAI outbreaks.
- The RC conducted a mission to Myanmar, on 16 and 17 February 2010, to accompany the RDMA team in following up on the progress of project activities there.
- The ECTAD team provided technical and operational inputs to country projects, in collaboration with FAO country teams and national counterparts, for the following activities:
 - recruitment of international consultants;
 - procurement of equipment and supplies; and
 - issuance of contracts to conduct field activities/research.

Output 2: Establishment of regional and national resource personnel in epidemiology

- In collaboration with the Regional Veterinary Epidemiologist (RVE), the RC worked closely with the Department of Livestock Development (DLD) on activities related to FETPV. These included:
 - acquiring Cabinet approval on a Letter of Agreement (LoA) with the Government of the Kingdom of Thailand to support the maintenance of the regional FEPTV coordination office based at the DLD;
 - meeting with teams from the United States' Centers for Disease Prevention and Control based in Thailand to discuss collaboration in supporting FETPV;
 - attending the steering committee on FETPV appointed by DLD to discuss programme management as well as the human and financial resources to be provided by DLD;
 - organizing a short course, entitled "Veterinary Epidemiology in Action", with participants from ten countries, including Cambodia, China, Indonesia, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, the Philippines, Thailand and Viet Nam (during this course, the RC also gave a lecture on application of veterinary epidemiology in regulatory services); and
 - organizing a series of workshops under the regional FETPV, for students who had enrolled in 2009, which included the "Animal-Human-Environment Interface Workshop: WILD Module", held from 8 to 12 February 2010.

Output 3: Strengthened coordination of epidemiology and laboratory network

- The RC provided technical inputs to help organize subregional and in-country workshops on surveillance and laboratory networks for HPAI and other forms of influenza in Asia. These workshops were supported by other regional projects (GCP/RAS/221/JPN, funded by the Government of Japan, and TCP/RAS/3211, funded by FAO) which were implemented by FAO from February to March 2010.
- ECTAD RAP continued to provide technical inputs to assist in the establishment of the disease tracking system, ECTAD Asia, in collaboration with the senior technical adviser of FAO's HPAI programme in China. The first training session for FAO ECTAD country teams was organized on 26 February 2010 in Bangkok, Thailand.
- The RC and RVE provided inputs to facilitate the organization of meeting of the epidemiology consortium, scheduled on 3 and 4 March 2010, to develop a

collaborative framework among key potential partners for activities related to epidemiology. These activities included: capacity building; networking; and knowledge generation and utilization.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- The RC, in collaboration with a socio-economic expert from FAO headquarters, followed up on activities and consolidated studies on poultry production and market chains at country level as well as associated HPAI risks at the cross-border level.

Planned activities for the next reporting period

Output 1: Strengthened cross-sectoral coordination at regional level

- Continue to provide technical and operational inputs to country-level projects, in collaboration with country teams.
- Continue to provide implementation support to ASEAN for activities under the Second Regional Strategic Framework for HPAI Control in Southeast Asia.
- Continue to coordinate and collaborate with other agencies on activities related to HPAI control.

Output 2: Strengthened regional and national human resources in epidemiology through Regional FETPV

- Continue activities to implement the two-year FETPV programme, including the seeking of additional support for the programme through other potential partners.

Output 3: Strengthened coordination of epidemiology and laboratory network

- Provide coordination, in collaboration with other regional projects implemented by FAO, to strengthen existing epidemiology and laboratory networks.
- Continue to provide support for sample submission from member countries to international reference laboratories.
- Continue to provide technical inputs for the establishment of a disease tracking system, ECTAD Asia, in collaboration with the senior technical adviser of FAO's HPAI programme in China.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- Continue to provide coordination for country teams conducting risk assessment studies on HPAI transmission through the cross-border poultry trade.

Main challenges encountered and response provided

- There were no major challenges during the reporting period.

Progress made towards the achievement of project outcomes (since the start of activities)

Output 1: Strengthened cross-sectoral coordination at the regional level

- Cooperation, coordination and collaboration between FAO and other international organizations and agencies – as well as with regional political organization such as

ASEAN – has continued and has been strengthened. Linkages have been made between projects funded by USAID and projects funded or (or about to be funded) by other donors.

Output 2: Strengthened regional and national human resources in epidemiology through Regional FETPV

- FETPV, at the regional level, has continued smoothly with additional collaborators at national and international levels and approved joint funding for the programme.

Output 3: Strengthened coordination of the epidemiology and laboratory network

- A matrix, to facilitate collaboration among key international partners, was drafted with the aim of strengthening epidemiology and laboratory networks for HPAI in Southeast Asia.

Output 4: Conducting risk assessment for HPAI transmission through cross-border poultry trade

- A key operational research approach to study HPAI risk in the context of the poultry sector, and the value chain at cross border level, was discussed through consultative meetings between FAO country teams and key USAID partners (which included: Abt Associates; Academy for Educational Development; and Development Alternatives, Incorporated). Methodology guidelines were finalized; plans to conduct regional studies, focusing on two major poultry production areas, were discussed and are being drafted. Additional data has been collected at country and regional levels.

2nd Quarter 2010**Project Monitoring Sheet: OSRO/RAF/719/USA – Phase II**

Project Title: Strengthening HPAI surveillance, preparedness and response capacity in Southern Africa

Reporting period: April to June 2010

Regional Component: Southern Africa Project Title: Strengthening HPAI surveillance, preparedness and response capacity in Southern Africa Code : OSRO/RAF/719/USA
Budget : USD 1 099 175 (Phase I), USD 500 000 (Phase II) Total budget : USD 1 599 175
Effective Starting Date: 1 January 2010
Planned End Date: 30 September 2010
Context of the Project <p>Since the outbreak of the Highly Pathogenic Avian Influenza (HPAI) on the African continent in February 2006, the Southern African region has remained free from the infection. In response to the potential threat of incursion of the disease, African countries have formulated National Preparedness and Response Plans, which led to the development of a Regional Plan by the Southern African Development Community (SADC). The levels of implementation of the national plans, however, differ greatly between the countries. This project, therefore, aims at assisting the countries at both national and regional levels in retaining a disease free status.</p>
Objectives of the Project <p>Impact of the project Improvement and safeguarding of animal health and livelihoods from the threat of HPAI and mitigation of the risk of a human pandemic within the SADC region.</p> <p>Outcome of the project Enhanced and harmonized regional preparedness, effective response to HPAI outbreak and strengthened regional and national surveillance for HPAI in the SADC region.</p> <p>Outputs of the project</p> <ol style="list-style-type: none"> 1. Expanded and consolidated risk analysis-based HPAI surveillance (Malawi, Mozambique, Zambia and Zimbabwe); 2. Enhanced capacity of regional and national veterinary laboratories for the diagnosis of Low Pathogenic Avian Influenza (LPAI) and HPAI and provision of essential material to second regional service laboratory (Botswana); 3. Regional coordination and networking.
<u>Activities that were planned for this quarter</u> <p>Output 1 Activity 1.1: Implementation of cross-border surveillance</p> <ul style="list-style-type: none"> • Sampling at identified common border posts with the respective neighboring countries

during the month of June

- Contracting the KYEEMA Foundation to join the cross-border surveillance to carry out a socio-anthropological survey

Activity 1.2: Field implementation of HPAI surveillance and its integration into ongoing animal health activities

- Start of the sampling in the previously identified high risk districts and its integration into an ongoing national animal health programme

Activity 1.3: Integration of producers into surveillance activities

- Start of the training of identified master farmers

Activity 1.4: Training of veterinary field personnel in surveillance techniques

- Training of relevant field personnel

Activity 1.5: Dynamic mapping of surveillance results

- Gathering of Global Positioning System (GPS) coordinates during the sampling activities for further analysis and mapping

Output 2

Activity 2.1: Laboratory support to enhance surveillance in the region

- Continuous supply of swabs and serum samples sent by all countries with enhanced surveillance to Botswana National Veterinary Laboratory (BNVL)
- Ensuring the proper functioning of the Demand-Supply Hub at BNVL, ordering reagents and distributing them to all recipient laboratories
- Submission of all SADC laboratories polymerase chain reaction (PCR) protocols (Standard operation procedures (SOPs)) for harmonization

Activity 2.2: Upgrade of virology section for AI diagnostics

- Establishing additional diagnostic tests for the detection of LPAI/HPAI, such as enzyme linked immunosorbent assay (ELISA)

Output 3

Activity 3.1: Regional coordination and networking

- Reports to be submitted by the four countries on results and progress of activities
- Evaluation of the project's progress by the project management team and close follow up on the activities noted in the work plan

Activities undertaken during the Reporting Period

Output 1

Activity 1.1: Implementation of cross-border surveillance

- Cross-border surveillance at nine common border locations, shared between Malawi, Mozambique, Zambia and Zimbabwe has been synchronized, and the necessary preparations for sampling activities were undertaken by the national consultants (NCs)

during April and May.

- At four out of the nine cross border posts, avian influenza (AI) surveillance activities are combined with a socio-anthropological study/survey conducted by the KYEEMA Foundation, contracted through a Letter of Agreement (LoA). A socio-anthropologist is conducting questionnaires and interviews in four villages (two in each country) located within 5 km from the border. The socio-anthropologist is targeting four different groups per village: 1. veterinary staff; 2. traders; 3. chicken producers (focusing on female chicken producers); and 4. commercial producers. Within groups 1., 2. and 4., information is collected on production systems, biosecurity, movements, transport routes, market places, ND vaccination and cross-border trade. Within group 3., information will be collected on consumption, communication behavior, and transport and trading.
- The surveillance teams and KYEEMA are visiting together the four border locations on the following dates: Malawi (Muloza)/Mozambique (Milanje): from 21 to 26 June; Zambia (Livingstone)/Zimbabwe (Vic Falls)/Malawi (Michinji): from 28 June to 9 July; and Zimbabwe (Nyamapanda)/Mozambique (Changara): from 12 to 17 July.
- At the time of the reporting, the cross-border surveillance has been conducted at the border of Muloza (Malawi)/Milanje (Mozambique) and the cross-border surveillance at Nyamapanda (Zimbabwe)/Michinji (Malawi) is under way.

Activity 1.2: Field implementation of HPAI surveillance and its integration into ongoing animal health activities

- HPAI surveillance is currently taking place in previously identified high risk areas (see AI surveillance 2009 maps) and at the newly identified cross-border locations (see activity 1.1). At present, the sampling has been conducted in Malawi at two border posts and in Mozambique at one border post and two districts. In Zambia, three districts and one border post have been sampled, while in Zimbabwe, sampling has been conducted in two different districts.
- In Zimbabwe, Newcastle Disease (ND) vaccination campaign and AI surveillance have been integrated in two provinces (Masvingo and Mashonaland West). However, more funding for ND vaccine production is expected, which will allow Zimbabwe to expand their campaign to further provinces.

In Mozambique, at the moment of reporting, no ND vaccination campaign is in process. Nevertheless, the campaign has been planned for the month of July and will be integrated within the AI surveillance project in a few provinces.

In Malawi, there is, at present, no national animal health program which could be linked to AI surveillance.

In Zambia, the Central Veterinary Research Institute (CVRI) is in process of increasing their capacity for ND vaccine production (funded by the KYEEMA foundation). The goal is to produce enough vaccines for starting a large ND vaccination campaign at the beginning of 2011, which will be integrated within the AI surveillance project.

Activity 1.3: Integration of producers into surveillance activities

- Master farmers have been selected through poultry associations (Zimbabwe), community leaders and vaccinators (Mozambique and Zambia) and existing agricultural development

systems (Malawi). The content of their training was covering poultry disease recognition with specific emphasis on AI and ND, disease reporting and passive surveillance. The master farmers have been encouraged to disseminate their gained knowledge to their fellow farmers in their community. The second edition of the “picture book” on infectious poultry diseases has been distributed to the master farmers and was used during the training.

Training took place during the month of June in the following countries:

In Malawi, a total of 350 Master Farmers from seven high risk areas (50/district) have been trained (from 14 June to 16 June).

In Mozambique, a total of 88 master farmers (11/province) are being trained between June and July. This training is taking place during the HPAI surveillance activities. This one-day training course is held by the field veterinary officers.

Training is planned for the month of July in the following countries:

In Zambia, a training course for master farmers is scheduled for the third week of July. A total of 48 master farmers will be trained in Lusaka coming from 12 different high risk areas (three master farmers/district).

In Zimbabwe, a total of 80 Master farmers have been trained in four high risk areas (20 farmers/district) (from 1 June to 22 June).

Activity 1.4: Training of veterinary field personnel in surveillance techniques

- A refresher training for field livestock officers has been organized and planned during the month of May/June. The training is focusing on AI surveillance techniques (blood collection, transport, storage and labeling).

In Malawi, at the time of the reporting, the training of 24 veterinary assistants (four per newly identified border district) has been completed.

In Mozambique, a refresher training has been organized for a total of 12 veterinary livestock officers (two per province), who will also be conducting training for master farmers in their respective provinces.

In Zambia, a refresher training for field veterinary officers is taking place during the sampling activities in the different high risk provinces. Three veterinary officers per province are trained during this sampling exercise.

In Zimbabwe, a one-day training for veterinary field staff has been completed in four different provinces during the same week when the training of master farmers took place.

- A copy of 4000 “picture books” on infectious poultry disease has been produced and sent to the four countries: 3000 in English and 1000 in Portuguese. These books are now available at all high risk District Veterinary Offices and have been used for training purposes, both for farmers and veterinary field personnel.

Activity 1.5: Dynamic mapping of surveillance results

- GPS coordinates have been collected in Malawi and Zimbabwe at the respective AI surveillance sites. Malawi has produced detailed Geographic Information System (GIS)

maps indicating the villages where cross-border surveillance is taking place.

Output 2

Activity 2.1: Laboratory support to enhance surveillance in the region

- Reagents for AI testing and ELISA kits have been requested to the demand-supply hub hosted at the BNVL by the four countries: the request from Malawi, Zambia and Zimbabwe has been processed and reagents/kits have been distributed to the respective central veterinary laboratories (CVLs). The request for reagents/kits has been placed by Mozambique and is in process.
- BNVL has received no serum and swab samples for AI testing during this quarter.
- Preparations for the proficiency test (PT), to be carried out in the next quarter, have started through discussions with BNVL and the Veterinary Laboratories Agency (VLA) in UK, which will participate in this trial.

Activity 2.2: Upgrade of Virology Section of the BNVL for AI diagnostics

- Orders for laboratory equipment to upgrade the virology section for AI testing have been placed by FAO ECTAD and 70 percent of the equipment has been delivered and installed. The autoclave and two pH meters are expected to be delivered in July.
- ELISA test, as an additional diagnostic test for AI, is in the process of being established. ELISA plate reader has been installed and pilot tests, using positive and negative serum controls, are currently used to verify the expected results.

Output 3

Activity 3.1: Coordination and regional networking

- Two progress reports have been submitted by Mozambique and Zambia (February/March & April/May), and one progress report has been submitted by Malawi and Zimbabwe (April/May).
- During the reporting period, the Operations Officer has completed three missions to Malawi, Mozambique and Zambia between May and June. The purpose of the visits was to assist the three NCs with the finalization of their budget/programme needs and to facilitate the finalization of the LoAs between the Food and Agriculture Organization of the United Nations (FAO) country offices and the National Veterinary Departments in Mozambique and Zambia.
- The organization and synchronization of cross-border surveillance in close collaboration with KYEEMA foundation has been coordinated by FAO Emergency Centre for Transboundary Animal Diseases Operations (ECTAD) Gaborone.
- The FAO ECTAD office in Gaborone has facilitated the procurement of additional laboratory and sampling material from the countries budget on each country's request: additional vacutainer needles, syringes, blood collection tubes, cryotubes, pipette tips (of five different sizes), microtitre plates, glass bottles and beakers, measuring cylinders, gel cutter, agarose gel. Ten GPS equipments have been procured for Mozambique and Zimbabwe.

Activities planned for the third quarter

Output 1

Activity 1.1: Implementation of cross-border surveillance:

- Sampling at common cross-border points will continue throughout the month of July
- The cross-border surveillance/survey in collaboration with KYEEMA foundation will be finalized in mid-July

Activity 1.2: HPAI surveillance

- HPAI surveillance will continue in high risk areas of the four countries throughout the months of July and August

Activity 1.3: Integration of producers into surveillance activities

- The role of previously trained master farmers in conducting passive surveillance will be evaluated

Activity 1.4: Dynamic mapping of surveillance results

- GPS coordinates will be collected during the sampling activities, and GIS maps will be produced indicating the AI surveillance locations in 2010

Output 2

Activity 2.1: Laboratory support to enhance surveillance in the region

- BNVL will receive samples from the four CVL for AI testing. All samples will be tested using the established ELISA test
- BNVL shall provide an update on the use of the demand-supply hub
- The SOPs for PCR (AI) will have been harmonized for the use by all SADC laboratories

Output 3

Activity 3.1: Coordination and regional networking

- Coordination by FAO ECTAD will continue throughout the project implementation

Main challenges encountered during the second quarter 2010

The main challenge during this reporting period was to coordinate the cross-border surveillance between the four countries taking into consideration the availability of the KYEEMA foundation's expert. Another challenge was to finalize the countries programme/budget needs and to have the LoAs signed in Zambia and Mozambique. In the meantime, LoAs with each targeted province have been finalized in Mozambique and in Zambia, the work and budget plans have been approved by the FAO representative and activities are on-going.

Main progress made towards the achievement of project outcome *(from the start of the project activities)*

Cross-border surveillance has been harmonized between the four countries, and at present, surveillance has been completed at three border posts.

Training of master farmers has been completed in Zimbabwe and Malawi and is organized for the month of July in Mozambique and Zambia.

A revised second edition of the "picture book" on infectious poultry disease has been printed and distributed to the four countries. It has also been posted on the ECTAD website.

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 06**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza in Viet Nam**

Reporting period: **April 2013 to September 2013**

Country: Viet Nam
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza in Viet Nam
Code: OSRO/RAS/604/USA Baby 06
Budget: Initial budget: USD 2 000 000 Amendment No. 1: USD 3 100 000 Amendment No. 2: USD 3 300 000 Amendment No. 3: USD 1 075 000 Amendment No. 4: USD 2 200 000 Amendment No. 5: USD 1 900 000 Amendment No. 6: USD 1 700 000 Transfer from project OSRO/VIE/801/USA in 2012: USD 508 373 Amendment No. 7 (current): USD 1 300 000 . Total budget: USD 17 083 373
Effective starting date: August 2006
Planned end date: 30 September 2014
Context of the project The control and move towards the eradication of H5N1 Highly Pathogenic Avian Influenza (HPAI) demands a long-term approach. Viet Nam is moving from the control phase to the consolidation phase, with an ongoing need for capacity building in the veterinary services and livestock production sectors as well as support for vaccination and other risk reduction measures. This regional project of the Food and Agriculture Organization of the United Nations (FAO) is supported by the United States Agency for International Development (USAID) and is currently in its sixth phase of implementation.
Objectives of the project The overall objective of the project is to increase the capacity to prevent, detect and respond to HPAI and other high impact livestock and zoonotic diseases and to reduce the risks of disease outbreaks occurring.
Planned activities for the reporting period (April 2013 to September 2013) Component 1: Preparedness and Planning Component Output 1: Strategy development for HPAI control <i>Activity 1.1 Regional HPAI Control Strategy</i> <ul style="list-style-type: none"> • Develop advocacy strategy for implementation in conjunction with the Partnership for Avian and Human Influenza (PAHI). • Joint planning of activities with other partners to ensure linkage to zonal strategy. • Support review of progress and report to stakeholders. <i>Activity 1.2 Develop policy briefs for potential outcomes during the transition period to the cessation of vaccination</i> <ul style="list-style-type: none"> • Review previous scenario development and revise as necessary. • Develop concise policy brief based on review and submit to the Department of Animal Health (DAH). • Develop concise brief on scenarios for advocacy at the provincial level.

Activity 1.3 Training in regional control plan management and evaluation

- Conduct real-time training in regional control plan management in conjunction with the Regional Animal Health Office (RAHO) meetings.
- Support real-time monitoring on the progress of the control plan and report.

Output 2: Coordination and communication internally and with donors and other HPAI implementing partners*Activity 2.1 Core FAO Viet Nam team supported and manages project activities**Activity 2.2 Annual project meeting supported**Activity 2.3 Coordination meetings to support regional HPAI control strategy implementation**Activity 2.4 Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment, value chain and risk mitigation in the poultry sector***Component 2: Animal surveillance component****Output 3: Animal surveillance at the national, regional/zonal, provincial, district and commune levels enhanced***Activity 3.1 Strengthening of core capacities for animal disease control and disease control planning within regional control strategies*

- Support capacity building to develop work plans to implement regional control strategies.
- Support capacity building in risk management along value chains relevant to regional control strategies.
- Support the development of risk management and other responses to risk analysis associated with value chains.
- Mentoring of epidemiology units in data analysis and interpretation as required.

Activity 3.2 Animal surveillance programme

- Support national surveillance plan for live bird markets (LBMs).
- Support surveillance plan for LBMs linked to regional strategic objectives.
- Support linkages in passive surveillance from community level to formal animal health reporting systems.
- Training for differential diagnoses of poultry disease outbreak at RAHO and the Sub-Department of Animal Health (SDAH) including poultry post-mortem examination.
- Develop policy options for incentives to stimulate reporting of disease events and support advocacy for implementation.

Activity 3.3 Strengthening of veterinary laboratories diagnostic activities, including biosafety and quality assurance supported

- Support laboratory quality assurance through monitoring of performance and review of standard operating procedures (SOPs).
- Continue support for rapid and differential diagnosis at RAHO level including other zoonoses/high-impact diseases.
- Continue support for the full characterization of viruses isolated from outbreaks and LBM surveillance.
- Review the functions and role of the animal health laboratory system.
- Support the strategy for DAH to assume full technical responsibility for HPAI laboratory programme.

Activity 3.4 Veterinary Epidemiology Network capacity supported

- Continue to support the Applied Veterinary Epidemiology Training (AVET) programme. Three international experts will conduct an advanced epidemiology training on risk analysis and spatial

epidemiology in May 2013. Two FAO international experts will conduct an eight-day *One Health* wildlife-farm animals-human interphase workshop in May 2013, including two field visits.

- During the planned third alumni meeting in August 2013, define and develop a framework for the epidemiology network at the national level.
- Further support regional level epidemiology networks at “The 5th International Workshop on Influenza Risk Assessment and Risk Modeling: Transitioning from Global to Local Assessments” to be held in Hanoi in May 2013.
- Support the planned third AVET alumni meeting in September 2013. This is part of FAO’s continued support of AVET alumni meetings.

Activity 3.5 Further development of monitoring and evaluation (M&E) expertise in animal health

- Train managers at RAHO and SDAH on the M&E principles that guide project management.
- Support alignment of the overall Avian and Pandemic Influenza Initiative (APII) M&E framework to local strategic plans.
- Support managers at RAHO and SDAH in gathering and processing M&E data.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1 Procurement of essential supplies and maintenance of laboratory equipment

Activity 4.2 Procurement of consumables to support laboratory activities

Activity 4.3 Determine and support maintenance requirements for laboratories

Activity 4.4 Procurement of supplies to support field surveillance activities

Component 3: Animal response component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk mapping and risk analysis updated to support regional strategies

- Three international experts to conduct an advanced epidemiology training on risk analysis and spatial epidemiology in May 2013 to further enhanced analysis capacity building.
- Implementation underway for an international expert to conduct a study in the Mekong region to provide detailed characterization of high-risk value chains including network analysis.
- Poultry sector profiling to support the regional strategy.
- Applied risk analysis capacity building.
- Updating risk assessment and mapping.
- Detailed characterization of high-risk value chains including network analysis.

Activity 5.2: Outbreak control capacity strengthened under regional control strategy

- Assist partners to sensitize grassroots stakeholders to disease control activities.
- Review application of carcass disposal in outbreak control in local situations within strategic plans.
- Prepare and conduct desktop exercises with public health counterparts.

Activity 5.3 Conduct review of response capability in relation to scenarios developed under activity 1.2

Activity 5.4 Develop tailored compensation mechanisms to support control strategy

- Support the development of locally feasible and practical incentives including compensation mechanisms to support farmers reporting disease.
- Review outbreak control procedures to enable effective audits to support compensation packages.

Activity 5.5 Cross-border dialogue and coordinated surveillance

- Support bilateral meetings with both the Governments of China and Cambodia to exchange technical information, including surveillance and risk assessment findings, and risk reduction plans.
- Review cross border value chains of high-risk commodities.

- Develop plans to conduct coordinated cross-border surveillance.

Activity 5.6 Vaccine efficacy assessments and virus surveillance supported at the national level

- Provide support for post-vaccination serological monitoring
- Conduct vaccine trials against key circulating clades with a range of vaccines, species and breeds.
- Monitoring pathogenicity of selected virus isolates from outbreaks and LMB surveillance.

Activity 5.7 Institutional strengthening in poultry production and animal health advisory systems

- Institutional and core function analysis for poultry production and support service.
- Capacity needs assessment of key stakeholders.
- Develop the poultry sector advisory services model in collaboration with partners and the Extension Department.

Activity 5.8 Support engagement of private sector in the execution of regional control strategies

- Develop a poultry industry forum at the regional level to support the regional control plan.
- Work with other APII partners to engage key value chain stakeholders in regional control strategy.

Activity 5.9 Support DAH to conduct review of the current draft of the Veterinary Law

Activity 5.10 Support DAI to finalize guidelines to establish Veterinary Statutory Body, including structure, function and mechanism

Output 6: Biosecurity improved and market hygiene practices in commercial and free-ranging poultry raising settings supported

Activity 6.1 Support programme to strengthen safe poultry production practices including biosecurity

- Develop materials and methods with partners, including extension service to scale up hatchery pilot programme in support of regional control strategies.
- Facilitate the development of policy and advocacy brief to support practical measures to upgrade the production of day-old ducks.
- Support implementing partners with high-level training and advice on hatchery pilot programme.
- Collaborate with the Department of Livestock Production (DLP) to develop upstream standards for parent flocks supplying hatcheries conforming to guidelines and pilot test practical implementation at field level.
- Continue support for the development of poultry waste disposal systems.
- Develop materials and methods with partners, including extension service to scale up the good production practices in support of regional control strategies.

Activity 6.2 Support ongoing activity of the Biosecurity Working Group

- Support national and regional meetings of the Biosecurity Working Group.
- Support the dissemination of the Biosecurity Working Group findings by partners within the regional control strategy, including the extension service.

Activity 6.3 Provide policy support brief on the inactivation of H5N1 in relation to environmental conditions

- Investigate inactivation of H5N1 strains under simulated environmental conditions.
- Develop a policy brief related to the implications of virus survival in the environment.

Activity 6.4 Pilot training programme for private sector in various guidelines and Good Poultry Production Practices (GPPP) developed

Activity 6.5 Training of provincial staff from the District Department of Agriculture and Rural Development (DARD) in description and mapping of the local poultry sector

Activities undertaken during the reporting period (April 2013 to September 2013)

Component 1: Preparedness and Planning Component

Output 1: Strategy development for HPAI control

Activity 1.1: Viet Nam-Based Regional HPAI Control Strategy

- The Government of Viet Nam did not implement the FAO proposed Viet Nam-based regional strategy, so no advocacy strategy was developed for implementation in conjunction with PAHI.
- Joint planning of activities with other partners to ensure linkage to zonal cross border strategy: FAO participated in and contributed to table top exercises, simulations and workshops organized by the World Health Organization (WHO) and the United States Centers for Disease Control and Prevention (CDC) on Influenza in humans. These workshops were held in Hanoi and Ho Chi Minh City. FAO organized two regional bilateral meetings, Viet Nam-Cambodia and Viet Nam-China to develop a regional (cross-border) control strategy.
- No Viet Nam based regional control strategy was implemented so no review of progress and report to stakeholders.

Activity 1.2: Develop policy briefs for potential outcomes of the cessation of vaccination

- The assumption was based on stop vaccination, but is no longer valid. FAO will continue to support use of vaccination including phasing out over time as necessary. With regards to the use of vaccine in the low-, medium- and high-risk areas being incorporated into the national strategy, a technical evaluation deemed this activity unnecessary.

Activity 1.3 Training in the Viet Nam based regional control plan management and evaluation

- The Government of Viet Nam did not implement the FAO proposed Viet Nam based regional strategy, so no real-time training in regional control plan management was conducted.
- The Government of Viet Nam did not implement the FAO proposed Viet Nam based regional strategy, so real-time monitoring of progress of the control plan was not conducted.

Output 2: Coordination and communication with donors and other HPAI implementing partners

Activity 2.1 Core FAO Viet Nam team supported and manages project activities

- continued to ensure that all required staff is in place;
- conducted a series of briefings, meetings and e-mails with many HPAI implementing partners for coordination, including both USAID and non-USAID partners;
- bi-weekly written briefings provided to USAID on HPAI activities;
- regular coordination meetings between USAID and FAO on a bi- or tri-weekly basis;
- meetings between FAO and DAH (usually the Director-General) on a bi-weekly basis for coordination purposes;
- semi-annual progress report for the period April-September 2013 has been prepared;
- released the first quarterly E-Newsletter and widely distributed to donors, implementing partners, Emergency Centre for Transboundary Animal Diseases (ECTAD) members list, and others in the *One Health* contact list. The E-Newsletter was also uploaded on the FAO Viet Nam website:

Activity 2.2 Annual project meeting supported

- The ECTAD Viet Nam team coordination meeting was held on 18 April 2013 to share information and update the project activities, both in technical and operational fields. All project staff, including those based at DLP and DAH, also took part in the meeting.
- The ECTAD Viet Nam team meeting was held on 16 July 2013 to share information and to update the project activities, both in technical and operational fields. All project staff took part in the meeting.
- Internal brainstorming/planning meeting was held on the next phase of the

OSRO/RAS/604/USA project on 30 July 2013. Preparation for the next phase of the OSRO/RAS/604/USA project was undertaken. The first draft for the next phase of the OSRO/RAS/604/USA project has been finalized and submitted to USAID and FAO's Regional Office for Asia and the Pacific (RAP) for comments.

Activity 2.3 Coordination meetings to support regional HPAI control strategy implementation

- Project staff attended and updated the FAO-USAID-CDC-WHO influenza meeting on H5N1 and on influenza A(H7N9) in Bangkok.
- FAO applied with partners in the South-East Asia One Health University Network (SEAOHUN) for additional funding to conduct additional "WILD" training, conduct a communication workshop and to research the relationship between *Streptococcus Suis* and porcine reproductive and respiratory syndrome (PRRS) in pigs. SEAOHUN is part of the USAID Emerging Pandemic Threats (EPT) RESPOND programme.
- Project staff participated in the USAID partners meeting on 17 May 2013.
- Project staff attended a PAHI meeting on 31 May 2013.
- FAO supported DAH in the organization of a National Consultation Workshop on the finalization of a circular on reporting avian influenza and updates on influenza A(H7N9) prevention, surveillance and response. The workshop was held in Hanoi from 13 to 14 June 2013. The consultation workshop was a final step of the circular development process before submitting to the Minister of Agriculture and Rural Development for approval.
- FAO provided inputs on economic impact of emerging infectious diseases (EIDs) for PAHI's study.
- FAO supported DAH in organizing a consultation workshop for replacement of the Circular 69/2005/TT-BNN on HPAI prevention and control:
 - Letter of agreement (LoA) on "Organizing consultation workshops for a new Circular to replace Circular 69/2005/TT-BNN on prevention and control of HPAI" was signed with the Department of Animal Health in June 2013.
 - The National Consultation Workshop for the replacement of Circular 69/2005/TT-BNN on prevention and control of HPAI was held on 5 July 2013 in Hanoi and 10 July 2013 in Ho Chi Minh City, in collaboration with the DAH.
- Project staff participated in the USAID planning meeting on 6 August 2013.
- Separate meetings with the DAH and DLP were held to discuss areas of focus and activities as preparation for the next phase of the OSRO/RAS/604/USA project.

Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector

- Project staff participated in the workshop on the introduction of Joint Circular No16/2013/TTLT-BYT-BNN and PTNT on Guidelines for coordinated prevention and control of zoonotic diseases held by the Ministry of Agriculture and Rural Development (MARD) and Ministry of Health (MOH) on 27 June 2013 in Hanoi.
- Project staff participated in the FAO-USAID Avian Influenza Annual Review meeting in Bangkok on 26 June 2013.
- Project staff participated in the EPT Asia Regional Meeting from 18 to 19 June 2013.
- Project staff participated in the Tripartite IDENTIFY Regional Meeting, Asia held in Bangkok on 20 June 2013.
- Project staff participated in the Applied Veterinary Bioinformatics Workshop in Bangkok from 26 June to 1 July 2013.
- FAO attended in the workshop "Enhancing Coordination on Emerging Infectious Diseases in Viet Nam: Building on the Avian Influenza Response for a *One Health* approach" organized by PAHI. The objectives of the workshop were to: 1) present the key findings from the draft report on Enhancing Coordination on Emerging Infectious Diseases in Viet Nam and discuss the report's recommendations and proposed options for enhanced EID coordination; and 2) present

and discuss the preliminary findings on the mapping exercise for *One Health* mainstreaming and linkages to the Integrated National Action Program on Avian Influenza, Pandemic Preparedness and Other Emerging Infectious Diseases (AIPED) 2011-2015.

- Senior Technical Adviser travelled to China from 7 to 10 August 2013 to participate in and deliver two presentations on the application of *One Health* approaches.
- Project staff undertook discussions with EPT Prevent regarding collaboration on conducting wildlife farming baseline survey and questionnaire to determine risks to public health associated with wildlife farming.
- FAO provided financial support to DAH for publishing the book "Animal Health Sector Strategy" which was released in September 2013 (170 copies).

Component 2: Animal surveillance component

Output 3: Animal surveillance at the national, regional/zonal, provincial, district and commune level enhanced

Activity 3.1 Strengthening of core capacities for animal disease control and disease control planning within regional control strategies

- Support capacity building to develop work plans to implement regional control strategies:
 - On-the-job training was conducted for RAHO staff on risk mitigation strategy development. Two RAHOs regional work plans have been developed; however the Government of Viet Nam did not implement the FAO-proposed, Viet Nam based regional strategy so no regional activities were carried out.
- Support capacity building in risk management along value chains relevant to regional control strategies:
 - The advanced epidemiological skills training workshop for animal health professionals from Viet Nam was held in Hanoi from 20 to 24 May 2013 with a total of 13 participants (male: 8, female: 5). One of the subjects taught was "qualitative risk assessment".
 - The 5th international Workshop "Influenza Risk Assessment and Risk Modeling: Transitioning from Global to Local Assessments" was held in Hanoi on 27 and 28 May 2013 with a total of 53 participants (male: 34, female: 19).
- Mentoring of epidemiology units in data analysis and interpretation as required:
 - The epidemiology units at DAH, RAHO III and RAHO VI were visited and assessed. Mentoring was not required.

Activity 3.2 Animal surveillance programme

- Support national surveillance plan for LMBs:
 - An LoA on "Implementation of Avian Influenza Monitoring National Programme in 2013" was signed with the DAH in June 2013. This is an extension of the LBM monitoring programme up to 30 September 2013.
 - Nationwide LMB H5N1 monitoring of ducks in 140 markets continued monthly. Monthly Influenza-A surveillance of ducks in LMBs in 140 locations continued. As this successful surveillance project is likely to continue in 2014, planning and procurement of laboratory consumables have been initiated.
- Support surveillance plan for LMBs linked to regional strategic objectives:
 - FAO ECTAD worked with the DAH to develop a surveillance strategy to detect influenza A(H7N9) virus in the north of Viet Nam. An LoA was signed with the DAH to start collecting diagnostic samples from poultry in 60 markets in nine northern provinces in June and July 2013.
 - A protocol was developed to evaluate the AnigenR Rapid AIV Ag test. This has been recommended by international experts and was added in the OSRO/RAS/604/USA project document to be conducted in 2013. Four hundred AnigenR Rapid AIV Ag tests have been procured and laboratory and field trials started in August 2013.
 - International partners have been briefed on the China influenza A(H7N9) situation at several meetings during the reporting period:

- FAO ECTAD participated in the Workshop on Implementing Guidelines of the Viet Nam Prime Minister on influenza A(H7N9) Control and Prevention held in Hanoi on 13 April 2013. The Senior Technical Adviser at FAO Viet Nam was asked to provide information about influenza A(H7N9) and emphasized the challenge before the Government to prepare for, detect and respond to a novel A(H7N9) virus that poses risks to people, livelihoods, food security, economies, and biodiversity.
- FAO ECTAD Viet Nam co-chaired the Briefing on the International Influenza A(H7N9) Disease Situation and Viet Nam's Prevention, Control and Preparedness Activities and Resource Mobilization Workshop with the MOH, MARD, and WHO on 6 May 2013. FAO released a joint statement with MARD, MOH and WHO on influenza A(H7N9) preparedness demonstrating a *One Health* message among sectors.
 - o FAO ECTAD and DAH released a joint statement on influenza A(H7N9).
 - o More than 500 archived Influenza-A positive samples collected during the last six months from poultry were tested for H7, and all samples were negative for H7.
- Support linkages in passive surveillance from community level to formal animal health reporting systems:
 - o Initially, DAH refused to consider handheld recording devices as part of an integrated animal health disease data-base, but after further consideration FAO has now been given permission to pilot such system. FAO hired two consultants and purchased a computer server, but contracts with the software developing university and international consultant were not signed. For the coming year DAH is considering a system developed by Defense Threat Reduction Agency (DTRA) of the United States Department of Defense (DOD).
- Training for differential diagnosis of poultry disease outbreak at RAHO and SDAH including poultry post-mortem examination:
 - o Talking to stakeholders and analysing information and data collected during field visits in Region 3 and Region 7 showed that poultry disease investigations are conducted satisfactorily. Currently, there is no urgent need to conduct training for differential diagnosis of poultry disease outbreak at RAHOs and SDAHs including poultry post-mortem examination.
- Develop policy options for incentives to stimulate reporting of disease events and support advocacy for implementation:
 - o Twice previously, the animal disease surveillance system was reviewed. Recommendations were noted. It was not necessary to develop policies to improve passive surveillance.

Activity 3.3 Strengthening of veterinary laboratories diagnostic activities, including biosafety and quality assurance supported

- Supporting laboratory quality assurance through monitoring of performance and SOP review:
 - o SOPs were established for laboratory detection by real-time polymerase chain reaction (PCR) of influenza A subtype H7 in general and also the specific strain of H7N9 that caused human mortality in China. The testing algorithm was also finalized.
 - o At RAHO2, 157 influenza A virus positive RNA samples collected since July 2012 were tested for H7, and all were found to be negative.
 - o In the emergency surveillance of H7N9, 1740 pooled chicken swab samples were tested for influenza A and H7. The results showed high prevalence (31 percent) of influenza A virus among chickens, but no positives for H7.
- Continue support for rapid and differential diagnosis at RAHO level including other zoonoses/high-impact diseases:
 - o Training on laboratory diagnosis of H7N9 was carried out for all RAHOs on 21 June 2013 in Ho Chi Minh City with a total of 37 participants (male: 20, female: 17).
 - o Primers and probes for detecting avian influenza A virus and for subtyping H7 and N9 were distributed to laboratories (RAHOs 1-7, National Institute of Veterinary Research, Central Viet Nam Veterinary Institute in Nha Trang city, Ho Chi Minh SDAH).
- Continue support for the full characterization of viruses isolated from outbreaks and LMB surveillance:

- 120 influenza A viruses were isolated from 500 influenza A PCR-positive samples by the end of May. Full genome sequencing was carried out with 43 of those isolated viruses. HA clade of those sequenced viruses were 2.3.2.1.A (1 isolate), 2.3.2.1.C (29 isolates), 1.1 lineage 5 (4 isolates), and 1.1 lineage 6 (9 isolates). Re-assortment of H5N1 viruses were found. All 9 isolates of clade 1.1 lineage 6 were reassortants having all internal genes from clade 2.3.2.1.C virus. One isolate of clade 2.3.2.1.C was also a reassortant having genes of M, NP, PA, and PB2 from clade 2.3.2.1.A.
- Review the functions and role of the animal health laboratory system:
 - Discussions are ongoing by e-mail, and they will be further discussed and finalized in October 2013 during 12th Epi-Lab network meeting.
- Support strategy for DAH to assume full technical responsibility for HPAI laboratory programme:
 - This will be discussed at 12th Epi-Lab network meeting in October 2013.

Activity 3.4 Veterinary Epidemiology Network capacity supported

- An LoA on Organization of Advanced Applied Veterinary Epidemiology Training and related workshop has been signed with DAH in April 2013.
- The advanced epidemiological skills training workshop for animal health professionals from Viet Nam was held in Hanoi from 20 to 24 May 2013 with a total of 13 participants (male: 8, female: 5). Participants were from RAHOs, National Centre for Veterinary Diagnostics, National Institute of Animal Health, Hanoi University of Agriculture and DAH.
- The Wildlife Investigation in Livestock Disease and Public Health: An Introductory Training course in *One Health* was implemented from 3 to 10 May 2013 with total 30 participants (male: 24, female: 6) representing human health, animal health and wildlife/ecology sectors. The course included lectures, problem-based learning exercises and field site visits.
- The 3rd AVET Alumni Conference and the 1st Epidemiology One Health Network Forum was held on 12 and 13 September 2013 in Ho Chi Minh city with total 184 participants (male: 128, female: 56). The main objectives of the meeting were:
 - strengthening the network of professionals involved in applied veterinary epidemiology;
 - sharing scientific knowledge and field experience in human health, ecology and animal health in Viet Nam;
 - providing a dedicated platform for AVET, Field Epidemiology Training Program (FETP) and Field Epidemiology Training Program for Veterinarians (FETPV) fellows to present their work; and
 - providing a platform to bring all *One Health* stakeholders together, to network, liaise and collaborate.
- The 5th International Workshop "Influenza Risk Assessment and Risk Modeling: Transitioning from Global to Local Assessments" was held in Hanoi on 27 and 28 May 2013 with a total of 53 participants (male: 34, female: 19). The workshop was coordinated by FAO, US National Institutes of Health and the University of Oklahoma. This workshop brought together more than 50 multi-disciplinary international experts, national government representatives and experts, technical staff and other partners to explore disease risk factors at the local level. The workshop helped determine how influenza risk assessment and modelling should best be used to benefit national priority-setting for the prevention, response and control of HPAI.
- A field trip on Influenza Risk Assessment and Risk Modeling funded by the University of Oklahoma was carried out in Cat Ba Island (Hai Phong province), and slaughter houses and LMB in Quang Ninh province during 29-31 May 2013.

Activity 3.5 Further development of M&E expertise in animal health

- Submitted the performance management plan (PMP) data for the period from 1 October 2009 to 30 September 2012 to USAID.
- Worked with the Monitoring and Evaluation Manager from Abt on 22 and 23 April 2013 to review the implementation of the USAID Viet Nam Avian and Pandemic Influenza Performance Management Plan.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.2 Procurement of consumables to support laboratory activities

- Primers and probe for H7N9 testing were distributed to 7 RAHOs, the National Institute of Veterinary Research, and the Central Viet Nam Veterinary Institute.

Component 3: Animal response component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk mapping and risk analysis updated to support regional strategies

- Poultry sector profiling to support the regional strategy:
 - Mapping key LMBs in Region 6 and Region 7 has been completed.
 - Mapping hatcheries in Region 6 and Region 7 has been completed.
 - Mapping LMBs in 15 northern provinces has been completed.
- Applied risk analysis capacity building:
 - Three international experts conducted an advanced epidemiology training on risk analysis and spatial epidemiology in May 2013 to further enhance analysis capacity building.
 - Conducted on-the-job training for SDAHs and DARD staff in the 15 northern provinces on risk analysis.
- Updating risk assessment and mapping:
 - Conducted risk assessment on layers production and spent hen trading in the northern provinces.
 - Reports on risk assessment and risk maps were developed as requested.
- Detailed characterization of high-risk value chains including network analysis:
 - An international consultant was hired to conduct characterization of high-risk value chains including network analysis. The work is still continuing.
 - Spent hen value chains in the northern provinces have been developed. The high-risk nodes of each value chain were identified and characterized.
 - Layer production practices and spent hen trading practices of key stakeholders were described.
 - Market network in the northern provinces was developed and its analysis is ongoing.
 - Key spent hen trade routes in the northern provinces were identified.

Activity 5.2: Outbreak control capacity strengthened under regional control strategy

- Assist partners to sensitize grassroots stakeholders to disease control activities:
 - This was deemed unnecessary.
- Review application of carcass disposal in outbreak control in local situations within strategic plans:
 - This was deemed unnecessary.
- Prepare and conduct desktop exercises with public health counterparts:
 - FAO provided technical input and attended one WHO table top simulation exercise and one CDC simulation in Influenza in humans

Activity 5.4 Develop tailored compensation mechanisms to support control strategy

- Support the development of locally feasible and practical compensation mechanisms to support farmers reporting disease:
 - DAH did not develop new tailored compensation mechanisms and FAO agrees that this was necessary in 2013.
- Review outbreak control procedures to enable effective audits to support compensation packages:
 - SOPs on outbreak control procedures were studied and technically cleared. The Government has not officially approved nor directed these SOPs to be used in the field. No field assessment was carried out owing to staff shortages.

Activity 5.5 Cross-border dialogue and coordinated surveillance

- The Viet Nam and China Bilateral Meeting on Collaboration to Address Transboundary Animal Diseases and Diseases of Public Health Concern was held from 22 to 24 August 2013 in Ha Long

city, Quang Ninh province with a total of 53 participants (male: 40, female: 13). A draft resolution is being prepared.

- Spent hen value chain analysis:
 - Technical consultation meetings were conducted with VAHIP, Abt, DAH, DLP to consult stakeholders on the LMB survey and spent hen value chain analysis in July 2013.
 - A field trip to Bac Giang province was conducted from 7 to 10 August 2013 and Nam Dinh province from 13 to 15 August 2013. The following tasks during the field trips have been completed: (i) focus group discussion with layer chicken farmers conducted to collect information on layer production systems; (ii) one-day consultation meeting held in Bac Giang on 9 August 2013 with a total of 22 participants and in Nam Dinh province in 15 August 2013 with a total of 46 participants. The participants came from provincial SDAH, DARD, District Veterinary Stations' staff, layer chicken farmers, poultry traders and transporters, poultry slaughterers and market management board members. The meetings' objectives were to: describe layer chicken production systems and spent hen value chains in Viet Nam; describe the unofficial movement and value chains of imported spent hens; and identify overlap between the two value chains; (iii) held a meeting with Government staff of the quarantine station and observed uncertified spent hens which were caught and kept at this station during the time of the visit; and (iv) interviewed poultry traders/transporters, poultry slaughterers and LMB managers.
 - A field trip to Bac Thang Long LMB was conducted on 11 and 12 August 2013 to interview poultry traders at the wholesale market.
 - A field trip to Ha Vy LMB was conducted on 17 and 18 August 2013 to interview poultry traders.
 - A meeting was held with TNS, a marketing research company, to discuss a potential contract to conduct LMB surveys.
 - A technical workshop to map and rank LMBs and to develop a value chain analysis of spent hens in northern Viet Nam was held on 19 and 20 August 2013 in Hanoi with a total of 54 participants (male: 37, female: 17).
 - A survey in Ha Vy LMB was conducted to collect information on spent hen value chains from poultry traders, transporters and market managers.
 - A field trip to Vinh Phuc province was undertaken to hold discussions with JAPFA, one of the biggest poultry production companies, on the collection of information on spent hen value chains and opportunities for strengthening public private partnership in poultry sub-sector.
 - A draft report on spent hen value chains has been prepared.
 - The result on ranking the largest LMBs in 15 northern provinces has been double checked with the AVET alumni participants.
 - The 12 biggest LMBs were selected for mapping in each province of the 15 provinces of northern Viet Nam. The links between LMBs in each province were also mapped. As a result, 180 LMBs in 15 northern provinces were mapped.
 - Mapping the 45 biggest LMBs in the northern region of Viet Nam and the main spent hen trade roads from China across Viet Nam's northern provinces.
 - Questionnaires for LMB survey have been designed. All comments from the stakeholders on the questionnaires were incorporated and the second draft of the questionnaires has been revised.
 - Pre-test live bird survey in one market in Nam Dinh city was conducted.
 - LMB survey questionnaires and methodology have been finalized.
- Develop plans to conduct coordinated cross-border surveillance:
 - At the bilateral Viet Nam-Cambodia meeting a coordinated cross-border surveillance strategy was proposed. Since July 2013, environmental samples from 4 LBMs have been collected. Results will be compared with findings from Cambodia. Environmental sampling will continue till at least April 2014.

Activity 5.6 Vaccine efficacy assessments and virus surveillance supported at the national level

- An H5N1 challenge experiment of chickens vaccinated with Re-6 and Re-5 was carried out at National Center for Veterinary Diagnostics.
- Support for H5N1 vaccine efficacy test in quail was requested by DAH upon the emergence of H5N1 in quails, and an LoA was signed. Vaccination of quails with Re5 and Re6 was carried out in September 2013, and the challenge experiment will be carried out in October 2013.

Activity 5.7 Institutional strengthening in poultry production and animal health advisory systems

- Capacity needs assessment of key stakeholders:
 - A consultation was held with JAPFA on their need to strengthen poultry production and capacity building for poultry farmers on biosecurity.
 - A consultation was held with the National Agricultural Extension Centre on their need to strengthen capacity on hatchery biosecurity training.
- Develop the poultry sector advisory services model in collaboration with partners and the Extension Department:
 - Cooperated with the extension system to extend hatchery biosecurity strengthening programme in the southern provinces.

Output 6: Biosecurity improved and market hygiene practices in commercial and free-ranging poultry raising settings supported

Activity 6.1 Support programme to strengthen safe poultry production practices including biosecurity

- Develop materials and methods with partners including extension service to scale up hatchery pilot programme in support of regional control strategies:
 - Hatchery mapping for provinces in Region 6 and 7 have been completed.
 - Draft concept notes on biosecurity standards for parent breeding farms and on parent breeding farm auditing system have been developed.
 - Draft training manuals on biosecurity for parent breeding farms and on parent flock breeding farm auditing have been developed.
 - Contract on "Video documentation of identified hatchery biosecurity and hygiene best practices with lessons learned in Quang Tri and Can Tho province" was signed with the Song Ngu Advertisement Company Ltd. in June 2013.
 - The concept note for a hatchery film was finalized by incorporating comments from additional stakeholders. Consultations held with the DLP and the National Agricultural Extension Centre on film script for hatchery biosecurity and hygiene best practices. All comments from Vietnamese partners were consolidated. The 2nd draft of the film script has been developed.
 - Field trips in Can Tho city were conducted on 19 and 20 July 2013 and in Quang Tri province on 29 and 30 July 2013 for the preparation of the film production on hatchery biosecurity and hygiene best practices.
 - Project staff attended the Forum of Extension and Agriculture on the topic of "Biosecurity for waterfowl husbandry development" on 18 July 2013 in An Giang province. Hatchery technical guidelines and duck waste management guidelines were incorporated into the workshop proceedings and distributed to the workshop participants.
- Facilitate development of policy and advocacy brief to support practical measures to upgrade the production of day-old ducks:
 - Legislation on Hatchery biosecurity minimum standards was approved by MARD on 10 May 2013.
- Support implementing partners with high-level training and advice on hatchery pilot programme:
 - Training materials on poultry parent breeding farm biosecurity have been developed and tested including training session plan, key messages, training handouts, presentations, pre and post tests. Training on Poultry parent breeding farm biosecurity was held in Can Tho on 26 and 27 June 2013 with a total of 23 participants (male: 14, female: 9). Participants came from Can Tho, An Giang, Long An and Vinh Long SDAH, District Veterinary Stations (Thoi Lai, Vinh Thanh, Co Do, Thot Not district), Long An and Vinh Long DARD, and

- breeding farm owners.
 - Training materials on poultry parent breeding farm auditing have been developed and tested. Training on poultry parent breeding farm auditing was held in Can Tho on 28 and 29 June 2013 with a total of 14 participants (male: 8, female: 6). The participants came from Can Tho, Long An, An Giang, Vinh Long SDAH, District Veterinary Stations staff (Thoi Lai, Vinh Thanh, Co Do, Thot Not district), Long An and Vinh Long DARD.
- Collaborate with DLP to develop upstream standards for parent flocks supplying hatcheries conforming to guidelines and pilot test practical implementation at field level:
 - A mission by the Biosecurity International consultant was undertaken from 15 June to 3 July 2013 on biosecurity standards and auditing system for poultry parent flock breeding farms in Viet Nam.
 - The technical consultation workshops on draft biosecurity minimum standards for poultry parent flocks was held in Hanoi on 19 June 2013 with a total of 28 participants (male: 18, female: 10).
 - The technical consultation workshop on the auditing system for poultry parent flocks was held in Hanoi on 20 June 2013 with a total of 28 participants (male: 18, female: 10).
 - The survey on biosecurity levels of duck parent breeding farms and farmers' knowledge of biosecurity was conducted in Thot Not district, Can Tho city on 24 June 2013.
 - The consultation meeting on biosecurity minimum standards for breeding farms was held in Thot Not district, Can Tho city on 24 June 2013; 22 breeding farms owners (male: 14, female: 8) attended the meeting.
 - The consultation meeting on biosecurity minimum standards was held in Can Tho city on 25 June 2013 with a total of 21 participants from provincial DARD, SDAH (Can Tho, Long An, An Giang and Vinh Long provinces) and Can Tho District Veterinary Stations (male: 11, female: 10).
 - A set of criteria for selection of duck parent breeding farm models was developed. Two duck parent breeding farms were selected in Thot Not and Co Do districts, Can Tho city.
 - Two action plans to develop duck parent breeding farm models have been developed in consultation with the farm owners.
 - The first draft of the LoA with DLP on the parent flock programme has been prepared.
 - A consultation was held with the key stakeholders to select a suitable water treatment system for parent flock models in Quang Tri province and Can Tho city.
- Continue support for development of poultry waste disposal systems:
 - Poultry waste management guidelines were finalized in June 2013. DLP will integrate the poultry waste management guidelines with the DLP waste management project to issue legislation on waste management.
- Develop materials and methods with partners including extension service to scale up the good production practices in support of regional control strategies:
 - Involvement of National Agricultural Extension Center in development of training material on good poultry production practices and the hatchery biosecurity film script.

Activity 6.2 Support ongoing activity of the Biosecurity working group

- Support national and regional meetings of the Biosecurity working group:
 - Preparing for the first meeting of wildlife farming sub-group.
 - A meeting with Mr. Ha Cong Tuan, Vice-minister of MARD, on wildlife farming issues and the role of biosecurity working group in strengthening wildlife farming was held on 31 May 2013.
 - The wildlife farming subgroup under Biosecurity Working Group (BSWG) was established.
 - The first meeting of the wildlife farming sub-group of the BSWG was held in Hanoi on 11 June 2013 with a total of 36 participants (male: 25, female: 11).
- Technical guidelines and training materials have been widely distributed to DARDs, SDAHs, Agricultural Extension Centers at national and provincial levels.

Activity 6.3 Provide policy support brief on the inactivation of H5N1 under environmental conditions

- Investigate inactivation of H5N1 strains under simulated environmental conditions:
 - Heat stability trials were conducted in September 2013.

Activity 6.5 Training of provincial DARD staff in description and mapping of local poultry sector

- Training on mapping LBMs and hatcheries for provincial and district staff has been completed.

Activities proposed for the next reporting period (October 2013 to March 2014)

Component 1: Coordination, Communication and Advocacy

Output 1: Coordination, Communication, and Advocacy Enhanced

Activity 1.1 Support core FAO Viet Nam Team

Activity 1.2 Organize monthly coordination meetings and periodic larger stakeholder (province, RAHO, district) workshops:

- Continue implementation of HPAI control strategy: biosecurity, vaccines, surveillance, outbreak response management, movement control, quarantine, market closures, differential dx, etc. (monthly).
- Identify priorities for sustainability and sustainability mechanisms (funding and technical) workshop (late October-November) with follow-up workshops as needed to facilitate transitions, national hand-over and sustainability of the HPAI programme (as needed with programme closing workshop in August 2014).
- HPAI lessons learned and programme results dissemination workshops (March-May 2014).

Activity 1.3 Develop Communication, Outreach and Legacy Materials

- Prepare and Produce two films on poultry biosecurity and hatchery improvement.
- Prepare a Legacy Document "HPAI Lessons Learned in Viet Nam over the past 7 Years".
- Develop six succinct fact sheets for Viet Nam HPAI Influenza Lessons Learned in the areas of on capacity development, surveillance, diagnostics, biosecurity, benefits of improved livestock production, and outbreak response.
- Produce the 604 monthly updates for USAID, FAO ECTAD Viet Nam quarterly newsletter, and ECTAD Viet Nam brochure (Linked to Activity 1.4).

Activity 1.4 Support and develop expertise in M&E as it relates to animal health

- Internal mapping, monitoring and monthly dissemination of avian influenza activities and preparation of progress and financial monitoring reports.
- Develop training course on M&E framework (DAH benefits) for managers at RAHO and SDAH to aid them in gathering and processing M&E data (supporting and benefitting DAH).
- Support alignment of overall national M&E framework with strategic plans (AIPED book M&E aligned with DAH, RAHO and Laboratory M&E).
- Support Performance Management Plan including data collection and analyses.
- Assist DAH in developing an M&E plan based on specific activities envisioned by the signing of Circular 16 and the soon to be signed circular for animal disease reporting.

Component 2: Animal Surveillance and Laboratory Strengthening

Output 2: Animal Surveillance at National, Provincial, District and Commune Levels Enhanced

Activity 2.1 Implement Animal Surveillance programme

- Support national animal disease surveillance (poultry, swine and other relevant species) including linkage and synergies with human surveillance and other influenza programmes including EPT+.
- Support passive surveillance including provincial level advocacy for reporting events, incentives to

stimulate provincial reporting, and use of a smart phone animal disease reporting application linked to the animal disease.

- Conduct a national surveillance efficacy review and develop recommendations for sustaining surveillance upon completion of the 604 programme, including a results dissemination workshop.

Activity 2.2 Strengthen core capacity for animal disease information collection and management

- Support the development and piloting of an animal disease information system including step-wise implementation of a linked laboratory data management system and smart phone animal disease reporting application.
- Develop on-line instructions and training materials for the use of the animal disease information system, linked laboratory data management system, and smart phone animal disease reporting application.
- Conduct surveillance information system trainings for SDAH, RAHO, and laboratory staff.

Activity 2.3 Strengthen core capacities for animal disease response and disease control planning

- Develop a live animal market disease control strategy and intervention options including a Closure Contingency Plan based on risk analysis associated with value chains into and out of LBMs.
- Prepare and conduct desktop exercises with public health counterparts simulating live animal market closures and other management actions considering cross border elements.

Activity 2.4 Strengthen influenza risk assessment and modelling to identify the most important risk factors for management in Viet Nam

- Improve the geocuration and date-curation of the 451 public Viet Nam virus sequences.
- Run an analysis of evolutionary rate and spatial evolutionary dynamics at the national level in Viet Nam.
- Link the analysis of virus evolution to the risk factor analysis, niche maps, and collated historical vaccination data.

Activity 2.5 Support the Veterinary Epidemiology Network capacity

- Conduct a national epidemiology needs assessment and strategy for short and medium term epidemiology training programmes.
- Implement additional advanced AVET trainings including WILD (*One Health* short course), advanced epidemiology and statistical analyses, risk assessment and modelling, and mentoring of RAHO epidemiology units in data analysis and interpretation of their provincial or RAHO data.
- Refine the national level framework for the epidemiology network including linkages to LabNet and development of a national epidemiology sustainability strategy.
- Support national and international cross-border level epidemiology (and laboratory) networking including 4-way linking with health counterparts (linked to Activity 4.1).

Activity 2.6 Strengthen veterinary laboratory diagnostic capacities

- Support laboratory biosafety and quality assurance through performance and SOPs.
- Expand and broaden RAHO diagnostic capacity for the diagnosis of animal diseases and zoonoses.
- Conduct full characterisation of viruses isolated from animal samples.
- Promote national and international laboratory networking in support of information sharing and sustainable development.
- Support a strategy for DAH to assume full technical responsibility for the laboratory programme by reviewing the functions and role of the animal health laboratory system.
- Support operational research on HPAI influenza control (vaccine efficacy trials, etc.).

Activity 2.7 Evaluate vaccination strategies and efficacy nationally to include Viet Nam border countries

- Support monitoring the efficacy of vaccines currently in use against H5 viruses circulating at the time.

- Support the development of new immunization strategies for the Mekong Delta including an ecozone vaccination workshop.
- Implement a cross-border duck vaccine trial in the Mekong Delta (linked to Activity 4.1).

Component 3: Animal Disease Prevention and Preparedness

Output 3: Animal Production and Biosecurity Improved to Prevent Disease Incursion

Activity 3.1 Support programmes to strengthen safe animal production practices including biosecurity

- Develop minimum biosecurity standards, technical guidelines, and certification advice for (i) parent flocks supplying hatcheries; (ii) poultry waste management; (iii) boar farms (artificial insemination stations, small-/medium-scale breeding farms, and fattening farms including guidance on the boar program; and (iv) select types of wildlife farms.
- Conduct a sector-wide Biosecurity legislation and standards review.
- Develop a Draft Circular addressing the management of poultry waste, hatcheries and parent flocks.
- Develop training materials for SDAH, DARD staff, extension services, university staff and students on minimum biosecurity standards, technical guidelines, and certification advice for poultry, pig and select wildlife species.
- Conduct master trainings on minimum biosecurity standards, technical guidelines, and certification advice for poultry, pig and select wildlife species.
- Develop poultry profile and mapping of local poultry sector.

Activity 3.2 Support ongoing activities of the Biosecurity Working Group (BSWG) including the sub-group on wildlife farming

- Support national and regional meetings of the BSWG and the sub-group on wildlife farming.
- Review and update the terms of reference of the BSWG.
- Liaise with the United Nations Development Programme One Health Coordination Unit, the Vietnam One Health University Network, PAHI, and other multi-disciplinary programmes to facilitate the dissemination of BSWG information with partners.
- Support capacity building for BSWG members (linked to Activity 3.1).

Component 4: Improved Networks to Address Animal Diseases Within Viet Nam and along its Borders

Output 4: Cross Border Ecozone Approach Implemented to Improve Disease Prevention and Control

Activity 4.1 Cross-border collaborative activities defined and promoted

- Support bilateral meetings with the Governments of China, Cambodia and Lao PDR to exchange technical information, including surveillance and risk assessment findings, and risk reduction plans.
- Develop plans and conduct coordinated cross border surveillance, diagnostics value chain studies and risk mitigation.
- Review cross border value chains of high risk commodities (within country and across borders).
- Determine management interventions to minimise disease transmission across borders and support risk reduction.
- China meeting outcomes: (i) future meetings to engage public health, quarantine authorities and social sciences; and (ii) facilitate management committee finalization of joint projects for the Viet Nam southern China epizone, considering:
 - a) real-time information exchange mechanisms;
 - b) corridor approach for poultry and poultry products; and
 - c) safe pathways for movement of species susceptible to foot-and-mouth disease.

Activity 4.2 Public-Private Partnership Strategy Developed for Animal Sectors

- Conduct advocacy workshop(s) on benefits of public-private partnerships.
- Conduct stakeholder workshop to identify interests, capacity needs, benefits, communication forum, etc.
- Capacity building for farmers and the private sector based on needs assessment.
- Establish a sustainable traceability system and improved supply management along the poultry value chain as an example of public-private partnerships and as a model for other provinces and cities in Viet Nam.
- Value chain and network analyses to support interventions and disease management decisions.

Main challenges encountered and response provided

- The approval of the Government of Viet Nam on the Project Document by FAO and USAID for the project extension (October 2013–September 2014) is still in process. Many activities, which the counterpart Government agency had primary responsibility for implementing, could not be initiated, owing to this delay in project approval.
- In the country context, the Viet Nam-based regional approach to HPAI control is a new concept. The Government administrative structure does not provide for a regional mechanism among the national and provincial authorities in Viet Nam and so the Government did not implement the FAO-proposed regional strategy. Therefore, no Viet Nam based regional activities were carried out from a provincial perspective. However, FAO has made the argument that cross-border activities (south China-north Viet Nam and south Viet Nam-Cambodia) are regional approaches supported by epizones or ecozones in which viruses differ. This seems supported and acceptable as a way of thinking about regional approaches which can also be applied within Viet Nam.

Main progress made towards the achievement of project outcomes (from the start of the project)**Output 1: Strategy development for HPAI control in 2006–2010 supported**

- Consideration of a Viet Nam based regional approach to HPAI control, rather than a provincial one, was promoted and is attracting interest as featured in the Green Book Review and several documents from the International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI). The final drafts of the regional HPAI control plans for the north-central region (Region 3) and the Mekong Delta region (Region 7+) have been completed.
- A regional/zonal approach has been incorporated into the National Operational Plan on Avian Influenza Control and Prevention (2013–2017).
- A Livestock Emergency Preparedness Plan was developed and submitted to DAH for use in any unusual event in the livestock sector, keeping in view the state of unpreparedness that the Government experienced during the 2003–2004 emergence of HPAI.
- Provincial poultry subsector profiling was effective in describing provincial poultry populations (including the Poultry Atlas), and DLP is considering adopting such an approach more widely.
- Risk assessment and risk-based targeting of control measures are increasingly being included in technical and policy development (however still largely restricted to the control of HPAI). This approach is now expanded and was translated into an HPAI regional control plan particularly for two regions in Viet Nam.
- A guideline for the application of the progressive control pathway approach had been finalized.

Output 2: Coordination and communication with donors and other HPAI implementing partners

- Programme management, planning and coordination of activities with USAID and other partners were maintained. FAO made 11 major recommendations for the Green Book Review, which were well received by the Government of Viet Nam as is evident from the newly released follow-up version of the Green Book as an Action Programme on AIPED for the period covering 2011–2016.
- FAO and Abt Associates have a common strategy to risk reduction across the supply chain with a shared activity matrix consolidating the agencies' activities into a single overall approach.
- The first volume of the DAH Animal Health bulletin was released in July 2011 (250 copies). The second volume of DAH Animal Health bulletin was released in August 2012 (210 copies). FAO

provided financial support to DAH for publishing the book "Animal Health Sector Strategy" which was released in September 2013 (170 copies).

Output 3: Animal surveillance at the national, district and community level enhanced

- The project provided support to the upgrading of TADinfo and LabNet, and the development of geographic information systems (GIS) at the RAHO level. A total of 210 officers from SDAH, 14 RAHO staff and five DAH epidemiology staff were trained to use this software. Seven global positioning systems (GPS) and seven licenses of mapping software (ArcView/ArcGIS 9.2) were provided to seven RAHOs (I-VII). A total of 55 SDAH/DAH staff was trained on its use.
- The project also developed a database system software for laboratory diagnostic management within the DAH's LabNet through the services of a local firm in Viet Nam. Laboratory biosafety and quality assurance are being supported and pursued. One laboratory, the National Centre for Veterinary Diagnostics (NCVD), was accredited for ISO17025, and the other laboratories are in the process of accreditation.
- The SOPs for H5N1 real-time PCR were developed and adopted. It has been used at nine veterinary laboratories extensively for passive and active surveillance. The use of real-time PCR was extended to the differential diagnosis of HPAI, such as Newcastle disease and duck plaque.
- The capacity of genetic sequencing of H5N1 viruses was developed and applied. Genetic analysis of the viruses isolated from HPAI outbreaks in poultry in Viet Nam over several years indicates that Clade 1 is entrenched in south Viet Nam with sporadic forays to central Viet Nam. Clade 2.3.4 was once the predominant clade for many years in north and central Viet Nam until the winter of 2009/2010. However, clade 2.3.2 viruses have totally replaced the dominance of clade 2.3.4 in late 2010, which continues today. Within the newly emerging clade of 2.3.2.1, an antigenic variant strain of the virus was detected. Adequate technical and material support significantly improved the HPAI diagnostic capacity in the laboratories and antigenic and genomic characterization of H5N1 viruses.
- A revised and updated set of SOPs for HPAI Outbreak Investigation and Control was developed, comprised of 19 sections and 14 job cards for various officials involved in HPAI outbreak management. The English and Vietnamese versions of the SOPs were handed over to DAH for transmission to MARD for adoption as a national strategy.
- The awareness-raising campaign to encourage poultry farmers to report any unusual occurrences of an infectious disease in poultry flocks and the necessity to report it on time were carried out through TV spots and loudspeakers during the risk period (e.g. the Tét festival).
- The AVET initiative to improve basic epidemiological investigation capacity in Viet Nam, specifically a nine-week-long tailor-made course curriculum, resulted in the training of 160 veterinarians in 12 cohorts in the period of 2010-2012. At least one veterinarian of each of the 63 provinces of Viet Nam now has specialized basic skills in veterinary field epidemiology. The advanced epidemiological skills training workshop for animal health professionals from Viet Nam was held in May 2013 with a total of 13 participants. The Wildlife Investigation in Livestock Disease and Public Health: An Introductory Training Course in *One Health* was implemented in May 2013 with total 30 participants representing human health, animal health and wildlife/ecology sectors. Three AVET alumni workshops and the 1st Epidemiology One Health Network Forum were organized for strengthening the animal health epidemiologist network in Viet Nam and improving the sharing of information.
- Active surveillance of HPAI and other poultry diseases launched to complement the community-based surveillance of Abt Associates yielded valuable insight on the efficacy of the surveillance.
- In the event of an outbreak, a new component was launched in March 2011 for the early detection of any potential secondary outbreaks in the neighbouring area of the index case.
- A cost-effectiveness study on surveillance for HPAI was completed. Preliminary findings suggest that there is a qualitative value in surveillance, but the cost of surveillance per outbreak reported is going up with a decrease in the number of outbreaks of HPAI in Viet Nam.
- LMB surveillance for subclinical infection of ducks sold at the markets in 30 high-risk provinces indicated widespread circulation of avian influenza virus and also H5N1 viruses, in particular.
- More than 300 copies of the Wild Bird Manual were translated into Vietnamese and distributed in 63 provinces.

Output 4: Priority procurement for animal surveillance and laboratory supported

- Procurement of vehicles, information technology (IT) equipment, sprayers and most laboratory consumables is complete, and all are in use.

Output 5: Effective and timely animal response efforts promoted

- A cross-border study in the north of Viet Nam concluded that as a result of a high financial return for poultry, smuggling across the border has not decreased, but has become more elaborate, which will pose a constant risk of disease transmission. The market chain is increasingly being recognized as critical to the control of HPAI, particularly in northern Viet Nam, and FAO's strategic targeting of LMBs was validated.
- Hatchery data collection and mapping in five pilot provinces was completed. Hatchery minimum biosecurity standards were developed through a stakeholder consultation process. A hatchery audit and certification tool was developed, and training was provided to the Government staff on the procedure for hatchery auditing and certification. Hatchery data collection and mapping in Region 3, Region 6 and Region 7 have been completed.
- Mapping of LMBs in Region 3, Region 6, Region 7, and along the border with Cambodia (including Long An, Dong Thap, An Giang and Tay Ninh province) and 15 northern provinces have been completed.
- Post-vaccination monitoring and virus circulating surveillance for influenza A/H5N1, supported by this project, shows that vaccinated poultry have a protection rate of 72.10 percent at the bird level. The protection rates of Muscovy ducks, turkey, other ducks, chicken and geese were: 80 percent, 80 percent, 78.90 percent, 68.05 percent and 50 percent, respectively. Prevalence of Type A and H5N1 avian influenza viruses in ducks were 0.94 percent and 0.67 percent, respectively, while in chickens, respective prevalence was 0.54 percent and 0 percent. There was no evidence of avian influenza virus persistence found with the samples taken from Muscovy ducks. The avian influenza positive samples were from Khanh Hoa and Quang Ngai provinces (Centre). Currently, the Government of Viet Nam halted mass vaccination of poultry against HPAI.
- A training course on good management practices for key stakeholders – a national veterinary company (NAVETCO), Viet Nam's veterinary vaccine company (VETVACO) and DAH – was conducted, which covered introductory level good manufacturing practices (according to the 2009 Pharmaceutical Inspection Convention/Pharmaceutical Inspection Co-operation Scheme [PIC/S] Code of good manufacturing practices) and quality systems applicable to the manufacture of avian influenza H5N1 vaccines.
- The operational appraisal of cold chain integrity was completed, and 39 provinces were provided with walk-in cold rooms. Software for inventory maintenance of vaccine banks in provinces was developed.
- Capacity for animal challenge testing was developed, following the completion of a high biosecurity animal isolation unit at NCVD. The unit applied for vaccine efficacy tests since 2007 to monitor the adequacy of vaccines against the evolving H5N1 viruses. An antigenic variant of H5N1 virus was found in 2011, for which the vaccine currently in use was not effective.
- A Viet Nam-Cambodia cross border meeting held in January 2013 and Viet Nam-China cross border meeting held in August 2013 to exchange technical information, including surveillance and risk assessment findings, and risk reduction plans. As a result of the meetings, cross-border surveillance strategy between Viet Nam and Cambodia was developed in January 2013.

Output 6: Improved biosecurity practices in commercial and scavenging poultry raising settings supported

- Poultry sector profiling provides important tools for risk-analysis and strategic disease control planning. A guide to provincial poultry sector profiling was developed. Poultry sector profiling was completed for four of the five project provinces. The guidelines are currently being tested externally by an implementing partner in three non-USAID pilot provinces.
- A BSWG was established, which provides a forum to network information and lessons learned, and build technical understanding among a peer group of agencies working to strengthen biosecurity.
- A framework for a database on biosecurity materials was developed, and its consolidation is in

progress. By now, over 100 documents have been compiled in a searchable format. This is now ready for dissemination. Biosecurity activities of all agencies engaged in related work have also been mapped.

- The BSWG reviewed work on hatchery biosecurity. Training on the principles of biosecurity and on biosecurity auditing was provided to 16 members of the BSWG. Conventional approaches to biosecurity strengthening were reviewed and evidence gathered to support the adoption of a supplementary approach focusing on private sector driven activities and adopting social marketing techniques from the human health sector.
- A wildlife farming subgroup was established under the BSWG.
- FAO and Abt Associates liaised on hatchery technical training and registration schemes.
- A regional risk analysis exercise was conducted, which provided information on the character of poultry movement and production in the lower Mekong region, identifying poultry movements and risk pathways for inter-provincial transmission of infection.

Output 7: Communication capacity supported at DAH and technical inputs to communication activities of other USAID implementing partners are provided

- FAO supported the calendar and sticker production and distribution prior to the 2010 Tết festival, sending out the message to call the hotline or the SDAH landline to report ill and dead poultry under the enhanced reporting component.
- Under the Gathering Evidence for a Transitional Strategy (GETS) project (closed in February 2012), the Academy for Educational Development produced a commercial, which encouraged poultry owners to report ill and dead poultry to SDAH via a hotline or SDAH phone numbers. This was used effectively in this project for awareness-raising purposes.
- Support to DAH communications and technical support to Abt Associates in implementing the field activities was maintained.
- The first quarterly E-Newsletter was released and widely distributed to donors, implementing partners, ECTAD Members and others in the *One Health* contact list.

I Quarter 2010**Project Monitoring Sheet: OSRO/VIE/801/USA**

Project title: Gathering Evidence for a Transitional Strategy (GETS) for Highly Pathogenic Avian Influenza (HPAI) H5N1 Vaccination in Viet Nam

Reporting period: January to March 2010¹

Country: Viet Nam
Project title: Gathering Evidence for a Transitional Strategy (GETS) for Highly Pathogenic Avian Influenza (HPAI) H5N1 Vaccination in Viet Nam
Code: OSRO/VIE/801/USA
Budget: USD 4 million (Phase I)
Total budget: USD 4 million
Effective starting date: October 2008
Planned end date: March 2011
Context of the project <p>Viet Nam has been carrying out vaccination of poultry twice a year (October and April) since autumn of 2005 to control epidemic Highly Pathogenic Avian Influenza (HPAI) H5N1 with some considerable empirical evidence of success. However, it has been recognized that this control strategy is not sustainable over the whole country in the long term. Mass vaccination entails a large amount of financial resources from the government and ties up significant human resources in the agriculture sector. Therefore, an alternative or more likely a parcel of complementary alternative control strategies will have to be devised as Viet Nam moves from initial emergency measures to a period of consolidation and ultimately on to the stated aim of control/eradication beyond 2010 (Green Book). This project is investigating and gathering evidence on alternative vaccination strategies in provinces with high and low risk for HPAI H5N1 outbreaks.</p>
Objective of the project <p>The main objective of the project is to provide field data to the Ministry of Agriculture and Rural Development (MARD) by testing a number of alternative vaccination strategies and the complementary strategy of improved surveillance. This data will assist MARD in its selection of a future vaccination strategy.</p>
Planned activities for this Quarter <p>Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1), and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1) <i>Activity 1.1&2.1 Needs assessment undertaken and work plan finalized</i> Amendments to letters of agreement (LoAs) with the Department of Animal Health (DAH) will be made to address logistical issues raised by the provinces during the project implementation phase.</p> <p><i>Activity 1.2&2.2 Public awareness campaigns</i> Radio announcements via loud speaker will be made and leaflets will be distributed throughout the communes.</p>

¹ Quarter 5 of the project cycle

Activity 1.3&2.3 & 1.4&2.4 Farms identified/sampled

Sampling for the sentinel duck baseline survey will be completed and identification of unvaccinated sentinels will be undertaken and sampling commenced.

Activity 1.5&2.5 Equipment procured including vaccine

A review will be undertaken of the status of the equipment at the Sub-Department of Animal Health (SDAH) and District Veterinary Service (DVS) offices to ensure that they are supplied with the necessary equipment for project reporting and communication.

Activity 1.6&2.6 Training undertaken

The second round of training workshops for district and commune veterinary authorities will be organized. A training programme, utilising industry groups and unions, will be developed for farmers and village animal health workers (AHW's). The next round of training will incorporate the recommendations based on lessons learnt from the first training including: (1) It is necessary to organize the training for local authorities including the mass organisation staff to improve their coordination and support when implementing the project later; and (2) To improve the ownership of the local DVS, the training sessions should be combined with DVS activities such as community animal health worker (CAHW) routine meetings every two or three months.

Activity 1.7&2.7 Data gathering

Data gathering activities will be fine tuned to address logistical issues raised by the provinces during the project implementation phase.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

Activity 3.1 Component planning/oversight

The first phase of the cost-effectiveness programme will be completed by the national implementing agency, the Southern Office of the Institute of Policy Strategy for Agricultural and Rural Development (SCAP).

Activity 3.2 Team recruited

An LoA will be prepared with the implementing partner for the second phase of the cost-effectiveness programme.

Activity 3.3 Data gathering

Data gathering for the first phase of the cost-effectiveness programme will be completed.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

Activity 4.1 Component planning/oversight

- Supply chain analysis will commence across the five GETS provinces and geographical positioning system (GPS) mapping using the GPS units supplied to each DVS will commence.
- A detailed case study of the meat trader system will be planned to investigate potential risk factors in outbreaks. Meat traders are a high risk group because they constantly move from farm to farm and handle birds at each farm.
- Monitoring of high risk mobile duck flocks will be undertaken by CAHW's in all communes in the GETS provinces and vaccination of these flocks will be ensured. These flocks present a high risk for disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated.
- Outbreak investigation activities will continue.
- Amendments to the LoA with DAH will be made to address logistical issues raised by the

provinces during the project implementation phase.

Activity 4.2 Training DAH-Regional Animal Health office (RAHO) and MoH-Regional Health Office (RHO)

Training of DVS staff in GPS use will be undertaken to prepare for the GPS mapping activities.

Activity 4.3 Operational funds arranged/distributed

Amendments to LoAs with DAH will be made to address logistical issues raised by the provinces during the project implementation phase and to ensure adequate funds are provided to the provinces for project activities.

Activity 4.4 Data gathering from outbreaks nationwide (64 provinces)

GETS regional coordinators will attend outbreaks that occur in the GETS provinces and in the provinces that border the GETS provinces to investigate potential routes of virus transmission and to determine whether outbreaks in bordering provinces.

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

Activity 5.1 Component planning/oversight

- A national partner will commence work on this component and will coordinate its implementation.
- Monitoring of perception and behavioral changes will be among poultry producers and within the government veterinary services in response to the interventions implemented by the GETS project
- Attitudinal surveys will be used as a tool to assist with the monitoring process.

Activity 5.2 Team recruited

The recruitment of a national partner will be completed and the partner will start on the project at the end of January 2010.

Activity 5.3 Data gathering

Data collection will continue with attitudinal questionnaires and behavioural case studies among poultry producers and within the government veterinary services.

Output 6: Policy analysis of HPAI strategy including public private sector collaboration and partnerships is undertaken

Activity 6.1 Component planning/oversight

- The governance of private/public partnerships will be investigated and the effect of the interventions on this will be monitored.
- Supply chain analysis and mapping will identify the location of animal health product suppliers and case studies will be undertaken to determine the governance of their activities.
- A detailed case study of the meat trader system will be designed and governance of their activities will be investigated.

Activity 6.2 Team recruited

The recruitment of a national partner will be completed and the partner will start on the project at the end of January 2010.

Activity 6.3 Data gathering

Data gathering will continue with the start of supply chain analysis and mapping.

Activities undertaken during the reporting period**Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1), and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1)***Activity 1.1&2.1 Needs assessment undertaken and work plan finalized*

- Missions were undertaken to each of the five GETS provinces to review the project activities as well as the data collection activities. Amendments to LoAs with DAH were made to address logistical issues raised by the provinces during the project implementation phase. These included LoAs covering Enhanced Surveillance, Reporting and Outbreak Response, Sentinel flock monitoring and Post-vaccination Monitoring. Enhanced Surveillance, Reporting and Outbreak Response and Sentinel flock monitoring has now been incorporated into a new LoA covering the next twelve months.

Activity 1.2&2.2 Public awareness campaigns

Radio announcements via loud speaker were made and leaflets were distributed throughout the communes.

Activity 1.3&2.3 & 1.4&2.4 Farms identified/sampled

Sampling for the sentinel duck baseline survey was completed and identification leg bands were supplied to each SDAH for the identification of unvaccinated sentinels.

Activity 1.5&2.5 Equipment procured including vaccine

Equipment requirements were discussed at the SDAH and DVS offices during the missions to the provinces.

Activity 1.6&2.6 Training undertaken

A national consultant has been contracted to assist with the training. GPS training for DVS staff has been planned, a partner chosen and a contract drafted. Access database training has been planned for the project assistants at each of the SDAH offices. A consultant has been chosen to assist with this activity and a contract finalized. A training programme, utilising industry groups and unions, has been developed for farmers and village AHW's. This will include workshops at the village level as well as events at the markets. The second phase of the CAHW training is being planned to coincide with the end of the 2010 first round of vaccination. It will include training on data collection and completion of the revised data forms.

Activity 1.7&2.7 Data gathering

Data gathering activities were reviewed during the missions to the provinces in March 2010. Data collection activities are progressing as planned. Data entry procedures will be fine tuned by the introduction of an Access database which will be set up in each province.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken*Activity 3.1 Component planning/oversight*

The first phase of the cost-effectiveness vaccination programme was completed by the national implementing agency, SCAP.

Activity 3.2 Team recruited

An LoA has been prepared with the implementing partner for the second phase of the cost-effectiveness programme.

Activity 3.3 Data gathering

Data gathering for the first phase of the cost-effectiveness programme has been completed and data analysis is ongoing. Emphasis has been placed on the historical data so that comparisons can be made between pre-GETS vaccination costs and post-GETS vaccination costs.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial**Activity 4.1 Component planning/oversight**

- Outbreak investigation has been undertaken for outbreaks in the GETS provinces and in those provinces neighbouring the GETS provinces.
- Monitoring of high risk mobile duck flocks has been successfully undertaken by CAHW's in communes in the GETS provinces and vaccination of these flocks has been undertaken where a vaccination certificate cannot be produced. These flocks present a high risk for disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated
- Supply chain analysis has been planned across the five GETS provinces and a contract drafted with the implementing partner to undertake the training of DVS staff who will be undertaking the GPS mapping using the GPS units supplied to each district veterinary station.
- A detailed case study of the meat trader system has been planned to investigate potential risk factors in outbreaks. Meat traders are a high risk group because they constantly move from farm to farm and handle birds at each farm.

Activity 4.2 Training DAH-Regional Animal Health(RAHO) and MoH-Regional Health Office (RHO)

GPS training for DVS staff has been planned, a partner chosen and a contract drafted. Training of DVS staff in GPS use will be undertaken in April to prepare for the GPS mapping activities.

Activity 4.3 Operational funds arranged/distributed

Amendments to LoAs with DAH have been made to address logistical issues raised by the provinces during the project implementation phase and to ensure adequate funds are provided to the provinces for project activities.

Activity 4.4 Data gathering from outbreaks nationwide (64 provinces)

GETS regional coordinators have attended to outbreaks that occurred in the GETS provinces and in the provinces that border the GETS provinces to investigate potential routes of virus transmission and to determine whether outbreaks in bordering provinces originated from GETS provinces. This included four outbreaks during the Tet high risk period of January, February and March in the GETS provinces compared with 15 in 2009. Investigations were also undertaken at eight outbreaks sites in neighbouring provinces. The province of Quang Binh, which has a zero vaccination GETS intervention programme in four districts, implemented an intensified monitoring and movement controls programme and succeeded in preventing disease spread from outbreaks in neighbouring provinces

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared**Activity 5.1 Component planning/oversight**

- The behavioural studies will evaluate potential motivation factors and key determinants for AHW and producers, the barriers to behaviour change and the behavioural changes that have occurred as a result of the project intervention
- Attitudinal surveys will be used as a tool to assist with the monitoring process.

Activity 5.2 Team recruited

A national partner has been chosen to continue with the implementation of this component and a

contract and terms of reference (TOR's) were finalized and the partner commenced in January 2010. A sociologist is being contracted to undertake behavioural case studies with animal health workers (AHW) and poultry producers.

Activity 5.3 Data gathering

Data collection will consist of attitudinal questionnaires and behavioural case studies and commenced with an attitudinal questionnaire included in the chief animal health worker post-training questionnaire.

Output 6: Policy analysis of HPAI strategy including public private sector collaboration and partnerships is undertaken

Activity 6.1 Component planning/oversight

- Supply chain analysis and mapping has identified the location of animal health product suppliers and case studies have to be undertaken to determine the governance of their activities.
- A detailed case study, including tracking of activities, of the meat trader system is being designed and will investigate the governance of their activities.

Activity 6.2 Team recruited

The recruiting of a national consultant, to continue with the implementation of this component, has been completed and the consultant commenced on the project at the end of January 2010.

Activity 6.3 Data gathering

Data gathering will continue with the completion of the supply chain analysis.

Planned activities for the next quarter

Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (VI), and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (VI)

Activity 1.1&2.1 Needs assessment undertaken and work plan finalized

Implementation of the new LoA with DAH on Enhanced Surveillance, Reporting and Outbreak Response and Sentinel Duck Monitoring will be undertaken.

Activity 1.2&2.2 Public awareness campaigns

Round 2 of the public awareness campaign will commence with radio announcements via loud speaker.

Activity 1.3&2.3 & 1.4&2.4 Farms identified/sampled

Contracts with sentinel duck flock owners will be signed to ensure commitment to the programme. The serum sampling component of the programme will commence.

Activity 1.5&2.5 Equipment procured including vaccine

Further equipment will be provided as required to ensure smooth operation of the project. A computer will be provided to each of the provinces for data entry activities with the Access database and auto-vaccinators will be provided to the districts for HPAI vaccination.

Activity 1.6&2.6 Training undertaken

- GPS training for DVS staff will be implemented and completed.
- Access database training for the project assistants at each of the SDAH offices will be implemented and completed.
- A training programme, utilising industry groups and unions, has been developed for farmers

and village AHW's. This will include workshops at the village level as well as events at the markets.

- The second phase of the CAHW training will be implemented to coincide with the end of the 2010 first round of vaccination. It will include training on data collection and completion of the revised data forms.
- A training programme, utilising industry groups and unions, will be organized for farmers and village AHW's.

Activity 1.7&2.7 Data gathering

- 2010 Round 1 vaccination data gathering will be undertaken. Round 2 post-vaccination monitoring will be undertaken.
- Data collection activities are being streamlined with the introduction of an Access database in each of the SDAH offices in the GETS provinces and training will be provided in the use of the database.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

Activity 3.1 Component planning/oversight

The second phase of the cost-effectiveness programme will be implemented by the national implementing agency, SCAPS.

Activity 3.2 Team recruited

An LoA will be signed with the implementing partner for the second phase of the cost-effectiveness programme.

Activity 3.3 Data gathering

Data gathering for the second phase of the cost-effectiveness programme will be completed.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

Activity 4.1 Component planning/oversight

- Supply chain analysis be completed across the five GETS provinces and GPS mapping using the GPS units supplied to each district veterinary station will be completed.
- Monitoring of high risk mobile duck flocks will continue in all communes in the GETS provinces and vaccination of these flocks will be ensured. These flocks present a high risk for disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated.
- A detailed poultry industry survey will start assisting in determining risk factors.

Activity 4.2 Training DAH-Regional Animal Health Unit (RAHO) and MoH-Regional Health Office (RHO)

Training of DVS staff in GPS use will be undertaken to prepare for the GPS mapping activities. The second round of CAHW training workshops will be implemented as well as the training for village animal health workers. Invitations will be extended to public health workers and livestock extension officers as in Round 1 where attendance of these groups was high.

Activity 4.3 Operational funds arranged/distributed

Operational funds will continue to support outbreak investigation activities as well as supply chain mapping for risk factors.

Activity 4.4 Data gathering from outbreaks nationwide (64 provinces)

Outbreak investigation activities will continue with attendance at all outbreaks in the GETS and neighbouring provinces by the GETS regional coordinators with the aim of providing accurate disease investigation reports.

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

Activity 5.1 Component planning/oversight

Behaviour studies are being planned that will evaluate potential motivation factors and key determinants for animal health workers and producers, the barriers to behaviour change and the behavioural changes that have occurred as a result of the project intervention. These will take place following the poultry industry survey that will provide detailed data on farm activities and practices.

Activity 5.2 Team recruited

A sociologist will be contracted to undertake behavioural case studies with AHW and poultry producers.

Activity 5.3 Data gathering

Data collection will continue with attitudinal questions included in the chief animal health worker post-training questionnaire.

Output 6: Policy analysis of HPAI strategy including public private sector collaboration and partnerships is undertaken

Activity 6.1 Component planning/oversight

- Supply chain analysis and mapping will be undertaken in the second quarter of 2010 and will identify the location of animal health product suppliers. Case studies will then be undertaken to determine the governance of their activities. The governance of private/public partnerships will then be investigated and the effect of the interventions on this will be monitored.
- A detailed case study, including tracking of activities, of the meat trader system will be designed to investigate the governance of their activities. This component will start following the completion of the supply chain analysis.

Activity 6.2 Team recruited

The recruitment of a national partner will be completed and the partner will start on the project at the end of January 2010.

Activity 6.3 Data gathering

Data gathering will continue with the commencement of supply chain analysis and mapping. This will assist in the identification of private/public operations that will be used in the governance studies and policy analysis.

Main challenges encountered and response provided

Data gathering activities were reviewed during the missions to the provinces in March. Whilst data collection activities are progressing as planned, data entry procedures need to be refined so that raw data can be entered and not aggregated data. Data entry procedures will be fine tuned by the introduction of an Access database which will be set up in each province. Access database training has been planned for the project assistants at each of the SDAH offices so that they can enter raw data from the communes directly into the database.

During the first phase of the cost-effectiveness study, detailed data were collected on the costs of the GETS interventions. The historical data collected were not representative of the vaccine usage prior to

the GETS project being implemented and would not allow useful comparisons to be made for pre- and post-GETS programmes. The national partner has been requested to make clear separation of pre- and post-GETS data in their report from Phase 1 of the cost-effectiveness programme. This issue has also been addressed in the new agreement for Phase 2 with the implementing partner where increased focus will be placed on gathering accurate historical data to allow a twelve month comparison to be made of pre- and post-GETS costs.

During Round 1 of the public awareness programme, the release of the audio segment by community loudspeakers was not consistent across the five GETS provinces as it was being organised by many different local authorities. This is being corrected for Round 2 by contracting the activity to a single national partner who will be responsible for ensuring consistent coverage across the five GETS provinces.

Reporting requirements for the agreements with DAH were not being met due to resource issues within the department. The project national coordinator has assisted with this task and an assistant has been contracted to assist the national coordinator to meet the reporting requirements.

Main progress made towards the achievement of project outcomes *(from the start of the project activities)*

Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1), and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1)

- Field missions to all provinces and the vaccine intervention plans have been completed.
- The project work plan has been completed and an agreement has been obtained from DAH/MARD for the intervention programme and the work plan.
- Implementation partners have been chosen and guidelines for all field activities have been completed. LoA's have been prepared and signed.
- The intervention was implemented to coincide with the second round Government of Viet Nam's vaccination programme in October and November 2009.
- Implementation partners for the public awareness programme have been contracted and the initial capacity building training for over 900 district and commune veterinary staff, livestock extension officers and district public health officials has been completed.
- Production of TV media, audio and leaflets has been completed. The media release commenced with the local TV advertisements started in the last week of October 2009 and they ran four times per day until the end of December 2009 in the five pilot provinces.
- Implementation partners for the second stage of the public awareness programme have been contracted and the media release is due to start in April 2010.
- Enhanced surveillance, reporting and outbreak response activities, as well as sentinel duck monitoring and post-vaccination monitoring are ongoing in the field and funds have been transferred to the provinces to support these activities. These activities have been reviewed during field missions to each of the five GETS provinces in March 2010 and revised agreements have been adopted to streamline project activities.
- Procurement and distribution of five vehicles, 42 GPS, and 714 fridges was completed to the provinces. For the first time in Viet Nam, continuous cold chain for vaccine storage has been extended to the commune level throughout the five GETS provinces.
- Data collection activities are being streamlined with the introduction of an Access database in each of the SDAH offices in the GETS provinces and training will be provided in the use of the database.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

- An international expert undertook a mission to Viet Nam and prepared the design of the cost-effectiveness component which was subsequently reviewed and finalised. Discussions were pursued with a national partner to implement this component and a work plan and budget were reviewed and finalised.
- Completion and signing of the LoA with the national partner, SCAPS, facilitated the commencement of field activities and data gathering. The SCAPS team, accompanied by the GETS regional coordinators, visited each of the five pilot provinces and commenced data collection activities. Phase 1 of the programme has been completed and Phase 2 will commence in April 2010.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

- Outbreak response activities have been finalized and accompanying documents completed.
- Training has been undertaken for the GETS Regional Coordinators whose role includes attending all outbreaks within the GETS provinces and in bordering provinces to undertake disease investigation activities.
- An LoA with DAH has been finalised and signed and funds have been available for provincial staff for outbreak activities.
- An agreement has been signed with DAH detailing the re-imbursement terms for poultry producers in the GETS provinces following culling of their flocks for HPAI outbreaks. Funds have been made available for provincial authorities to fund the re-imbursement for eligible flocks.
- Workshops detailing enhanced disease reporting activities were held at the 42 districts involved in the project and these were attended by 713 chief animal health officers, 178 district veterinary officers, 39 agricultural extension officers and 38 district public health officers, 48 were from SDAH and 14 were from RAHOs.
- Supply chain analysis has been planned and will be undertaken across the five GETS provinces as well as GPS mapping using the GPS units supplied to each district veterinary station.
- A detailed case study of the meat trader system is planned to investigate potential risk factors in outbreaks. Meat traders are a high-risk group because they constantly move from farm to farm and handle birds at each farm.
- Monitoring of high-risk mobile duck flocks has commenced and is being undertaken by CAHWs throughout the GETS provinces and vaccination of these flocks is being pursued. These flocks present a high-risk for disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated.

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

- An international expert undertook a mission to Viet Nam to assist in preparing the design of this component. Data collection consists of attitudinal questionnaires and behavioural case studies. A national partner has been chosen to continue with the implementing of this component and a contract and TOR's were finalized and the partner started in January 2010. Data collection has initiated with an attitudinal questionnaire included in the chief animal health worker post-training questionnaire.
- A sociologist is being contracted to undertake behavioural case studies with AHW and poultry producers. These studies will evaluate potential motivation factors and key determinants for AHW and producers, the barriers to behaviour change and the behavioural changes that have occurred as a result of the project intervention.

Output 6: Policy analysis of HPAI strategy including public private sector collaboration and partnerships is undertaken

- A detailed case study, including tracking of activities of the meat trader system is being designed and will investigate the governance of their activities.
- A national partner has been selected to continue with the implementation of this component. This component will start following the completion of the supply chain analysis which will assist in the identification of private/public operations that will be used in the governance studies and policy analysis

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 06**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to Viet Nam**

Reporting period: **October 2010 to March 2011**

Country: Viet Nam
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to Viet Nam
Code: OSRO/RAS/604/USA Baby 06
Budget: USD 2 million (Phase I), USD 3.1 million (Phase II), USD 3.3 million (Phase III), USD 1.075 million (cost extension) ¹ , USD 2.2 million (Phase IV)
Total budget: USD 11.675 million
Effective starting date: August 2006
Planned end date: September 2011
Context of the project The control and elimination of H5N1 Highly Pathogenic Avian Influenza (HPAI) demands a long-term approach. Viet Nam is moving from the control phase to the consolidation phase, with an ongoing need for capacity building in the veterinary services and livestock production sectors and support for vaccination and other risk reduction measures. This regional project supported by the United States Agency for International Development (USAID) is currently in its fourth phase of implementation.
Objectives of the project The overall objective of the project is to address the urgent short-term actions that need to be undertaken by the country to strengthen its capacity to rapidly detect the introduction of HPAI into the country and minimize its spread in case of its occurrence.
Planned activities for this quarter Component 1: Preparedness and Planning Component Output 1: Strategy development for HPAI control <i>Activity 1.1: Review of HPAI Control Strategy in Viet Nam</i> <ul style="list-style-type: none"> Attend the National Workshop on Developing a One Health Approach for 2011-2015, addressing high impact infectious diseases at the Animal Human Interface before the OPI review. <i>Activity 1.2: Transforming the HPAI Contingency Plan</i> <ul style="list-style-type: none"> Review of the H5N1 drafting animal disease emergency preparedness plan. Output 2: Coordination and communication with donors and other HPAI implementing partners <i>Activity 2.1: Core FAO Viet Nam team supported</i> <ul style="list-style-type: none"> Extend and renew contract of the current personnel, as and when necessary. <i>Activity 2.2: Annual project meetings supported</i> <ul style="list-style-type: none"> Organize a strategic Planning Meeting with all stakeholders in November 2010. <i>Activity 2.3: Team Meetings from Provincial to National level</i> <ul style="list-style-type: none"> Hold one meeting will be held with provincial and national stakeholders. <i>Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector</i> <ul style="list-style-type: none"> Initiate a national workshop with stakeholders to exchange information on surveillance and risk analysis; and Initiate the preparation of a DAH bulletin by November 2010 for the first volume. Component 2: Animal Surveillance Component Output 3: Animal surveillance at the national, provincial, district and community level enhanced <i>Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported</i> <ul style="list-style-type: none"> Continue providing technical inputs by national and international laboratory experts; continue providing support to the LabNet server and tele-hosting maintenance; organize the maintenance of the laboratory equipment (refer to section 4.1); initiate a working plan to develop a roadmap for animal disease diagnostics;

¹ Project Cost Extension Request from October 2009 to September 2010.

- hold a laboratory workshop at the National Centre for Veterinary Diagnosis (NCVD) and the Regional Animal Health Office (RAHO) 6 to build capacity for microbial and pathological investigation of animal disease;
- initiate activities in gene sequencing for more AI virus isolates; and
- initiate small laboratory based research component on HPAI virus survivability and host factors associated with the virus.

Activity 3.2: Strengthening of core capacities for animal health in 5 focus provinces, including surveillance activities supported

- Extend the letter of Agreement (LoA) extension with the DAH to monitor the implementation of the active surveillance (CBS);
- consult with DAH to review the CAHW guidelines;
- continue coordination with USAID implementing partner Avian Pandemic Influenza Initiative (APII); and
- conduct an evaluation of awareness campaign for enhanced reporting from previous year.

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- Continue to support M&E activities as outlined in the 2009 USAID Viet Nam Highly Pathogenic Avian Influenza and Emerging Pandemic Threats Performance Management Plan.

Activity 3.4: Veterinary epidemiology network supported

- Review AVET curriculum;
- initiate fifth and sixth AVET programme;
- exchange information with other epidemiological trainings (Field Epidemiology Training Programme [FETP], Field Epidemiology Training Programme for Veterinarians [FETPV], etc.); and
- continue providing support to TADinfo and support hosting the server.

Activity 3.5: Piloting surveillance for animal influenza in poultry and pig production interface

- Initiate activity with national counterpart.

Activity 3.6: Active surveillance programme in a selected poultry marketing system

- Initiate a plan for analysis of a market catchment area in a particular zone.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- Carry out personal protection equipment (PPE) needs assessment in five pilot provinces;
- Continue procurement of laboratory consumables HPAI diagnosis and surveillance, as required; and
- Continue to maintain equipment, as required.

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk-mapping and risk analysis updated at national level

- Carry out poultry sub-sector profiling and training on spatial analysis.

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- Provide support for carrying out investigation in the event of HPAI outbreaks occurring in the pilot provinces or in the neighbouring provinces (field trips);
- continue support for lab diagnosis; and
- continue training of CAHW for improved reporting.

Activity 5.3: Cross-border analysis using a value chain methodology in three border areas

- Initiate northwest cross-border trade analysis for HPAI.

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- initiate PVM and the H5 VCS among poultry for round two of 2010; and
- initiate vaccine efficacy trial of new vaccine strains against 2.3.2 clade virus.

Activity 5.5: Support public private partnership (PPP) and institutional strengthening in poultry production and health care system

- Initiate the setting up of a regulatory board for monitoring veterinary service delivery and quality of veterinary education; and
- initiate a poultry price monitoring structure in three major cities in Viet Nam; and

<ul style="list-style-type: none"> • support creation of a PPP working group for development and restructuring of the poultry sector. <p>Output 6: Improved bio-security and market hygiene practices in commercial and scavenging poultry raising settings supported</p> <p><i>Activity 6.1: Support biosecurity strengthening in pilot provinces</i></p> <ul style="list-style-type: none"> • Continue with the stakeholder process to develop local risk reduction action plans. This activity will support the completion of those plans; and • Conduct mapping of hatcheries in two provinces. <p><i>Activity 6.2: Develop biosecurity guidelines and training for DAH and DLP</i></p> <ul style="list-style-type: none"> • Continue to support two working groups in biosecurity. The first is planned for October 2010. <p>Activities undertaken during the reporting period (October 2010 to March 2011)</p> <p>Component 1: Preparedness and Planning Component</p> <p>Output 1: Strategy development for HPAI control</p> <p><i>Activity 1.1: Review of HPAI Control Strategy in Viet Nam</i></p> <ul style="list-style-type: none"> • None . <p><i>Activity 1.2: Transforming the HPAI Contingency Plan</i></p> <ul style="list-style-type: none"> • On-going mission for the drafting of an Animal Disease Emergency Preparedness Plan to improve national preparedness to respond to an incursion of a transboundary disease, the emergence of a new disease or an epidemic of a disease already in the country. Animal Disease Emergency Preparedness Plan technical meeting held with DAH on 25 March 2011. <p>Output 2: Coordination and communication with donors and other HPAI implementing partners</p> <p><i>Activity 2.1: Core FAO Viet Nam team supported</i></p> <ul style="list-style-type: none"> • All key staff recruited and in place for the project implementation period. <p><i>Activity 2.2: Annual project meetings supported</i></p> <ul style="list-style-type: none"> • Annual Planning Workshop took place in November 2010. Participants from USAID, WHI, DAH, DLP, VAHIP, RUDEC, HAU, FAO, AVET, pilot province SDAH, Abt and NCVD attended. 43 Participants, 28 males and 15 females). • Initiated preparation of a FAO/DAH Information Sharing Workshop on "Recent advances in the knowledge of the epidemiology of HPAI in Viet Nam and identification of research priorities" proposed for 28-29 April 2011, in Hanoi. <p><i>Activity 2.3: Team Meetings from Provincial to National level</i></p> <ul style="list-style-type: none"> • FAO delegation undertook missions to the 5 pilot provinces in December 2010 and January 2011 for meetings with provincial Sub-DAH and DARD officials. Project achievements of the last year and the plan for the current year were jointly reviewed, discussed and feed-back obtained. • A Quarterly FAO Abt meeting took place in Hanoi to explain the Risk Reduction in the Market Chain jointly showing the FAO and APII activities in a Provincial Matrix format including the surveillance activities and give the field an opportunity to share information, discuss bottlenecks and propose solutions (21 participants, 11 males, 10 females). <p><i>Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector</i></p> <ul style="list-style-type: none"> • FAO provides a weekly report which is submitted to USAID and USAID partners. • Update the Google Viet Nam PPI calendar regularly. • FAO finalized and submitted detailed work plan and logical framework for all key outputs of this project to USAID and USAID partners. • Two coordination meetings with FAO and Abt took place to discuss and design the Work-Plans for market surveillance and risk mitigation measures in the poultry value chain in the pilot provinces. • FAO Participated in FAO-Abt joint meeting to review the proposed BCC plan and provided additional technical input. • FAO participated to the BCC Working group in December 2010. • Development of a shared supply chain risk reduction working strategy between FAO and Abt Associates. • Technical meetings held with Abt Associates relating to risk assessment, risk reduction within the market chain and linkages between communication activities, technical interventions and supply
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chain strengthening (including technical support to DLP on supply chain risk reduction approaches) (approach also presented at regional ECTAD meeting and a bilateral meeting between China and Viet Nam).

- Participated in Abt led technical consultation on implementation of recent slaughter-house legislation and practical issues to be tested through the USA project.
- National Vaccination Strategy Meeting was held on 22 October 2011 (participants included USAID, FAO, Abt, DAH, NCVD, RAHOs, NIVR, MARD, MONRE, VAPM, MPI, MoF, Gov office, PAHI, HUA, VAHIP and National Center for VET drugs and bio-products control No1; 48 participants, 29 males and 19 females). Government of Viet Nam incorporated lessons learnt from active and passive surveillance based on work done under this project, along with key recommendations under the GETs project.
- DAH bulletin underway, but first volume will be delayed until May 2011.
- FAO participated in AI partners' coordination meeting in USAID office on 24 January, 2011 and USAID Partner's Meeting on March 29th.

Component 2: Animal Surveillance Component

Output 3: Animal surveillance at the national, provincial, district and community level enhanced

Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported

- The Manual for Biosafety in Veterinary Laboratories in Viet Nam and the SOP for adoption of Biosafety and Biosecurity in the laboratories have been finalized. These documents were developed through a National Consultancy and with technical inputs from FAO country team. Both these documents have been submitted to the Department of Animal Health in December 2010. FAO is strongly advocating the DAH to adopt appropriate biosafety and biosecurity measures in the laboratories, particularly those, handling highly infectious and pathogenic microbes and also those organisms having zoonotic potential.
- The Labnet software for creating a network among the HPAI reference laboratories for on-line and data-entry and submission of results to the Central Hub has been created. It was developed earlier but had a glitch for which it failed to work. Now it is ready for use in the laboratories, which will be taken up after two sets of one-day training, one in NCVD and the other in RAHO 6 in HCMC.
- Epidemiological Lab network workshop was carried out in December 2010 for capacity building for microbial and pathogenic investigation of animal diseases (participants included USAID, CDC, FAO, WCS, VAHIP, DAH, NCVD, NIVR, RAHO3,4,5,6,7. Total participants 47, 30 males and 17 females).

Activity 3.2: Strengthening of core capacities for animal health in 5 focus provinces, including surveillance activities supported

- Final reports of Active and Passive Surveillance carried out in the year 2009-10 were received, reviewed and finalized.
- Final report on the Cost-effectiveness of Surveillance was reviewed, finalized and formally handed over to the DAH in December 2010 for information which is expected to help develop policy directives for future surveillance activities against HPAI and possibly other Trans-boundary Animal Diseases.
- SOPs and Job Cards for HPAI outbreak investigation and response were completed, translated in Vietnamese and formally handed over to the DAH for information which is expected to be nationally adopted.
- Evaluation mission of awareness campaign for enhanced reporting from previous year completed.
- FAO participated in an Abt meeting for the launching of the CBS model in Ha Nam and Can Tho provinces.
- FAO attend the Abt meeting for the review of CBS activities done from August 2010 to December 2010 and plan for next step.
- LoAs for the strengthening the passive surveillance system and the routine active disease surveillance, initiated in Q1 and Q2 2010 extended until May 2011.
- In consultation with DAH and taking into account the CAHW guidelines, an additional approach has been launched for the active surveillance model with an event-based component taking place whenever there is a new HPAI outbreak reported in a pilot province or in a district neighbouring a

pilot province. During 1 month, CAHWs of 50 communes neighbouring the infected commune carry out field visits to early detect any potential secondary outbreak. LoA has been launched early March and will run until end of May.

- Briefing to provincial SDAH authorities on supply chain risk reduction approach
- Updating of provincial animal health authorities on developments in epidemiology of HPAI (through provincial risk analysis meetings).
- With a new HPAI outbreak reported in Hai Que commune, Hai Lang district, the event-based active disease surveillance model has been launched. Increased surveillance will be carried over during one month in 50 neighbouring communes.

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- FAO provided training to Provincial Coordinators and Focal Points on PMP indicator data collection in February 2011 under subIR-1 and subIR-3.
- FAO completed and submitted the annual PMP report, along with key recommendations to MEASURE in March 2011.

Activity 3.4: Veterinary epidemiology network supported

- Technical reports for AVET courses 1 to 4 were finalized.
- A technical meeting between FAO and NZAID took place to discuss the epidemiological data gathering and analysis and also epidemiological training programmes being carried out by the two agencies in Viet Nam. Training materials of AVET and NZAID were respectively shared.
- A review of the AVET Chapters was undertaken to include more examples and practical exercises and avoid overlaps between chapters. Additionally, the set of questions for the pre & post-course tests was revised.
- A short course on public health epidemiology is now included in the AVET curriculum and is delivered by Dr Nguyen Tran Minh (Topi), the Course Coordinator of the FETP.
- The 5th AVET course was launched on 28th February with 13 trainees involved from DAH, RAHOs and Universities.
- A TAG meeting was held for preparing the 6th AVET course which will be launched on 13 April 2011.

Activity 3.5: Piloting surveillance for animal influenza in poultry and pig production interface

- Deferred

Activity 3.6: Active surveillance programme in a selected poultry marketing system

- A field assessment was carried out of the 10 LBMs in Quang Tri province including information on the markets and based on this and the risk assessment key markets in the network selected.
- A protocol for the approach including sampling, processing and testing of samples has been drafted together with an experience sharing consultation with GETS and Word Bank (VAHIP) projects.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- Procurement and PPE needs assessment was carried out in each of the pilot studies to determine procurement, stocking and maintenance requirements. Results are currently with the Department of Animal Health to review the provincial requests and ensure there is no overlap with contribution from other potential sources.
- Field missions to all laboratories completed to review inventory and ensure USAID visibility with correct labelling.
- 20 new car stickers ordered and received on 5 December (2 per car) to be sent to the 10 provinces (GETS and 604) to replace any damaged/lost car stickers.
- 2 Printer , 2 Computer Dell Optiplex 380DT, 2 Fax machine ,02 Santax UPS offline 500VA, 02 Fax modem have been provided to 2DVSs in Kien Giang province, as a result of new districts set up.

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk-mapping and risk analysis updated at national level

- Outbreaks have been spatially and temporarily mapped and together with molecular epidemiological evidence, understanding of risk factors and HPAI epidemiology have been

significantly strengthened.

- Poultry profiling technical reports completed in 5 pilot provinces.
- Risk analyses have been carried out in Ha Nam and Hung Yen (through UNJP), completing risk analysis exercises in all 5 provinces.
- A regional risk analysis has been planned and technical material prepared for central provinces (to be held Apr 6-8) and material also developed for the Red River Delta.
- Post test evaluation on the Risk Assessment carried out in Kien Giang and Can Tho were completed on 25 and 26 October 2011. The relevancy of training activities with actual works, content of training activities, training methods and guidance, documents and materials, overall logistics were highly appreciated by informants. Many of the informants confirmed that they benefitted from the training workshops and they could apply what they have learnt into their areas of operation. 66 percent of the total participants said that they have been involved in the coordination or organization of risk analysis activities after the training workshops.

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- Mapping temporal and spatial distribution outbreaks of HPAI in poultry in Viet Nam and dissemination to other stakeholders (includes translation of DAH and Ministry of Health (MoH) reports disseminated via email, updating excel list of HPAI outbreaks, reporting any new outbreaks, and analyses of epidemiological data and mapping).
- Evaluation on hotline, calendars, stickers and roadshow in Ha Nam and Can Tho were completed on 28 Dec 2010. It was recommended that the hotline should be used not only to report HPAI suspicious cases but also for other diseases such as PRRS, FMD and for other purpose such as providing advice on animal production and vaccination to farmers, etc.

Activity 5.3: Cross-border analysis using a value chain methodology in three border areas

- Technical support provided to a bilateral meeting between Chinese and Vietnamese authorities at which value-chain approaches and results from studies were presented and important future recommendations made
- Implementing partner identified for future study on *cross border trade and study outline developed emphasising movement and assimilation of spent hens into Vietnamese domestic markets*

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- Technical report of the LoA for the Round I of 2010 of Post-vaccination monitoring and virus circulation surveillance was reviewed, finalized and cleared.
- Round II of 2010 of Post-vaccination monitoring and virus circulation surveillance cancelled by DAH as a result of Circular No. 136/2010/TT-BTC dated 13 September, 2010, which proposed revised rates of various laboratory tests. As the newly proposed cost norms were debated by Government, FAO was requested by DAH to defer post-vaccination monitoring until Round I 2011.
- Detailed description of sub-optimal performance of vaccination in selective districts, provinces and regions requirements complete for planned activities.
- In the current set of trials on the vaccine efficacy against the circulating virus strains, it was observed that with one shot of Re-1 vaccine, chickens were protected 100 percent when challenged with a recently isolated H5N2 virus (of slightly lesser virulence) and 80 percent when challenged with the currently circulating H5N1 HPAI virus clade 2.3.2, predominantly in North Viet Nam. Since the recommended procedure is to inoculate two doses of the vaccine three weeks apart, the next phase of the trial is looking into the efficacy of Re-1 vaccine against the above two virus stains in chickens, vaccinated with two doses of the vaccine as per the manufacturer's instruction.

Activity 5.5: Support public private partnership (PPP) and institutional strengthening in poultry production and health care system

- Scoping study on PPP carried out (under UNJP) in anticipation of project extension approval.

Output 6: Improved bio-security and market hygiene practices in commercial and scavenging poultry raising settings supported

Activity 6.1: Support biosecurity strengthening in pilot provinces

- Training materials and approaches for hatchery hygiene, public and private sector adviser Training of Trainers (ToT) technically reviewed.
- Bio-security risk communication DVD developed for inclusion into training/awareness raising packages.
- Hatchery mapping has been undertaken in Can Tho and Kien Giang provinces and preparation for GPS marking activities are in place. Hatchery data collection and GPS marking has also been organised to initiate in Ha Nam, Hung Yen and Quang Tri.

Activity 6.2: Develop biosecurity guidelines and training for DAH and DLP

- A bio-security working group annual strategic planning meeting was held in October 2010 and an action plan developed through stakeholder consultation. Participants included Phu Tho SDAH, Viet Nam Veterinary Association, VSF-CICDA, PAHI, RUCED, NAFEC, AFAP, Hung Yen DARD, Institute of Animal Husbandry, DLP, Abt, FAO, USAID. Total participants 25, 15 males and 10 females. (Training for provincial technical officers: see public sector training of trainers programme 6.1)

Planned activities for the next six-month period

Component 1: Preparedness and Planning Component

Output 1: Strategy development for HPAI control

Activity 1.1: Review of HPAI Control Strategy in Viet Nam

- The consultancy for this review will be initiated when the DAH road map and the new “green book” are finalized.
- Additional technical inputs and advice will be provided by FAO technical officers. This will emanate from outputs of field work, technical meetings (such as risk assessments, HPAI epidemiology consultation etc).

Activity 1.2: Transforming the HPAI Contingency Plan

- Framework for the Animal Disease Emergencies Preparedness plan will be reviewed, finalized, translated in Vietnamese and formally handed over to DAH.

Output 2: Coordination and communication with donors and other HPAI implementing partners

Activity 2.1: Core FAO Viet Nam team supported

- Continue to ensure that all staff is in place.

Activity 2.2: Annual project meetings supported

- FAO/DAH Information Sharing Workshop on “Recent advances in the knowledge of the epidemiology of HPAI in Viet Nam and identification of research priorities” completed.

Activity 2.3: Team Meetings from Provincial to National level

- Hold quarterly FAO-Abt meeting with field staff in third and fourth quarter of the project.

Activity 2.4: Coordination and sharing of information with other players engaged in HPAI surveillance, risk assessment and value chain and risk mitigation in poultry sector

- Regular technical and coordination meetings will be held with implementing partner Abt Associates providing support to project implementation and monitoring, support and benefit from technical consultancies of mutual interest and exchange experiences including through additional technical resources (Rome based)
- Ad hoc technical meetings with government counterpart agencies and implementing partners to share results and disease control developments and to conduct expert analysis
- Continue to provide a weekly report which is submitted to USAID and USAID partners.
- Continue to update the Google Viet NamPPI calendar regularly.
- Release first volume of DAH bulletin by May 2011.

Component 2: Animal Surveillance Component

Output 3: Animal surveillance at the national, provincial, district and community level enhanced

Activity 3.1: Strengthening of veterinary laboratories, specifically biosafety and quality assurance supported

- Carry out two sets of one-day training for Tad-Info, one in NCVD and the other in RAHO 6 in HCMC.

Activity 3.2: Strengthening of core capacities for animal health in 5 focus provinces, including surveillance activities supported

- Support provided through LoAs for passive and active surveillance will end by May 2011.
- A review of the project support for the passive surveillance system is planned in June 2011.
- An evaluation of the active disease surveillance model (Routine and event-based component) will be conducted in August 2011.
- When the SOPs for HPAI Outbreak Investigation and Response are officially adopted, FAO will support on DAH's request the adequate awareness and dissemination of SOPs on HPAI OIR (adoption and implementation) and will implement SOPs training of local authorities / AISC leaders in the 5 pilot province following Government Adoption.
- Support to provinces to develop HPAI disease control plans based on risk assessments and risk analysis exercises and technical support to package USAID programme and regular provincial resources into coherent province-level disease control action plans (also linked to activity 1.1)

Activity 3.3: Further development of Monitoring and Evaluation (M&E) expertise in animal health

- FAO complete and submit the bi-annual PMP report (01 October 2010 to 31 March 2011), along with key recommendations to MEASURE in April 2011.

Activity 3.4: Veterinary epidemiology network supported

- Three more AVET courses will be carried out targeting trainees from the remaining SDAH that were not involved in previous AVET courses.
- Two Alumni Workshop of AVET Trainees will be organised for strengthening the animal health epidemiologist network in Viet Nam and improve the sharing of information.
- Preparation of risk assessment training materials and case studies to be accessible to AVET trainees and DAH epidemiology core team

Activity 3.5: Piloting surveillance for animal influenza in poultry and pig production interface

- Deferred at the request of USAID.

Activity 3.6: Active surveillance programme in a selected poultry marketing system

- This active live bird market surveillance programme will be carried out in 1 or 2 markets of Quang Tri province.

Output 4: Priority procurement for animal surveillance and laboratory supported

Activity 4.1: Procurement and maintenance

- To decide on procurement and maintenance needs based on needs assessment.

Component 3: Animal Response Component

Output 5: Effective and timely animal response efforts promoted

Activity 5.1: HPAI risk-mapping and risk analysis updated at national level

- Training course for Provincial DARD and sDAH staff on value chain analysis and practical techniques for sub-sector mapping and analysis
- Technical update/refresher training on risk assessment approaches for provincial and national epidemiologists
- Regional risk assessments/ analyses will be carried out covering the central and Red river Delta areas of Viet Nam and involving provincial sDAH and DARD offices in those areas beyond the pilot provinces
- A meeting will present the findings of the risk analysis studies and capacity building approaches carried out by the project.

Activity 5.2: Outbreak investigation capacity strengthened in focus provinces

- Continue mapping temporal and spatial distribution outbreaks of HPAI in poultry in Viet Nam and dissemination to other stakeholders as outlined above.

Activity 5.3: Cross-border analysis using a value chain methodology in three border areas

- A risk analysis study will be carried out focusing on the north-western cross-border trade corridor between Viet Nam and China and also analysing the integration of Chinese poultry into the market chains of northern Viet Nam.
- Study to propose options for managed safe cross-border poultry trade conducted and finding presented in a policy meeting

Activity 5.4: Vaccine efficacy monitoring and virus surveillance supported at national level

- Round I 2011 of PVM and VCS will be prepared in consultation with DAH with potentially a

revised protocol for the sampling based on the new vaccination programme for 2011-2012.

- A consultancy will be conducted for investigating the sub-optimal performance of vaccination in selective districts, provinces and regions.
- Experimental infection of ducks with H5N1 and H5N2 will be initiated in April 2011 to determine pathogenicity of these viruses.
- Vaccine efficacy test (Re-1, Re-5 vs. H5N1 2-3-2, H5N2 2-3-2) will continue.

Activity 5.5: Support public private partnership (PPP) and institutional strengthening in poultry production and health care system

- Design appropriate PPP action plans in target areas (PPPs will be implemented in areas where existing market chain risk reduction activities are being carried out)
- Conduct an analysis of the poultry sub-sector, identifying medium and long term trends and drivers affecting the sector with an emphasis on related veterinary public health issues.
- Area-based action plans to be implemented.

Output 6: Improved bio-security and market hygiene practices in commercial and scavenging poultry raising settings supported

Activity 6.1: Support biosecurity strengthening in pilot provinces

- Implement bio-security capacity strengthening programmes in 5 provinces (focusing on the private sector advisers) (Abt Associates to focus on the government advisory services)

Activity 6.2: Develop biosecurity guidelines and training for DAH and DLP

- Review and adapt National Guidelines developed for Industrial poultry producers under the VAHIP into a version more appropriately targeting the small holder sector.
- Training for government officers on the standards and guidelines developed (delivered at the province level).
- Carry-out evaluation of bio-security initiatives to develop good bio-security practices and ensure consolidation of lessons learned
- Hatchery data collection will be completed in Ha Nam, Hung Yen and Quang Tri. GPS marking will be completed in all five pilot provinces, including hatchery mapping.

Main challenges encountered and response provided

Government approval for the extension of this project was received on 14 February 2011, which was 4.5 months after planned start date of 01 October 2010. FAO was able to continue implementation of on-going activities related to the previous work plan but not able to initiate the new activities proposed in the project proposal covering the period 01 October 2010 to 30 September 2011.

Main progress made towards the achievement of project outcomes (from the start of the project)

Output 1: Strategy development for HPAI control in 2006-2010 supported

- Consideration of a regional approach to HPAI control rather than a provincial one has been promoted and is attracting interest as featured in the Green Book Review and several International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) documents.
- Provincial poultry sub-sector profiling has been effective in describing provincial poultry populations (including the Poultry Atlas) and DLP is considering adopting such an approach more widely.
- Risk assessment and risk-based targeting of control measures are increasingly being included in technical and policy development (however still largely restricted to the control of HPAI).

Output 2: Coordination and communication with donors and other HPAI implementing partners

- Programme management and planning and coordination of activities with USAID and other partners have been maintained. FAO has made 11 major recommendations for the Green Book Review, were well received by the Government of Viet Nam.
- FAO and Abt have a common strategy to risk reduction across the supply chain with a shared activity matrix consolidating the agencies activities into a single overall approach.

Output 3: Animal surveillance at the national, district and community level enhanced

- The project is carrying out animal surveillance activities which include support in relation to the upgrading of TAD-info and the Laboratory Information System (LabNet), development of Geographic Information Systems (GIS) at RAHO. So far, 210 officers from SDAH, 14 RAHO staff and five DAH Epidemiology staff have increased their capacity to use this software through training. Seven units of Global Positioning System (GPS) and seven licenses of mapping software

(ArcView/ArcGIS 9.2) have been provided to seven RAHOs (I-VII). A total of 55 SDAH/DAH staff have been trained on its use.

- The project has also developed a database system software for laboratory diagnostic management within the DAH's LabNet through the services of a local firm in Viet Nam. Laboratory biosafety and quality assurance are being supported and pursued.
- The SOPs for H5N1 real-time PCR have been developed and adopted. Genetic analysis of haemagglutination (HA) gene of the new virus isolates of 2009-10 showed that besides clade 1 and clade 2.3.4, there is increasing evidence of involvement of clade 2.3.2.
- A revised and updated SOP for HPAI outbreak investigation and control has been developed comprising 19 sections and 14 job cards for various officials involved in HPAI outbreak management. The English and Vietnamese versions of the SOP have been handed over to DAH for transmission to MARD for adoption as a national strategy.
- The campaign to encourage poultry farmers to report any unusual occurrences in poultry flocks, arising suspicion of an infectious disease, through TV spots and loudspeakers during the risk period (e.g. the TẾT festival), has created an increased awareness on the necessity to report diseases on time.
- The AVET initiative, to build up basic epidemiological investigation capacity in the country through Viet Nam-specific, tailor-made course curricula of nine weeks duration resulted in training of 52 veterinarians in four cohorts in 2010 and of 13 veterinarians so far in 2011.
- Active surveillance for HPAI and other poultry diseases has been launched on a pilot scale in project provinces, which will complement the community-based surveillance of Abt Associates.
- In addition, a new component has been launched in March 2011 in the event of an outbreak to early detect any potential secondary outbreaks in the neighbouring area of the index case.
- A cost effectiveness study on surveillance for HPAI has been completed. Preliminary findings suggest that there is a qualitative value in surveillance, but the cost of surveillance per outbreak reported is going up with a decrease in the number of outbreaks of HPAI in Viet Nam.
- More than 300 copies of the Wild Bird Manual have been translated into Vietnamese and distributed to 63 provinces.
- Live bird market active surveillance approaches are for the first time being adopted under the USA project approach in Viet Nam in keeping with emerging best international practices

Output 4: Priority procurement for animal surveillance and laboratory supported

- Procurement of vehicles, Information Technologies (IT) equipment, equipment sprayers and most lab consumables is complete to support AS3 and AR2, and all are in use.

Output 5: Effective and timely animal response efforts promoted

- A cross-border study in the north of Viet Nam concluded that as a result of a high financial return for poultry, smuggling across the border has not decreased but has become more elaborate, which will pose a constant risk of disease transmission. The market chain is increasingly being recognized as critical to the control of HPAI, particularly in northern Viet Nam and FAO's strategic targeting of LBMs has been validated.
- Post-vaccination monitoring and virus circulating surveillance for influenza A/H5N1, supported by this project, shows that vaccinated poultry have a protection rate of 72.10 percent at bird level. The protection rates of Muscovy ducks, Turkey, other ducks, chickens and geese were 80 percent, 80 percent, 78.90 percent, 68.05 percent and 50 percent, respectively. Prevalences of Type A and H5N1 avian influenza viruses in ducks were 0.94 percent and 0.67 percent respectively while in chickens, respective prevalences were 0.54 percent and 0 percent. There was no evidence of AI virus persistence found with the samples taken from Muscovy ducks. The AI positive samples were from Khanh Hoa and Quang Ngai provinces (Center).

Output carried over from Year II: Vaccine production

- A training course on good management practices (GMP) to key stakeholders, National Veterinary Company (NAVETCO), Viet Nam's Veterinary Vaccine Company (VETVACO) and DAH was conducted, which covered introductory-level Good Manufacturing Practice (according to the 2009 Pharmaceutical Inspection Convention / Pharmaceutical Inspection Co-operation Scheme [PIC/S] Code of GMP) and quality systems applicable to the manufacture of AI H5N1 vaccines.
- The operational appraisal of cold chain integrity is complete, and 39 provinces were provided with walk-

in cold rooms. A software for inventory maintenance of vaccine banks in provinces has been developed.

Output 6: Improved biosecurity practices in commercial and scavenging poultry raising settings supported

- Poultry sector profiling provides important tools for risk-analysis and strategic disease control planning. A guide to provincial poultry sector profiling has been developed. Poultry sector profiling has been completed for four of the five project provinces. The guidelines are currently being tested externally by an implementing partner in three non-USAID pilot provinces.
- A Biosecurity Working Group has been established which provides a forum to network information and lessons learned and build technical understanding among a peer group of agencies working to strengthen biosecurity.
- A framework for a database on biosecurity materials has been developed and its consolidation is in progress. By now, over 100 documents have been compiled in a searchable format. This is now ready for dissemination. Biosecurity activities of all agencies engaged in related work have also been mapped.
- The working group reviewed work on hatchery biosecurity, and training on the principles of biosecurity and on biosecurity auditing was provided to 16 members of the biosecurity working group. Conventional approaches to biosecurity strengthening have been reviewed and evidence gathered to support adoption of a supplementary approach focusing on private sector driven activities and adopting social marketing techniques from the human health sector.
- FAO and Abt Associates have liaised on hatchery technical training and registration schemes.
- A regional risk analysis exercise was conducted, which provided information on the character of poultry movement and production in the lower Mekong Region, identifying poultry movements and risk pathways for inter-provincial transmission of infection.

Output 7: Communication capacity supported at DAH and technical inputs to communications activities of other USAID implementing partners are provided

- FAO is supporting the calendar and sticker production and distribution for pre-TÊT festival 2010, sending out the message to call the hotline or the SDAH landline to report ill and dead poultry under the Enhanced Reporting component.
- Under the Gathering Evidence for a Transitional Strategy (GETS) project, the Academy for Educational Development (AED) produced a commercial in which the second part encouraged poultry owners to report ill and dead poultry to SDAH via a hotline or SDAH phone numbers. This has been effectively used in this project for awareness-raising purposes.
- Support to DAH communications has been maintained.
- Technical support to Abt Associates in implementing the field activities has been maintained.

I Quarter 2010

Project Monitoring Sheet: **OSRO/RAS/604/USA Baby 06**

Project title: **Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to Viet Nam**

Reporting period: **January to March 2010¹**

Country: Viet Nam
Project title: Immediate technical assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) to Viet Nam
Code: OSRO/RAS/604/USA Baby 06
Budget: USD 2 million (Phase I), USD 3.1 million (Phase II), USD 3.3 million (Phase III), USD 1.075 million (cost extension) ²
Total budget: USD 9.475 million
Effective starting date: August 2006
Planned end date: September 2010
Context of the project <p>The control and elimination of H5N1 Highly Pathogenic Avian Influenza (HPAI) demands a long-term approach. Viet Nam is moving from the control phase to the consolidation phase, with an ongoing need for capacity building in the veterinary services and livestock production sectors and support for vaccination and other risk reduction measures. This regional project supported by the United States Agency for International Development (USAID) is currently in its third year of implementation.</p>
Objectives of the project <p>The overall objective of the project is to address the urgent short-term actions that need to be undertaken by the countries in the region to strengthen their capacities to rapidly detect the introduction of HPAI into the country and minimize its spread in case of its occurrence.</p>
Planned activities <p>Output 1: Strategy development [AIMEBA code PP1] <i>Activity 1.1 Pandemic preparedness plan review</i> Hold preliminary discussions with the World Health Organisation (WHO) on public health planning outcomes. <i>Activity 1.3 National HPAI control strategy review</i> Prepare for an international workshop on the Food and Agriculture Organization of the United Nations (FAO's) Strategy Review with reference to the Green Book.</p> <p>Output 2: Coordination and communication [AIMEBA code PP2] <i>Activity 2.1 Core FAO Viet Nam team recruitment</i></p> <ul style="list-style-type: none"> Recruit national biosecurity technical personnel and extend the contracts of the current personnel as per work plan.

¹ Quarter 4 of the Project Cycle.

² Project Cost Extension Request from October 2009 to September 2010.

- Determine with USAID additional fine tuning and coordination and collaboration partnerships for provincial packages developed by FAO for cycle III activities.

Activity 2.3 Annual project meeting supported

Schedule the field quarterly reporting meeting.

Output 3 : Animal surveillance [AIMEBA code AS1]

Activity 3.1 Strengthening veterinary laboratories

- National and international laboratory experts continue providing technical inputs.
- Continue conducting follow-up on-site trainings at Regional Animal Health Office (RAHO) I.
- Continue providing support to the LabNet server and tele-hosting maintenance.
- Finalize list of laboratory equipment maintenance.
- LabNet workshop is scheduled in March 2010.

Activity 3.2 Strengthening of the core capacities for animal health staff

- Continue support for field activity.
- Support DAH to improve active surveillance at risk locations (based on selected criteria) using risk mapping (based on area and season) through a Letter of Agreement (LoA). FAO is assisting Abt Associates (USAID partner) in the criteria requirements and risk analysis of district and communes selected for their activities. FAO is participating and presenting in their provincial workshops and carrying out joint missions in January 2010 to select the appropriate district and commune. FAO is also using these districts and commune selected for the above mentioned LoA with the Department of Animal Health (DAH).
- Holding of a joint National Workshop on Behaviour Change Communication (BCC) in February 2010 and presentation of an active surveillance model as determined on the basis of risk analysis carried out jointly by FAO and Abt Associates in consultation with the five pilot provinces to be proposed at the provincial level and presented to the National Government.
- Dissemination of stickers and calendars to target groups including pharmacies, Provincial Peoples Committee, Sub-Department of Animal Health (SDAH), District Veterinary Services (DVS), District People's Committee, and Chief Animal Health Works in January 2010. Distribute some to local community poultry owners along with loud speaker roaming and communicating the reporting telephone number per province. Submit samples to USAID partners before printing and distribution.
- Airing of TV spot to enhance reporting using second section of Gathering Evidence for a Translational Strategy (GETS) commercial, i.e. report dead and ill poultry to your animal health worker (AHW) and through provincial phone number report using the appropriate number per province, in February 2010.
- Carry out into 2010 implementation of cost effective study on surveillance (looking at most cost effective surveillance approaches in Viet Nam).
- Introduce the new Standard Operating Procedures to SDAH (at provincial level) and DVS (district level) during January 2010, then to community animal health worker (CAHW) in March 2010. Tailor the training to different audiences. The first training is taking place for Ha Nam and Hung Yen from 14 to 15 January 2010 and the remaining provinces are trained from 1 to 3 February 2010 in Ho Chi Minh (HCM). The five pilot provinces are using the SOPs and Job Cards for field testing for six months period. Post the edited SOPs and annexed Job Cards on DAH website for six months for unstructured feedback.
- Carry out computer skill training in five pilot provinces on 20 and 21 January 2010 in

Hung Yen, on 21 and 22 January 2010 in Ha Nam, January 2010 in Quang Tri, on 14 and 15 January 2010 in Cantho, and February 2010 in Kien Giang).

Activity 3.3 Development of M&E expertise

Continue to support Monitoring & Evaluation activities.

Activity 3.4 Support of the epidemiology network

- Continue to provide support to TADinfo.
- Continue to support the Applied Veterinary Epidemiology Training Program (AVET) coordination and activities.
- Conduct the field projects and the third module of the first session of training courses during the first quarter of 2010. Undertake the third module, following the field project to develop skills on managing disease control programs, communication and scientific report writing. Request each trainee to run their field project in their own place of work on a subject/area to be decided on the basis of the disease situation in that area and in consultation with the mentor appointed for the trainee. Mentor guidance for the implementation of the project and for a final written and oral presentation of their work at the end of the training.
- Review the AVET program based on comments and evaluation of the first session. Adjust as necessary before initiating the second training course.
- Prepare tentative schedule for the three other AVET training courses to be conducted by September 2010.

Outputs 4 and 5: Priority procurement [AIMEBA code AS3 & AR1]

Continue to support lab equipment maintenance.

Output 6: Effective and timely animal response [AIMEBA code AR2]

Activity 6.1 HPAI risk mapping updated

Coordinate with the Risk Assessment Working Group and technical advisers for further inputs.

Activity 6.2 Outbreak investigation

- Field teams in place and field visits to pilot provinces if suspicious cases reported and if outbreak occurs.
- Carry out computer skill training in five pilot provinces. This is linked to Activity 3.2.
- Support global positioning system (GPS) and geographic information system (GIS) training for SDAH staff planned for March 2010 to enhance capacity for outbreak investigation.
- Continue providing support for the national telephone hotline.

Activity 6.3 Epidemiology with human health

Identify field linkages with WHO with respect to human and animal health protocols.

Activity 6.4 Value chain analysis in border areas

- Share results of the Cross-border Poultry Movement Analysis in the north of Viet Nam with various stake holders through a presentation meeting in January 2010.
- Pilot good live bird market management practices in one North and one South pilot province. Cost effectiveness of surveillance study will be conducted during the first quarter of 2010.

Activity carried over from Year 2: vaccine inventory system

Finalise development of a pilot excel spreadsheet-based system.

Activity 6.5 Vaccination monitoring

- Finalize samples lab testing and analysis of the data of the second round of 2009 post-vaccination surveillance for Influenza A/H5N1, and DAH finalize and submit the report by February 2010.

- Produce a documented report for FAO for further transmission to DAH with recommendations for implementation of a modified post-vaccination sero-monitoring and virus surveillance in Viet Nam in order to have a better understanding of the impact of vaccination and the overall epidemiological situation.
- Review and finalize the report on vaccine efficacy trials.

Output 7: Better biosecurity practices [AIMEBA code AR3] (from Year 2)

Activity 7.1 Biosecurity strengthening in five pilot provinces

- Conduct a situation analysis for the poultry sectors, building on the baseline work carried out by Abt Associates to include greater analysis and take into consideration farm density and farm systems, market chains, and eventually, a risk assessment to better guide the allocation of resources. This work is conducted by five provincial focal points and three project coordinators. Explore avenues for collaboration with the Department of Livestock Production (DLP) for biosecurity activities.
- Recruit FAO National Biosecurity Consultant in February 2010.
- Recruit the Regional Animal Production Project Officer to support biosecurity activities in January 2010.
- Continue to conduct mapping and update the database on hatchery and breeding farm registration.
- Carry out provincial profiling for future risk analysis assessment in Kien Giang, Ha Nam, Can Tho, Quang Tri in January 2010, using existing data and conclude with a series of stakeholder meetings and participatory mapping exercises (note poultry atlas, value chain studies).
- Hatchery Registration training planned for Kien Giang and Can Tho from 20 to 22 January 2010. FAO has piloted an approach to registration of hatcheries in Can Tho that is now repeated in Ha Nam together with mapping of hatchery locations. This activity is linked to a hatchery training programme planned by Abt Associates.
- FAO and Sub-DAH is identifying a pilot poultry market in Ha Nam and Quang Tri, and working through a stakeholder approach to support measures to strengthen that market through training and infrastructure improvements.
- Pilot the Provincial Risk Analysis and Disease Control Planning Exercise. This approach is utilizing the information in the profiling studies and FAO experts are working with provincial authorities to support strategic approaches and plans for vaccine, surveillance and other control measures.

Activity 7.2 Biosecurity guidelines and training

- Develop Biosecurity Training Programme in the pilot provinces consisting of three elements (1) *Training district level DAH and Extension Officers* on biosecurity using a training module developed by FAO (2) *Training programme for Private Sector agri-vet store owners and vet pharmacies* (those who advise commercial poultry farmers); and (3) *Stakeholder Field Schools* to develop and test biosecurity interventions at the farm level to ensure that pilot approaches are effective and adopted by farmers.
- Continue to provide support to the Biosecurity Improvement Working Group.
- Provide technical biosecurity advice to partners.
- Consolidate the database of biosecurity materials.

Output 8: Communications capacity [AIMEBA code CC1]

Activity 8.1 Support National Communications Officer

Continue to translate and disseminate the *Disease Outbreak Update Report*.

Activity 8.2 Technical support for training and other materials

Continue to provide technical support to Abt Associates.

Activities undertaken during the reporting period

Output 1: Strategy development [AIMEBA code PP1]

Activity 1.1 Pandemic preparedness plan review

FAO had a preliminary discussion with WHO and it was decided that FAO will carry out a review of the Animal Health Sector and Pandemic Preparedness Plan.

Activity 1.3 National HPAI control strategy review

- The organization of an international workshop in the first quarter of 2010 on FAO's Strategy Review with reference to the Green Book was delayed.
- FAO participated to the mid-term Green Book review presentation by the Government of Viet Nam and Partnership for Avian and Human Influenza on 8 March 2010
- The output from the international mission for Green Book review has been published and is being widely distributed.

Output 2: Coordination and communication [AIMEBA code PP2]

Activity 2.1 Core FAO Viet Nam team

- A Biosecurity and Poultry Production Adviser and a new AVET Programme Coordinator have been appointed and the contracts of the current staff extended.
- Project parameters for cycle III have been analyzed with USAID and have been implemented in the project provinces.

Activity 2.3 Annual project meeting supported

The field quarterly reporting meeting was delayed.

Output 3: Animal surveillance [AIMEBA code AS1]

Activity 3.1 Strengthening of veterinary laboratories

- National and international laboratory experts continued to provide technical inputs.
- Continued to provide support to LabNet server and tele-hosting maintenance.
- List of lab equipment maintenance has been finalized.
- LabNet Workshop was postponed to May 2010.

Activity 3.2 Strengthen the core capacities of the animal health staff

- Continued support for field activities through Field Project Assistant and provincial focal points. In consultation with Abt Associates, the Terms of Reference (ToR) of the four provincial coordinators were modified.
- The methodology for Risk-Based Active Surveillance in the five project pilot provinces has been finalized in consultation with implementing partners i.e. DAH and Abt Associates.
- The stickers and calendars to enhance suspicious case reporting via hotlines were produced and distributed to target groups including AHWs and poultry farmers through Veterinary Medicines Shops.
- Television spots to enhance suspicious case reporting to animal health workers and to SDAH by hotlines in five provinces were aired particularly targeting the time of Tet Festival in February 2010.
- Similar campaign was also launched through loudspeakers campaign in risk prone borders and markets during Tet Festival.
- A cost-effectiveness study on surveillance has been launched through an LoA with

the Rural Development Centre (RUDEC) following a series of discussions between FAO, DAH and RUDEC with technical backstopping mission from FAO headquarters.

- Computer skill trainings were delivered as planned to a total of 101 DVS and SDAH staff in several provinces as follows: Hung Yen (20 participants – 13 men and 7 women); Ha Nam (14 participants – 8 men and 6 women); Quang Tri (25 participants – 21 men and 4 women); Can Tho (16 participants – 8 men and 8 women); and Kien Giang (26 participants – 25 men and 1 woman).
- The LoA FAVIE 09/54 to improve passive surveillance (cycle III) with a greater focus on strengthened field investigation in five pilot provinces of Ha Nam, Hung Yen, Quang Tri, Can Tho, Kien Giang is being implemented.
- A consultation workshop for developing a risk-based approach as a preliminary step for the Community-Based Surveillance model was held in Ha Nam province on 11 January, Hung Yen on 12 January and in HCMC on 4 February 2010 with combined staff drawn from Kien Giang Can Tho and Quang Tri SDAH and DVS. Representatives from DAH, RAHO 6 and Abt Associates also attended the Workshop.
- Linked to the above was the Joint National Workshop on Community-based Surveillance model which took place in Hanoi on 5 February 2010. Sixty-two participants (45 men and 17 women) attended the Workshop from USAID, SDAHs (Hung Yen, Ha Nam, Quang Tri, Can Tho, Kien Giang), Abt Associates, DAH, DAH branch in Ho Chi Minh City (HCMC), Regional Coordinator Unit of the Asian Development Bank (ADB) Greater Mekong Sub-Region Communicable Disease Control Project, CARE, Viet Nam Animal and Human Influenza Control and Preparedness Project (VAHIP), National Institute of Hygiene and Epidemiology (NIHE), Hanoi Agricultural University (HAU), RUDEC, Institute for Policy and Strategy for Rural Development (IPSARD), RAHO 1, RAHO 2, WHO, FAO, Academy for Educational Development (AED), Hanoi School of Public Health (HSPH), US Center for Disease Control and Prevention, General Department of Preventive Medicine and Environmental Health, Partnership for Avian and Human Influenza (PAHI), Public Health University, and Provincial Department of Preventive Medicine (Ha Nam, Can Tho, Kien Giang, Quang Tri, Hung Yen).

Activity 3.3 Development of M&E expertise

FAO reviewed and commented upon the new/revised USAID Project Management Plan (PMP) M&E Strategy forwarded by USAID.

Activity 3.4 Support epidemiology network

- Continued to provide support to TADinfo.
- The field projects undertaken by the AVET training were reviewed and mentorship was provided to all trainees. The trainees presented the final results of their field project in Hanoi on the 9th and 10th of March 2010 (last days of the third week of AVET programme) in front of some of the trainers and mentors.
- The AVET programme was reviewed by an independent national consultant on the basis of evaluation results and comments to the first training course. The recommendations of the review were discussed in the technical advisory group on 26th March and have been appropriately included for subsequent courses.
- Training on Geographic Information System (GIS) was delivered in January 2010 to 22 staff (18 men and 4 women) from DAH, RAHOs, Agriculture University of Hanoi, National Veterinary Institute and FAO staff.
- The on-site mapping to increase the use of GIS application for animal surveillance is ongoing and is being piloted in Can Tho.

Output 4 and 5: Priority procurement [AIMEBA code AS3 and AR1]

Procurement for lab equipment maintenance was deferred to the next quarter.

Output 6: Effective and timely animal response [AIMEBA code AR2]*Activity 6.1 HPAI risk mapping updated*

- The requirement to update field data has been confirmed and appropriate agencies need to be identified to carry out the task.
- Coordination with the Risk Assessment Working Group (RAWG) and technical advisers for further inputs is pending. Communication with RAWG has been carried out but RAWG is largely focused on import risk assessment and has limited capacity to focus on endemic disease. FAO through its risk capacity building work (OSRO/VIE/701/UNJ and OSRO/RAS/604/USA) is seeking to engage the RAWG on regional risk assessments through the secondment of a technical officer from the RAWG.

Activity 6.2 Outbreak investigation

- Passive surveillance under the LoA FAVIE 09/54 supported veterinary staff to undertake field investigation whenever a rumor of HPAI is reported. The project funds the laboratory diagnostic of HPAI but also a differential diagnostic with testing for other main poultry diseases (Newcastle, Duck Plague and Pasterellosis).
- Telephone hotlines and answering machines have been set up in the pilot provinces to enhance disease reporting and TV spots were aired at regular intervals to encourage reporting of HPAI.
- FAO with DAH delivered two training courses on the new SOPs and Job Cards for HPAI Outbreaks Investigation and Outbreak Response. Both courses were held in HCMC in February and March 2010 respectively, and targeted a total of 55 staff (49 men and 6 women) from DAH, SDAH, RAHOs and DVS.
- Based on these SOPs and Job Cards training courses, public veterinary staff from the five pilot provinces were requested to start using and applying these documents in real conditions at the field level. The objective is to pilot this draft version for a 6-months period (from January to June 2010) before carrying out a final review.

Activity 6.3 Epidemiology with human health

Preliminary discussions were held between FAO and WHO on how to include one section on the public health epidemiology of H5N1 influenza in human in the final version of the SOP for outbreak investigation and outbreak response developed by FAO and under field trial in the country.

Activity 6.4 Value chain analysis in border areas

- Results of the Cross-border Poultry Movement Analysis in the north of Viet Nam was shared with various stake-holders through a presentation workshop on 5 January 2010. A total of 40 representatives (28 men and 12 women) from DAH, DLP, NAFIQAD, Quarantine Station Divisions and SDAH in Lang Son and Quang Ninh, ICD (MARD), Marketing Management Sub-departments in Lang Son and Quang Ninh, USAID, CDC, USDA, Abt Associates, AVSF, FAO, Marketing Management Department (MOIT), RUDEC and IPSARD attended the workshop. Subsequently, IPSARD have drafted a policy paper on cross-border movement of poultry which FAO have provided comments on, and with FAO support will be revised based on those comments.
- Cross-border analysis of the Kien Giang- Cambodia border was assessed through the Kien Giang provincial poultry profiling exercise which included a field trip to the border. There will be a reprioritisation of this specific border to include movement

corridors of greater risk in the Mekong. This work will be harmonised with that of an ADB project during a planned cross-border meeting in Cambodia in July 2010.

- A preliminary analysis of the Quang Tri – Laos border has been carried out as part of the Quang Tri provincial poultry profile. Initial findings suggest that further information is required from Laos and this cross-border work will now be linked to an ADB project, and a cross-border meeting will be held in June 2010.

Activity 6.5 Vaccination monitoring

- The report of the post-vaccination sero-monitoring and virus circulation surveillance following round 2 vaccinations for the year 2009 is awaited from DAH.
- The vaccine efficacy trial by the National Centre for Veterinary Diagnosis (NCVD), DAH including HPAI vaccine testing in 2009 and HPAI virus pathogenicity testing in ducks is ongoing.
- FAO through an international consultancy developed and passed on to DAH a report with recommendations for implementation of a modified post-vaccination sero-monitoring and virus surveillance in Viet Nam in order to have a better understanding of the impact of vaccination and the overall epidemiological situation.

Activity carried over from Year 2: vaccine inventory system

The final draft version of a pilot excel spreadsheet-based system which was developed through a national consultancy in the previous year has been received by FAO and is currently under review.

Output 7: Better biosecurity practices [AIMEBA code AR3] (from Year 2)

Activity 7.1 Biosecurity strengthening in five pilot provinces

- An international consultancy to provide advice on strengthening biosecurity programmes was carried out. This included a debriefing with DLP and Abt Associates. Recommendations included the greater use of private sector technical advisers and limited value in direct farmer training and awareness raising, the use of risk assessment to better determine and focus entry points and the need to provide poultry health information as an overall package, not solely focusing on biosecurity and HPAI.
- An informative meeting with private sector on biosecurity was held in Hanoi on 5 March 2010. The event was attended by representatives from Luong My Poultry Company, Charoen Pookhapand (CP) group, Vietnam Poultry Association, Animal Feed Company, DLP, VIRA, Directorate for Standards, and Phap Luat Newspaper.
- The Poultry Production and Biosecurity Adviser to support biosecurity activities was recruited in January 2010. ToR finalized during the last quarter of 2009.
- Hatchery and breeding farm registration pilot and design activity implementation has been completed in Can Tho (10 Communes of Co Do District). Data collection for mapping and updating the database on hatchery and breeding farm registration is now complete for Can Tho and results have already been presented to Can Tho provincial government. Based on feedback from the sub-DAH, a modified approach is being developed to launch the remaining four pilot provinces.
- Preliminary actions were carried out to develop a participatory approach for developing biosecurity guidelines. The selection of the provincial focal points has been an important step in facilitating the dialogue between the stakeholders and is ongoing. Two potential focus groups have been identified and further 2-4 groups are needed before launching the field work.
- Assessment on current animal production situation in Kien Giang and Quang Tri has been conducted through provincial poultry profiling exercises. Additionally, data is now complete for Can Tho and almost complete for Hung Yen. The data collection for current animal production is ongoing.

- A discussion paper was prepared which proposes that HPAI control programmes be subdivided into geographically distinct areas based on the emerging understanding of production systems and disease epidemiology.

Activity 7.2 Biosecurity guidelines and training

- The eight Biosecurity Working Group Meeting took place on 19 January 2010 in HCMC. A total of 48 participants (32 men and 16 women) attended the meeting. They were from the Development Alternative (DAI) Stop AI project, USAID, FAO, DLP, RAHO 6, RAHO 7, National Agriculture Extension Center in the South, Center for Animal Research and Development of Southern Viet Nam (VIGOVA), IPSARD, Institute of Agricultural Economics and Techniques in the South, HCMC University, Berkeley University, An Giang Department of Agriculture and Rural Development (DARD), An Giang AEC, Dong Thap DARD, Abt Associates, CARE, AusAID, VAHIP, Asian Veterinary and Livestock Services (ASVELIS), Vietnam Poultry Association (VIPA), and SDAH-HCMC. The working group considered duck production and how to improve biosecurity within the duck production systems. FAO produced a discussion paper for the meeting.
- The database of biosecurity materials is being consolidated and will be shared with relevant partners. Currently ongoing.
- FAO continued to provide technical biosecurity advice to partners.

Output 8: Communications capacity [AIMEBA code CC1]

Activity 8.1 Support provided to the National Communications Officer

Disease outbreak update reports continued to be translated and disseminated.

Activity 8.2 Technical support for training and other materials

- Identification of key information, education and communication materials including how they will be delivered is ongoing and coordinated by the technical expert and the communications assistant.
- A number of resources were identified as needed during the International Biosecurity consultancy and these will now be developed together with a private sector extension system to enhance the delivery of such materials.
- A road show was carried out in the five pilot provinces from 4 to 6 February 2010. A car with speakers and one large sticker on each side of the car circulated around main cities in the pilot provinces (Hung Yen, Ha Nam, Quang Tri, Can Tho and Kien Giang). Furthermore, 200 stickers, banners and 100 calendars were distributed among the provinces' population to enhance awareness on the risk of HPAI outbreak, especially during the TET festival period.

The project funded Communication Assistant and FAO staff participated in the BCC Working Group meeting on 22 January 2010.

Planned activities for the next quarter

Output 1: Strategy development AIMEBA code PP1]

Activity 1.1 Pandemic preparedness plan review

FAO will carry out a discussion with potential international consultants to explore if the Animal Health component of the Pandemic Preparedness Plan could be carried out even if the Human Health component is taken up later by WHO. Consultative meetings will be held with DAH and WHO on the feasibility of reviewing the Animal Health component unilaterally.

Activity 1.2 Contingency plan for animal disease outbreak

Review of the contingency plan for animal disease outbreak was discussed with DAH and the opinion emerged that the contingency plan is not much in use any more in view of the

Operational Strategy described in the Green Book. Therefore, this activity needs to be removed from the project workplan.

Activity 1.3 National HPAI control strategy review

Following the presentation of the Green Book mid-term review on 8 March 2010 by the GoVN, there is a probability that the Green Book will be replaced with a 'Blue Book' delineating further strategy for HPAI control from year 2010 - 2015. FAO waits for GoVN decision before planning further actions.

Output 2: Coordination and communication [AIMEBA code PP2]

Activity 2.1 Core FAO Viet Nam team

- Extend and renew contract of staff as and when necessary.
- Continue coordination and planning meetings with all stakeholders.

Activity 2.3 Annual project meeting supported

Schedule the field quarterly reporting meeting.

Output 3 : Animal surveillance [AIMEBA code AS1]

Activity 3.1 Strengthening of veterinary laboratories

- Continue providing technical inputs by national and international laboratory experts.
- Continue providing support to the LabNet server and tele-hosting maintenance.
- Organize the maintenance of the lab equipment.
- Labnet Workshop will be held from 11 to 13 May 2010 in Ho Chi Minh City (HCMC).
- Support and coordinate the RAP sponsored/organized training on Animal Health Influenza Surveillance Training Workshop to be held in HCMC in April 2010.

Activity 3.2 Strengthening of the core capacities for animal health staff

- Continue providing technical inputs by national and international experts.
- Continue support for field activity.
- A LoA with DAH on the implementation of Risk-Based Active Surveillance will be prepared in April 2010.
- Stickers and calendars have been provided to veterinary medicine shops for distribution to farmers whenever they have issue among their poultry flock. This activity is ongoing until the end of the project.
- Monitor the LoA with RUDEC on the cost-effectiveness study on surveillance.
- A final review of SOPs for outbreak investigation and response is planned in July 2010.
- Monitor the implementation of the passive surveillance programme.

Activity 3.3 Development of M&E expertise

- A joint FAO-Abt M&E 1-day training Workshop will be organized in April 2010 targeting provincial coordinators focal points in pilot provinces, Abt Associates staff and Provincial Department of Preventive Medicine. The main topics would include general M&E principles and USAID PMP.

Activity 3.4 Support of the epidemiology network

- Continue providing support to TADinfo.
- Continue supporting AVET coordination and activities. The second AVET training is planned to start on 10 May 2010. Trainees of this second AVET course will be selected particularly from SDAH of the project's (OSRO/RAS/604/USA Baby 06)10 pilot provinces for Year 2 and Year 3.
- Prepare tentative schedule for the two other AVET training courses to be conducted in September 2010.

Outputs 4 and 5: Priority procurement [AIMEBA code AS3 & AR1]

Support procurement for lab equipment maintenance.

Output 6: Effective and timely animal response [AIMEBA code AR2]*Activity 6.1 HPAI risk mapping updated*

Coordinate with RAWG on an approach to updating risk mapping for HPAI.

Activity 6.2 Outbreak investigation

- Field teams in place and field visits to pilot provinces if suspicious cases reported and if outbreak occurs.
- Continue providing support for the enhanced reporting and strengthened outbreak investigation and response through the LoA FAVIE 09/54.

Activity 6.3 Epidemiology with human health

Identify field linkages with WHO with respect to human and animal health protocols.

Activity 6.4 Value chain analysis in border areas

- Cost-effectiveness of surveillance study will be ongoing during the second quarter of 2010.
- Review market risk analysis study (FAO-RVC-DAH from OSRO/VIE/701/UNJ Project), risk assessment of market chain in Kien Giang and risk analysis work carried out by Abt Associates.
- Develop work plans for risk mitigation measures in the pilot poultry markets (Dong Ha Central market and Phu Ly Central market) through a stakeholder approach.

Activity carried over from Year 2: vaccine inventory system

Finalise the development of a pilot excel spreadsheet-based system.

Activity 6.5 Vaccination monitoring

- DAH will submit and finalise the report based on LoA FAVIE 09.15 by May 2010 with the analysis of the data of the second round of 2009 post-vaccination surveillance for Influenza AH5N1.
- FAO will sign a new LoA with DAH for the first round of 2010 for post-vaccination monitoring and virus circulation.
- Report on vaccine efficacy trials will be reviewed and finalized.

Output 7: Better biosecurity practices [AIMEBA code AR3] (from Year 2)*Activity 7.1 Biosecurity strengthening in five pilot provinces.*

- Document an approach to hatchery registration based on experiences in the Can Tho district trial and launch a hatchery registration and mapping exercise in the remaining four provinces.
- Complete provincial profiling for future risk analysis assessment in Ha Nam and Can Tho using existing data, and conclude with a series of stakeholder meetings and participatory mapping exercises.
- Conduct a risk analysis (RA) exercise for region 7 including provincial risk analyses exercises for Can Tho and Kien Giang Provinces and pilot a regional approach to risk analysis, building capacity at the provincial level to carry out risk assessments. The risk analysis exercise will utilize provincial profiles to develop a regional poultry profile. Outcomes of the RA exercise will support strategic approaches and plans for vaccine, surveillance and other control measures within the region.
- Commence implementation of monthly poultry commodity price monitoring in all five pilot provinces.

Activity 7.2 Biosecurity guidelines and training

- Biosecurity Training Programme will be developed in the pilot provinces and will consist of three elements (1) *Training for district level DAH and Extension Officers* on biosecurity using a training module developed by FAO (2) *Training programme for Private Sector* agri-vet store owners and vet pharmacies (those who advise commercial poultry farmers); and (3) *Stakeholder Field Schools* which will develop and test biosecurity interventions at the farm level to ensure pilot approaches are effective and adopted by farmers.
- Continue to provide support to the Biosecurity Working Group through technical meetings and the dissemination of documents.
- Provide technical biosecurity advice to partners.
- Consolidate the database of biosecurity materials.
- Carry-out a review of biosecurity activities and provincial programmes to determine what has been effective and why, and to support provinces to develop strategic approaches to biosecurity strengthening and to develop good practices and lessons learned for biosecurity activities.

Output 8: Communications capacity [AIMEBA code CC1]

Activity 8.1 Support National Communications Officer

Continue to translate and disseminate the Disease Outbreak Update Report.

Activity 8.2 Technical support for training and other materials

- FAO will liaise further with DAH and assess the need for technical and or financial support for the development and the production of a DAH bulletin.
- FAO will compile all BCC material produced and will transmit hard and /or soft copy to Abt Associates as requested by the BCC Working Group.
- FAO will pilot a public-private sector model for the delivery of poultry farmer extension information.

Main challenges encountered and response provided

No major challenges were encountered during the reporting period.

Main progress made towards the achievement of project outcomes (since the start of the project)

Output 1: Strategy development [AIMEBA code PP1]

- A risk-based approach to disease control has been developed and USAID project activities are being strengthened and developed to ensure that risk reduction is cross-cutting strategy in each. FAO is advocating and building capacity within partners for a progressive shift from mass application of disease control measures to smart disease control based on risk analysis and the optimum utilization of resources.
- Consideration of a regional approach to HPAI control rather than a provincial one has been promoted and is attracting interest, featuring in Green Book review and several International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) documents.
- Provincial poultry sub-sector profiling has been effective in describing provincial poultry populations (including the Poultry Atlas) and DLP is considering adopting such an approach more widely.

Output 2: Coordination and communication [AIMEBA code PP2]

- Programme management and planning, and coordination of activities with USAID and other partners have been maintained. FAO has made 11 major recommendations for the Green Book Review which were well received by the Government of Viet

Nam and the recommendations were taken into consideration during the Government Green Book Review in November 2009 and presented in March 2010.

- The Biosecurity Working Group has widely networked information and lessons learned between a large number of agencies working on biosecurity and poultry production. Significant capacity has been built through the information exchange and network created which has now been taken over by DLP

Output 3: Animal surveillance [AIMEBA code ASI]

- The project is carrying out animal surveillance activities which include support in relation to upgrading of TAD-info® and the Laboratory Information System (LabNet), development of GIS at the Regional Animal Health Office (RAHO), Short Message Service (SMS) pilot study and Veterinary Epidemiology capacity building.
- TAD-info® has served as the official livestock disease reporting system of the Government of Viet Nam for HPAI and other priority diseases. The disease reporting system has been established in 64 provincial SDAHs.
- A database of the administrative map of Viet Nam has been procured and upgrading of TAD-info® modules has been completed and downloaded on DAH training server with technical support from FAO headquarters. Today 210 officers from SDAH, 14 RAHO staff and five DAH Epidemiology staff have increased their capacity to use this software through training.
- Seven units of Global Positioning System GPS and seven licenses of mapping software (ArcView/ArcGIS 9.2) have been provided to seven RAHOs (I-VII). A total of 55 participants from 7 RAHOs were trained during the basic and refresher training course on ArcGIS and GPS along with on-site mapping which has increased the use of GIS application for animal surveillance in Viet Nam.
- The project has also developed a Database System Software for Laboratory Diagnostic Management within the DAH's LabNet through the services of a local firm. Laboratory biosafety and quality assurance is being upgraded and standardized by the introduction of powered air purification respirator and the homogenizer at NCVD at all diagnostic centres.
- The SOPs for H5N1 Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) has been modified with new N1 primers. Genetic analysis of new virus isolates of early 2009 has been done for HA gene sequence, which showed that the similar virus continued to circulate in 2009. The initiative to add epidemiological information to the genetic sequence data from Viet Nam in the public domain has started. Follow-up on-site trainings at the NCVD and some RAHOs are ongoing including the validation of current protocol of molecular diagnosis with new viruses isolated in 2009.
- In 2009 FAO staff working closely with DAH to finalise SOP and Job Cards to create a sound foundation on which Viet Nam's veterinarians can standardise their approaches to the control of Avian Influenza. This has been well received by the government. DVS, SDAH and CAHW training will be carried out in 2010. Also the Animal Health component can easily be modified for use with other important animal diseases such as Duck Plague, Rabies and Foot and Mouth Disease.
- The campaign on encouraging poultry farmers to report any unusual event in poultry flocks leading to suspicion of an infectious disease through TV spots and loudspeakers during the risk period, e.g. TET festival, has created better awareness on the necessity to report diseases on time.
- The AVET initiative, specifically on curriculum development and start up of short training courses, is one of the most important capacity building initiatives being undertaken to improve the planning, implementation and monitoring of HPAI control

in Viet Nam. The first batch of trainees have completed the AVET Programme and the second batch is expected to start from 10 May 2010. Availability of field staff with veterinary epidemiology training will enhance epidemiological skills at the field for better understanding of HPAI disease transmission and maintenance cycle.

Output carried over from Year 2: Wild bird surveillance [AIMEBA code AS2]

More than 300 copies of the Wild Bird Manual have been translated into Vietnamese and distributed to 63 provinces.

Output 4 and 5: Priority procurement [AIMEBA code AS3 & AR1]

Procurement of vehicles, IT equipment, equipment sprayers and most lab consumables is complete to support AS3 and AR2 and all are in use.

Output 6: Effective and timely animal response [AIMEBA code AR2]

- Cross-borders study in the North of Viet Nam concluded that due to high financial return for poultry, smuggling across the border has not decreased but has become more elaborate. The stakeholders place greater value in potential income than the risk of disease infection for their domestic poultry flocks. As a result, they do not apply adequate measures to prevent the disease. Prevention of cross-border movement is constrained by limited human resource, a large geographic area, plus active and sophisticated informal/illegal trading systems.
- Post-vaccination monitoring and virus circulating surveillance for Influenza AH5N1, supported by this project shows that about 60 percent of vaccinated poultry birds and about 75 percent of poultry flocks that have had appropriate vaccination generate a good protection against influenza virus. However, virus circulation surveillance demonstrates that AI virus is circulating widely throughout the national flock. FAO is providing epidemiological advisory to DAH to ensure that this important activity is carried out using a methodology which will meet the highest international standards.

Output carried over from Year 2: Vaccine production

- A training course on GMP was conducted for key stakeholders such as Viet Nam's National Veterinary Company (NAVETCO), Viet Nam's Veterinary Vaccine Company (VETVACO) and DAH. The training course covered introductory-level Good Manufacturing Practice (according to the 2009 PIC/S³ Code of GMP) and quality systems applicable to the manufacture of AI⁴ vaccines. Audits of two vaccine production facilities were conducted, with a focus on the AI vaccine processes and emphasis on packaging of vaccines and the associated facilities including GMP compliance. The project has continued to provide technical support to the needs assessment and planning on domestic AI vaccine production, including hiring a national consultant to analyse the current situation of vaccine inventory at the field level and develop a database for vaccine inventory system.

Output carried over from Year 2: cold chain appraisal

The operational appraisal of cold chain integrity is complete and 39 provinces were provided with walk-in cold rooms.

³ PIC/S = Pharmaceutical Inspection Convention / Pharmaceutical Inspection Co-operation Scheme

⁴ AI = Avian Influenza H5 N1

Output 7: Better bio-security practices [AIMEBA code AR3] (from Year 2)

- Provincial profiling and risk analysis work is providing implementers with useful information to better target biosecurity initiatives. This includes assessments of live bird markets and description of risk pathways to and from those markets.
- A Biosecurity Working Group has been established to act as a focal point to implement the biosecurity activities considered to be a major long-term risk reduction initiative (also see above- Coordination).
- A framework for a database on biosecurity materials has been developed and its consolidation is in progress. The approach to develop this database was developed during one of the Biosecurity Working Group's meetings and over 100 documents have now been compiled in a searchable format. This is now ready for dissemination. Biosecurity activities of all agencies engaged in related work have also been mapped.
- The working group also reviewed work on hatchery biosecurity, and training on the principles of biosecurity and on biosecurity auditing was provided to 16 members of the biosecurity working group. Longer-term, tailored biosecurity technical materials and risk communication approaches will be developed through focus groups and stakeholder discussions to ensure that biosecurity measures are more demand-driven and appropriate. The selection of provincial focal points is an important first step in facilitating the dialogue between the stakeholders and has contributed to enhance strengthening of biosecurity practices in the five pilot provinces.
- Continuing technical support has been provided to partners including technical reviews and extensive comments to provincial package implementing partners, Abt Associates and AED, relating to their biosecurity training programmes.
- FAO and Abt associates have liaised on hatchery technical training and registration schemes. The biosecurity coordinator will document existing registration practices in operation in selected provinces. Abt and FAO will jointly develop an approach to be piloted in USAID funded provinces.

Output 8: Communications capacity [AIMEBA code CC1]

- A total of 3 000 copies of calendar 2008 with 12 key messages on avian influenza prevention and control have been produced and distributed to 63 provinces, 45 districts, 503 communes and other relevant government agencies, donors and NGOs. FAO is repeating the calendar and sticker production and distribution for pre-Tet 2010 giving one message: to call the hotline or SDAH landline to report ill and dead poultry under the Enhanced Reporting Component. USAID partners are participating in the review of materials.
- In 2008, FAO also produced a 10-minute documentary about Viet Nam's experiences in dealing with HPAI from the animal health perspective. A total of 200 Video CD in Vietnamese, 300 DVDs in English and 200 DVDs in Vietnamese were prepared and widely distributed. Under the GETS project, AED produced a commercial, for which the second part will be used in the pilot provinces for this project, which encourages poultry owners to report ill and dead poultry to SDAH via Hotline or SDAH phone numbers.
- Support to DAH communications has been maintained.
- Technical support to Abt Associates in implementing field activities has been maintained.

2nd Quarter 2010

Project Monitoring Sheet: OSRO/RAF/717/USA**Reporting period:** April – June 2010

Regional component: OSRO/RAF/717/USA
Country: Regional West and Central Africa
Project title: HPAI early warning, early response and preparedness strategy support in western and central Africa
Code: OSRO/RAF/717/USA
Budget: USD 432 000 (Phase I), USD 1 000 000 (Phase II) Total budget: USD 1 432 000
Effective starting date: 1 March 2008
Planned end date: 30 September 2010
Context of the project Highly Pathogenic Avian Influenza (HPAI) in western and central Africa is effectively prevented and controlled through improved early warning and diagnosis capacities, effective national plans and enhanced coordination and information sharing between neighbouring countries.
Objectives of the project The main objective is to assist countries in western and central Africa in enhancing their capacities to prevent the introduction of HPAI and to respond efficiently to HPAI outbreaks. The goal is to limit the spread of the disease in the sub-region and to minimize its negative social and economic impacts. Improving each country's capacity to prevent and control HPAI will accomplish the following: <ul style="list-style-type: none"> • Protect human health and prevent a human pandemic; • Maintain and develop the poultry sector as a valuable source of protein and income for all actors within the poultry chain (including women and the rural population); • Strengthen national and regional capacities to address other transboundary animal diseases (TADs).
Planned activities <u>A. Activities related to project Phase I</u> Record the commentary for polymerase chain reaction (PCR) standard operating procedures (SOPs) video (English and French). Post on the website the SOPs for an operational contingency plan (CP). <u>B. Activities related to project Phase II</u> Output 1.1: Establish regional epidemio-surveillance networks to support the national network. <i>1.1.1 Support passive and active surveillance in key countries.</i> Finalize the various studies on active surveillance in Burkina Faso, Côte d'Ivoire and Benin.

Output 2.1: Through RESOLAB networking activities, strengthen diagnostic capacity at laboratory and field levels.

2.1.1. Promote laboratory diagnostic test quality assurance and inter-laboratory proficiency testing rounds and avian influenza (AI) and Newcastle disease inter-laboratories proficiency testing round.

Analysis and distribution of 2009 AI and Newcastle disease proficiency test exercise that involved 21 out of 23 network labs.

Output 3.1: Poultry associations are supported and private-public partnerships are enhanced (regional and national) for a better understanding of the sector and the identification of practical and cost-effective investments/measures.

3.1.1 Building on previous poultry sector reviews, develop sustainable private-public partnerships to produce and maintain updated information and data (including geo-referenced maps) on poultry sector responses to veterinary services and private sector needs. (Benin, Burkina Faso, Côte d'Ivoire, Ghana and Togo)

Finalize the consultation process and prepare a project document for Benin, Burkina Faso, Côte d'Ivoire, Ghana and Togo.

Advocate for the development of a private-public database/information system on the poultry sector as a means to better prevent and control HPAI and any other existing or emerging disease in the poultry sector.

Output 3.2: Improve biosecurity throughout the poultry chain.

3.2.1 Building on Stamping out Pandemic and Avian Influenza (STOP AI)/FAO training workshop, develop and disseminate multimedia modular training tools on biosecurity, including cost and benefit studies.

Finalize the development of the toolkit, including training modules, technical brochures and documented best practices for biosecurity. The training tools will be published and distributed to targeted users.

3.2.2 Conduct biosecurity pilot operations on live bird markets (LBM) (Benin, Togo, Guinea Bissau, Ghana, Côte d'Ivoire, Burkina Faso, Gambia and Niger).

The implementation of operations in Benin, Burkina Faso and Côte d'Ivoire will be completed. Implementation should be well advanced in Mali.

Output 3.3: Poultry and poultry product zoo sanitary certificate has been tested and adapted with the Economic Community of West African States (ECOWAS) for use at the regional level.

3.3.1. Support ECOWAS for the promotion and adoption at the regional level of relevant zoosanitary and trade regulations and support the use, in a pilot phase, of a harmonized zoosanitary certificate for poultry and poultry products.

The implementation of the field test operations will be launched and completed in Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali and Togo (covering 16 border posts). Results and recommendations resulting from these tests will be made available.

Output 4.1: Epidemio-surveillance and laboratory network data collection and management are actively supported through national databases and specific gateways within the regional website and Geographic Information System (GIS) services are developed.

4.1.1 Support networking activities through the existing website to facilitate overall information sharing and networking harmonization on laboratory diagnosis, epidemio-surveillance, socio-economics and production and related communications. This is also a tool to improve the donor visibility in Africa.

News and updates from the network will continue to be published on the website.

4.1.2 Implement and improve data management on animal health issues (zoo sanitary database), including active collaboration with the Strategy for Revitalization of Agriculture (SRA)/African Union – Inter-African Bureau for Animal Resources (AU-IBAR) project. This will facilitate a Pan-African information/knowledge management component linked to other Regional Animal Health Centres (RAHCs).

Provide computers, install TADinfo and train veterinary service personnel in Niger and Gambia.

Activities undertaken during the reporting period

A. Activities related to project Phase I

- Record the commentary for PCR SOPs video (English and French): still to be done.
- Post on the website the SOPs for an operational CP: As an example for the sub-region, the compensation operational plan developed for Togo has been posted (<http://www.fao-ectad-bamako.org/fr/Modalites-de-paiement-des>) as well as the World Bank (WB), International Office of Epizootics (OIE) and Food and Agriculture Organization of the United Nations (FAO) recommendations on this subject.

B. Activities related to project Phase II

Output 1.1: Establish regional epidemio-surveillance networks to support the national network.

1.1.1 Support passive and active surveillance in key countries.

AI active surveillance protocol among domestic ducks has been finalized with Padova and International Cooperation Centre of Agricultural Research for Development (CIRAD) for Burkina Faso, Côte d'Ivoire and Benin. Financial supports for sampling and lab testing have been granted to the said countries.

Output 2.1: Through West and Central Africa Veterinary Laboratory (RESOLAB)

networking activities, strengthen diagnostic capacity at laboratory and field levels.*2.1.1. Promote laboratory diagnostic test quality assurance and inter-laboratory proficiency testing rounds for AI and Newcastle disease.*

The results of the 2009 inter-laboratory proficiency testing rounds for AI and Newcastle disease have been disseminated in April 2010. The analysis of compiled results is ongoing. This exercise involved 18 out of the 23 labs of the RESOLAB network.

Output 3.1: Poultry associations are supported and private-public partnerships are enhanced (regional and national) for a better understanding of the sector and the identification of practical and cost-effective investments/measures.*3.1.1 Building on previous poultry sector reviews, develop sustainable private-public partnerships to produce and maintain updated information and data (including geo-referenced maps) on poultry sector responses to veterinary services and private sector needs. (Benin, Burkina Faso, Côte d'Ivoire, Ghana and Togo)*

In Burkina Faso and Togo a quite dynamic consultation process between stakeholders took place and resulted in a first version of a project document formulated in a fully participatory way. Further exchanges are happening including the Emergency Centre for Transboundary Animal Disease Operations (ECTAD)-Bamako to jointly improve the document, particularly in view of its submission to donors and the sustainability of the structure to be set.

In Benin and Cote d'Ivoire, there was a disagreement between stakeholders on where to locate the database, which had delayed the work. Difficulties seem to have been overcome, and it is expected that the first version of the project documents will be submitted during the first fortnight of July.

On various occasions (missions, meetings, etc.), the ECTAD-Bamako experts had the opportunity to advocate for the development of such a private-public database/information system on the poultry sector, as a means to better prevent and control HPAI and any other existing or emerging diseases in the poultry sector.

Output 3.2: Improve biosecurity throughout the poultry chain.*3.2.1 Building on STOPAI/FAO training workshop, develop and disseminate multimedia modular training tools on biosecurity, including cost and benefit studies.*

The developed toolkit, including training modules, technical brochures and documented best practices for biosecurity, will be widely distributed to targeted users and parts of it will be posted on the FAO-ECTAD website: www.fao-ectad-bamako.org.

3.2.2 Conduct biosecurity pilot operations on LBM (Benin, Togo, Guinea Bissau, Ghana, Côte d'Ivoire, Burkina Faso, Gambia and Niger).

The biosecurity pilot operations, designed in close collaboration with market actors and administrators as well as the respective national veterinary services are being implemented in Benin, Burkina Faso and Côte d'Ivoire.

Output 3.3: Poultry and poultry product zoo sanitary certificate has been tested and adapted with ECOWAS for use at the regional level.

3.3.1. Support ECOWAS for the promotion and adoption at the regional level of relevant zoosanitary and trade regulations, and support the use, in a pilot phase, of a harmonized zoosanitary certificate for poultry and poultry products.

Sixteen border posts in Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali and Togo had been identified in March to perform a field test of the zoosanitary certificate. During the reporting period, Letters of Agreement (LoAs) have been signed in each country with the veterinary services who will be responsible for the implementation of the test.

Output 4.1: Epidemio-surveillance and laboratory network data collection and management are actively supported through national databases, and specific gateways within the regional website and GIS services are developed.

4.1.1 Support networking activities through the existing website to facilitate overall information sharing and networking harmonization on laboratory diagnosis, epidemio-surveillance, socio-economics and production and related communications. This is also a tool to improve the donor visibility in Africa.

News and updates from the network will continue to be published on the website.

4.1.2 Implement and improve data management on animal health issues (zoo sanitary database), including active collaboration with the SRA/AU-IBAR project.

National Epidemiology Units of Côte d'Ivoire and Guinea Bissau were provided with computers and TADinfo software. The training for the software use was carried out by an ECTAD expert from Bamako.

The *coup d'Etat* that occurred in Niger has led to a postponement of the installation in that country.

Planned activities for the next quarter

A. Activities related to project Phase I

Record the commentary for PCR SOPs video (English and French).

B. Activities related to project Phase II

Output 1.1: Established regional epidemio-surveillance networks to support the national network.

1.1.1 Support active surveillance in key countries (Burkina Faso, Côte d'Ivoire and Benin)

Output 3.1: Poultry associations are supported and private-public partnerships are enhanced (regional and national).

3.1.1 Building on previous poultry sector reviews, develop sustainable private-public partnerships to produce and maintain updated information and data on poultry sector responses to veterinary services and private sector needs.

Finalize the national project documents for Benin, Burkina Faso, Côte d'Ivoire and Togo.

Output 3.3: Poultry and poultry product zoo sanitary certificate has been tested and adapted with ECOWAS for use at the regional level.

3.3.1. Support ECOWAS for the promotion and adoption at the regional level of relevant zoosanitary and trade regulations, and support the use, in a pilot phase, of a harmonized zoosanitary certificate for poultry and poultry products.

Output 4.1: Epidemio-surveillance and laboratory network data collection and management are actively supported through national databases and specific gateways within the regional website, and GIS services are developed.

4.1.1 Support networking activities through the existing website to facilitate overall information sharing and networking harmonization on laboratory diagnosis, epidemio-surveillance, socio-economics and production and related communications.

Main challenges encountered and response provided

There is still a need for closer cooperation with technical organizations such as: the AU-IBAR, the OIE and other implementing partners (USDA/APHIS, STOP-AI). There is also a need for a better support by or anchorage with Regional Economic Communities (RECs) such as ECOWAS and West African Economic and Monetary Union (UEMOA) in western Africa and Economic Community of Central African States (ECCAS) and Central African Economic and Monetary Community (CEMAC) in central Africa. This would enhance the impact and sustainability of the various activities and networks put in place by FAO-ECTAD under USAID financial support in the region.

Some activities were difficult to implement owing to the high level of political input required. This was the case for testing the regional zoo sanitary certificates in order to improve the traceability and biosecurity in the trade of poultry and poultry products.

The adoption of participatory approach in the design of biosecurity operations in LBMs and the setting of national poultry data centre delayed the beginning of the implementation of such activities.

Main progress made towards the achievement of project outcomes (from the start of the project activities)

The activities planned under this project were aimed at national and regional technical capacity building in order to improve preparedness and early warning and response to HPAI outbreaks. For the project extension phase, a range of activities was carried out: disease intelligence and biosecurity, information and data management. On the human resources side, these activities relied mainly on FAO-ECTAD expertise at the regional animal health centre in Bamako, but also on national expertise in some selected countries (via national consultants (NCs)). To date, most of these activities have been implemented.

This project contributes significantly to the efforts made by countries, regional organizations, and technical and financial partners to build capacities for prevention and control of HPAI and other similar TADs in the region.

This USAID support contributed significantly to the following major achievements:

- Livestock sector and animal health issues in particular are gaining more recognition/attention from the general public and the policy decision-makers;
- Good biosecurity practices promoted by livestock actors (producers, traders, transporters, etc.) to cope with disease-related constraints and to improve the management of their flocks for safe animal production;
- Public-private partnerships to encourage a better integrated approach towards controlling HPAI and other poultry diseases;
- Useful and updated data were collected, analyzed and disseminated to target audiences through the various networks put in place: RESOLAB (laboratory network), RESEPI (epidemiology network), RESECOP (socio-economics and productions network) and RESOCOM (communication network). Information in both English and French is made available to animal health stakeholders through the FAO-ECTAD website: www.fao-ectad-bamako.org;
- Support to all AI outbreak containment in West Africa and Cameroon through provision of personal protective equipment (PPE), technical advice, etc;
- Laboratories were provided with required equipment and their technical staff regularly trained;
- Capacities of national epidemio-surveillance and diagnostic laboratories were enhanced for timely and efficient outbreak investigation, disease laboratory confirmation and response.

Indeed one of the most significant achievements was also the launching and support of the RESOLAB network in December 2007 in collaboration with the United States Department of Agriculture (USDA)/ Animal and Plant Health Inspection Service (APHIS). This launching of RESOLAB was done in collaboration with OIE and AU-IBAR within the framework of the RAHC of Bamako, Mali. The RESOLAB network is coordinated by FAO-ECTAD with the objective to enhance the effectiveness and efficiency of the 23 national veterinary diagnostic laboratories of western and central Africa. Since its launching, the RESOLAB organized the training of more than 170 lab technicians from the 23 countries on HPAI laboratory diagnosis and on quality assurance including CPs and emergency procedures. The network's main laboratories were assessed, and all technicians participated in two proficiency test rounds organized in collaboration with OIE/FAO reference laboratory for AI and Newcastle disease of Padova. Three annual coordination meetings were held and publications on West Africa isolates of AI virus strain were made in scientific journals¹. The most significant achievements of RESOLAB thus far, owing to its local collaborative arrangements put in place, is the reduction of HPAI laboratory confirmation delay from an average of 30 days in 2006 (Niger, Nigeria, Cameroon, etc.) to two days (Togo) and one day (Nigeria) in 2008.

The regional networking approach and the sharing of information and expertise have significantly contributed to the harmonization of strategies and protocols and to capacity building, a key element for sustainability.

¹ EID. 2008. *Reassortant avian influenza virus (H5N1) in poultry, Nigeria, 2007*, 14 (4):637-40; **PLoS ONE**. 2009. *Highly Pathogenic Avian Influenza Virus Subtype H5N1 in Africa: A Comprehensive Phylogenetic Analysis and Molecular Characterization of Isolates*, 4(3):e4842; EID. 2009. *Introduction into Nigeria of a Distinct Genotype of Avian Influenza Virus (H5N1)*, 15:445-7.

Biannual Report for the IDENTIFY Project

Reporting institutions: FAO

Reporting period: 1 April - 30 September 2011

Planned activities: 1 October 2011 – 31 March 2012

Project Title: IDENTIFY

Regional component: Global
Countries: 4 "hot spots": <ul style="list-style-type: none"> - Congo Basin: Uganda, Democratic Republic of Congo, Cameroon, Republic of Congo, Tanzania, Gabon, Equatorial Guinea, Rwanda, Central African Republic, South Sudan - Southeast Asia: Cambodia, China, Indonesia, Lao Peoples Democratic Republic, Malaysia, Myanmar, Philippines, Thailand, Vietnam - South Asia: Bangladesh, India, Nepal (future activities pending)
Project title: IDENTIFY
Code: OSRO/INT/902/USA
Budget: US\$ 16.5 million (US\$ 13 million without OIE : US\$ 3 million for first year, US\$ 4 million for second year, 6 million for October 2011-September 2012)
Effective starting date: December 2009
Planned end date: 30 September 2012
Context of the project <p>This project is part of a complex program--Emerging Pandemic Threats (EPT)--designed by USAID and aimed to find and implement mechanisms to detect disease emergences, especially from wild life. The One Health concept is an important component of the whole program. The IDENTIFY project is implemented jointly by the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), and the World Health Organization (WHO).</p>
Objectives of the project <p>The IDENTIFY project is intended to strengthen diagnostic capacities through the development of laboratory networks spanning animal and human sectors with the ultimate aim of enabling countries to meet international obligations for disease reporting. Accurate and timely detection of known pathogens should facilitate the rapid recognition of newly emerging pathogens. International reference laboratories capable of fully characterizing the emerging pathogens are an integral part of these networks.</p> <p>The project focuses on several parts of the world defined by the USAID as "hot spots" for emerging diseases where they are more likely to happen: Congo Basin, Southeast Asia, Amazon Basin and Gangetic Plains.</p> <p>The project will collaborate with the other arms of the EPT program: PREDICT, RESPOND, PREVENT, and USAID's DELIVER project. Collaborations are defined through the Lines of Work (LoW) defined by USAID: Pathogen Detection, Outbreak response, Risk determination, and Risk reduction. Each LoW has a defined work plan with activities and sub-activities to which every project team has agreed upon their level of participation (support, participate or lead).</p>
Planned activities <p>A tripartite work plan had been established for years 1 and 2 at the headquarters level. The approach to the project had been fully developed and agreed to among the three partners. For the description of outputs, activities and sub-activities, refer to Work plan Year Two.</p> <p>The planned activities and sub-activities (1 October 2011 - 31 March 2012) are described in the</p>

FAO IDENTIFY Year three Work Plan (submitted on 1 Sept 2011), FAO Log Frame and Gantt Chart (submitted on 6 Oct 2011) and the supplement to the FAO IDENTIFY Year three work plan (submitted on 28 Oct 2011).

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Acronyms & Abbreviations

AAHL	Australian Animal Health Laboratory
AGAH	FAO Animal Health Service
AHSHM	Animal Health Stakeholders Awareness Meeting
AOTR	Agreement Officer's Technical Representative
A-PBA	Asia-Pacific Biosafety Association
APSED	Asian Pacific Strategy for Emerging diseases
ASEAN	Association of Southeast Asian Nations
AU-IBAR	African Union-Interafrican Bureau for Animal Resources
CPBB	Contagious Bovine Pleuropneumonia
CVO	Chief Veterinary Officer
DRC	Democratic Republic of Congo
EARLN	East Africa Regional Laboratory Network
EDPLN	WHO Emerging and Dangerous Pathogens Laboratory Network
EMPRES-i	FAO Global Animal Disease Information System
EPT	Emerging Pandemic Threats
EQA	External Quality Assessment
EQAS	External Quality Assessment Schemes
FAO	Food and Agriculture Organization of the United Nations
FAO-ECTAD	Food and Agriculture Organization of the United Nations Emergency Centre for Transboundary animal diseases
FAO-RAP	Food and Agriculture Organization of the United Nations Regional Office for Asia Pacific
FMD	Foot-and-mouth disease
FRET	Fluorescence resonance energy transfer
FVI	France Vétérinaire International
GFN	WHO Global Foodborne Infections Network
GLNS	Global Laboratory Networking Strategy
HPAI	Highly Pathogenic Avian Influenza
HPED	Regional Cooperation Programme on Highly Pathogenic Emerging and Re-emerging Diseases in Asia
HQ	Headquarters
IAEA	International Atomic Energy Agency
IATA	International Air Transport Association
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
IST	Intercountry Support Team

IZSve	Istituto Zooprofilattico Sperimentale delle Venezie
LANAVET	Laboratoire National Vétérinaire, Cameroon
Lao PDR	Lao People's Democratic Republic
LIMS	Laboratory Information Management System
LoA	Letter of Agreement
MoA	Ministry of Agriculture
MoH	Ministry of Health
NICD	National Institute for Communicable Diseases, South Africa
OFFLU	Joint OIE/FAO Network of Expertise for Animal Influenza
OIE	World Organization for Animal Health
OIE SRR	OIE Sub-Regional Representation
PPE	Personal Protection Equipment
PPR	Peste des petits ruminants
PVS	OIE Performance of Veterinary Services Pathway
QA	Quality Assurance
RVF	Rift Valley Fever
RLNS	Regional Laboratory Networking Strategy
SAARC	South Asian Association for Regional Cooperation
SADC	Southern African Development Community
SADC FANR	Southern African Development Community Food Agriculture and Natural Resources
SE Asia	South East Asia
SEACFMD	Southeast Asia and China Foot and Mouth Disease Campaign
SIB	Swiss Institute of Bioinformatics
SOP	Standard Operating Procedures
STOP AI	Stamping Out Pandemic and Avian Influenza
TC	Teleconference
TCP	Technical Cooperation Programme
USAID	U.S. Agency for International Development
USAID/W	U.S. Agency for International Development/Washington
VC	Videoconference
VRI	Veterinary Research Institute, Malaysia
WAHID	World Animal Health Information Database
WAHIS	World Animal Health Information System
WHO	World Health Organization
WHO AFRO	World Health Organization Regional Office for Africa
WHO SEARO	World Health Organization South East Asia Regional Office
WHO WPRO	World Health Organization Western Pacific Regional Office

Activities undertaken during the reporting period (1 April 2011 – 30 September 2011)

1.1 GLOBAL and activities across more than one region

1.1.1 Activity 3.1.G: Ongoing tripartite project management and coordination, monitoring, and planning

For description and listing of activities completed, see Annex 1 Table 1

- Routine project management at HQ and regional levels continued through weekly/biweekly conference calls, videoconferences as needed, daily email communication, and tripartite face to face meetings between FAO, OIE and WHO as well as the use of the IDENTIFY SharePoint.
- Participation in monthly teleconferences with IDENTIFY project management team and USAID/W AOTR on 19 April, 3 August and 22 September or face to face meetings on 15-16, 28 June and 13 July. .
- Continued rotating system of responsibility sharing on a monthly basis between the three partners in order to more effectively and rapidly handle communication with program partners, day-to-day operations, and logistic arrangements. This system also applies to document creation, revision and meeting hosting. FAO hosted the IDENTIFY secretariat on April, June and September 2011.
- Moreover, project planning was discussed during the following meetings:
 - Tripartite HQ meeting on the Year 3 planning process, Lyon, France, 10-11 May 2011
 - EPT Quarterly Partners meeting, Washington, DC, 27-28 June 2011.
 - USAID and Tripartite Meeting to discuss IDENTIFY and EPT +, Rome, 15-16 Jun 2011

Additionally, side meetings with OIE and/or WHO are indicated in Annex 1, tables 1 to 4.

1.1.2 Activity 3.2.G: Recruitment of project staff (headquarters and regionally) to support IDENTIFY activities

During the reporting period, the following staff were recruited, only for short consultancies:

- FAO consultant (4 months) for further development of the EMPRES-i virus genetic module (exploring the possibility to link with other sequence databases) and updating the national and international laboratory directory.
- IT FAO Consultant (half time- 10 months) for the linkage between the FAO EMPRES-i database and the OpenFlu Influenza database, in the context of the development of the FAO virus genetic module and development of national and international laboratory directory.
- External consultant (8 days) to (1) finalize the review of available diagnostic assays for several IDENTIFY targeted diseases, submit each chapter to a panel of OIE/FAO experts for review and explore potential applications for large scale multiple disease screening; (2) assist with training materials under the OFFLU Technical Activity on Capacity Building.
- External consultant (5 days) to assist in the process for designation of FAO Reference Centres.

1.1.3 Activity 3.3.G: Develop annual IDENTIFY work plan - preparation and review of global, regional, and country-level work plans and other project documents

- During the reporting period, the HQ project team, along with regional IDENTIFY coordinators, developed the IDENTIFY Year 3 Work plans for HQ, Congo Basin, Southeast Asia and South Asia (covering the period from 1 Oct 2011-30 Sept 2012) following the guidance provided by USAID on April 2011 to the EPT partners and on September 2011 to IDENTIFY partners. This process had to be of a consultative nature at the regional level and the identification of areas of coordination among different EPT projects. A tripartite meeting was organized 10-11 May 2011 in Lyon, France, to initiate the tripartite discussions and to define the internal timeline for the tripartite work plan submission.
- USAID presented on 15-16 June a shift in the project's administrative framework, indicating that each organization would prepare a separate work plan and budget. The FAO work plan was developed at Global, regional and country level. Collaboration with OIE and WHO were maintained in the case of bi/tripartite activities. The FAO work plan was initially submitted on 1 September, with revision to log frame format on 6 October, and additional supplemental information submitted on 28 October 2011.
- Project indicators were developed by FAO during the formulation of the work plan and presented in the FAO Log Frame. Indicators were developed at Outcome, Outputs and Activity levels. For the detailed description of the baseline indicators for the FAO contributions to the IDENTIFY project, please see Annex 3. The recruitment of an M&E specialist is being considered to finalize the baseline indicators for FAO contribution to IDENTIFY project.
- The first tripartite biannual report for Year 2 (1 Oct 2010-31 Mar 2011) describing Global and Regional activities was submitted to USAID on 12 May 2011.

1.1.4 Activity 3.4.G: Communication tool development and resource building - to ensure circulation of information, coordination and harmonization of initiatives, implement standard methods of sharing critical project documents for access by project members

- In order to ensure communication and coordination, the IDENTIFY HQ coordinator uploaded key IDENTIFY documents on the SharePoint, as well as reference documents.
- The joint IDENTIFY leaflet (English version) was finalized and validated by the three partners and shared with IDENTIFY project stakeholders.
- A tripartite document was developed in August 2011 together with and agreed by the USAID AOTR (see Annex 2: "USAID EPT/IDENTIFY Project Position on Provision of Laboratory Equipment and supplies"). This document is intended to be shared with the other EPT partners in order to clarify the position of the three organizations regarding the provision of lab equipment under IDENTIFY.

1.1.5 Activity 3.5.G: Review and update of the tripartite Laboratory Networking Strategy (LNS) and future planning

- Within the framework of the GLNS:
FAO consultant continued with the FAO IDENTIFY team the review of available diagnostic assays and cross-cutting technologies for IDENTIFY targeted diseases and large scale multiple disease screening to explore potential applications for large scale multiple disease screening, in particular in the context of developing countries. The draft document comprises tables proposing diagnostic methods of eight different diseases and is still under review of FAO/OIE Reference Laboratories. Tables for ten other priority diseases will be finalized in the next reporting period. (see Annex 3). The animal influenza table has been peer reviewed by experts from FAO/OIE Reference Centres and has been finalized was

submitted in September 2011 to the OFFLU Steering and Executive committee for validation and posting on the OFFLU website.

- In May-June 2011, the three partners updated the Laboratory Networking Strategy (LNS) based upon feedback from the regions, outcomes of the stakeholder's meetings and data from the laboratory mapping. This document provides the framework for the IDENTIFY project activities (see Annex 4).

1.1.6 Activity 3.6.G: Follow-up of laboratory mapping exercise activities

- This effort includes several phases, such as assessment, identification of gaps, and progress monitoring. Mapping of laboratory capacity assessments in FAO networks in Congo Basin and SE Asia has been undertaken using a similar approach in both regions. The compilation of existing documents accessible by FAO on laboratories in beneficiary countries in the two hotspots (e.g. analysis of National Laboratories Annual Reports and FAO laboratory assessments/mission reports, etc.) will be ongoing and will help update current data. For those laboratories that have already been assessed, the mapping activity can now enter the progress monitoring phase. This process will be repeated for any new laboratories nominated by national authorities to receive support under IDENTIFY.
- Following the laboratory mapping results in each region, appropriate action was determined based on the needs of each laboratory in the following areas: follow-up laboratory visits, trainings, workshops, conferences, and procurement and delivery of equipment and supplies. These activities will continue throughout the next reporting period.
- The lists for national and regional laboratories nominated receive support under IDENTIFY has been updated for both regions and were shared with USAID and the EPT partners. The updated lists including the Laboratory focal points for the regional laboratory network were included in the IDENTIFY FAO Year 3 work plan (see Annex 5). The regional service laboratories already nominated to provide disease-based support to each region are also included on these lists. The newly designated FAO Reference Centres will be contacted in the near future to further define their involvement in laboratory networking activities and capacity building serving each hot spot region in support of the laboratory networking strategy in the context of the IDENTIFY project and will be included in the list in the next reporting period.

1.1.7 Activity 3.7.G: Engage with stakeholders to support the development of cross-sectoral approach (es) concerning laboratories

- FAO HQ assisted in the preparation of the SE Asia meeting including contributions to the concept note and agenda; integration of the outcomes from the Third Laboratory Director's Forum (4-5 August 2011); expansion of the existing network to include China (Bangladesh, Cambodia, Indonesia, Lao PDR, Malaysia, Nepal, Philippines, Thailand, Vietnam); participation of key laboratories representing wildlife and PREDICT; liaison with WHO regarding planning for the joint sessions, contributions to working group development and format for joint sessions. This represents the first formal opportunity in the region for a joint meeting of laboratories in both animal and public health sectors.

1.1.8 Activity 3.8.G: Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines, and standards

For description and listing of meetings/trainings supported, see Annex 1, Table 2

1.1.9 Activity 3.9.G: Development of joint meetings and conferences to support networking and promote national laboratory

For description and listing of workshop and trainings completed, see Annex 1, Table 3

- The three partners continue to share training opportunities and collaborate where possible, particularly where public health and veterinary professionals can work together. FAO implemented targeted training programmes based on the outcomes of the AHSHM and the laboratory mapping under the framework of the GLNS/RLNS. Under the effort for validation and transfer of new techniques for multiple disease diagnosis (PCR using the FRET system) (FAO/IAEA), a multiple pathogens detection tool for ruminants poxviruses based on FRET technology and peste des petits ruminants (PPR) virus was developed and validated by FAO/IAEA. For poxviruses, the capripoxviruses were used as model to develop an alternative to FRET assay which can perform on any qPCR machine without the need of FRET Channel. 15 scientists from 11 different countries (Uganda, Democratic Republic of Congo, Cameroon, Republic of Congo, Tanzania, Gabon, Equatorial Guinea, Rwanda, and Central African Republic, Kenya and Ethiopia) were trained to use the PPR real time PCR during the training course in Uganda (20 June-1 July 2011, refer to Annex 1, Table 3) conducted under this reporting period. During the next reporting period, this approach will be extended to other poxviruses, with the aim to differentiate the viral strain within each genus.

For peste des petits ruminants, an internally controlled real time PCR is being validated for an accurate and quality assured detection of PPR virus. This tool will provide a more robust and accurate technique for PPRV molecular diagnosis by real time PCR. It will also provide an alternative method to FRET validated for capripox detection and differentiation, with the potential to be applied to IDENTIFY priority diseases for multiple pathogen detection.

This is an ongoing activity that will continue through the next reporting period; genotyping tools are ready for transfer in Congo basin region. This tool will be disseminated through peer-review paper with acknowledgement made to IDENTIFY financial contribution. Furthermore, the number of labs using these tools will be assessed.

- A revision and adaptation of the existing train-the-trainer system for enhancing field and laboratory diagnosis was initiated by an international FAO Consultant to prepare and conduct a simple, sustainable, regional Train-the-Trainer system on field necropsy, pathology, and linking with laboratories (to be conducted during the next reporting period).

1.1.10 Activity 3.10.G: Promote and support laboratory quality management

- The publication of data from the second part on External Quality Assessment Schemes (proficiency testing) as an EQAS database on the websites of the four organizations (WHO, OIE, FAO and IAEA for the benefit of laboratories and Member States) was discussed and will be finalized during the next reporting period. WHO has finalised the dataset.
- Proficiency testing for PPRV by molecular detection was organised by FAO/IAEA early 2011 and involved 11 countries in total, including 3 IDENTIFY countries (China, Bangladesh and Cameroon). The results were analysed by FAO/IAEA and the feedback provided to the laboratories in April 2011. The preparation of the 2012 proficiency

testing for molecular detection of PPRV for Congo basin and Asian countries was initiated by FAO/IAEA staff and FAO regional coordinators for the Congo Basin. Targeted countries are: DR Congo, Cameroon, Gabon, Central African Republic, Congo, Uganda, Rwanda, Tanzania, Ethiopia and Kenya, China, Vietnam, Bangladesh. This activity will continue through the next reporting period.

1.1.11 Activity 3.11.G: Provide laboratory equipment and supplies in a coordinated manner

- FAO HQ assisted the Congo Basin regional team in the provision of metrology kit, on April 2011, in support of Quality management system (QMS) implementation to Cameroon, DR Congo, Congo, CAR, Gabon, Rwanda, Tanzania and Uganda.
- FAO HQ together with regional team and WHO provided to USAID the preliminary list and justification for the selection process of laboratories to receive 5 real time PCRs, PPE and equipment that remained from the USAID 2009 H1N1 procurement. FAO regional coordinators for IDENTIFY linked with the two regional laboratories suggested for animal health side: LNERV in Senegal and BNVL in Botswana.

1.1.12 Activity 3.12: Support and promote laboratory networks: Assess the role and activities of existing FAO/OIE/WHO networks in improving the laboratory capacity and networking in hot spot regions. Coordinate regional networking to test for normative diseases and detect emerging or unknown pathogens in wildlife, domestic animals and humans

For description and listing of meetings completed, see Annex 1, Table 4

- The first phase of development of the Genetic Module in EMPRES-i (FAO animal disease information database) was completed in June. Webservices were developed to enable the transfer of information between the OpenFlu and EMPRES-i databases. An algorithm was developed to link EMPRES-i outbreak data with publicly available influenza sequences in OpenfluDB (SIB). A validation tool for the linkages proposed in the algorithm was created. Shape files with virus characteristics to overlay on other EMPRES-i maps (e.g. animal densities) were generated. A final meeting was held at FAO HQ with the main partner: the Swiss Institute for Bioinformatics (SIB), 30-31 May to review the results and prepare for the next phase, for validation and production (launch to the public) and development of applications (maps, analytic tools). The Genetic module was presented at several occasions to potential users (e.g. WHO; GISAIID foundation) and was endorsed by OFFLU in April 2011.

The development of a genetic module for other diseases is being discussed. The next Letter of Agreement describing the next phase of work has been prepared and is pending for internal clearance. The frame of a scientific paper that describes the Genetic Module has been drafted with the external partner and the manuscript is planned; the next phase to test and validate the FAO EMPRES-i influenza genetic module will start in November; discussions will be conducted with two other specialized influenza databases to explore linkages between EMPRES-i, and the possibility of a newly developed algorithm will be introduced. The work for integration of future results from the EPT+ project will start shortly.

- The joint "Four-way linking of epidemiological and virological information on human and animal influenza" project assessment mission in Viet Nam in June 2011 reviewed the national-level functional and communication linkages among the 4 sectors critical to controlling health risks from H5N1 influenza at the human-animal interface: Public

Health Epidemiology, public health virology (NIHE), animal health epidemiology (DAH) and animal health virology (NCVD). Twenty-four visits were made to various stakeholders, and details of the mapping were presented to all stakeholders for their inputs in a final workshop. During this workshop, linkages were mapped and gaps identified. The main conclusions of the assessment mission focused around the need for data sharing, improving joint working for case investigation, and improving surveillance systems. A workshop was conducted in Egypt in September (supported under another project) and included didactic presentations, group work, and scenario-based training: the setup of this workshop in Egypt will serve as a blue print for the future workshop in Viet Nam (planning meeting is scheduled for Oct 2011). The didactic materials developed for Egypt are available for workshops in third countries.

- OFFLU developments:

{1} Contribution to WHO Vaccine Selection Process. FAO is involved - together with the OFFLU secretariat based at OIE- in coordination and gathering of data. OFFLU laboratories (i.e. any animal health laboratories that have animal influenza activities and that wish to contribute to OFFLU) are engaged, and a subset of these representing international reference and key regional laboratories are involved in the biannual preparation of data on zoonotic influenza virus strains for the OFFLU contribution to the WHO Vaccine Composition meeting selection process. FAO carries out the compilation, analysis and reporting of information on animal influenza viruses of public health concern from institutions within the OFFLU network. The OFFLU contribution includes the report generated from these collaborations, and a presentation is provided by a nominee from one of the international reference laboratories with an FAO/OIE OFFLU representative. For the last consultancy meeting (26-28 September 2011), OFFLU provided a summary of available epidemiological and molecular data for highly pathogenic avian influenza (HPAI) H5N1 and avian influenza H9N2 for the period 1 February until 20 September 2011. For H5, OFFLU shared new and previously unreported sequences from Bangladesh, Egypt, India, Indonesia, Israel, Lao PDR, Myanmar, and Viet Nam, representing clades 1, 2.1.3, 2.2, 2.2.1, 2.3.2, 2.3.4. The report included 245 H5 sequences (120 non-public and 12 public domain sequences from 2011; 113 non-public 2009-2011). For H9, the OFFLU network contributed 20 pre-2011 sequences (majority from 2009) and one 2011 sequence from Bangladesh. The outcomes of this consultancy process are published on the WHO web under "Antigenic and genetic characteristics of zoonotic influenza viruses and development of candidate vaccine viruses for pandemic preparedness":

(http://www.who.int/influenza/resources/documents/characteristics_virus_vaccines/en/). In support of this ongoing effort, SOPs to aid in the coordination and analysis of data were prepared by FAO for the next VCM scheduled in February 2012 and submitted to the OFFLU Executive Committee on the 15 September 2011.

{2} An FAO international consultant worked 8 days on the selection of many online training materials and resources; the approach for this review was initially discussed with the OFFLU Technical Activity on Capacity building and the outcomes subsequently validated by the same group. In particular, an influenza E-learning Training Module developed under an EU project (FLUTRAIN) was reviewed and comments provided to the developers to aid in improvement of the The outcomes of this review were submitted to the OFFLU Steering Committee (Paris, September 2011), who agreed on the creation of a training webpage with the selected material on the OFFLU website. Contacts with the WHO library (<http://www.influenzatraining.org/en/>) on influenza training were made and OFFLU experts were invited to provide training material to this library.

{3} Inputs provided to the OFFLU secretariat for the establishment of new OFFLU website: www.offlu.net, to improve visibility of the OFFLU network and to facilitate data

sharing, transfer of knowledge and training materials. The new updated site was launched in April 2011. FAO provides regular check-up and update for the website.

(4) Establishment of the OFFLU Swine Influenza Group to work towards a worldwide surveillance network for influenza in pigs that includes timely data collection, analyses, and sharing. The first meeting was held at OIE, Paris 6-7 April 2011. The meeting report is posted on offlu.net. FAO has suggested TORs and governance for the SIV group and submitted to the OFFLU Steering Committee in Sept 2011. The TORs for SIV group are to be endorsed in the coming months.

1.1.13 Activity 1.13.G: FAO/OIE/WHO laboratory twinning initiatives and partnerships

- Progress has been made on this long and complex designation process of FAO Reference Centres. 5 Reference Centres in animal health have so far been designated according to the 2006 Corporate Policy while the Animal Health Service expects to have 48 designated Ref. Centres in the near future. Applications have been reviewed, missing information has been requested to the applications, workplans have been established and agreed with the applications, evaluations have been submitted for clearance by the FAO DG, government endorsements have been requested and final designation letters have been prepared, after discussions with the LEGAL office. Dossiers stand at various stages of the process. A comparison between OIE and FAO Reference Centres and terms for designation and partnership has been made to look for complementary and common work.
- Further IT developments of the EMPRES-i directory were conducted. The directory is now functional but will need to be more populated. Once fully populated, this directory will allow to get an easy access to information related to reference, regional and national laboratories and geographically map these laboratories and attach any related information that FAO may want to store on each laboratory (eg letter of Reference Centre designation, annual reports, Letters of Agreement, etc).

1.2 SOUTH/SOUTHEAST ASIA. Activities undertaken during the reporting period (1 April 2011 - 30 September 2011)

1.2.1 Activity 3.1.S: Ongoing tripartite project management and coordination, monitoring, and planning

For description and listing of meetings completed, see Annex 1 Table 1

1.2.2 Activity 3.3.S: Develop annual IDENTIFY work plan - preparation and review of global, regional, and country-level work plans and other project documents

SE ASIA

- Development of the Year 3 work plan included participation in many tripartite and EPT planning meetings both at country and regional levels (Annex 1, Table 1).

1.2.3 Activity 3.4.S: Communication tool development and resource building - to ensure circulation of information, coordination and harmonization of initiatives, implement standard methods of sharing critical project documents for access by project members

SE ASIA

- EMPRES-i Asia platform open for public access will continue to reinforce communication and share documents with IDENTIFY stakeholders in the region. On-going
- In addition, updates to the AI Network Asia email list serve are made on a weekly basis by the regional FAO IDENTIFY coordinator. On-going

SOUTH ASIA

- EMPRES-i Asia platform and AI Network Asia as above. On-going

1.2.4 Activity 3.5.S: Review and update of the Laboratory Networking Strategy (LNS) and future planning

For description and listing of meetings completed, see Annex 1 Table 1 FAO communication and coordination for IDENTIFY (including laboratory networking meetings and communication with EPT Partners)

SE ASIA

- The Southeast Asia RLNS will be updated to reflect the outcomes of the Regional Laboratory Network Technical Advisory Group Meeting (4-5 Aug)

SOUTH ASIA

- The South Asia / SAARC network is in the process of reviewing inputs such as the Global and Regional LNS examples and will be discussing ways forward at upcoming meetings.

1.2.5 Activity 3.6.S: Follow-up of laboratory mapping exercise activities

- Follow-up of ongoing desktop review of existing data on laboratory capacity and networks from existing laboratory assessments

Additional assessments (both self-assessment and expert visits) from 4 laboratories and updated information from 8 laboratories have been integrated and overall laboratory capacities are summarized in Table 1.A.1 below. This data was updated using a streamlined version of the FAO Laboratory mapping tool (Annex 6) which summarizes 18 indicators by 93 different criteria. For the eight laboratories assessed in the previous time period, improvements as indicated from the criteria based upon updated training and additional equipment received ranged from zero (for 1 lab) to 23%.

Type of laboratory	Number
Advanced labs	2
In progress -> advance	1
Routine labs	4
In progress -> intermediate	1
Basic labs	4

Table 3.6: Laboratory assessment data by 18 major indicators

Indicator	Southeast Asia National Laboratories								Sub-national	South Asia National		
	++	*	*	*	*	*	*	*				
Geographic location	66.7	77.8	88.9	66.7	22.2	55.6	66.7	88.9	66.7	88.9	22.2	11.1
Laboratory Budget	77.8	77.8	66.7	66.7	55.6	44.4	0.0	0.0	61.1	55.6	44.4	11.1
Basic supply	100.0	100.0	88.9	100.0	44.4	55.6	44.4	44.4	77.8	100.0	77.8	11.1
Organization	100.0	100.0	100.0	66.7	66.7	100.0	66.7	66.7	66.7	66.7	66.7	66.7
Linkage with satellite labs	100.0	100.0	88.9	77.8	66.7	66.7	44.4	66.7	0.0	44.4	33.3	44.4
Communication means	91.7	91.7	100.0	66.7	50.0	66.7	25.0	33.3	79.2	91.7	58.3	25.0
Infrastructure	91.7	87.5	75.0	75.0	54.2	54.2	50.0	58.3	52.1	70.8	41.7	25.0
Equipment	94.4	77.8	72.2	50.0	50.0	38.9	44.4	50.0	55.6	66.7	50.0	33.3
Reagent supply	87.5	83.3	83.3	75.0	66.7	29.2	20.8	16.7	72.9	62.5	41.7	4.2
Staff skills and availability	95.8	91.7	83.3	54.2	45.8	58.3	50.0	41.7	62.5	83.3	8.3	25.0
Sample accession	94.4	94.4	100.0	61.1	50.0	72.2	55.6	27.8	55.6	94.4	44.4	27.8
Available technology	96.3	96.3	88.9	63.0	63.0	18.5	14.8	22.2	79.6	59.3	14.8	11.1
Training	77.8	66.7	83.3	33.3	27.8	22.2	38.9	27.8	50.0	61.1	11.1	22.2
Quality Assurance	79.2	95.8	79.2	58.3	58.3	41.7	20.8	20.8	29.2	33.3	8.3	16.7
Biosafety/Biosecurity	86.7	73.3	100.0	80.0	33.3	13.3	13.3	13.3	50.0	66.7	53.3	6.7
Staff Security/Health	88.9	88.9	100.0	77.8	22.2	33.3	11.1	0.0	16.7	66.7	11.1	11.1
Laboratory collaboration	86.7	93.3	60.0	86.7	66.7	66.7	46.7	46.7	43.3	73.3	20.0	33.3
Use of databases/platforms	83.3	66.7	66.7	83.3	83.3	25.0	25.0	25.0	58.3	91.7	41.7	25.0
Grand Total	88.9	86.7	83.5	66.7	52.3	43.7	34.1	33.7	55.6	69.2	31.9	20.4

+ = to be confirmed, * = laboratory with regional responsibilities

- Follow-up of the additional targeted data collection, including laboratory visits and/or follow-up assessments if necessary, to fill in gaps in knowledge on laboratory capacity

SE ASIA

- The list of potential national and regional laboratories compiled by FAO has been updated (Annex 5)

- Data from multiple sources is being compiled to visualize regional capacities by priority disease.
- The FAO laboratory mapping tool presented at the SE Asia Animal Health Stakeholders Awareness Meeting, 20-21 Jan 2011 in Bangkok, Thailand, was adapted used to monitor the progress of laboratory capacities.
- FAO with OIE completed visits to national and sub-national laboratories in Lao PDR, Viet Nam, Thailand, Nepal, and Indonesia:
 - Laboratory mapping conducted at Hanoi Agriculture University, Hanoi, Viet Nam, June 2011 by FAO Laboratory Expert in Viet Nam. Results compiled and preliminary analysis results available. HAU share similar limitations in biosafety-biosecurity, staff security and health with the majority of laboratories in SE Asia.
 - Laboratory mapping conducted for Bangladesh Livestock Research Institute and Central Veterinary Diagnostic Laboratory in Bangladesh in March 2011 has been integrated into the overall data.

1.2.6 Activity 3.7.S: Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories

- Regional and national stakeholders meeting (primarily the directors of national public health and veterinary laboratories and representatives from the MoH and MoA. This meeting is scheduled for October 2011, to take place in Kuala Lumpur, Malaysia
- Preparations for the upcoming IDENTIFY regional stakeholders meeting for SE Asia planned for October 2011 included integration of the outcomes from the Third Laboratory Director's Forum (4-5 August 2011); expansion of the existing network to include China (Bangladesh, Cambodia, Indonesia, Lao PDR, Malaysia, Nepal, Philippines, Thailand, Vietnam); participation of key laboratories representing wildlife and PREDICT; planning and drafting questions for breakout groups during animal health and tripartite the joint sessions, format for tripartite sessions, and finalizing the concept note, agenda, and invitations. This represents the first formal opportunity in the region for a joint meeting of laboratories in both animal and public health sectors.
- May 2011: The report for the IDENTIFY Animal Health Stakeholders Awareness Meeting on 20-21 January 2011 in Bangkok Thailand was finalized after receiving Stakeholders' comments and submitted to USAID HQ.
- Develop the four-way linking framework for assessing health risks at the human-animal interface, to be applicable to various countries and to various diseases (Viet Nam, other pilot countries TBD)
- June 2011, Viet Nam: The joint "Four-way linking of epidemiological and virological information on human and animal influenza" project assessment mission in Viet Nam in reviewed the national-level functional and communication linkages among the 4 sectors critical to controlling health risks from H5N1 influenza at the human-animal interface: Public Health Epidemiology, public health virology (NIHE), animal health epidemiology (DAH) and animal health virology (NCVD). 24 visits were made to various stakeholders, and at a final workshop details of the mapping were presented to all stakeholders for their inputs. Finally, the relationships were mapped and gaps identified. The main conclusion of the assessment mission was that problems are mainly occurring in enabling and supporting data sharing, improving joint working for case investigation and improving surveillance systems. A workshop was conducted in Egypt in September (supported under another project) and included

didactic presentations, group work, and scenario-based training: the setup of this workshop in Egypt will serve as a blue print for the future workshop in Viet Nam (planning meeting is scheduled for Oct 2011). The didactic materials developed for Egypt are available for workshops in third countries.

1.2.7 Activity 3.8.S: Support to and participation in [non-IDENTIFY] conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines, and standards

For description and listing of activities completed, see Annex 1 Table 2. List of [non-IDENTIFY] conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines, and standards to which participants were supported

1.2.8 Activity 3.9.S: Development of joint meetings and conferences to support networking and promote national laboratory

For description and listing of activities completed, see Annex 1 Tables 3 and 4: List of FAO/OIE/WHO-organized **trainings or workshops** to build laboratory capacity and to promote national laboratory policies, guidelines, and List of joint **meetings and conferences** organized by FAO/OIE/WHO to support networking and promote national laboratory policies

- Advanced Biorisk Training: Building regional biosafety resource people including biosafety managers and biosafety engineers. The training curriculums were designed to specifically target advanced laboratories with BSL3 and/or BSL4.
 - Preparations are underway for this activity scheduled for November 2011. This activity builds upon Biosafety Management Training organized under IDENTIFY in Year 2. Targeted country support for six advanced laboratories in China (CADCC, CAHEC and Langzhou), India (HSADL), Lao PDR (NAHC), Malaysia (VRI), Thailand (NIAH, RRL) and Viet Nam (RAHO6).
- Laboratory Engineering and Equipment Maintenance Training. Building regional biosafety resource people including biosafety managers and biosafety engineers. The training curriculums were designed to specifically target advanced laboratories with BSL3 and/or BSL4.
 - Preparations are underway for this activity scheduled for November 2011. This activity builds upon Biosafety Management Training organized under IDENTIFY in Year 2. Targeted country support for six advanced laboratories in China (CADCC, CAHEC and Langzhou), India (HSADL), Lao PDR (NAHC), Malaysia (VRI), Thailand (NIAH, RRL) and Viet Nam (RAHO6).
- Strengthen capabilities /capacities through workshops to support diagnosis of pathogens significant to the region and for emerging and unknown pathogens
 - Details contained in Table 3 for: 21 - 22 July 2011 The Workshop on Diagnosis of Priority and Emerging Diseases in Swine, and 11 - 20 July 2011 The Training on Diagnosis and Characterization of Classical Swine Fever and Porcine Reproductive and Respiratory Syndrome. The evaluations of the completed workshop and training can be found in Annex 7.
- Laboratory Information Management Systems (LIMS): Workshop to Identifying Needs, Resources, and Ways Forward

- Based on previous experience in providing assistance to LIMS implementation, FAO is collaborating with the Australian Animal Health Laboratory (AAHL) to develop guidelines for selecting LIMS. A Letter of Agreement with collaborating partner (Australian Animal Health Laboratory) has been finalized and planning initiated. The goal of this workshop is to address laboratory needs and provide information on potential open-source database solutions. Guidelines for selecting LIMS including need assessment tool for the laboratory is being developed and will be presented during the workshop planned for 8-9 December 2011 in Bangkok, Thailand where IDENTIFY supported laboratories will be invited to attend including China (CAHEC, CADCC), Cambodia (NaVRI), Lao PDR (NAHC), Malaysia (VRI), Philippines (PAHC), Thailand (NIAH) and Viet Nam (RAHO6).
- Adaptation of animal health laboratory (individual and country-level) assessment tools for monitoring and evaluation – refer to 3.6: The FAO laboratory mapping tool presented at the SE Asia Animal Health Stakeholders Awareness Meeting, 20-21 Jan 2011 in Bangkok, Thailand, was adapted used to monitor the progress of laboratory capacities.

1.2.9 Activity 3.10.S: Promote and support laboratory quality management

- Assessment of biosafety infrastructure, biosafety cabinet testing, procurement and calibration
 - Under the Letter of Agreement (LoA) with FAO, A-PBA conducted the assessment of biosafety infrastructure, biosafety cabinet testing (24 cabinets), and practices of 5 laboratories in Cambodia, Lao PDR, Philippines, Malaysia, and Thailand (Nov-Dec 2010). The report was submitted and awaiting clearance. Reports including recommendations for improving laboratory biosafety-biosecurity are available for national animal health laboratories in Cambodia (NaVRI), LaoPDR (NAHC), Malaysia (VRI), Philippines (PAHC), Thailand (NIAH), Bangladesh (CDIL, BLRI) and Nepal(CVL) – refer to 3.11. S for procurement detail.
- Laboratory support visits to assist with development and implementation of laboratory quality management systems
 - Under the Letter of Agreement (LoA) with the Australian Animal Health Laboratory signed in May 2011, Backstopping missions was planned to ensure implementation of appropriate diagnostic protocols under a quality assurance system. Specifically, AAHL laboratory experts would 1) Follow up on proficiency testing result for PRRS, CSF and HPAI, 2) Trouble shooting any technical problem reveal by proficiency testing result, 3) Provide in-house training on equipment usage and maintenance, 4) Follow up on laboratory quality systems, 5) Provide inputs on biosafety and biosecurity and 6) Advocate laboratory support for surveillance. These missions are planned to be carried out between October 2011 – November 2011 at IDENTIFY supported laboratories in China (CAHEC, CADCC), Cambodia (NaVRI), Lao PDR (NAHC), Malaysia (VRI), Thailand (NIAH) and Viet Nam (RAHO6)
- Provision of Laboratory Information Management Systems (LIMS)
 - Under the Letter of Agreement (LoA) with the Australian Animal Health Laboratory, a guidelines for selecting LIMS including need assessment tool for the laboratory is being developed and will be presented during the workshop planned for 8-9 December 2011 in Bangkok, Thailand (refer to Activity 3.9)

- Training to build national laboratories capacity to design, implement and analysis national proficiency testing program for priority diseases
 - 5-19 September 2011, Geelong, Australia. Training on Quality Assurance and Standardization of Diagnostic Reagents. The objective of this training was to equip laboratories with necessary skill to develop their own proficiency testing programme. A total of 15 participants from IDENTIFY supported laboratories in Cambodia (NaVRI), China (CAHEC), Lao PDR (NAHC), Malaysia (VRI), Philippines (PAHC), Thailand (VRI) and Viet Nam (DAH) participated in the 12-day training. The training program at the Australian Animal Health Laboratory (AAHL) reviewed the requirements under ISO17025 for quality assurance of laboratory tests and training in providing Proficiency Testing (PT) to ensure laboratories are producing accurate and correct results for tests carried out in the laboratory. It is foreseen that the developed capacity to provide proficiency testing will allow national animal health laboratories to develop their own external quality assurance programme for their national laboratory network.
- Provision of validated standardized veterinary diagnostic reagents –antigens and antisera- targeting priority TADs – refer to 3.11.

1.2.10 Activity 3.11.S: Provide laboratory equipment and supplies in a coordinated manner

SE ASIA and SOUTH ASIA

- Procurement by FAO to address immediate needs:
 - A total of three (3) replacement HEPA filters were procured, delivered and installed for laboratories in Thailand (NIAH) and Bangladesh (BLRI and CDIL). A total of eight (8) replacement biosafety cabinets were procured and delivery to laboratories in Cambodia (NaVRI 1 cabinet), LaoPDR (NAHC 2 cabinets), Malaysia (VRI 2 cabinets), Bangladesh (BLRI 1 cabinet) and Nepal (CVL 2 cabinets) is in process – refer to 3.10. S;
 - Delivery for other items such as laboratory diagnostic reference books, IATA biocontainers for samples shipment, and proficiency testing panels is ongoing.

1.2.11 Activity 3.12.S: Support and promote laboratory networks : Assess the role and activities of existing FAO/OIE/WHO networks in improving the laboratory capacity and networking in hot spot regions. Coordinate regional networking to test for normative diseases and detect emerging or unknown pathogens in wildlife, domestic animals and humans

- Strengthen linkages among existing regional laboratory networks and between laboratory and epidemiological networks and across human and animal health, including implementation of regional guiding principles for surveillance and diagnosis

SE ASIA

For description and listing of completed meetings, see Annex 1 Table 4 FAO communication and coordination for IDENTIFY (including laboratory networking meetings and communication with EPT Partners)

Other activities included:

- 13 – 17 June 2011, Hanoi: FAO/IDENTIFY SE Asia coordinator together with OIE/IDENTIFY SE Asia coordinator visited Animal Health Laboratories in Viet Nam including the National Center for Veterinary Diagnosis, Regional Animal Health Office Number 6 and Hanoi Agriculture University from. Presentation and discussion on Regional Laboratory Networking activities including the Emerging Pandemic Threat Programme and IDENTIFY were made. Details of FAO Regional Laboratory Network activities including IDENTIFY activities in Viet Nam were discussed and agreed upon with the Director General of the Department of Animal Health, Ministry of Agriculture and Rural Development.
- 18 July 2011, Bogor, Indonesia: FAO/IDENTIFY HQ Liaison with the OIE/IDENTIFY SE Asia coordinator Meeting with Heads of Departments of Bbalitvet laboratory, various technical staff. Presentations were provided by both focal points to provide background information on EPT/IDENTIFY, identify opportunities to build upon the existing network of Disease Investigation Centres and other national veterinary labs, and to determine disease focus needs and current collaborations.
- 24-26 August 2011, Hanoi, Viet Nam: FAO/IDENTIFY SE Asia coordinator supported the mission for the Field Epidemiology Training Programme for Veterinarians. The mission team including the ROs, Thailand FETPV and FETP staff had two meetings with both administrative and epidemiology staff of the RAHO6 to discuss support for FETPV trainee from Viet Nam. RAHO6 and Viet Nam Department of Animal Health (DAH) expressed their kind support for FETPV trainee and agreed upon the objectives, the data sources and work plan covering the next six months. The mission team also attend the FETP graduation ceremony at the Ministry of Health, Hanoi, Viet Nam and have informal consultation with USAID Viet Nam on EPT and IDENTIFY activities in Viet Nam.
- Strengthen collaboration and communication platforms and pathways in order to encourage the sharing of samples, data, reports, etc. within regional and global networks
 - 30 May – 2 June 2011, Rome, Italy: FAO/IDENTIFY SE Asia coordinator participated in the meeting between FAO EMPRES Laboratory unit and the Swiss Institute of Bioinformatics from. The goal of the meeting was to follow up on the outcome and way forward for the development of EMPRES-i Genetic Module. The EMPRES-i genetic module was developed as a collaborative activities between FAO EMPRES laboratory unit and the Swiss Institute of Bioinformatics (SIB) with the goal to provide an integrate Influenza outbreak information on FAO – EMPRES system together with virus gene sequence information on SIB – OpenFlu. The linkage between Empres-i outbreak ID and OpenFlu ID was established along with validation interface and web-service tools. SOP for data analysis across OpenFlu and Empres-I was recommended including analysis of large scale viruses, visualization and analysis from phylogeny to sequence similarity maps.

1.3 CONGO BASIN

1.3.1 Activity 3.1.C: Ongoing tripartite project management and coordination, monitoring, and planning

For description and listing of activities completed, see Annex 1 Table 1

- Project management and planning at regional level continued through conference calls between Tripartite regional coordinators, and tripartite face to face meeting on 29 July 2011.

1.3.2 Activity 3.2.C: Recruitment of project staff (headquarters and regionally) to support IDENTIFY activities

- FAO consultant (April 2011) analyzed data on animal disease surveillance system in IDENTIFY project countries by focusing on the collaboration between epidemiology and laboratory staff, and identify constraints, roles and responsibilities to improve relation between laboratory and epidemiology networks in IDENTIFY beneficiary countries and suggest ways to alleviate these constraints. The report is available and the outcomes will be presented during the 2011 annual RESOLAB meeting.

1.3.3 Activity 3.3.C: Develop annual IDENTIFY work plan - preparation and review of global, regional, and country-level work plans and other project documents

- During the reporting period, the regional FAO|IDENTIFY coordinators, along with HQ team, developed the IDENTIFY Year 3 Work plans for Congo Basin, from the country (done in conjunction with each country), region to the global level following the guidance provided by USAID. During the process, FAO regional coordinators requested, assessed and reviewed the workplans, budgets and lists of needs for capacity building from all National Laboratories.
- The FAO|IDENTIFY coordinators presented the FAO planned activities for year 3 during the tripartite IDENTIFY side meeting (Kinshasa, 29 July 2011) and discussed collaboration with OIE and WHO in the case of tripartite and cross-sectoral activities.
- IDENTIFY regional coordinators participated and presented the planned FAO Year 3 Congo region activities to USAID/W, USAID country missions and EPT partners during the EPT Congo Regional Planning Meeting organized from 27-28 July 2011 in Kinshasa. Contacts and discussions were made with the newly appointed EPT coordinator in Uganda, PREDICT and RESPOND. FAO delegation visited RESPOND Office in Kinshasa and have had a fruitful working discussion.

1.3.4 Activity 3.4.C: Communication tool development and resource building - to ensure circulation of information, coordination and harmonization of initiatives, implement standard methods of sharing critical project documents for access by project members

- There is regular contact on activities implemented between FAO|IDENTIFY coordinators (Bamako, Nairobi and Gaborone) and with stakeholders, in particular laboratory directors through emailing list.
- FAO|IDENTIFY coordinators regularly posted documents and information on IDENTIFY events on FAO-ECTAD websites (RESOLAB <http://www.fao-ectad-bamako.org/>, EARLN <http://www.fao-ectad-nairobi.org/spip.php?rubrique57> and LAB NET <http://www.fao-ectad-gaborone.org/>)

ectad-gaborone.org/en/spip.php?rubrique55). A specific tab for IDENTIFY has been created in RESOLAB website (<http://www.fao-ectad-bamako.org/fr/-Projet-IDENTIFY-?lang=en>) and will be created on the other ECTAD websites during the next reporting period to contribute to IDENTIFY project visibility.

- Production of tripartite awareness materials (banners and leaflets with IDENTIFY and USAID logos are produced for IDENTIFY supported workshops).
- IDENTIFY poster (French version) was produced and distributed to each of the following laboratory Cameroon, CAR, DR Congo, Eq. Guinea, Gabon and Congo. English version under printing for Rwanda, Tanzania and Uganda during Kinshasa workshop on Necropsy and sampling. One copy will be sent to FAO Representatives of all the said countries.

1.3.5 Activity 3.5.C: Review and update of the tripartite Laboratory Networking Strategy (LNS) and future planning

- Tripartite finalization of the Regional lab networking strategy (RLNS) expected by end of 2011. A draft of Regional Laboratory Networking Strategy (RLNS) was proposed by OIE and circulated between the three regional coordinators.

1.3.6 Activity 3.6.C: Follow-up of laboratory mapping exercise activities

- Additional targeted data collection, including laboratory visits and/or follow-up assessments if necessary, to fill in gaps in knowledge on laboratory capacity: FAO focal point visited the Laboratoire vétérinaire of Kinshasa, 26 and 29 July., and the additional data collected was the for example the organigram, vaccine production status, other activities carried out, strength of financial sustainability from own generated resources.
- The data review and compilation of national laboratories reports from the West and Central regional laboratory network (RESOLAB), Eastern Africa network (EARLN), SADC Laboratory Network (LABNET) meetings and from FAO laboratory assessments/mission reports were consolidated with additional data collected through questionnaires on rabies and FMD (the RESOLAB FMD subnetwork facilitators posted an updated biannual table on confirmed FMD cases in the region <http://www.fao-ectad-bamako.org/fr/-FMD-Sub-Network-?lang=en>), country status reports presented during training workshops (Kinshasa, 15-19 August; Libreville, 12 – 16 September), coordination meetings (e.g. EARLN/EAREN joint meeting in Kigali from 5 – 7 September 2011) and opportunistic visits to the national laboratories in Uganda, Rwanda, Tanzania and DRC.).
- Follow-up of ongoing desktop review and analysis of existing data on laboratory capacity and networks from existing laboratory assessments : the FAO laboratory scoring and gap analysis preliminary findings presented to the IDENTIFY OIE and WHO coordinators at the tripartite Gabon meeting (Libreville, March 2011) were further developed (see annex 8) . The completed report on veterinary laboratory data analysis and mapping exercise and the integration of the outcomes of the lab mapping into the Lab Networking Strategy will be finalized by FAO by end November 2011. Congo Basin laboratories individual laboratory scoring and gaps analysis shall be submitted at the same time to IDENTIFY coordinators .
- Agreement on each laboratory's desired and feasible role in the regional context: the discussions with each laboratory started informally at the stakeholder meetings and were further elaborated during the FAO laboratory visits and assessments. Regional service laboratories will be contacted to define their mandate, as opposed to reference Centres during the next reporting period.

1.3.7 Activity 3.7.C: Engage with stakeholders to support the development of cross-sectoral approach (es) concerning laboratories

- IDENTIFY activities have been adjusted according to the recommendations from Entebbe Stakeholders' meeting in the Congo Basin region (2-4 Nov 2010 in Entebbe, Uganda). .
- Preliminary discussions were initiated between the IDENTIFY partners on next stakeholders meeting for the Congo region, tentatively projected for early 2012.

1.3.8 Activity 3.8.C: Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines, and standards

For description and listing of activities completed, see Annex 1 Table 2

1.3.9 Activity 3.9.C: Development of joint meetings and conferences to support networking and promote national laboratory

For description and listing of activities completed, see Annex 1 Tables 3 and 4

- Information on planned trainings for Year 2 of the project was shared between FAO/IAEA/OIE/WHO. Opportunities for joint trainings were discussed and training for public health professionals and veterinary scientists together will be explored under the planned trainings for the next reporting period.

1.3.10 Activity 3.10.C: Promote and support laboratory quality management

- Under the LoA with FAO and IZSve of Padova, all IDENTIFY countries in Congo Basin were invited in February 2011 to participate in the third round of Avian influenza and Newcastle disease proficiency test. The panels were shipped in March 2011 and all countries submitted their results. The results were analyzed by IZSve, made available on September 2011, and will be presented to the countries during the next RESOLAB and EARLN annual meetings in 2011.
- Provision of metrology kit, on April 2011, in support of Quality management system (QMS) implementation to Cameroon, DR Congo, Congo, CAR, Gabon, Rwanda, Tanzania and Uganda. This procurement was followed up by the training on "Management of laboratory equipment and basic metrology" (12-16 September 2011, Libreville, see Annex 1, table 3) to train Cameroon, Central African Republic, DRC, Congo, Gabon, Equatorial Guinea for the use of the metrology equipment provided to the countries.
- Provision of manuals and standard operating procedures in support of QMS implementation (DRC, Congo, CAR, Rwanda, Tanzania and Uganda): training manuals including SOPs on implementation of laboratory QMS based on ISO/17025 were provided to participants from Rwanda, Tanzania and Uganda during a regional training course in Dar es Salaam, Tanzania in July 2011. Manuals on laboratory biosafety and biosecurity were also provided during this meeting.
- Installation and staff training for an open-source LIMS platform by FAO/IAEA in order to improve laboratory information management in the national animal health laboratories of one pilot country (Cameroon) : One expert mission was conducted at LANAVET (Cameroon) on 11-15 April 2011, to identify the laboratory needs for Vet- LIMS and advice on the establishment of LIMS and various LIMS systems used in veterinary laboratories, Evaluate the existing facilities, infrastructures and system requirement for LIMS and determine interfacing technology. Work with counterpart to outline workflow for necessary task in the lab. (Visual workflow), provide technical advice on data

collection, validation of system, implementation methodology and monitoring and provide feedback to FAO/IAEA on equipment and training requirements. Furthermore, one staff from LANAVET attended the Bioinformatic training in Vienna (11-22 July 2011, see Annex 1 Table 3) for which the second week was focused on databases and LIMS.

- Training manuals including SOPs on implementation of laboratory QMS based on ISO/17025 were provided to participants from Rwanda, Tanzania and Uganda during a regional training course in Dar es Salaam, Tanzania in July 2011. Manuals on laboratory biosafety and biosecurity were also provided during this meeting.
- The preparation of the proficiency testing for the serodiagnosis of Rift Valley Fever (RVF): comparison of the efficiency of two RVF Inhibition ELISA kits in the Congo basin region was initiated in June and an agreement was made between FAO/IAEA and the head of the special pathogen unit of the National Institute for Communicable Diseases (NICD, South Africa) for the practical organization. The targeted countries (DR Congo, Cameroon, Gabon, Central African Republic, Congo, Uganda, Rwanda, Tanzania, Ethiopia and Kenya) have been invited to participate and already provided their agreement. The kits for RVF Competition ELISA were ordered in September 2011. This activity will continue through the next reporting period.

1.3.11 Activity 3.11.C: Provide laboratory equipment and supplies in a coordinated manner

- The provision of metrology kit by FAO to address immediate needs defined by the countries during the stakeholder meeting (November 2010) was finalized in July 2011 in Cameroon, DR Congo, Congo, CAR, Gabon, Rwanda, Tanzania and Uganda.
- The list of equipment and supplies required by Cameroon, CAR, DR Congo, Eq. Guinea, Gabon, Congo, Rwanda, Tanzania and Uganda were collected during the work planning process (see activity 3.3.C), compiled by FAO Coordinators and shared with OIE and WHO during the EPT planning meeting (July, Kinshasa). The procurement process will be continued during the next reporting period.

1.3.12 Activity 3.12.C: Support and promote laboratory networks : Assess the role and activities of existing FAO/OIE/WHO networks in improving the laboratory capacity and networking in hot spot regions. Coordinate regional networking to test for normative diseases and detect emerging or unknown pathogens in wildlife, domestic animals and humans

For description and listing of activities completed, see Annex 1 Table 4

- FAO has been facilitating the selection of a regional laboratory (applications received from Ethiopia, Tanzania, Sudan (North), and Kenya) for Eastern Africa : FAO-ECTAD Eastern Africa received formal applications from the four countries for designation as regional service laboratories for Avian Influenza and Newcastle disease. Subsequently ECTAD convened a meeting of a regional networks secretariat composed of OIE, FAO, AU-IBAR, representative of Livestock (Ethiopia), Wildlife (Tanzania) and VS (Kenya) in May 2011 to consider the applications. The outcome of the meeting is that the National Animal Health Diagnostic and Investigation Centre (NAHDIC, Sebeta) Ethiopia was selected as the regional AI/ND laboratory for Eastern Africa. A report on the procedure and outcome of the selection process has been prepared. It is expected that a summary of the report will be published in the FAO EMPRES Bulletin.
- Laboratory subnetworks (established during the RESOLAB 2010 Annual meeting at Bamako, December 2010) on rabies and FMD including Cameroon, CAR, Congo, DR

Congo, Guinea Equatorial and Gabon and other laboratories from Western Africa (See also activity 3.6).

- The FMD subnetwork aims to assess the relevance of tests/papers for use in the region; Discuss and share the FMDV findings by the national labs and/or the FAO/OIE WRL; Translate and/or comments on published FMD papers relevant to West/Central Africa; Share information on relevant projects in the region; Share information on important epidemic events.
- The Rabies subnetwork aims to: Define priorities for rabies control; Identify the needs for veterinary laboratories; Interact with the human health sector and advocate with public sector. During the reporting period, a survey on rabies diagnostic was initiated in collaboration with IZSve laboratory of Padova. The purpose of this study is to assess the diagnostic capabilities of rabies in the laboratories of the network
- Similarly an FMD for Eastern Africa (EARLN-FMD) has been established. Its activities are supported mainly by EU-FMD secretariat that is based at FAO Headquarters, Rome.
 - EARLN-FMD conducted an in-house training on sample collection, shipment and processing in August 2011. Other activities were indicated in the table.
- National laboratories quarterly reports were posted on protected space of ECTAD website. Access username and password have been provided to OIE and WHO/AFRO focal points. These reports provide information on animal diseases diagnosed, tests performed, constraints faced by the laboratories during the period and the action plan for the next quarter.
- FAO commissioned a study on animal disease surveillance systems across all RESOLAB including IDENTIFY supported countries. The focus was on national epi system capability and their relationship between Epidemiology and Laboratory to address the limited number of samples submitted and tested through the establishment of collaborations with epidemiosurveillance units and participation in disease surveillance programs.

1.3.13 Activity 3.13.C: FAO/OIE/WHO laboratory twinning initiatives and partnerships

- From FAO side, no progress reported during the reporting period

2 Planned activities for the next six-month period (1 October 2011 – 31 March 2012)

For further detail, please refer to the FAO Workplan Year 3.

2.1 Planned activities for GLOBAL

Activity code	Activity description	2011			2012			PARTNERS	Focal Person
		10-11	11-11	12-11	01-12	02-12	03-12		
Output 1 Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced									
1.A.	Follow-up of laboratory mapping exercise activities							OIE, WHO	Mia Kim, FAO HQ
	1.A.1 Review of historic data from EMPRES-i							OIE, WHO	Mia Kim, FAO HQ
	1.A.2 Disease prioritization							OIE, WHO	Mia Kim, FAO HQ
	1.A.3 Improved data collection from FAO Reference Centres							OIE	Mia Kim, FAO HQ
	1.A.4 Update of regional data on laboratory capacity and networks							FLI	Mia Kim, FAO HQ
	1.A.5 Identification of regional service laboratories by disease focus based on the outcomes of the laboratory mapping							OIE, FAO/IAEA	Mia Kim, FAO HQ
	1.A.6 Adaptation of animal health laboratory (individual and country-level) assessment tools								
1.B.	Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines, and standards								Gwenaëlle Dauphin, FAO HQ
1.C	Develop and conduct trainings or workshops to build laboratory capacity and to promote national laboratory policies and guidelines								Gwenaëlle Dauphin, FAO HQ
	1.C.1 Organizational support for regional workshops, "Laboratory Information Systems (LIMS): Open-Source Platforms and Tools to Aid in Needs Assessment."							FAO/IAEA	Mia Kim, FAO HQ
	1.C.2 Regional pathology train-the-trainer workshops on "Basics of Field and Laboratory Diagnosis" coordinated and conducted in both regions							OIE, RESPOND, UGA	Mia Kim, FAO HQ

1.C.3	Training on classical and molecular virology						FAO/IAEA	Gwenaëlle Dauphin, FAO HQ
1.C.4	Regional training courses on "Major Transboundary and zoonotic animal diseases in the region: early detection, surveillance and epidemiology"						FAO/IAEA	Gwenaëlle Dauphin, FAO HQ
1.C.5	Consultation on good laboratory practices for conducting multiple disease diagnosis						FAO/IAEA	Gwenaëlle Dauphin, FAO HQ
1.C.6	Validation and transfer of new techniques for multiple disease diagnosis (PCR using the FRET system)						FAO/IAEA	Gwenaëlle Dauphin, FAO HQ
1.C.7	Workshop on Good Emergency Management Practice (GEMP) in coordination with FAO/CMC and RESPOND						OIE, WHO, RESPOND	Gwenaëlle Dauphin, FAO HQ
1.D	Promote and support laboratory quality management							Gwenaëlle Dauphin, FAO HQ
1.D.1	Development of training/mentoring Programme						OIE, AAHL, IZSvE	Gwenaëlle Dauphin, FAO HQ
1.D.2	Installation of updated laboratory information system (LIMS) in targeted laboratories						FAO/IAEA	Gwenaëlle Dauphin, FAO HQ
1.D.3	External Quality Assurance for targeted diseases						FAO/IAEA, IZSvE, AAHL	Gwenaëlle Dauphin, FAO HQ
1.D.4	Joint FAO/IAEA/OIE/WHO Global Survey on External Quality Assessment (proficiency testing) Schemes						OIE, WHO, FAO/IAEA	Gwenaëlle Dauphin, FAO HQ
1.D.5	Access to standardized veterinary diagnostic reagents and international standards						FAO/IAEA	Gwenaëlle Dauphin, FAO HQ
1.E	Provide laboratory equipment and supplies in a coordinated manner							Gwenaëlle Dauphin, FAO HQ
Output 2 Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened								Gwenaëlle Dauphin, FAO HQ
2.A	Communication tool development and resource building							Gwenaëlle Dauphin, FAO HQ
2.A.1	Develop communication tool(s) for different audiences, stakeholders and partners						OIE, WHO	Gwenaëlle Dauphin, FAO HQ
2.A.2	Resource Building – Provision of documents, manuals, books and database access to scientific literature							Béatrice Mouillé, FAO HQ

2.A.3	Development of a glossary of the available diagnostic assays and cross-cutting technologies for selected animal diseases, including zoonoses						FLI, laboratory experts	Gwenaëlle Dauphin and Mia Kim , FAO HQ
2.A.4	Development of a self assessment tool for laboratories to identify the elements needed for a laboratory information management system (LIMS)						AAHL, LIMS users and developers	Mia Kim, FAO HQ
2.A.5	Support ongoing development of the EMPRES-I genetic module						SIB	Gwenaëlle Dauphin, FAO HQ
2.A.6	Development of e-learning modules on bioinformatics (phylogeny and sequence analysis)						FAO/IAEA, SIB	Gwenaëlle Dauphin, FAO HQ
2.A.7	Centralized resource for genomic characterization and molecular reagents						FAO/IAEA, TBD	Gwenaëlle Dauphin, FAO HQ
2.A.8	Sample referral guidelines for transboundary animal diseases (TADs)							
2.B	Development of joint meetings and conferences to support networking and promote national laboratory policies							Gwenaëlle Dauphin, FAO HQ
2.C	Review and update of the tripartite Laboratory Networking Strategy (LNS) and future planning							Gwenaëlle Dauphin, FAO HQ
2.C.1	Tripartite coordination meetings						OIE, WHO, Regional Lab Network partners, Ref Labs	Gwenaëlle Dauphin, and Mia Kim , FAO HQ
2.D	Engage with stakeholders to support the development of cross-sectoral approach (es) concerning laboratories							Gwenaëlle Dauphin, FAO HQ
2.D.1	Coordination and development with regional counterparts of global framework for regional and national stakeholders meeting in each hot spot region						PREDICT, RESPOND, DELIVER	Gwenaëlle Dauphin, FAO HQ
2.D.2	Four-way linking framework to improve the linkage between laboratory and epidemiological data (for H5N1 zoonotic influenza) for assessing health risks at the human-animal interface						OIE, WHO, PREDICT	Gwenaëlle Dauphin, FAO HQ
2.E	Support and promote laboratory networks							Gwenaëlle Dauphin, FAO HQ
2.E.1	Support to routine regional and global networking meetings						OFFLU, CDC, Ref Laboratories/Centers	Gwenaëlle Dauphin, FAO HQ

2.E.2	Linking laboratory and epidemiologic networks						CMC, RESPOND	Gwenaëlle Dauphin, FAO HQ
2.E.3	Support for sharing of information and biological materials						OIE, WHO	Gwenaëlle Dauphin, FAO HQ
2.E.4	Monitoring regional capacities for targeted diseases						National labs	Gwenaëlle Dauphin, FAO HQ
2.E.5	Support and promote OFFLU network activities						CDC, WHO collaborating centers, Ref Laboratories/Centers	Gwenaëlle Dauphin, FAO HQ
2.F	Support and promote laboratory partnerships							Gwenaëlle Dauphin, FAO HQ
2.F.1	Identification of FAO Reference Centres in the regions and beyond prepared to offer expertise in diseases or technical areas relevant to each region						Ref Laboratories/Centers, OIE, WHO	Gwenaëlle Dauphin, FAO HQ
2.F.2	Support and promote the establishment/development of regional service laboratories						Ref Laboratories/Centers, OIE, WHO	Gwenaëlle Dauphin, FAO HQ

2.2 Planned activities for SOUTH and SOUTHEAST ASIA

Activity code	Activity description	2011			2012			Focal Person	PARTNERS
		10-11	11-11	12-11	01-12	02-12	03-12		
	Output 1 Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced								
1.A.	Follow-up of laboratory mapping exercise activities								
1.B.	Support to and participate in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines, and standards								
1.C	Develop and conduct trainings or workshops to build laboratory capacity and to promote national laboratory policies and guidelines								
1.C.1	Biosafety trainings							Pawin Padungtod, FAO-RAP	
1.C.2	Hands-on training for diagnosis of selected regional priority disease							Pawin Padungtod, FAO-RAP	
1.C.3	LIMS workshop: Open-Source Platforms and Tools to Aid in Needs Assessment							Pawin Padungtod, FAO-RAP	Thai Department of Livestock Development, AAHL
1.C.4	Regional training-the-trainer pathology workshop on Basics of Field and Laboratory Diagnosis							Pawin Padungtod, FAO-RAP	UGA
1.C.5	Regional training courses on "Major transboundary and zoonotic animal diseases in the region: early detection, surveillance and epidemiology"							Pawin Padungtod, FAO-RAP	PREDICT

1.C.6	Workshop on diagnosis of selected regional priority disease						Pawin Padungtod, FAO-RAP	OIE/WHO, TBD
1.D	Promote and support laboratory quality management							
1.D.1	Assessment of biosafety infrastructure, biosafety cabinet testing, procurement and calibration						Pawin Padungtod, FAO-RAP	APBA
1.D.2	Laboratory support visits to assist with development and implementation of laboratory quality management systems						Pawin Padungtod, FAO-RAP	International lab experts
1.D.3	Develop training tool for laboratory logistics management						Pawin Padungtod, FAO-RAP	DELIVER
1.D.4	Provision of Laboratory Information Management Systems (LIMS)						Pawin Padungtod, FAO-RAP	AAHL
1.D.5	Laboratory Management Mentoring program between laboratory directors and/or managers of IDENTIFY-supported laboratories						Pawin Padungtod, FAO-RAP	International lab experts, AAHL
1.D.6	External Quality Assurance for targeted diseases						Pawin Padungtod, FAO-RAP	AAHL
1.D.7	Access to standardized veterinary diagnostic reagents and international standards						Pawin Padungtod, FAO-RAP	AAHL
1.E	Provide laboratory equipment and supplies in a coordinated manner							
	Output 2 Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened						Pawin Padungtod, FAO-RAP	
2.A	Communication tool development and resource building							
2.A.1	Resource Building - Provision of documents, manuals, books and database access to scientific literature						Pawin Padungtod,	

							FAO-RAP	
2.A.2	Sample referral guidelines for transboundary animal diseases (TADs)						Pawin Padungtod, FAO-RAP	
2.B	Development of joint meetings and conferences to support networking and promote national laboratory policies							
2.B.1	Regional Laboratory Technical Advisory Group Meeting						Pawin Padungtod, FAO-RAP	OIE/WHO
2.C	Review and update of the tripartite Laboratory Networking Strategy (LNS) and future planning							
2.D	Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories							
2.D.1	Regional and national stakeholders meeting						Pawin Padungtod, FAO-RAP	OIE/WHO
2.D.2	Four-way linking framework to improve the linkage between laboratory and epidemiological data (for H5N1 zoonotic influenza) for assessing health risks at the human-animal interface						Pawin Padungtod, FAO-RAP	OIE, WHO, PREDICT
2.E	Support and promote laboratory networks							
2.F.	Support and promote laboratory partnerships							
2.F.1	Support and promote the establishment/development of regional service laboratories						Pawin Padungtod, FAO-RAP	OIE

2.3 Planned activities for CONGO BASIN

Activity code	Activity description	2011			2012			Focal Person	PARTNERS
		10-11	11-11	12-11	01-12	02-12	03-12		
	Output 1 Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced								
1.A.	1.A. Follow-up of laboratory mapping exercise activities							B.M. Seck;	OIE, WHO

								J.K. Litamoi	
	1.A.1	Follow-up of ongoing desktop review of existing data on laboratory capacity and networks from existing laboratory assessments						B.M. Seck; J.K. Litamoi	OIE, WHO
	1.A.2	Follow-up of review and compilation of national laboratories annual/biannual reports and information generated by members of the West and Central regional laboratory network (RESOLAB), Eastern Africa network (EARLN), SADC Laboratory Network (LABNET) and FAO laboratory assessments/mission reports						B.M. Seck; J.K. Litamoi	
	1.A.3	Additional targeted data collection, including laboratory visits and/or follow-up assessments if necessary, to fill in gaps in knowledge on laboratory capacity						B.M. Seck; J.K. Litamoi	OIE, PREDICT
	1.A.4	Integrate the outcomes of the laboratory mapping into the Laboratory Networking Strategy						B.M. Seck; J.K. Litamoi	OIE, WHO, FLI
	1.A.5	Adaptation of animal health laboratory (individual and country-level) assessment tools							
1.B.	1.B.	Support to and participation in conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines, and standards						B.M. Seck; J.K. Litamoi	OIE, WHO
1.C	1.C	Develop and conduct FAO/OIE/WHO trainings or workshops to build laboratory capacity and to promote national laboratory policies, guidelines						B.M. Seck; J.K. Litamoi	OIE, WHO
	1.C.1	Regional workshop: "Targeting the needs for genetic sequencing"						B.M. Seck; J.K. Litamoi	OIE, WHO
	1.C.2	Regional workshop, "Diagnostic laboratory quality Assurance: Workshop on Process Control - Quality Control (Sample Management; Quality Control for Quantitative Tests; Quality Control for Qualitative Tests)"						B.M. Seck	FVI
	1.C.3	Regional training course on "Major transboundary and zoonotic animal diseases in the region: early detection, surveillance and epidemiology"						B.M. Seck; J.K. Litamoi	EISMV, PREDICT
	1.C.4	Regional train-the-trainer pathology workshops "Basics of Field and Laboratory Diagnosis"						B.M. Seck; J.K. Litamoi	UGA, OIE
	1.C.5	Regional workshop: Laboratory equipment calibration and maintenance						B.M. Seck; J.K. Litamoi	APHIS,EISMV
	1.C.6	National trainings with field epidemiologists for samples collection, storage, shipping						B.M. Seck; J.K. Litamoi	WHO, OIE
1.D	1.D	Promote and support laboratory quality management						B.M. Seck; J.K. Litamoi	OIE,WHO

1.D.1	Support QMS implementation in providing standard documents and samples of SOPs							B.M. Seck; J.K. Litamoi	OIE,WHO
1.D.2.G	On-site audit/backstopping missions for assessing quality assurance system implementation and development of quality documentation.							B.M. Seck	IAEA
1.D.2	On-site audit/backstopping missions for assessing quality assurance system implementation and development of quality documentation (DRC, Congo, CAR, Rwanda, Tanzania and Uganda).							B.M. Seck; J.K. Litamoi	FVI
1.D.3	Laboratory support trainings to assist in equipment maintenance and calibration							B.M. Seck; J.K. Litamoi	APHIS
1.D.4	Promotion of laboratory management mentoring program between laboratory directors and/or managers of IDENTIFY-supported laboratories							B.M. Seck; J.K. Litamoi	National lab
1.D.5	Assessment missions (Cameroon, DRC) for biosafety and biosecurity infrastructures, equipment and practices								APHIS
1.D.6	Develop partnership with regional biosafety association							B.M. Seck; J.K. Litamoi	AfBSA
1.D.7	Participation of selected countries to external quality assessment (EQA) schemes targeting avian influenza/Newcastle disease, Rift Valley Fever, Peste des Petits Ruminants, and Foot-and-Mouth Disease							B.M. Seck; J.K. Litamoi	IAEA, IZSve
1.D.8	Provision to the nine beneficiary countries with validated standardized veterinary diagnostic reagents -antigens and antisera- targeting priority TADs laboratory diagnosis							B.M. Seck; J.K. Litamoi	IAEA, IZSve
1.D.9	Development of specific technical competence to face emergent disease situations in the region							B.M. Seck; J.K. Litamoi	National lab
1.E	1.E Provide laboratory equipment and supplies in a coordinated manner							B.M. Seck; J.K. Litamoi	National labs, WHO, PREDICT
Output 2 Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened									
2.A	2.A Communication tool development and resource building							B.M. Seck; J.K. Litamoi	OIE, WHO
2.A.1	Develop communication tool(s) for different audiences, stakeholders and partners (all 9 IDENTIFY-supported countries)							B.M. Seck; J.K. Litamoi	OIE, WHO
2.A.2	Resource Building - Provide documents, manuals, books and database access to scientific literature (all 9 IDENTIFY-supported countries)							B.M. Seck; J.K. Litamoi	OIE, WHO

2.A.3	Second phase of the study on the development of collaborations and/or partnerships between public veterinary laboratories and the animal industry						B.M. Seck; J.K. Litamoi	National lab
2.A.4	Sample referral guidelines for transboundary animal diseases (TADs)							
2.A.5	Production, printing and dissemination of case definition and recommended test repertoire for IDENTIFY listed priority diseases to help animal health personnel (both field and lab) in the identification and prompt reporting of diseases							
2.B	2.B Organize and conduct joint meetings and conferences to support networking and promote national laboratory policies						B.M. Seck; J.K. Litamoi	
2.C	2.C Review and update of the Laboratory Networking Strategy (LNS) and future planning						B.M. Seck; J.K. Litamoi	
	2.C.1 Tripartite regional coordination meetings						B.M. Seck; J.K. Litamoi	OIE, WHO
2.D	2.D Engage with stakeholders to support the development of cross-sectoral approach(es) concerning laboratories						B.M. Seck; J.K. Litamoi	OIE, WHO
2.E	2.E Support and promote laboratory networks						B.M. Seck; J.K. Litamoi	
	2.E.1 Support to routine regional and global networking meetings						B.M. Seck; J.K. Litamoi	OIE, OFFLU, EDPLN, GFN, AU-IBAR
	2.E.2 Linking laboratory and epidemiologic networks						B.M. Seck; J.K. Litamoi	APHIS, CIRAD, FVI, AU-IBAR
	2.E.3 Support for sharing of information and biological materials						B.M. Seck; J.K. Litamoi	
2.F.	2.F Support and promote laboratory partnerships						B.M. Seck; J.K. Litamoi	
	2.F.1 Identification of FAO Reference Centres in the regions and beyond prepared to offer expertise in diseases or technical areas relevant to each region						B.M. Seck; J.K. Litamoi	OIE
	2.F.2 Support and promote the establishment/development of regional service laboratories						B.M. Seck; J.K. Litamoi	OIE

Main challenges encountered and response provided

- Several major issues were encountered in this reporting period, some of which should ultimately allow activities to progress more smoothly and some that remain new challenges to solve. Significant emphasis on country-level impacts and the subsequent review of the current approach has uncovered the need to re-evaluate present implementation strategies and develop new solutions, which are still in development. These efforts have been further complicated with lack of clarity in reporting / planning process at the country and regional levels where duplicative requests from regional and country USAID offices continue and our officers seek to comply.

As EPT+ comes online, there will be new opportunities for building on current country level approaches that integrate the field and laboratory activities in priority countries. These opportunities can also include synergy and coordination with other EPT partners, which has been suboptimal, but is improving and expected to gain momentum in Year 3.

- The separation of the work plan process (announced at the June meeting in Rome) resulted in an unexpected drop in the frequency and quality of the communication between the IDENTIFY partners, especially at HQ level. Renewed efforts have improved the coordination, and will continue – particularly with regards to implementation of One Health activities at the country level where coordination is needed to identify opportunities, ensure linkages, and provide clear messages across sectors.
- Some activities in both regions were slowed or postponed from March to June following the request by USAID to conserve funds, and additional delays have been experienced from July to September due to the significant time devoted to the Year 3 work planning process and revisions. Where needed, activities have been brought forward to Year 3.
- The issue of veterinary laboratory sustainability is complex and is not yet being sufficiently addressed, in particular in Central Africa, where the animal industry is not developed. Significant support to national strategy development, identification of resources, and monitoring of laboratory progress is needed, accompanied with regulatory measures. FAO|IDENTIFY will only be able to partially address these issues.

Main progress made towards the achievement of project outcomes (since the start of the project activities)

- The support provided by IDENTIFY to date has contributed to greater understanding of the regional animal health priorities, assessment of laboratory capacities, and identification of regional and national gaps and resources.
- The direct support afforded to laboratories is substantial and has allowed expansion of activities to include quality assurance, biosafety, and maintenance and calibration of equipment, which contribute to laboratories' ability to conduct their work at internationally accredited standards (e.g. ISO 17025). Many national laboratories had never had the opportunity to consider these major issues. This support is not provided in an isolated and sequential manner but builds upon previous and current investments in laboratory networking and allow for a programmatic approach, proper approbation of planned activities by countries, and supports a regional approach to transboundary animal diseases (TADs).
- As many priority diseases are TADs, a regional approach (where agreed) allows for rapid disease detection/identification, and response measures can be coordinated regionally for more effective control. The networks in the West/Central, Eastern Africa and South-East Asia regions have set a good example with both the formal and informal exchange of information, collective effort, and responsibility to build laboratories in the regions. While laboratory capacities and national needs are heterogeneous within each region, the mapping tool developed by FAO has contributed to producing a regional perspective of laboratory capacities and gaps, identifying the required regional and individual support in those laboratories and offering a visualization tool to policy makers. Other partners such as APHIS-USDA, EU-FMD commission and CIRAD have demonstrated increasing interest in and support for these laboratory networks. This growing confidence lends credence to the regional approach, and FAO has a comparative advantage in the coordination of such supports and inputs.
- This project has enabled launching of innovative initiatives, such as the genetic module in the EMPRES-i database, the 4-way linking framework and the laboratory mapping tool. The genetic module represents an ideal example of a multidisciplinary success, linking virology, epidemiology and bioinformatics, and is receiving increasing interest from the scientific community and from policy makers.
- Building on the investments made with support under avian influenza, this project sustains previously established mechanisms such as collaborations and communication pathways between organizations, global –OFFLU- and regional networks, and benefits from momentum gained through “public good concepts” such as recognition of the importance of early detection and intervention, and impacts of pathogens with pandemic potential; these investments facilitate the interest and willingness for further development of technical laboratory capacities, especially molecular techniques, to other transboundary and priority diseases.

3 Annexes & Tables

Annex 1: Tables 1 – 4 for reporting period (1 April 2011 - 30 September 2011)

Table 1: FAO communication and coordination for IDENTIFY (including external communication with EPT Partners) (links with Activity 3.1)

Table 2: List of [non-IDENTIFY] conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines, and standards to which participants were supported (links with Activity 3.8)

Table 3: List of FAO/OIE/WHO-organized trainings or workshops to build laboratory capacity and to promote national laboratory policies, guidelines (linked to Activity 3.9)

Table 4: List of joint meetings and conferences organized by FAO/OIE/WHO to support networking and promote national laboratory policies (linked to Activity 3.9 and 3.12)

Annex 2: USAID EPT/IDENTIFY Project Position on Provision of Laboratory Equipment and Supplies

Annex 3: Current status of the progress of the Veterinary Glossary presenting an overview for validated (new) diagnostic techniques in addition to OIE recommended methods.

Annex 4: Global Laboratory Networking Strategy - June 2011

Annex 5: List of Laboratories – SSEA and Congo Basin

Annex 6: Questionnaire adapted from the lab-mapping analysis tool

Annex 7: CSF-PRRS Training and Workshop Evaluation

Annex 8: Mapping Exercise –Congo Basin.

Annex 1: Tables 1 – 4 for reporting period (1 April 2011 - 30 September 2011)**Table 1:** FAO communication and coordination for IDENTIFY (including external communication with EPT Partners) (links with Activity 3.1)

Event Title	Dates	Venue	Organizer(s)	Other Information
Global				
Tripartite face-to-face meetings	10-11 May; 15-16 June, 27-28 June 2011			Project management and planning
Regular tripartite teleconferences (TC) or videoconferences	since Oct 2011			Project management and planning; biannual report; laboratory networking strategy; Year 3 Work Plans; Global Survey
TC and Face-to-face meetings with IDENTIFY AOTR, USAID/W	19 Apr; 3 Aug; 22 Sept; 15-16 June, 28 June; 13 July 2011			Face to face meetings replacing monthly TCs, on the occasion of the EPT Quarterly Partners meeting and of the SE Asia EPT planning meeting
EPT Program Quarterly meetings	27-28 June 2011	Washington DC, USA	USAID	HQ team participated to the EPT quarterly meeting together with OIE and WHO, including the Lab working group discussion (Participants: USAID, PREDICT, RESPOND, CDC, DELIVER)
Congo Basin				
EPT planning meeting organized by USAID	27-29 July 2011	Kinshasa, DR Congo	USAID	Coordination and planning meeting between all EPT partners
Side meeting of IDENTIFY focal points after EPT meeting	29 July 2011	Kinshasa, DR Congo	FAO, OIE, WHO HQ and AFRO	The FAO IDENTIFY Regional coordinators attended on behalf of IDENTIFY to coordinate the EPT work plan and fine-tune details on activities
Regional tripartite TCs between regional coordinators	7 Apr; 2 May, 19 May; 12 July 2011		FAO, OIE, WHO	Project management and planning

Preparatory meeting between FAO and OIE	26 July 2011	Kinshasa, DR Congo	FAO, OIE	Review of ongoing activities and identification of possible Year 3 areas for collaboration in animal health sector
SE Asia				
Informal Consultation on a Draft Asia Pacific Laboratory Action Plan (2011 - 2015) for Emerging Infectious Diseases, +	19-20 May 2011	Manila, Philippines	WHO WPRO	IDENTIFY HQ and SE Asia coordinator participated in the Informal Consultation on a Draft Asia Pacific Laboratory Action Plan (2011-2015) for Emerging Infectious Diseases organized by WHO Western Pacific Regional Office (WPRO). Fourteen participants from WPRO countries attended the meeting along with representatives from ASEAN secretariat, USAID, FAO and OIE. IDENTIFY HQ coordinator (Mia Kim) presented the Tripartite (FAO-OIE-WHO) Laboratory Capacity Building and Networking while IDENTIFY SE Asia coordinator (Pawin Padungtod) presented FAORAP regional approach to animal health laboratory networking under IDENTIFY project of the Emerging Pandemic Threat (EPT) programme supported by USAID and the Regional Cooperative Programme on Highly Pathogenic and Emerging Diseases (HPED) supported by the European Commission (EC). Subsequent discussion among the tripartite on collaborative laboratory networking activities in SE Asia was focusing on upcoming meeting schedule. It was agreed that the tripartite would pursue in-country collaborative activities including organization of the Zoonoses conference, training in laboratory management and biosafety.
EPT Viet Nam country work plan development workshop, +	20-21 June 2011	Hanoi, Viet Nam	USAID Viet Nam	A spreadsheet describing activities in Viet Nam implemented by all EPT partners was developed. Activities were grouped under five themes including: Livestock Disease Surveillance, Outbreak response, Laboratory Capacity Development, Risk Determination and Risk Reduction. Potential areas of collaboration across EPT components were identified. A summary of EPT contribution for Viet Nam was presented to USAID mission director at the end of the meeting
EPT Thailand country work plan development	23 June 2011	Bangkok,	USAID RDMA	A spreadsheet describing activities in Thailand implemented by all EPT partners was developed. Activities were grouped under five

workshop		Thailand	(Thailand)	themes including: Livestock Disease Surveillance, Outbreak response, Laboratory Capacity Development, Risk Determination and Risk Reduction. Potential areas of collaboration across EPT components were identified.
EPT LaoPDR country work plan development workshop	24 June 2011	Bangkok, Thailand	USAID RDMA (Thailand)	A spreadsheet describing activities in LaoPDR implemented by all EPT partners was developed. Activities were grouped under five themes including: Livestock Disease Surveillance, Outbreak response, Laboratory Capacity Development, Risk Determination and Risk Reduction. Potential areas of collaboration across EPT components were identified.
Tripartite IDENTIFY South and SE Asia Meeting, +	11 July 2011	Bangkok, Thailand	FAO-OIE- WHO	Participants including FAORAP, FAOHQ, OIE SRR SEA, WPRO, SEARO and WHO-IHR agreed upon regional and country work plan for 2012. The overall IDENTIFY regional and country work plan of each organization were presented and agreed upon. Gantt chart and presentation were prepared. The outcomes from this meeting were presented at the regional EPT meeting in Bangkok, 12-13 July 2011.
EPT Asia Regional Workshop, +	12-13 July 2011	Bangkok, Thailand	USAID	The objectives of the workshop were ; 1) Building a shared vision for EPT as a "program", 2)Share "current thoughts" about FY12 country and regional work plans and 3) Highlight the relevance of "non-EPT" platforms in the region
EPT Indonesia country work plan development workshop, +	15-16 July 2011	Jakarta, Indonesia	USAID Indonesia	IDENTIFY HQ liaison together with OIE IDENTIFY SE Asia coordinator participated in the Indonesia EPT planning meeting. EPT partners delivered prospective activities across the five themes: Livestock Disease Surveillance, Outbreak response, Laboratory Capacity Development, Risk Determination and Risk Reduction. A draft work plan was developed for IDENTIFY. Potential areas of collaboration across EPT components were identified.
Stakeholder planning meeting	1 September, 2011	Bangkok, Thailand	FAO-OIE	Internal planning meeting

* = side meetings with OIE , + = side meetings with OIE and WHO

Table 2: List of [non-IDENTIFY] conferences, trainings or workshops related to laboratory capacity building, and national laboratory policies, guidelines, and standards to which participants were supported (links with Activity 3.8)


Event Title	Dates	Venue	Organizer(s)	Invited IDENTIFY Countries	Other Information
Global					
1 st International Congress on Pathogens at the Human-Animal Interface (ICOPHAI): Impacts, Limitations and Needs in Developing countries.	15-17 September 2011	Addis Ababa, Ethiopia	ICOPHAI		No country invited but poster on the One Health approach presented by FAO
Congo					
Joint regional AU-IBAR/FAO-RAF Technical workshop on a regional strategy for African swine fever (ASF) control in Central Africa	21-23 June- 2011	N'Djamena, Chad	AU-IBAR/FAO-RAF	DRC, Eq. Guinea, CAR	Participation of the Directors of national veterinary lab of DR Congo, Equatorial Guinea and Central African Republic
One Health for Central and East Africa alliance (OHCEA)	4-6 May:	Brazzaville, Congo	USAID		IDENTIFY focal point Bamako participated. Meeting purpose was to Participate in One Health brainstorming meeting called by USAID at the WHO-AFRO office to



					enhance cooperation between public health and veterinary faculties and the interaction between Ministries of Agriculture and Health. 20 participants (USAID, RESPOND, OHCEA, WHO-AFRO, AU-IBAR and FAO)
EAC/EAPHLN Experts Meeting on viral haemorrhagic fevers and integrated diseases surveillance and response for EAC countries	11-15 July :	Entebbe, Uganda			ECTAD Nairobi focal point participated. The purpose of the workshop was to discuss the status of the regional plan on viral hemorrhagic fevers (VHFs) as the VHFs have been occurring frequently in the region in the past ten years. Uganda gave an account of their experiences with the recent outbreaks of VHFs (Ebola and Yellow fever) in the past one year. The workshop participants visited the recent Ebola outbreak areas in Central and northern Uganda (Kitgum and Lacon hospital in Gulu) and assessed the capacity of the country to manage such outbreaks in the future. Community and field simulation scenarios were developed and discussed. The positive gains by Uganda in the management of VHFs should be consolidated in the other countries and the region as a whole.
SE Asia					



Asia Pacific Biosafety Association Conference, *	5-6 May	Singapore	Asia Pacific Biosafety Association	FAO/IDENTIFY SE Asia Coordinator supported to deliver joint presentation on One Health approach to Biosafety, including EPT with OIE/IDENTIFY SRR Coordinator	A joint presentation entitled "One Health Approach to Biosafety", on One-Health approach to laboratory capacity building including description of the Emerging Pandemic Threat Programme and IDENTIFY was presented by FAORAP and OIE SRR SEA IDENTIFY coordinators
Avian Virology Diagnostic Training and Workshop	11-22 July 2011	Weybridge, UK	Veterinary Laboratory Agency	Philippines	Requested for supported by Philippines Animal Health Center, Bureau of Animal Industry. IDENTIFY supported participation of Dr Edna Felipe, Head of Avian Influenza Diagnostic unit. This training contribute to improve national laboratory staff capacity and competence in diagnostic of priority diseases in the region, which ultimately strengthen laboratory support for surveillance of priority and emerging diseases in the region.

* = side meetings with OIE , + = side meetings with OIE and WHO

Table 3: List of FAO/OIE/WHO-organized trainings or workshops to build laboratory capacity and to promote national laboratory policies, guidelines (linked to Activity 3.9)

Event Title	Dates	Venue	Organizer(s)	Invited IDENTIFY Countries	Other Information
Global					
Training on virological and molecular techniques for the diagnosis of Avian Influenza and Newcastle Disease and Rabies	13-24 Jun 2011	Padova, Italy	IZSVe of Padova under a LoA with FAO	Rwanda, Tanzania	The training aimed at providing participants with the necessary information and skills related to molecular and virological laboratory procedures utilized for the diagnosis of Avian Influenza and Newcastle Disease and Rabies.
Training Course on Advanced Bioinformatics and Laboratory Data Management for Enhanced Quality Assurance and Quality Control  IAEA.Bioinformatic_course_2011.doc	11-22 Jul 2011	Vienna, Austria	FAO/IAEA	Cameroon, Uganda, Ethiopia, Kenya, Indonesia, Malaysia	Consisted of theoretical and practical sessions in the application of advanced bioinformatics tools for viral genome sequence analysis (databases, sequences retrieval, sequences comparison and phylogeny), animal genomic data handling (Animal genetic resources databases) and laboratory information management (LIMS, Vet-LIMS). Participant's knowledge was improved on practical application of bioinformatic tools for viral genome analysis and laboratory information management. 19 participants attended this course; 6 covered by IDENTIFY. Partners: IAEA TC Project:RER/5/015, SIB

Congo Basin					
<p>Regional Training course on "Major transboundary and zoonotic diseases : Early detection, surveillance and epidemiology"</p>  <p>IAEA.Uganda_Jun_2011_final.doc</p>	<p>Part 1: 20 June to 24 June - Transboundary Animal Diseases (PPR and CBPP);</p> <p>Part 2: 27 Jun-1 Jul, Zoonotic Diseases (rabies and RVF).</p>	Entebbe, Uganda; National Animal Disease Diagnostics and Epidemiology Centre, Ministry of Agriculture, Animal Industry and Fisheries	FAO/IAEA	Cameroon, CAR, Congo, DR Congo, Equatorial Guinea, Gabon, Rwanda, Tanzania, Uganda.	<p>One health concept training with one week dedicated to transboundary animal diseases (CCPP and PPR) and the second to zoonotic diseases (RVF and Rabies). 15 scientists from 11 different countries (Kenya and Ethiopia also participated) attended this course.</p> <p>Partners: National Institute for Communicable Diseases, South Africa; Centre de coopération Internationale en Recherche Agronomique pour le Développement, France; National Animal Disease Diagnostics and Epidemiology Centre, Ministry of Agriculture, Animal Industry and Fisheries, Uganda.</p>
Advanced Regional Training on Laboratory Quality Assurance and Biosafety/Biosecurity	4 - 8 Jul 2011	Dar Es Salam, Tanzania	FAO	Rwanda, Uganda, Tanzania	Other participating countries: Ethiopia, South Sudan, Sudan, Djibouti, Burundi, Kenya, Ethiopia, Eritrea and Somalia.
<p>Field epidemiologists and laboratory technicians regional training workshop on necropsy, sample collection and shipment.</p>  <p>Necropsy.Sampling.Kinshasa 15.19Aug11.</p>	15-19 August 2011	Kinshasa, DR Congo	FAO	Cameroon, Central African Republic, Democratic Republic of Congo, Congo, Gabon, Equatorial Guinea, (2 participants by country)	<p>To train field and lab technicians in necropsy, sample collection and shipment.</p> <p>Other participation country: Sao Tome and Principe. Partners : Ecole Vétérinaire de Dakar (EISMV), Laboratoire Central Vétérinaire de Kinshasa (LCVK)</p>
Regional Workshop on laboratory Quality	12-16 September	Libreville,	FAO	Cameroon, Central African Republic,	Follow up training for Quality system strengthening in IDENTIFY and RESOLAB

Assurance (QA) system: Management of laboratory equipment and basic metrology  AQ Libreville 12.16Sept2011.doc	2011	Gabon		Democratic Republic of Congo, Congo, Gabon, Equatorial Guinea	laboratories. Other participating countries: 10 Western Africa countries (Benin, Burkina Faso, Cap-Vert, Côte d'Ivoire, Guinea, Guinea Bissau, Mali, Niger, Senegal, Togo) supported by USDA/APHIS
Workshop on OIE Standards for Collection & Shipment of Biological Samples	9-11 August 2011	Nairobi, Kenya	OIE	All IDENTIFY countries (supported by OIE)	FAO IDENTIFY focal point for Eastern Africa attended and gave a presentation on FAO Reference Centres and described FAO's technical assistance programmes, and projects to its member countries (e.g. TCPs, GCPs, UTFs, Pas, SPFS, LoAs, SPPs, and TeleFood projects).
SE Asia					
Training and workshop on Diagnosis and Characterization of CSF and PRRS Viruses  CSF-PPRS_Training_and_Workshop_Final.	11-20 July 2011	RAH06 (Ho Chi Minh City, Viet Nam)	FAO, Viet Nam DAH and AAHL	Cambodia (NaVRI), China (CAHEC, Yunnan), Indonesia (DGLAHS), LaoPDR (NAHC), Malaysia (VRI), Philippines (PAHC), Thailand (NIAH) and Viet Nam (RAH06)	This training aimed to harmonize the protocols for diagnostic and characterization of the two priority animal diseases in Southeast Asia. Seventeen laboratory staff attended this training. The training contents covered swine viral diseases diagnostic and characterization procedures including gross pathology, immunohistochemistry and molecular techniques. The post-training evaluation showed that the participants were satisfied with the training organization and gained satisfactory level of understanding and skills in diagnostic of CSF and PRRS
The Workshop on Diagnosis of Priority and Emerging Diseases	21 - 22 July 2011	Ho Chi Minh City, Viet Nam	FAO, Viet Nam DAH and AAHL	Cambodia (NaVRI), China (CAHEC, Yunnan), Indonesia (DGLAHS), LaoPDR	The objective of this workshop was to draft the strategic framework for capacity building for diagnosis and characterization of priority and emerging diseases in swine. A total of 43

in Swine				(NAHC), Malaysia (VRI), Philippines (PAHC), Thailand (NIAH) and Viet Nam (RAHO6)	participants including laboratory staff from 7 countries in ASEAN, China, experts in swine diseases from academic institution, vaccine production company, Viet Nam Department of Animal Health and the Emerging Pandemic Threat programme partners involving in conducting surveillance in Viet Nam participated in the workshop. Presentations were made to provide the participants with update on CSF and PRRS disease situation in the region, diagnostic, surveillance and control techniques for CSF, PRRS and other emerging diseases in wild and domestic animals. The outcome of the workshop included recommendation of capacity building activities under 5 key areas; biosafety, laboratory support for surveillance, legislation, networking and laboratory quality
Training on Quality Assurance and Standardization of Diagnostic Reagents	5-19 September 2011	Geelong, Australia	FAO-AAHL (LoA)	China, Cambodia, Indonesia, LaoPDR, Malaysia, Myanmar, Philippines, Thailand and Viet Nam	The objective of this training was to equip laboratories with necessary skill to develop their own proficiency testing programme. A total of 15 participants from IDENTIFY supported laboratories in Cambodia (NaVRI), China (CAHEC), Lao PDR (NAHC), Malaysia (VRI), Philippines (PAHC), Thailand (VRI) and Viet Nam (DAH) participated in the 12-day training. The training program at the Australian Animal Health Laboratory (AAHL) reviewed the requirements under ISO17025 for quality assurance of laboratory tests and training in providing Proficiency Testing (PT) to ensure laboratories are producing accurate and correct results for tests carried out in the laboratory. It is foreseen that the developed

					capacity to provide proficiency testing will allow national animal health laboratories to develop their own external quality assurance programme for their national laboratory network.
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Table 4: List of joint meetings and conferences organized by FAO/OIE/WHO to support networking and promote national laboratory policies (linked to Activity 3.9 and 3.12)

Event Title	Tentative Dates	Tentative Venue	Organizer(s)	Invited IDENTIFY Countries	Other Information
Global					
Congo Basin					
9 – 10 May 2011	Second EARLN Interim joint network meeting	Nairobi, Kenya	The Interim Secretariat was coordinated and hosted by FAO ECTAD EA in collaboration with AU-IBAR and OIE Sub Regional Representative in Eastern Africa	No IDENTIFY supported country invited	The FAO ECTAD EA IDENTIFY coordinator attended the meeting, facilitated and presented IDENTIFY. The partners involved included OIE, AU-IBAR, EAC, IGAD. The establishment of Interim Secretariat was endorsed by the CVOs meetings in order to better coordinate the two networks (cpi and laboratory) in Eastern Africa. Livestock representative (Ethiopia), Wildlife representative (Tanzania) and VS (Kenya) also attended the meeting.
5-7 September 2011	2nd Joint Eastern Africa Epidemiology and Laboratory network meeting	Kigali, Rwanda	FAO ECTAD Nairobi	Uganda, DRC, Tanzania and Rwanda.	The participation of the RESOLAB coordinator (FAO) enabled the development of stronger linkages between RESOLAB and EARLN networks. Meeting also attended by AU-IBAR, OIE, CDC, EARLN-FMD and other Eastern African countries. Wildlife sector represented by

					participants from Kenya and Rwanda.
SE Asia					
Consultation for establishing a network of Regional Leading Diagnostic Laboratories, *	27-29 July 2011	Kathmandu, Nepal	FAO Sub Regional ECTAD, Nepal	FAO IDENTIFY SE Asia Coordinator supported to deliver presentation on the SE Asia Regional approach to laboratory networking and EPT	The Consultative Workshop for Epidemiology and Laboratory Network in the SAARC Region was organized from 27 to 29 July 2011 involving the epidemiology and laboratory experts of animal health and wild life sectors of SAARC countries and various other organizations like WHO, OIE, EU and wild life personnel. The workshop was attended by 43 country participants from the entire eight SAARC member states. The workshop participants recommended how the epidemiology and laboratory networks should be set up and functioned in the SAARC region including mechanisms for networking among sub-national laboratories, linkage between national laboratory and epidemiology networks, sharing of diseases information among member states and communication models. Also highlighted during the meeting was the importance of communication framework for the region and the need to have one
Regional Laboratory Network Technical Advisory Group Meeting, *	4-5 August 2011	Bangkok, Thailand	FAO-OIE	16 representatives from ASEAN Regional Reference Laboratory for HPAI (VRI), Australian Animal Health Laboratory	Regional Framework for Laboratory Capacity Building and Networking in Asia was developed taking into account other regional strategies including IDENTIFY Regional Laboratory Networking Strategy, Asia Pacific Strategy for Emerging Diseases

				{AAHL}, FAO, National Institute of Animal Health (NIAH) of Thailand, OIE, OFFLU, USDA{USAID.	{APSED), ASEAN HPAI Regional Strategy
Meeting to Initiate a Strategic Plan and Strategic Framework for Epidemiology Capacity Development in Asia	18-19 August 2011,	Bangkok, Thailand	FAO - RESPOND	FAO IDENTIFY SE Asia Coordinator supported to deliver presentation on the SE Asia Regional approach to laboratory networking	Recommendations relevant to the current developments in animal health in Asia were developed for a Strategic Framework by national, regional and international participants to represent the core elements of a five-year Strategic Plan for building epidemiology capacity in Asia.
The 4th OIE Regional Meeting on Strengthening Animal Health Information Networking in Asia	14-16 September 2011	Chiangmai, Thailand	OIE Tokyo	FAO IDENTIFY SE Asia Coordinator supported to share experiences and lessons learnt in HPAI control and present Regional Laboratory Network activities including the Emerging Pandemic Threat Programme and IDENTIFY.	The main objectives were:(1) To share updated information and experience in animal health information networking , (2) To review progress made by OIE Members in Asia in line with the previous meeting recommendations, (3) To discuss how to improve animal health information networking to strengthen animal disease control and prevention measures at national and regional level, (4) To discuss and review current H5N1 HPAI control measures in OIE Members in Asia in particular focusing on vaccination. The meeting was attended by participants from 21 countries/territories namely: Bangladesh, Brunei, Bhutan, Cambodia, PR

					China, Chinese Taipei, Hong Kong SAR, Indonesia, Japan, RO Korea, Laos, Malaysia, Maldives, Mongolia, Myanmar, Nepal, the Philippines, Singapore, Sri Lanka, Thailand and Vietnam, local observers (Thai-DLD) and FAO. The IDENTIFY SE Asia coordinator shared experience and lessons learnt in HPAI control and present Regional Laboratory Network activities including the Emerging Pandemic Threat Programme and IDENTIFY.
WHO South East Asia Regional Workshop on the Emerging and Dangerous Pathogens Laboratory Network, +	20-22 September 2011	Jakarta, Indonesia	WHO-SEARO	FAO IDENTIFY SE Asia Coordinator supported to share experiences and lessons learnt in HPAI control and present Regional Laboratory Network activities including the Emerging Pandemic Threat Programme and IDENTIFY	WHO regional workshop aims to convene key national, regional and global public health and animal health diagnostic laboratory scientists and EDP experts, and other stakeholders for developing the way forward for a collaborative regional laboratory preparedness and response network coordinated with Global EDPLN to enhance the region's capacity for detecting, responding to and preventing outbreaks of EDPs in SE Asia.

* = side meetings with OIE , + = side meetings with OIE and WHO

Annex 2: USAID EPT/IDENTIFY Project Position on Provision of Laboratory Equipment and Supplies
August 30, 2011

The IDENTIFY project seeks to strengthen national laboratory capacity for rapid and accurate detection of known key pathogens and appropriate handling of material from cases of disease with no identified cause. FAO/OIE/WHO are jointly implementing the IDENTIFY project through their existing institutional frameworks, mechanisms and networks. These project efforts by IDENTIFY are often implemented alongside a variety of host governments', donors' and international organizations' laboratory capacity building efforts and investments, and coordinating and rationalizing IDENTIFY's efforts among these other efforts needs to be done in a transparent manner.

The IDENTIFY project aims to provide sustainable inputs into: 1) the development of guidance and policy for national laboratories; 2) promoting laboratory quality (e.g. biosafety/biosecurity, quality assurance, accurate diagnosis, and specimen collection, handling and shipping); 3) strengthening laboratory capacity in support of surveillance and response; and 4) enhanced laboratory networking.

Given the EPT program's focused mission and limited funds, the IDENTIFY project doesn't intend to routinely provide or pay for partner laboratories' recurring material costs. On a case-by-case basis, where the absence of particular pieces of laboratory equipment or reagents are seriously limiting the laboratory's ability to perform normative disease testing, or where specific laboratory investments may improve a laboratory's ability to serve as a national and/or regional resource for normative disease testing, and where there is reasonable expectation that the government involved will sustain the efforts of the laboratory(ies) in question, then in these instances IDENTIFY will consider financing these needs, and then only in full cooperation with the relevant national authorities and in consultation with other EPT Partners.

While all three organizations recognize the need to engage regional parties in order to ensure sustainability and continued collaboration within and between the animal and public health sectors, the three organizations operate under separate mandates and the approach to achieving their goals sometimes differs. For example, provision of laboratory equipment and consumables in support of points 2 and 3 above is considered by all three organizations based upon need and in line with the national authority, with the following distinctions:

- For FAO, a regional approach is followed where a programmatic strategy exists in order to provide consumables such as reference reagents to countries equally, and national inputs are coordinated where need is identified and in agreement with the Ministry of Agriculture.
- While the OIE may provide laboratory equipment and supplies on a limited basis within the context of the OIE Twinning Programme, the OIE is not planning wide-spread procurement of equipment or supplies under the IDENTIFY Project.
- For WHO, both a regional and national approach is followed under existing regional platforms such as the Asia Pacific Strategy for Emerging Diseases (APSED), the Asia Pacific Strategy for Strengthening Health Laboratory Services and the Integrated Disease Surveillance and Response (IDSR) Strategy. Unlike FAO and OIE, WHO allocates funds under IDENTIFY directly to some of its Country Offices. These funds may be used to procure equipment and laboratory supplies following the agreement of the Ministry of Health of those countries.

Practically, should a USAID Mission or EPT partner in a given country wish to inquire about current or planned support for laboratory equipment or supplies through the IDENTIFY project, if the IDENTIFY Project has local representatives from WHO and FAO in that country/region,

they may approach those people to convey their request or suggestion. For inquiries regarding public health laboratories, the WHO representative may be contacted. Inquiries pertaining to support for animal health laboratories should be addressed to the FAO representative. Alternatively, if local or regional representatives are not available, USAID Mission and EPT partners may convey queries to IDENTIFY's headquarters' representatives, or to the USAID Washington AOTR. Requests or suggestions for provision of laboratory equipment can be best considered by the IDENTIFY Project if they are submitted early, when upcoming yearly work plans are being developed.

When the IDENTIFY Project has queries related to planned support for laboratory equipment or supplies coming from USAID Missions or EPT partners, these will be directed to the USAID/Washington AOTR, or the EPT Partner headquarters counterparts, who will attempt to collect and share any details on such provisions that would be of help to IDENTIFY, and its own laboratory strengthening efforts.

Should there be an extraordinary need, for example a disease outbreak that has exhausted local supplies, a country may request additional support from the IDENTIFY Project for their laboratory services. FAO, OIE and WHO, as IDENTIFY partners and also in keeping with their respective organizations' mandates, will attempt to meet such requests. The three organizations would coordinate their response with the other EPT partners under the leadership of the relevant national authorities as appropriate.

Annex 3: Current status of the progress of the Veterinary Glossary presenting an overview for validated (new) diagnostic techniques in addition to OIE recommended methods.

DISEASE		TABLE MATRIX	Review process
1	African Swine Fever	available	Reviewed by 3 reference labs, comments still awaited from expert review
2	Foot and Mouth Disease	available	Reviewed by 2 reference lab, needs review of 3 rd ref.lab
3	Influenza A Virus	available	Reviewed by 3 reference labs (EU, USA)
4	Newcastle Disease	pending	pending
5	Peste des petits ruminants	pending	Pending (submitted to expert review)
6	Rabies	available	Reviewed by 2 reference labs
7	Classical Swine Fever	pending	Pending (submitted to expert review)
8	Nipah/Hendra	pending	Pending (submitted to expert review)
9	Porcine Respiratory and Reproductive Syndrome	pending	Pending (submitted to expert review)
10	Poxviruses	pending	Pending (submitted to expert review)
11	Anthrax	available/pending	First draft available (done by Reference lab), needs review of further Reference labs
12	Salmonella	pending	Pending (submitted to expert review)
13	Brucellosis	available	Developed by expert, sent to Reference lab for review
14	Hemorrhagic Septicemia	pending	pending
15	Leptospirosis	pending	Pending (submitted to expert review)
16	Tuberculosis	available	Comments from 2 reference labs still awaited
17	Cysticercosis	available	Needs review of reference labs
18	Trypanosomosis	pending	Pending (submitted to expert review)
(19)	Additional: EIA	available	Reviewed by one Reference lab

Tables: Lists of IDENTIFY targeted animal and public health diseases including zoonoses

IDENTIFY Targeted Diseases: Congo Basin and SE Asia Regions (alphabetical)

For planning purposes only for the IDENTIFY Project

Jointly implemented by FAO, OIE and WHO

From SE Asia Animal Health Stakeholders Meeting, Bangkok, 20-21/01/2011	From Congo Joint Stakeholders Meeting, Entebbe, 02-04/11/2010	
SE Asia Animal Diseases	Congo Animal Diseases	Congo Human Diseases
African Swine Fever Anthrax Brucellosis Classical Swine Fever Foot and Mouth Disease Hemorrhagic Septicemia Influenza viruses Leptospirosis Newcastle Disease Nipah Peste des Petits Ruminants Porcine Respiratory and Reproductive Rabies Salmonella Spongiform encephalopathies Tuberculosis Viral haemorrhagic fevers	African Horse Sickness * African Swine Fever Anthrax Brucellosis Contagious Bovine Pleuropneumonia Contagious Caprine Pleuropneumonia * Cysticercoses * Foot and Mouth Disease Influenza viruses Leptospirosis * Monkey pox Newcastle Disease* Peste des Petits Ruminants Rabies Bacterial enteric diseases Spongiform encephalopathies* Toxoplasmosis * Trypanosomosis Tuberculosis Viral haemorrhagic fevers	Anthrax Bacterial Meningitis Brucellosis Dengue Hepatitis Influenza viruses Leptospirosis Malaria Monkey pox Plague Rabies Rickettsiosis Bacterial enteric diseases Toxoplasmosis * Trypanosomosis Tuberculosis Viral haemorrhagic fevers Viral respiratory diseases Yellow Fever

* listed as diseases of secondary concern for Congo Region

Bold: diseases appearing in at least 2 tables

Italic: diseases appearing in 3 tables

OIE Listed Animal Diseases for IDENTIFY : SE Asia Region (alphabetical)

For planning purposes only for the IDENTIFY Project

Jointly implemented by FAO, OIE and WHO

No.	Final Stakeholders' List	OIE Listed Disease	No.	Related other diseases, not OIE Listed
1	African Swine Fever	African Swine Fever	1	
2	Anthrax	Anthrax	2	
3	Brucellosis	Brucellosis (<i>Brucella abortus</i>)	3	
		Brucellosis (<i>Brucella melitensis</i>)	4	
		Brucellosis (<i>Brucella suis</i>)	5	
		Ovine Epididymitis (<i>Brucella ovis</i>)	6	
4	Classical Swine Fever	Classical Swine Fever	7	
5	Foot and Mouth Disease	Foot and Mouth Disease	8	
6	Haemorrhagic Septicemia	Haemorrhagic Septicemia	9	
7	Influenza viruses	Highly Pathogenic Avian Influenza in birds/Low Pathogenicity notifiable Avian Influenza in poultry α	10	Swine Influenza +
		Equine Influenza	11	
8	Leptospirosis	Leptospirosis	12	
9	Newcastle Disease	Newcastle Disease	13	
10	Nipah	Nipah Virus Encephalitis	14	
11	Peste des Petits Ruminants	Peste des Petits Ruminants	15	
12	Porcine Respiratory and Reproductive Syndrome	Porcine Respiratory and Reproductive Syndrome	16	
13	Rabies	Rabies	17	
14	Salmonella	Fowl Typhoid \dagger	18	Campylobacter jejuni +
		Pullorum Disease \dagger	19	Campylobacter coli +
		Salmonellosis (<i>Salmonella abortusovis</i>)	20	Verocytotoxigenic Escherichia coli \ddagger +
15	Spongiform Encephalopathies	Bovine Spongiform Encephalopathy	21	Chronic Wasting Disease \ddagger
		Scrapie	22	
16	Tuberculosis	Bovine Tuberculosis	23	Avian Tuberculosis \ddagger +
17	Viral Haemorrhagic Fevers	Crimean-Congo Haemorrhagic Fever	24	Marburg
		Epizootic Haemorrhagic Disease \dagger	25	Lassa Fever
		Rift Valley Fever	26	Hendravirus \ddagger +
		-		Ebola
		-		Hantavirus
		\dagger No designated OIE Reference Laboratory	+ Guidance available in OIE Terrestrial Manual	
Bold: diseases appearing in at least 2 tables		\ddagger OIE Reference Laboratory designated		
Italic: diseases appearing in 3 tables		α as defined in Chapter 10.4 of the OIE Terrestrial Animal Health Code		

vers. 1 18.3.1

vers. 1 18.3.11

OIE Listed Animal Diseases for IDENTIFY : Congo Basin Region (alphabetical)

For planning purposes only for the IDENTIFY Project

Jointly implemented by FAO, OIE and WHO

No.	Final Stakeholders' List	OIE Listed Disease	No.	Potential other diseases, not OIE Listed
1	African Horse Sickness*	African Horse Sickness	1	
2	African Swine Fever	African Swine Fever	2	
3	Anthrax	Anthrax	3	
4	Bacterial enteric diseases	Fowl Typhoid †	4	Campylobacter jejuni +
		Pullorum Disease †	5	Campylobacter coli +
		Salmonellosis (Salmonella abortusovis)	6	Verocytotoxigenic Escherichia coli ‡ +
5	Brucellosis	Brucellosis (Brucella abortus)	7	
		Brucellosis (Brucella melitensis)	8	
		Brucellosis (Brucella suis)	9	
		Ovine Epididymitis (Brucella ovis)	10	
6	Contagious Bovine Pleuropneumonia	Contagious Bovine Pleuropneumonia	11	
7	Contagious Caprine Pleuropneumonia *	Contagious Caprine Pleuropneumonia	12	
8	Cysticercoses*	Porcine Cysticercosis †	13	Bovine Cysticercosis +
		Echinococcosis/Hydatidosis	14	
9	Foot and Mouth Disease	Foot and Mouth Disease	15	
10	Influenza Viruses	Equine Influenza	16	Swine influenza +
		Highly Pathogenic Avian Influenza in birds/Low Pathogenicity notifiable Avian Influenza in poultry x	17	
		Leptospirosis	18	
11	Leptospirosis*	Leptospirosis	18	
12	Monkey Pox	-		
13	Newcastle Disease*	Newcastle Disease	19	
14	Peste des Petits Ruminants	Peste des Petits Ruminants	20	
15	Rabies	Rabies	21	
16	Spongiform Encephalopathies*	Bovine Spongiform Encephalopathy	22	Chronic Wasting Disease ‡
		Scrapie	23	
17	Toxoplasmosis*	-		+
18	Trypanosomosis	Dourine	24	
		Surra (Trypanosoma evansi)	25	
		Trypanosomosis (tsetse-transmitted)	26	
19	Tuberculosis	Bovine Tuberculosis	27	Avian Tuberculosis ‡ +
20	Viral Haemorrhagic Fevers	Criméan–Congo Haemorrhagic Fever	28	Marburg
		Epizootic Haemorrhagic Disease †	29	Lassa Fever
		Nipah Virus Encephalitis	30	Hendravirus ‡ +
		Rift Valley Fever	31	Ebola
		-		Hantavirus
* Listed as diseases of secondary concern for Congo region		† No designated OIE Reference Laboratory		+ Guidance available in OIE Terrestrial Manual
Bold: diseases appearing in at least 2 tables		‡ OIE Reference Laboratory designated		
Italic: diseases appearing in 3 tables		x as defined in Chapter 10.4 of the OIE Terrestrial Animal Health Code		

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Annex 4: Global Laboratory Networking Strategy - June 2011**Emerging Pandemic Threats Program****IDENTIFY Project****Background:**

The IDENTIFY project is the component of the USAID-funded Emerging Pandemic Threats (EPT) programme that focuses on the capacity of laboratories in the public-health and animal-health sectors to contribute to the management of emerging zoonotic pathogens through rapid detection of known pathogens and appropriate handling of material from cases of unidentifiable diseases. The IDENTIFY project is specifically designed to strengthen diagnostic capacities in the geographic "hot spot" regions identified by USAID where new diseases have previously emerged. In addition to IDENTIFY, the EPT Program has projects called PREDICT, RESPOND, and PREVENT which cover the areas of wildlife monitoring, field epidemiology and training, behavior change communications, and national planning. IDENTIFY activities have necessary connections and interactions with the activities of several of the other components of the EPT programme.

IDENTIFY is jointly implemented by the U.N. Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), and the U.N. World Health Organization (WHO). These organizations have long-established networks of laboratories which are an integral part of their public-health or animal-health function. Under the framework of the IDENTIFY project, the three organizations will enhance the diagnostic capacity and improve networking of these laboratories – both geographically and across the public-health and animal-health sectors. The networks will include international reference laboratories which will support national and regional laboratories, when necessary, by performing full characterization and investigation of "unknown" agents. The ultimate aim of the five-year project is to link together a global cooperative network that is fully capable of rapidly diagnosing and reporting to OIE on listed animal diseases and unusual epidemiological events or emerging diseases, and investigating events of potential international public health concern and reporting to WHO as required by the International Health Regulations (IHR).

Laboratory networks, often vertical or disease-oriented in nature, exist and will be the foundation to which the IDENTIFY project will look to meet its goals. Gaps, both disease-specific and with respect to geographical coverage, exist. The IDENTIFY project intends to determine gaps and propose, in collaboration with national partners, mechanisms for capacity building to fill these gaps. National and regional ownership of capacity building and networking activities is critical. Regional parties are already active in regional networking and need to be engaged as early as possible in the planning process in order to ensure sustainability and continued collaboration within and between the animal and public health sectors.

Steps to support enhanced laboratory capacity and networking

A. Identification of priority diseases and laboratories

1. Identification of targeted normative diseases and emerging pathogens *[Note: steps A.1 and A.2 conducted concurrently]*
 - a. For each hot spot region, IDENTIFY project partners will compile a list of targeted diseases among humans and animals (including wildlife) in each region for which improved rapid and accurate diagnosis is needed within the framework of national and regional priorities. This list is based on official disease notifications, country disease data review, regional existing disease lists and priorities, literature review, input from national and regional stakeholders, previous regional occurrence, predictive modeling, and other relevant sources.
 - b. Once the list of targeted diseases is finalized following the stakeholders awareness meetings, IDENTIFY project partners will catalog recommended and updated testing methods, identify associated pathogens or syndromes, and identify diseases which use similar testing technology, in order to better coordinate and increase impact of project activities, specifically laboratory-based training on testing methods.
2. Identification of laboratories and networks in or providing services to the hot spot regions and countries *[Note: continuous and evolving approach for Congo Basin and SE Asia regions]*
 - a. Within each of the hot spot regions, laboratory capacity of national animal and public health laboratories will be assessed using standard criteria in agreement with national authorities.
 1. Results of assessments previously conducted by the three IDENTIFY partners will be summarized and will act as the basis for additional data collection. This step could include incorporating available assessments conducted by other EPT partners.
 2. Additional targeted data collection on capacity will be conducted if necessary (by self-assessment and questionnaire) by IDENTIFY partners to fill in gaps in knowledge on laboratory capacity.
 - b. This information plus additional information from other EPT projects on geographic areas with the highest risk of pathogen emergence and spread, and in consultation with local stakeholders such as Ministries of Health and Agriculture, will also be considered in better targeting national laboratories for support, within the framework of national and regional priorities.
 - c. National laboratories (public health and animal health) will be the lowest level of engagement within a country for IDENTIFY. Exceptions will be made in cases where another laboratory has been specified by national authorities, or where this relationship could be defined and/or strengthened, and could provide the capacity to fill in gaps at national or regional levels.
 - d. Continuous support to regional networking will enable information and experience sharing between countries, development of trust, regional decisions on laboratory strengthening

- e. International and regional reference laboratories serving the hot spot regions, most of which are affiliated with the IDENTIFY partners' existing networks, will be incorporated to provide technical support to national laboratories in accordance with existing Terms of References or mandates if appropriate. These laboratories, along with high-capability national laboratories, can also support quality control/assurance for other national laboratories in the hot spot regions.
- f. The IDENTIFY partners will support development or adaptation of standard procedures and mechanisms, and reinforcement of linkages and communication to refer specimens (or strains) between the above-mentioned laboratories. This could include decision trees and algorithms for referring specimens associated with human or animal outbreaks for which all tests for known pathogens are negative to high capability laboratories and the referral of unusual or unidentified pathogens to reference laboratories.

B. Strengthening of national laboratories in regional networks

1. For the laboratories identified (step A.2.b above), more detailed assessments may be conducted in agreement with national authorities to fill information gaps and to identify specific needs (step A.1.a above) - which could include training, supplies for shipping, equipment, reagents, etc. - that are needed to ensure that overall laboratory functioning, accuracy, and timeliness is improved according to the national laboratory's priorities with the ultimate goal of improving disease reporting to the proper national authorities.
2. Within the framework of national priorities and following laboratory assessments (see B.1), partners will provide strengthening support, such as training, protocols and documentation, quality assurance systems, proficiency testing, networking opportunities, equipment, reagents, supplies, etc. for national laboratories.
 - a. Development/adaptation and provision of protocols and/or in-service training for laboratory staff related to testing, sample handling, laboratory biosafety, reporting, quality control, sample shipping, etc. Follow-up training may be required at certain intervals.
 - b. Procurement and delivery of equipment, reagents, supplies, etc. For sustainability reasons, it would be ideal for national authorities to include equipment and commodities costs in their budgets or to phase in coverage of the costs so the country is fully supporting recurrent costs for commodities and maintenance of equipment. At the stakeholders meetings, participants expressed their desire to develop a strategy for ensuring sustainability (see B.3 below).

Note: These steps will be coordinated with national, regional, and global partners to ensure that this support is not already being provided by others.

3. In collaboration with national authorities, the development of a sustainability plan by country will be facilitated to assist the identification of sources of funding, including reinforced budget lines for national laboratories, to ensure optimal use of resources.

C. Establishing/strengthening linkages among existing regional and global laboratory networks across public and animal health (e.g. OFFLU, GFN, EDPLN) and with relevant disease control authorities.

1. Within each hot spot region, the mapping exercise will include the inventory of activities of existing geographical/specialized laboratory networks that already contribute to meeting IDENTIFY's goals.
2. Discussions with the key global specialized networks (e.g. OFFLU, GFN, EDPLN) will occur for the strengthening of linkages and increased collaboration between national laboratories and regional networks.
3. IDENTIFY will advocate for new and enhanced linkages between laboratory networks and epidemiological networks both within the animal and public health sectors, and across sectors.
4. For the laboratories in each hot spot region, collaborations and communication pathways will be strengthened in order to share samples, data, reports, etc. with disease control authorities. Development of mutual trust and interest within regional networks will be promoted.

Annex 5: List of Laboratories – SSEA

Region	Country	Veterinary laboratories	Abbr	Laboratory Focal point	Disease specialty/focus *	National Laboratory	PREDICT Laboratory
Southeast Asia	Cambodia	National Veterinary Research Institute	CA-NAVRI	Dr. Sorn San	n/a	Yes	Yes
	China	Langzhou Veterinary Research Institute	CH-LVRI	Hong Yin	FMD		
		Yunnan Animal Science and Veterinary Institute	CH-YASVI	Dr Li Huachun	Bluetongue		
		China Animal Disease Control Centre, Beijing	CH-CADC	Xinyan Zhai	n/a	Yes	
		China Animal Health and Epidemiology Center, Qingdao	CH-CAHEC	Song Cuiping	Newcastle and Exotic Diseases	Yes	
	Indonesia *	Directorate of Livestock Animal Health Service	ID-DGLAHS	Dr. Pudjiatmoko	n/a		
	Lao PDR	National Animal Health Center	LA-NAHC	Dr Bounlom Douangngeun	n/a	Yes	Yes
	Malaysia	Veterinary Research Institute	ML-VRI	Dr Ramlan Mohamed	Avian Influenza and Newcastle disease	Yes	Yes
		Department of Wildlife and National Parks Peninsular Malaysia	ML-PER	Dato' Abd Rasid Bin Samsudin	Wildlife		Yes
	Myanmar *	Livestock Breeding and Veterinary Department	MY-LBVD	Dr Maung Maung Kyin	n/a	Yes	
	Philippines	Philippine Animal Health Center	PH-PAHC	Dr Magdalena Cruz	n/a	Yes	
	Thailand	National Institute of Animal Health	TH-NIAH	Dr Vimol Jirathanawat	n/a	Yes	
		FMD Regional Reference Laboratory Pakchong	TH-RRL	Dr Panithan Thongtha	FMD		

		Chulalongkorn University Center for Emerging and Re-Emerging Diseases in Animals	CUEIDAs	Dr Sannipa Suradhat	n/a		
	Viet Nam	Regional Animal Health Office Number 6	VN-RAHO6	Dr Ngo Than Long	CSF and PRRS		
		Hanoi Agriculture University	VN-HNAg	Nguyen Thi Lan	Wildlife		Yes
		National Center for Veterinary Diagnosis	VN-NCVD	Dr Nguyen Tung	n/a	Yes	
South Asia	Bangladesh	Central Disease Investigation Laboratory	BL-CDIL	Dr Bidhan Chandra Das	n/a	Yes	
		Bangladesh Livestock Research Institute	BL-BLRI	Dr Md. Giasuddin	PPR		
	Nepal	Central Veterinary Laboratory	NE-CVL	Dr. Damodar Sedai	n/a	Yes	
	India **	High Security Animal Disease Laboratory	IN-HSADL	Dr. S. C. Dubey	OIE Reference Laboratory for Avian Influenza	Yes	

* Participation of Indonesia to regional activities in Year 3 and of Myanmar (not supported by IDENTIFY) will be funded from other sources

List of Laboratories – CONGO BASIN

Country	Veterinary laboratories	Abbreviation	Disease specialty/focus*
Cameroon	Laboratoire National Vétérinaire, Garoua, LANAVET	LANAVET	PPR, ASF, NCD and CBPP, rabies, tuberculosis, brucellosis
Central African Republic	Laboratoire Central Vétérinaire de Bangui, LACEVET	LACEVET	ASF, PPR, NCD, Rabies, brucellosis
Democratic Republic of Congo	Laboratoire Vétérinaire de Kinshasa, LCVK	LCVK	MPX, RVF in ruminants, ASF, NCD, AI, LSD, PPR, rabies, brucellosis, CBPP, ASF, FMD
Equatorial Guinea	Laboratoire National ECAA-KM 7	ECAA-KM 7	n/a
Gabon	Laboratoire National Vétérinaire de Libreville, LNVL	LNVL	n/a
Republic of Congo	Laboratoire de diagnostic vétérinaire de Brazzaville, LDVB	LDVB	CBPP, PPR
Rwanda	National Veterinary Laboratory, RARDA, Rubirizi, Kigali	RARDA	AI, CBPP, CCPP, RVF, PPR, brucellosis
South Sudan	Central Veterinary Laboratory, Juba	CVL (S.Sudan)	n/a
Tanzania	Central Veterinary Lab, CVL in Temeke, Dar es Salaam	CVL	AI, BTB, FMD, CBPP, RVF, PPR, NCD, ASF, rabies, brucellosis
Uganda	National Veterinary Lab, NVL in Entebbe	NVL	FMD, CBPP, Influenzas (H1N5, H1N1), ASF, PPR, rinderpest, rabies.

Regional service laboratories for Congo region

Botswana	Botswana National Veterinary Laboratory, BNVL, Gaborone	BNVL	AI, NCD, CBPP
Ethiopia	National Animal Health Diagnostic Investigation Centre, NAHDIC, Sebeta (Selected by EARLN as regional service lab for AI/ND, Eastern Africa)	NAHDIC	AI/ND/IBD, AHS, PPR, CBPP, CCPP, RVF
Nigeria	National Veterinary Research Institute, NVRI, Vom (elected by RESOLAB as one of the two regional laboratories)	NVRI	CBPP, PPR, ASF, FMD, NCD, Coccidiosis, HPAI, Rabies, Anthrax, Salmonellosis, Brucellosis
Senegal	Laboratoire National de l'Élevage et de Recherches Vétérinaire, LNEVR, Dakar, (elected by RESOLAB as one of the two regional laboratories)	LNERV	Rinderpest, RVF, PPR, ASF, NCD, FMD, Tuberculosis, Rabies, Anthrax, salmonellosis, Peste equine, LSD, AHS, HPAI

Annex 6: Questionnaire adapted from the lab-mapping analysis tool

Laboratory:	Date:
Contact:	Email:
Lab Address:	
Address 2:	
Telephone:	Fax:

Instructions: select only one answer per row and record score in grey shaded space below. Scores will then be transferred to excel sheet

	3	2	1	0
L O C A T I O N	Isolated compound outside of residential area	Isolated compound in low populated area	Single building in low populated area	Building within residential area
	Proper containment + guard (24 hr) + Restricted access to building with Identity card (employees) only	Proper containment + guard (24 h)	Insufficient containment / low biosecurity level / guard present	Easy access to laboratory compound by visitor / stranger / containment insufficient / no guard
N	Access to highway, airport, harbour and / or station within 30 minutes	Access to highway, airport, harbour or station within 60 minutes	Access sometimes difficult	Limitations in access to transport means (traffic jams, bad road, airport far)

	3	2	1	0
L A B B U D G E T	Lab is financially autonomous, funds for lab from public source and/or self-generated	Lab is almost financially autonomous, funds for lab from public or self-generated AND development programmes	Lab has insufficient own budget, activities dependant on development partners	Lab has no own budget; all activities exclusively rely on external funding source
	Lab budget allows ample opportunity for research	Lab budget allows a little research	Lab finances are insufficient for proper research	No research activity due to insufficient lab budget
G E T	Lab budget sufficient for independent upgrading of larger lab infrastructure	Lab budget would allow a little independent upgrading of infrastructure	Upgrading by use of lab budget only for small and cheap infrastructural changes	Upgrading only with external funding

	3	2	1	0
B A S	Constant stable electricity supply and automatic switch-on generator	Stable electricity supply and generator (manually operated)	Frequent electrical instability/voltage irregularity, manually operated generator	Electricity supply less than 10 hours per day, generator does not run permanently or not existent

I C S U P P L Y	Constant supply of good-quality water (pipe)	Constant supply of water through pipe or tank; back-up tank available	Supply of water through tank, sometimes insufficient or quality low	Irregular water supply
	Unlimited access to purified water; own production of deionised and distilled water	Access to deionised and distilled water (external source)	Limited access to deionised and/or distilled water (external/internal source)	Difficult access to deionised and/or distilled water
	3	2	1	0
O R G.	Organigram and organization system in place + written description of responsibilities	Organigram and organization system in place; staff mostly know their roles	Organization system in place, but frequent changes, staff not always aware of their roles	Frequent shifting of personnel, no consequent organization system
	3	2	1	0
L I N K A G E L A B S	Close collaboration with and constant support of satellite labs* (hereafter: satlab)	Close contact with satellite labs, but support limited due to insufficient lab budget	Contact with satellite labs, but collaboration difficult	Collaboration with satellite labs insufficient
	Support of satlabs by training on regular basis	Support of satlabs by training on irregular basis	Support of satlabs by rare training	No transmission of training to satlabs
	Support of satlabs by provision of material/reagents/kits on regular basis	Support of satlabs by irregular provision of material/reagents/kits	Rare provision of material/reagents/kits	No possibility for provision of material/reagents/kits
	3	2	1	0
C O M M U N I C A T I	Constant telephone/fax connectivity with good quality	Good telephone/fax connectivity, sometimes interrupted	Connectivity and quality of phone/fax sometimes poor	Bad connectivity of phone/fax due to problems with line or electricity
	Good and speedy internet connection, all staff has access in all areas (labs, office...)	Good internet connection in offices; not all staff member have access	Internet connection limited, but in general fairly well	Internet is slow and interrupted; only selected staff member have access
	Staff has free access to scientific publications (library, online journals)	Free access to library, limited access to online-journals	Library might be existent, but not up-to-date, limited access to online-j.	No access to library, and only to few online journals (non-restricted)
	Institute has website and	Institute has website and irregularly publishes	Inhouse and external informations are published	No website, no regular

	3	2	1	0
I N F R A S T R U C T U R E	All lab departments are clearly separated and well contained by use of disinfections, change of lab coats; identity badges or other means	Lab departments are separated but can be accessed by lab staff from other department	Separation in place but not strictly followed	No clear separation
	Facilities (labs) of all departments well-maintained and well looked after by lab staff	Facilities of most of departments well-maintained and well looked after by lab staff	Only some labs are well-maintained and well looked after	Most labs of the departments are in poor status.
	BSL-3/4 Virology lab (BSC-III)	BSL-2/3 Virology Lab (2xBSC-II)	BSL-1/2 Virology lab (1xBSC-II)	No biosafe Virology lab (BSC-II not functioning or not existent)
	BSL-3/4 Postmortem room + BSC-III	BSL-2/3 PM-room + BSC-II	BSL-1/2 PM-room (BSC-II)	No biosafe PM-room, no BSC
	BSL-3/4 Bacteriology lab + BSC-II	BSL-2/3 Bacteriology lab + BSC-II	BSL-1/2 Bacteriology lab + 1xBSC-II	No biosafe Bacteriology lab (BSC-II not functioning or not existent)
	BSL-3 Animal facility in use for experiments and bioproducts (diagnosis)	Animal facility in use production of diagnostic reagents (SPF-eggs, sera etc.)	Animal facilities available but not in use	Animal facilities not available
	PCR set-up (extraction, MM, template, machine) separated including change of lab clothes (coats and shoes)	PCR set-up (extraction, MM, template, machine) separated, but no change of lab clothes	Different rooms available, but not in consequent use for PCR set-up separation	No separation of PCR set-up
	All labs are closed rooms and harbour Air Conditioner in all departments	Labs in most of departments are closed rooms and harbour Air Conditioner	Only labs in specific departments (e.g. AI-Lab) have closed rooms and harbour Air Conditioner	Lab doors or windows do not properly close, hardly any AC in rooms
E Q	Virology/Serology department sufficiently equipped to carry out safe diagnosis of various viral diseases including	Virology/Serology department sufficiently equipped to carry out safe diagnosis of only selected disease (e.g. HPAI)	Virology/Serology department lacks modern equipment for diagnosis of viral diseases	Virology/Serology department lacks basic equipment for diagnosis of viral diseases

	electronic microscopy			
U				
I	Molecular section sufficiently equipped to carry out diagnosis of various diseases	Molecular section sufficiently equipped to carry out diagnosis of HPAI (including realtime PCR cyler and sequencer)	Molecular section lacks modern equipment and might harbour old PCR cyclers and gel-electrophoresis equipment	Molecular section lacks even basic equipment
P				
M	Pathology department sufficiently equipped to safely carry out necropsies and histo-pathological techniques	Pathology department sufficiently equipped to carry out necropsies and limited pathological techniques	Pathology department lacks modern equipment for Pathological techniques	Pathology department lacks basic equipment for diagnosis of viral diseases
E				
N	Bacteriology department sufficiently equipped to carry out safe diagnosis of a broad range of bacterial diseases	Bacteriology department sufficiently equipped to carry out safe diagnosis of at least the most important bacterial diseases	Bacteriology department lacks modern equipment for diagnosis of important bacterial diseases	Bacterial department lacks basic equipment for diagnosis of bacterial diseases
T				
	Parasitology department sufficiently equipped to carry out safe diagnosis of a broad range of parasitological diseases	Parasitology department sufficiently equipped to carry out safe diagnosis of at least the most important parasitological diseases	Parasitology department lacks modern equipment for diagnosis of important parasitological diseases	Parasitology department lacks basic equipment for diagnosis of parasitological diseases
	A mobile BSL-3 lab (automobile) is ready for use in emergency situations	A mobile BSL-3 lab (automobile) is in place, but has not been maintained	A mobile BSL-3 lab (automobile) is under procurement / under process	Never heard of mobile BSL-3 lab
	3	2	1	0
R	A broad range of reagents can be independently procured for diagnostic use	A limited range of reagents can be independently procured for diagnostic use	Only few reagents can be independently procured for diagnostic use	All reagents for diagnostic use must be procured by external organization
E				
A	Reagents/material for diagnostic use can be self-produced in good quality (according to standards) and sufficient amount	Few reagents/material for diagnostic use can be self-produced, efforts taken to produce in good quality according to standards	Few reagents/material for diagnostic use can be produced, quality questionable	No own production or quality of produced reagents/material is doubtful
G				
E	Separate storage and documentation of different material (reagents, sera, samples...) according to standards of QA / QMS	Separate storage of different material (reagents, sera, samples...), but not documented	No consequent separation of storage of different material	No separation, storage doubtful because of limitations in functionality of freezer / fridges, insufficient documentation
N				
T	Virology/Serology department harbours sufficient reagents for diagnosis of a broad range	Virology/Serology department harbours sufficient reagents for diagnosis of the most important viral diseases	Virology/Serology department harbours limited reagents for diagnosis viral diseases	Virology/Serology department harbours hardly any reagents, or reagents are expired, or reagents have not been

S	of viral diseases	(e.g. AI, ND, rabies...)		properly stored
U				
P	Molecular section harbours sufficient reagents for molecular diagnosis	Molecular section harbours reagents for a limited range of molecular diagnosis	Molecular section harbours limited reagents molecular diagnosis	Molecular diagnosis cannot be carried out due to lack of valid reagents
P	Bacteriology department harbours sufficient reagents for diagnosis of a <i>broad range</i> of bacterial diseases	Bacteriology department harbours sufficient reagents for diagnosis of the <i>most important bacterial diseases</i> (e.g. Anthrax, Salmonellosis, Tuberculosis, Pasteurella...)	Bacteriology department harbours <i>limited</i> reagents for diagnosis bacterial diseases	Bacteriology department harbours <i>hardly any</i> reagents, or reagents are <i>expired</i> , or reagents have <i>not been properly stored</i>
L				
Y	Pathology department harbours sufficient reagents for <i>profound</i> patho-histological investigations	Pathology department harbours sufficient reagents for necropsies / gross-pathology	Pathology department harbours <i>limited</i> reagents for pathology	Pathology department harbours <i>hardly any</i> reagents, or reagents are <i>expired</i> , or reagents have <i>not been properly stored</i>
	Parasitology department harbours sufficient reagents for diagnosis of a <i>broad range</i> of parasitological diseases	Parasitology department harbours sufficient reagents for diagnosis of the <i>most important</i> parasitological diseases	Parasitology department harbours <i>limited</i> reagents for diagnosis parasitological diseases	Parasitology department harbours <i>hardly any</i> reagents, or reagents are <i>expired</i> , or reagents have <i>not been properly stored</i>
	3	2	1	0
S	Sufficient number of <i>skilled</i> staff in each department	Sufficient number of staff, but <i>not all trained</i> in each department or <i>not always available</i>	Number of staff <i>not sufficient/not available</i> in most of the departments	<i>Serious lack of skilled</i> personnel in most of the departments
T				
A				
F				
F	<i>High expertise</i> of staff in virology/serology department	<i>Well-trained but not very experienced</i> staff in virology/serology department	Trained staff in virology/serology department, but <i>lack motivation</i>	Staff in virology/serology department <i>not trained or not experienced or not motivated</i> or all
S				
K				
I	<i>High expertise</i> of staff in molecular section	<i>Well-trained but not very experienced</i> staff in molecular section	Trained staff in molecular section, but <i>lack motivation</i>	Staff in molecular section <i>not trained or not experienced or not motivated</i> or all
L				
L				
S				
&	<i>High expertise</i> of staff in bacteriology department	<i>Well-trained but not very experienced</i> staff in bacteriology department	Trained staff in bacteriology department, but <i>lack motivation</i>	Staff in bacteriology department <i>not trained or not experienced or not motivated</i> or all
A				
V	<i>High expertise</i> of staff in parasitology department	<i>Well-trained but not very experienced</i> staff in parasitology department	Trained staff in parasitology department, but <i>lack motivation</i>	Staff in parasitology department <i>not trained or not experienced or not motivated</i> or all
A				

I				motivated or all
L				
A	Lab staff is actively involved in lab work for > 35 hours/week	Lab staff is actively involved in lab work for > 25 hours/week	Lab staff is present for > 25 hours/week, but not always active	Lab staff might be present, but mostly not active
B				
I				
L	Emergency service is in place for 24 hours	Weekend shifts are in place	Irregular emergency service/weekend shifts	No emergency service
I				
T				
Y	Maintenance staff (plumbing, electricity, mechanics etc.) always available	Maintenance staff during working hours available	Maintenance staff available with delay in arrival	Very difficult to get maintenance staff

	3	2	1	0
S	Pathology department receives >5 carcasses daily for post-mortem	Pathology department receives 5 carcasses daily for post-mortem	Pathology department receives <5 carcasses daily for post-mortem	Pathology department receives carcasses only in emergency situations
A				
M				
P	Lab daily receives >10 biological samples for routine diagnosis	Lab daily receives 5-10 biological samples for routine diagnosis	Lab daily receives <5 biological samples for routine diagnosis	Lab daily receives biological samples only in emergency situations
L				
E				
A	>20 samples are investigated in PCR weekly	10-20 samples are investigated in PCR weekly	<10 samples are investigated in PCR weekly	No PCR applicable, or only in rare circumstances with doubtful results
C				
C				
E	Lab is regularly involved in active surveillance of >3 animal diseases	Lab is regularly involved in active surveillance of 2-3 animal diseases	Lab is actively involved in surveillance of <2 animal diseases	Lab is very rarely involved in active surveillance
S				
S				
I	Sample processing is immediately carried out by skilled and experienced lab staff	Sample processing is carried out sometimes with delay by skilled and experienced lab staff	Sample processing is carried out mostly with delay by lab staff	Sample processing is carried out mostly with delay; sometimes because lack of staff no processing
O				
N	Back-reporting to the shipper/sender/owner of samples is immediately carried out after receiving results	Back-reporting to the shipper/sender/owner of samples is carried out with delay but within one week	Back-reporting to the shipper/sender/owner of samples often takes >1 week	Sometimes / often no back reporting of results

	3	2	1	0
A	Necropsies conducted by high-skilled pathologists	Necropsies conducted by trained but unexperienced pathologists	Necropsies conducted by laboratory person	No expertise in pathology / no technology / pathologist available
V				
A				
I	Histopathological investigation well applied			No means for histopathological technique

	3	2	1	0
TECHNICAL STAFF TRAINING				
T	Staff of each department receives annual training for improvement of lab diagnosis	Not all staff, not all department	rarely	No regular training
R				
A	Staff of each department receives weekly inhouse training	Not all staff, not all department	rarely	No weekly inhouse training
I				
N	Key staff receives regular training in quality assurance (QA)/control (QC)	Not all staff, not all department	rarely	No training in QA/QC
I				
N	Key staff receives regular training in equipment maintenance and calibration	Not all staff, not all department	rarely	No training in equipment maintenance and calibration

G	Heads trained in lab management	No training in lab management
	Cleaning staff trained in biosafety/biosecurity	Not trained but instructed by head of lab
	Neither trained, nor instructed, but aware	Cleaning staff not trained at all

	3	2	1	0
Q	ISO 17025 installed for some diseases or particular departments + external control program + audits	ISO 17025 principles applied and regularly checked by lab staff	In process of adapting ISO 17025 principles	No ISO 17025 principles applied
U				
A				
L				
I	Annual participation in Proficiency Testing for >1 disease	Annual participation in PT for 1 disease	Irregular participation for 1 disease	No PT participation until now
T				
Y				
A	SOPs for all methodology prepared and in use	SOPs only for selected methodology of most important diseases prepared and in use	Preparation of SOPs under process	Hardly any SOP
S				
S				
U	Proper validation for inhouse methods / Checking kits before use			No experience in validation or evaluation techniques
R				
A				
N	Quality officer/manager assigned + quality manual applied	Quality manual applied	Quality officer / manager assignment and quality manual under process	No Quality officer/manager and no quality manual
C				
E				
	Use of internal test quality control (QC) according to international standards	QC often, but not always applied	QC rarely applied	No experience in QC
	Identification and tracking of each sample entering the lab by use of LIMS or barcoding	Identification and tracking of each sample entering the lab by use of precise Log-Book + Excel file	Identification and tracking of samples only of some (important) diseases	Irregular identification and tracking of samples applied
	OIE guidelines are followed, and OIE Terrestrial Manual is in regular use	OIE Manual in place	OIE Manual rarely used	No notice of OIE Manual

	3	2	1	0
B	Biorisk officer is assigned and SOPs for personnel biosafety/biosecurity available	Key-Staff is well-trained in biosafety/biosecurity	Some staff is aware of biosafety/biosecurity principles	Only vague knowledge of biosafety/biosecurity principles
I				
O				
S				
A	PPE is used when required, consequent change of lab	PPE is available and under rare occasions used, change	PPE is available, but not used, inconsequent use of	PPE is not (always) available, inconsequent use

	3	2	1	0
F	clothes including shoes	of lab coat but not shoes	lab clothes	of lab clothes
E				
T	Lab staff has to follow an obligatory quarantine period of 3-7 days before entering any animal holding, is not involved in taking samples during active surveillance	Lab staff generally follows a quarantine period of 3 days before entering any animal holding, is not involved in taking samples during active surveillance	Lab staff is actively involved in taking samples from animals with a quarantine period of at least 3 days	Lab staff is actively involved in taking samples from animals without quarantine period
Y				
&				
B				
I	Proper waste management by compulsive use of incinerator, autoclave, treatment of chemical waste, sharp disposal	Mostly use of incinerator and autoclave...	Irregular use of incinerator, autoclave...	Improper waste management, no incinerator, no autoclaving of infectious material...
O				
S				
E				
C	Controlled and restricted access only for key staff to BS-Labs and freezer rooms by use of security system (ID-badges, camera)	Controlled and restricted access only for key staff to BS-Labs and freezer rooms by use of locks		Easy access to labs and freezers / fridges during working hours
U				
R				
I				
T				
Y				
	3	2	1	0
S	Health check of all lab staff on regular basis (at least annually)	Irregular health check of lab staff	Health check of lab staff only on request / accident	No health check, in case of accident staff has to seek doctor on own expenses
T				
A				
F	Annual vaccination of some staff working with zoonotic agents following WHO recommendations (rabies, H1N1...)	Vaccination on request	Post-exposure vaccination in case of accident	No vaccination
F				
H				
E				
A	Eye wash and shower available in each department	Eye wash and shower available in some labs	Eye wash and shower available in some labs but not regular checked	Not available or not functional
L				
T				
H				
C	Lab has regular contacts / collaborations with >3 labs/institutions within the country	Lab has regular contacts / collaborations with 1-3 labs/institutions within the country	Lab has regular contacts / collaborations with 1 labs/institutions within the country	Lab has no regular contacts / collaborations labs/institutions within the country
O				
L				
L				
A	Lab takes actively part in regional lab-networking, considers its role as key regional lab	Lab is involved in regional lab-networking	Lab is attends meetings for regional lab-networking, but is not active in regional networking	Lab is not involved in regional lab-networking
B				
O				
R				
A	Lab participates in >3 international projects for TAD/zoonotic diseases of	Lab participates in 1-3 international projects for TAD/zoonotic diseases of	Lab participates in 1 international projects for TAD/zoonotic diseases of	Lab does not participate in international projects

Annex 7: CSF-PRRS Training and Workshop Evaluation**Organization (mean score)**

		Training (n=14)	Workshop (n=19)
Overall assessment of the event	Content	3.9	3.7
	Structure / Format	3.7	3.5
	Organisation	3.6	3.6
How would you rate the impact this event had or will have on:	Your technical knowledge on the subject	3.5	3.2
	Your professional activities	3.4	3.2
	Strengthen regional networks	3.6	3.6
	Improving the work of your department/unit	3.4	3.3
Logistics:	Invitation	3.6	3.9
	Flight arrangement	3.9	3.9
	Land transportation	3.5	3.5
	Accommodation	3.3	3.7
	Registration	3.6	3.8
	Venue / Room Facility	3.3	3.7
	Food and drink	3.9	3.9
	Dinner	3.1	3.8
	Supporting document	3.7	3.5

Training Programme (mean score)

	content	presentation	practice	useful	fulfill
Laboratory Biosafety	4	4	4	4	4
Working with cell culture	4	4	4	4	4
Preparation and inoculation of tissue samples	4	4	4	4	4
Serological identification of CSF and PRRS antibody	4	4	4	4	4
Identification of CSF and PRRS viruses in tissue sample using real-time PCR	4	4	4	4	4
Swine viral diseases gross pathology	3	3	3	4	3
Identification of CSF and PRRS virus in cell culture	4	4	4	4	3
Optimization of PCR assay	4	4	4	4	4
ELISA test for CSF and PRRS	3	3	3	3	3

Quality assurance	4	3	3	4	4
Proficiency testing	3	3	3	4	3
Overall training programme	4	4	4	4	4

Other comments (Training)

Strength

- Good cooperation of laboratory personnel in RAH06
- Best capacity of trainers
- Full support of donor and host country to prepare the facilities needed
- Organization, practice, knowledge, taking care
- Should start on time to avoid finish late
- More hands-on work were conducted by participants
- First two days were a bit dis-organized laboratory work start late
- Enhance relationship among countries

Weakness

- Training document
- PM room need more light and air condition
- Few inverted microscope available
- Only 2 BSC for participants to practice, should have 4

Suggestion

- Should rotate host country to see facilities of others
- Can split into two small groups (PCR and VI) then switch after one week so there are enough equipment for each group

Annex 8: Mapping Exercise –Congo Basin.

IDENTIFY Project: CONGO BASSIN NATIONAL VETERINARY DIAGNOSTIC LABORATORIES MAPPING Background

One of the specific objective of the IDENTIFY project is to strengthen detection and reporting of common human and animal pathogens using existing laboratory networks that include regional- and country-level laboratories. These laboratories will be linked with regional- or global-level reference laboratories which can provide diagnosis confirmation services as well as additional advanced testing, including pathogen characterization, as needed.

In order to fulfil the objectives of the IDENTIFY project, laboratories will be prioritized for capacity building and other support (e.g., supply of equipment, reagents, etc.) so as to achieve adequate coverage within the hot spot region across all tiers. Additional project activities will focus on strengthening the connectivity of these laboratories with each other across tiers, sectors and disease programs.

Sub-activities

- Review of existing data on laboratory capacity and networks from existing laboratory assessments available; Analysis of National Laboratories annual reports and laboratory capacity in the region compiled, Data input into laboratory capacity matrix;
- Laboratory visits and/or follow-up assessments planned and conducted; Additional targeted data collection, including laboratory visits and/or follow-up assessments if necessary, to fill in gaps in knowledge on laboratory capacity; Data input into laboratory capacity matrix; Laboratories placed into tier corresponding to actual capacity
- Identification of laboratories to target for strengthening support of capabilities/capacities to diagnose normative and emerging/unknown pathogens significant to the region so as to achieve adequate coverage within the region

Achievements

This mapping exercise was carried out within the framework of the USAID funded IDENTIFY project on its beneficiary laboratories in Congo Basin region:

- *Laboratoire National Vétérinaire - LANAVET (Cameroon)*
- *Laboratoire Vétérinaire de Bangui – LACEVET (Central African Republic)*
- *Laboratoire Vétérinaire de Kinshasa- LCVK (Democratic Republic of Congo),*
- *Laboratoire de diagnostic vétérinaire de Brazzaville - LDVB (Republic of Congo)*
- *Laboratoire National Vétérinaire de Libreville – LNVB (Gabon)*
- *Laboratoire National ECCA (Equatorial Guinea)*
- *Central Laboratory, Rubirizi – CL_Rw (Rwanda)*
- *Central Veterinary Laboratory of Dar es Salam – CVL_Tz (Tanzania)*
- *National Animal Disease Diagnostics and Epidemiology Centre – NADDEC (Entebbe, Uganda).*

The survey covered 8 out of these 9 laboratories as one of them, the *Laboratoire National ECCA* of Equatorial Guinea, is under construction.

1. Methodology


The methodology consisted in the analysis of data collected from a questionnaire prepared and distributed in 2010 during the preparation of IDENTIFY Stakeholders meetings (2-5 Nov. 2010, Entebbe, Uganda), from the presentations made in 2009 and 2010 by each laboratory during the EARLN and the RESOLAB respective annual coordination meetings and during the two specific


workshops on Quality Assurance organized by FAO in Eastern and Central Africa. The answers from the questionnaire and reports were grouped into the following 7 group of criteria:

- *Laboratory General profile- Administrative organization;*
- *Infrastructure;*
- *Main functional equipment and materials in place;*
- *Technical platform available (lab analysis or tests routinely performed);*
- *Number of diagnostic cases received and processed annually for laboratory diagnosis;*
- *Quality Assurance (QA) System - status of QA system implementation- including biosafety and biosecurity;*
- *Collaboration and partnership.*

Other data collected, to have better picture on each individual laboratory functional status, were on "List of major diseases confirmed" and on "Main factors hindering the laboratory diagnosis and Quality Assurance System implementation".

Samples of questionnaires sent to all supported labs:

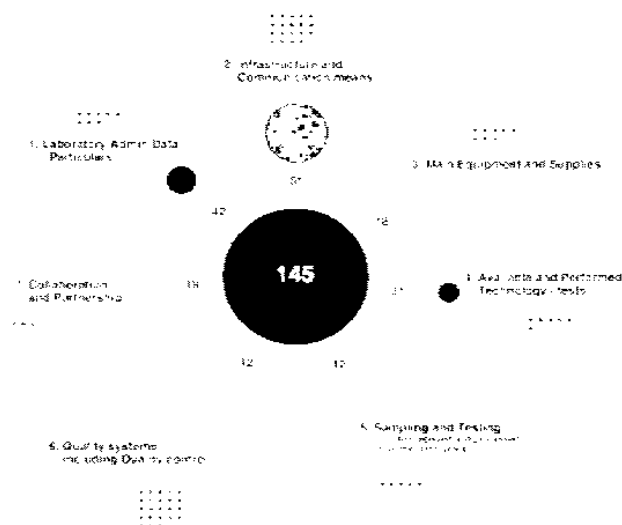

Lab Mapping
MainQuest 3July10.d


Lab_Self assessment
ques_Entebe.doc

Scoring:

The collected data are grouped in the form of quantified indicators. These indicators are the distributed across seven groups of criteria according to their nature. The score for each group of criteria is the sum of the scores of its indicators. The overall score, for a given laboratory, is the sum of scores of his seven sets of criteria.

National Vet Lab Mapping



2. Preliminary Results

Conclusion on Individual laboratories Scoring

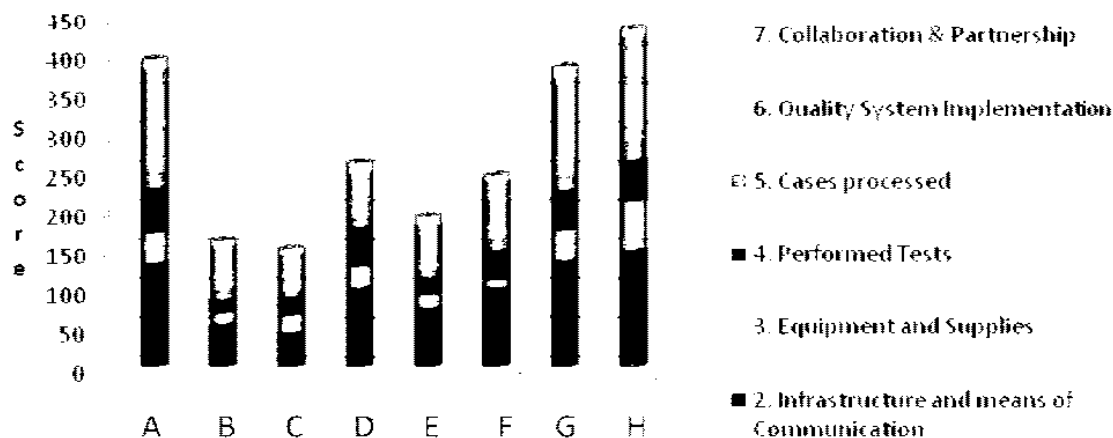
According to the individual scores recorded, three laboratories are grouped as “Basic Laboratory”, two are grouped as “Basic laboratory +”, while the remaining three are among the “Routine diagnostic laboratories”. No laboratory is ranged in “routine diagnostic laboratory +” or “advanced diagnostic lab¹” for the time being.

Table 1: Laboratories' categories Scores

Basic lab		Basic lab +		Routine Diagnostic Lab.		Routine Diagnostic Lab +		Advanced lab.	
Low		In progress -> intermediate		Medium		In progress -> advance		High	
from	to	from	to	from	to	from	to	from	to
0	245	246	320	321	566	567	641	642	887

Table 2 and graphic: Total score for Individual laboratory

Criteria	Max	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H
1. Laboratory Admin Data/ Particulars	91	43	25	26	40	26	26	42	36
2. Infrastructure and means of Communication	188	91	31	19	62	50	76	95	115
3. Equipment and Supplies	109	38	13	21	27	17	10	38	61
4. Performed Tests	110	58	18	25	51	23	38	52	54
5. Cases processed	70	20	12	6	12	8	16	18	24
6. Quality System Implementation	289	131	56	47	57	58	72	125	133
7. Collaboration & Partnership	30	13	7	7	12	11	7	14	10
	887	394	162	151	261	193	245	384	433



The specific objective of the IDENTIFY project is to strengthen detection and reporting of common human and animal pathogens using existing laboratory networks that include regional- and country-level laboratories. These laboratories will be linked with regional- or global-level reference laboratories which can provide diagnosis confirmation services as well as additional advanced testing, including pathogen characterization, as needed.

¹ Laboratories capable of more advanced diagnostic methods to identify and characterize pathogens causing animal or human disease, including novel agents with pandemic potential

The mapping exercise has been undertaken to assess the technical level and needs of the project supported laboratories so that specific “tailored and focused” assistance could be provided to them in order to achieve the project objective. This exercise data show that, in Congo Basin region², only “Basic Testing²” and “Routine Diagnostic³”, as defined in the “Laboratory Networking Strategy” distributed during Entebbe Stakeholders meeting. The collected data shall be used as indicators for further monitoring of the project achievement.

Conclusion on laboratory diagnosis work across Congo Basin IDENTIFY Supported labs

The major constraints reported by the laboratories for the adequate performing of their laboratory diagnosis works *sensu stricto* are: the weaknesses of financial and material resources (29%), inadequate number of qualified human resources (26%), difficulty in procurement of reagents and consumables (23%) and the difficulties for metrology and equipment maintenance (6%). At the same time, and sometimes at the same place, the quality system development and/or implementation faces difficulties ranging from the insufficiency of financial and material resources (26%), the lack of trained personnel (23%), the suboptimal metrology and equipment maintenance operations (13%) to the irregular provision of water and electricity (7%).

With regard to the percentage of a criteria maximum score, it is seen that this percentage is below 30% for most of the criteria amongst the least advanced laboratories (colored in blue in table 3). Nevertheless, for the most advanced one it is barely above 50% for some criteria only (colored in blue in table 3).

Table 3: Individual lab % of score

Criteria	Lab A	Lab B	Lab C	Lab D	Lab E	Lab F	Lab G	Lab H
1. Laboratory Admin Data/ Particulars	47,25	27,47	28,57	43,96	28,57	28,57	46,15	39,56
2. Infrastructure and means of Communication	48,40	16,49	10,11	32,98	26,60	40,43	50,53	61,17
3. Equipment and Supplies	34,86	11,93	19,27	24,77	15,60	9,17	34,86	55,96
4. Performed Tests	52,73	16,36	22,73	46,36	20,91	34,55	47,27	49,09
5. Cases processed	28,57	17,14	8,57	17,14	11,43	22,86	25,71	34,29
6. Quality System Implementation	45,33	19,38	16,26	19,72	20,07	24,91	43,25	46,02
7. Collaboration & Partnership	43,33	23,33	23,33	40,00	36,67	23,33	46,67	33,33

These identified constraints to properly carry out laboratory diagnosis works or to implement sound quality system give a good indication on needs to fill (in term of financial, human and material resources) in order to put this lab in a position to fulfil its mission with satisfaction and to fully meet its customers' expectations with timely and reliable lab results not leading to any complaint.

² Laboratories with the capacity to perform basic testing using a limited range of techniques

³ Laboratories which are capable of consistently and accurately conducting the tests necessary to diagnose diseases endemic to their area or region



USAID
FROM THE AMERICAN PEOPLE

IDENTIFY | FAO

BIANNUAL REPORT

(SIX-MONTHLY PROGRESS REPORT)

REPORTING PERIOD: 1 APRIL 2013 - 30 SEPTEMBER 2013

PLANNED ACTIVITIES: 1 OCTOBER 2013 - 31 MARCH 2014

TO BE SUBMITTED TO:

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID)

UNDER COOPERATIVE AGREEMENT

SUBMITTED BY

IDENTIFY PROJECT PARTNER: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

Regional component: Global/Inter-regional
Three hot spot areas (with countries): <ul style="list-style-type: none"> • Congo Basin: Uganda, Democratic Republic of the Congo, Cameroon, Republic of Congo, Tanzania, Gabon, Equatorial Guinea, Rwanda, Central African Republic and South Sudan. • Southeast Asia: Cambodia, China, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar,* Philippines, Thailand and Viet Nam. • South Asia: Bangladesh, India and Nepal (future activities pending).
Project title: Support for strengthening animal health laboratory capacities in hot spot regions to combat zoonotic diseases that pose a significant public health threat - IDENTIFY
Code: OSRO/INT/902/USA
Total budget: USD 18 794 372 (of which USD 3 500 000 were allocated for implementation of activities by the World Organisation for Animal Health (OIE) through funds transferred by FAO to OIE through a Letter of Agreement (LoA)). The activities of OIE will be reported separately by OIE. Note : An additional amount of USD 3 000 000 has been approved by USAID of which USD 400 000 is allocated to OIE. This budget increase is allocated to cover the Year 5 work plan from 1 October 2013 to 30 September 2014.
Effective starting date: 1 October 2009
Planned end date: 30 September 2014
Context of the project This project is part of a complex programme – Emerging Pandemic Threats (EPT) – designed by the United States Agency for International Development (USAID) and aimed at identifying and implementing mechanisms to detect disease emergencies, especially from wildlife. The One Health concept is an important component of the programme. The IDENTIFY project is implemented jointly by FAO, OIE and the World Health Organization (WHO).
Objectives of the project <ul style="list-style-type: none"> • enhance laboratories' ability to detect – to the appropriate level of characterization for the laboratories' capability – IDENTIFY targeted diseases¹; • enhance/support laboratories' timely reporting of IDENTIFY targeted diseases to national authorities, in support of their official notification to the appropriate regional and international organizations; • laboratories have adopted or improved quality assurance (QA) practices, inclusive of biosafety and biosecurity measures, and a comprehensive quality management system; • laboratories are participating in relevant regional and international laboratory networks according to their respective abilities, disease priorities and responsibilities.

* Myanmar is included in regional activities under separate funding.

¹ "IDENTIFY targeted disease" indicates those diseases selected at the regional level for support under IDENTIFY. Some IDENTIFY laboratories have no mandate/interest to detect all IDENTIFY targeted diseases, and data will not be reported for diseases in those cases.

Short summary of main activities planned for the reporting period (1 April 2013 - 30 September 2013)

Main activity headings are as follows; for further details, please refer to the FAO | IDENTIFY year four work plan.

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced.**USAID | IDENTIFY OBJECTIVE 1: Enhance Laboratories' ability to detect - to the appropriate level of characterization for the laboratory's capability - IDENTIFY targeted diseases.**

- 1.A Mapping national and regional laboratory resources for animal health.
- 1.B Provide laboratory equipment and supplies in a coordinated manner.
- 1.C Strengthening the linkage between the field and laboratory.
- 1.D Develop and conduct trainings or workshops to build diagnostic laboratory capacity and support laboratory management.
- 1.E Strengthening global and regional resources for selected animal diseases.
- 1.F Targeted support for strengthening diagnostic capacity and laboratory management.

USAID | IDENTIFY OBJECTIVE 2: Enhance/Support Laboratories' timely reporting of IDENTIFY targeted diseases to national authorities, in support of their official notification to the appropriate regional and international organizations.

- 2.G Support timely diagnosis and reporting for priority animal diseases, including support of laboratory policy, to ensure flow of samples and sharing of information.

USAID | IDENTIFY OBJECTIVE 3: Laboratories have adopted or improved quality assurance (QA) practices, inclusive of biosafety and biosecurity measures, and a comprehensive quality management system.

- 3.H External quality management (EQA) for diagnosis of targeted animal diseases.
- 3.I Develop and conduct trainings or workshops to promote laboratory quality management, excluding biosafety/biosecurity (refer to activity group J).
- 3.J Develop and conduct trainings or workshops to promote laboratory biosafety and biosecurity.
- 3.K Targeted support for laboratory quality management systems, including biosafety.

Output 2. Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened.**USAID | IDENTIFY OBJECTIVE 4: Laboratories are participating in relevant regional and international laboratory networks according to their respective abilities, disease priorities, and responsibilities.**

- 4.L Regional laboratory network support and coordination for animal health.
- 4.M Enhancing the role of Regional Leading/Support Laboratories.
- 4.N Supporting national laboratory networks for animal health.
- 4.O One Health initiatives: strengthening linkages between veterinary and public health.
- 4.P Support for participation in scientific conferences, trainings or workshops.

ACRONYMS AND ABBREVIATIONS

AAHL	Australian Animal Health Laboratory
AI	Avian Influenza
ASEAN	Association of Southeast Asian Nations
ASF	African swine fever
CBPP	Contagious Bovine Pleuropneumonia
CIRAD	Agricultural Research for Development
CSF	Classical Swine Fever
CVL	Central Veterinary Laboratory
CVO	Chief Veterinary Officer
DIC	Disease Investigation Centre
EARLN	Eastern Africa Veterinary and Epidemiology Laboratory Network
ECTAD	Emergency Centre for Transboundary Animal Diseases
ELISA	Enzyme-linked Immunosorbent Assay
EMPRES	FAO Emergency Prevention System
EMPRES-i	FAO Global Animal Disease Information System
EPT	Emerging Pandemic Threats
EQA	External Quality Assurance
FAO	Food and Agriculture Organization of the United Nations
FMD	Foot-and-mouth Disease
FRET	Fluorescence Resonance Energy Transfer
FVI	<i>France Vétérinaire Internationale</i>
IAEA	International Atomic Energy Agency
IATA	International Air Transport Association
IVM	Influenza Virus Monitoring
IZSVE	<i>Istituto Zooprofilattico Sperimentale delle Venezie</i>
LANAVET	<i>Laboratoire National Vétérinaire, Cameroon</i>
LIMS	Laboratory Information Management System
LMT	Laboratory Mapping Tool
LoA	Letter of Agreement
M&E	Monitoring and Evaluation
MORU	Mahidol-Oxford Tropical Medicine Research Unit (MORU)
NAHC	National Animal Health Centre, Lao PDR
NAHDIC	National Animal Health Diagnostic and Investigation Center
NaVRI	National Veterinary Research Institute, Cambodia
ND	Newcastle Disease
NIAH	National Institute of Animal Health, Thailand
OFFLU	Joint OIE/FAO Network of Expertise for Animal Influenza
OIE	World Organisation for Animal Health
PCR	Polymerase Chain Reaction
PPP	Public-private Partnership
PPR	<i>Peste des petits ruminants</i>
PRRS	Porcine Reproductive and Respiratory Syndrome
QA	Quality Assurance
RAHO 6	Regional Animal Health Office Number 6, Viet Nam
REC	Regional Economic Community
RESEPI	Regional Network of National Epidemiosurveillance Systems for Transboundary Animal Diseases
RESOLAB	West and Central Africa Veterinary Laboratory Network for Avian Influenza and Other Transboundary Diseases
RSL	Regional Support Laboratory
RVF	Rift Valley fever
SIB	Swiss Institute of Bioinformatics
SILAB	LABs Information and Management System

SOP	Standard Operating Procedures
TAD	Transboundary Animal Disease
ToTs	Training of Trainers
TVLA	Tanzania Veterinary Laboratory Agency
USAID	United States Agency for International Development
WHO	World Health Organization

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1 ACTIVITIES UNDERTAKEN DURING THE REPORTING PERIOD (1 APRIL 2013 – 30 SEPTEMBER 2013) AND PLANNED ACTIVITIES FOR THE NEXT REPORTING PERIOD (1 OCTOBER 2013 - 31 MARCH 2014)

1.1 ACTIVITIES GLOBAL COMPONENT (FAO HEADQUARTERS AND FAO/INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA))

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced.

USAID | IDENTIFY OBJECTIVE 1: Enhance Laboratories' ability to detect - to the appropriate level of characterization for the laboratory's capability - IDENTIFY targeted diseases.

G1.A Mapping national and regional laboratory resources for animal health.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- Contributed to the monitoring and evaluation (M&E) effort:
 - Initiated revision of the laboratory mapping tool (LMT) together with *France Vétérinaire International* (FVI) experts and Food and Agriculture Organization of the United Nations (FAO) staff.
 - Developed and completed on a regular basis individual laboratory sheets for all IDENTIFY supported laboratories, describing mapping data, activities conducted, follow-up actions required and progress made.
 - Integrated African national letters of agreement (LoAs) and monitored results in each laboratory sheet.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Global compilation of updated regional data on laboratory capacity and networks (*sub activity G1.A.1*).
- Contribute to the M&E effort (*sub activity G1.A.2*): M&E retreat organized at headquarters before December 2013 to prepare all M&E activities for year five.
- Revision of the LMT (*sub activity G1.A.3*):
 - Finalize the LMT revision and share the new version with IDENTIFY supported laboratories. A guide for LMT's application will also be developed and agreed upon by all users.
 - Link the LMT with other assessment reports (e.g, biosafety/biosecurity assessment and quality assurance (QA) auditing) to measure specific progress made. Compile and review all new data obtained from the LMT (using the results of self and external assessments in both regions), and analyse the progress made.
- Develop a laboratory biosafety/biosecurity assessment questionnaire (100 questions) for a one or two day laboratory visit.
- Laboratory sheets completed on a regular basis for all IDENTIFY supported laboratories and shared with regions (*sub activity G1.A.4*).
- Help to prepare for and conduct laboratory interviews (*sub activity G1.A.5*).

G1.B Provide laboratory equipment and supplies in a coordinated manner.**Activities undertaken during the current reporting period (1 April - 30 September 2013)**

- Followed-up on the safe delivery of items procured for all laboratories, especially in Africa:
 - Finalized delivery and installation of the dry ice machine in Uganda (shipped in October 2013 to the Uganda Virus Research Institute in Entebbe).

G1.C Strengthening the linkage between the field and laboratory.**Activities undertaken during the current reporting period (1 April - 30 September 2013)**

- Supported ongoing development of the FAO Global Animal Disease Information System (EMPRES-i) genetic module, following its launch to the public:
 - Submitted scientific paper on the genetic module to the journal *Databases* in September 2013, as an interface between EMPRES-i and OpenFluDB.
 - Requested the Joint World Organisation for Animal Health (OIE)/FAO Network of Expertise for Animal Influenza (OFFLU) community to test the module and review the questionnaire in order to understand the influenza scientific community's needs regarding the sequence databases.
 - Further developed and maintained the publicly accessible genetic module for the linkage of outbreak (epidemiological) and sequence (genetic) data under the LoA with the Swiss Institute of Bioinformatics (SIB).
 - Created a list of additional developments required for the genetic module in the next period, including visual genetic analysis tools and mapping functions within EMPRES-i, which support epidemiological risk assessment and FAO early warning activities.
 - Officially invited Influenza Research Database to connect with EMPRES-i for further complementarities on epidemiological and virological data.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Support further developments of the EMPRES-i genetic module.
- Meet with SIB to discuss further developments of the influenza genetic module, as well as foot-and-mouth disease (FMD) and African swine fever (ASF).

G1.D Develop and conduct trainings or workshops to build diagnostic laboratory capacity and support laboratory management.**Activities undertaken during the current reporting period (1 April - 30 September 2013)**

- Developed e-modules on bioinformatics:
 - Integrated practical scenario-based learning material with the SIB's existing phylogenetic module, in collaboration with the joint FAO/IAEA division.
 - Under the new LoA signed with SIB in April 2013, two new e-learning modules were developed on virus analysis: (i) molecular database analysis and searching by sequence similarity; and (ii) multiple sequence alignments. Technical discussions took place between the FAO/IAEA joint division and SIB to agree on the scope, expected content and structure of the two new modules on multiple sequence alignment and sequence similarity search. The draft modules were prepared by SIB and reviewed by the FAO/IAEA joint division to ensure that the global scope was met and that the expected content was in agreement with the technical discussions. The multiple sequence alignment module contains 35 slides, and the sequence similarity search module 45 slides. These versions work properly on Internet Explorer 10. Tests and video tutorials were also provided.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Released new bioinformatics distance-learning module (multiple alignments) (*sub activity G1.D1*):
 - Exercise sessions will be added to the two e-learning modules. Additionally the previously developed phylogenetic module will be improved to include more exercises based on scenarios.

G1.E Strengthening global and regional resources for selected animal diseases.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- Developed communication tool(s) for different audiences, stakeholders and partners (*activity G1.E.1*):
 - Finalized brochures on FAO regional laboratory networking and the Emergency Prevention System (EMPRES) Laboratory Unit.
 - Finalized leaflet content on "Public/private partnerships and sustainability of veterinary laboratories in sub-Saharan Africa" in English and French; design in process.
 - Designed and printed three tripartite IDENTIFY posters at global, Africa and Asia levels.
- FAO HQ provided input on H7N9 laboratory protocols to the Emergency Centre for Transboundary Animal Diseases (ECTAD) in regions and countries, as well as data: documentation on H7N9 laboratory testing; support for adaptation of regional protocols for diagnosing AI-H7N9 in Southeast Asia; and linkage with OFFLU; <http://www.fao.org/docrep/018/aq251e/aq251e.pdf>.
- Provided laboratories with access to sequencing services (*activity G1.E.5*):
 - Selected the sequencing services provider for both Africa and Asia; sent contract to selected service provider for final signature.
 - Initiated discussions with Agricultural Research for Development (CIRAD) to prepare an LoA to assist African countries in genotyping contagious bovine pleuropneumonia (CBPP) strains through sequencing, in accordance with the validated protocol proposed under this project.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Finalize laboratory cards (available diagnostic assays and cross-cutting technologies for selected animal diseases, including zoonosis) for IDENTIFY priority diseases, and disseminate to the laboratories (*sub activity G1.E.1*).
- Support the development of disease cards (case definitions and recommended tests repertoire for IDENTIFY listed priority diseases) (*sub activity G1.E.2, linked with Congo Basin C1.E1*).
- Develop communication tools for different audiences, including stakeholders and partners, and finalize communication documents (including tripartite publications) for the IDENTIFY project (*sub activity G1.E.3*).
- Continue to provide inputs to FAO ECTAD in regions and countries on H7N9 laboratory protocols and data.
- Continue to provide laboratories with access to sequencing services (*sub activity G1.E.4*):
 - Develop a system to manage requests by countries for sequencing services, working in close collaboration with the selected service provider;
 - Sign the LoA with CIRAD to assist countries in genotyping through sequencing of CBPP strains.
 - Finalization and dissemination of a handbook for beneficiary national laboratories to support sequencing protocols, workflow with selected service providers and sequence raw data analysis (*sub activity G1.E.5*).

- Establish with service providers a cost effective and sustainable procedure for sequencing services: (i) producing and evaluating tagged primers for Capripoxvirus, *peste des petits ruminants* (PPR) and ASF to allow polymerase chain reaction (PCR) products sequencing with universal primers (*sub activity G1.E.6.a*); (ii) evaluating the temperature stability of purified and non-purified PCR products in order to determine the maximum time that the PCR products can be stored at ambient temperature before being sent for sequencing. PPR, Capripox and ASF will serve as models. This will help to ensure cost effective and efficient shipment of PCR products to the sequencing company (*sub activity G1.E.6.b, at the FAO/IAEA joint division*).

G1.F Targeted support for strengthening diagnostic capacity and laboratory management.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- Supported PCR testing for multiple diseases as a follow-up to the IAEA consultation on “Good laboratory practices for conducting multiple disease diagnosis”; also supported standardization and validation of the major PCR testing procedures through the use of the same kits of reagents for various diseases (*activity G1.F2*).
- Provided technical support to laboratories with standard operating procedures (SOPs) and reagents to facilitate the transfer of techniques (PCR using the fluorescence resonance energy transfer (FRET) system) described in *activity G.3.H3*:
 - Transferred a Capripoxvirus genotyping assay based on classical PCR to Senegal through provision of primers and SOPs. Follow-up actions (gel pictures) show that the laboratory is performing well.
 - Follow-up actions were performed to help the National Animal Disease Diagnostics & Epidemiology Centre (NADDEC) in Uganda, including advising on instrument and reagent handling, and checking the raw data sent by the laboratory. However, some technical problems (i.e. the type of qPCR available in this laboratory) have prevented the successful implementation of the assay. Efforts to overcome these technical difficulties are ongoing.
 - Follow-up actions with the National Animal Health Diagnostic and Investigation Center (NAHDIC) Ethiopia (exchange of data files) show that the Capripoxvirus genotyping assays transferred in February 2013 have been successfully implemented for routine use.
- Supported the joint FAO/IAEA division to validate and transfer new techniques for multiple disease diagnosis (PCR using the FRET system):
 - Developed a cost effective method for capripoxvirus genotyping using snapback primers and dsDNA intercalating dye. The results of this work were published in PLoS ONE (PLoS ONE 8(10): e75971. doi:10.1371/journal.pone.0075971). This assay was transferred to NAHDIC Ethiopia in February 2013. Further efforts to transfer this assay to additional laboratories will take place during the next reporting period.
 - Most analytical parameters of the pan-pox detection system are now available and the assay transfer will start during the next reporting period.
 - As part of multiple pathogen detection development for respiratory diseases in small ruminants, a real time PCR multiplex assay was developed targeting priority diseases of IDENTIFY: capripox, parapox, PPR, pasteurella, contagious caprine pleuropneumonia. An analytical validation was performed, including linearity, sensitivity, specificity and repeatability parameters.
 - Designed and evaluated a multiple pathogen detection assay for respiratory diseases of small ruminants based on a fluid array system (Luminex). The initial phase (designing, coupling of the micro beads with the probes, single plex PCR, and detection) was standardized. Further assessment of the performance of the

multiplex assay is needed. The microbead based assay on Luminex allows further multiplexing of more than 50 targets with the following advantages over other conventional PCR and real time PCR assays: sample utility, cost, time and labour in screening a larger number of pathogens.

- Continued the joint FAO/IAEA division's work on molecular epidemiology of PPR:
 - The PPR virus was genotyped in clinical specimens collected from different regions of Nigeria between 2010 and 2013. In total, 73 samples have been characterized and phylogenetically analysed. Of particular interest is that the PPR viruses identified belong to both lineage II and IV, indicating that viruses from both lineages are presently circulating in Nigeria. The data also indicates transboundary movement of the virus between neighbouring countries.
 - Full genome sequencing of two PPR viruses isolated in Benin 42 years apart (1969–2011) is near completion. This data will provide significant information on the evolution of the virus over an extended period.
 - The full genome sequencing of two historical isolates from Senegal isolated in 1969 and 1970, respectively, are near completion.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Provide assistance to the field support mission, including knowledge transfer on using the tagged primers for sequencing; processing post-PCR products for shipment; and establishing local capacity for sequencing raw data analysis (*activity G1.F.1, linked with regional sub activity C1.F9*).
- Produce teaching material on the introduction of new molecular assays in a diagnostic laboratory (*activity G1.F.2*).
- Write SOPs and guidelines for molecular epidemiological studies and diagnosis of PPR, ASF, animal pox diseases and ruminant respiratory diseases (*activity G1.F.3*):
 - A consultant was appointed at the Animal Production and Health Laboratory of the joint FAO/IAEA division to validate and develop guidelines and SOPs for newly developed PPR diagnostic tests, and to compare the sensitivity of newly developed cell lines for the *in vitro* isolation of PPR virus from pathological samples. This eight month consultancy started at the end of August 2013.
- Perform validation studies and transfer a multiple poxvirus detection assay to selected regional laboratories (*sub activity G1.F.4*); transfer the new techniques for multiple disease diagnosis (PCR using the FRET system):
 - Finalize the pan-pox detection system and initiate transfer: Identify potential countries with suitable qPCR platforms; prepare and distribute the SOPs; and distribute the primers.
 - Diagnostic validation of real time PCR-based method for multiple pathogen detection of respiratory diseases using clinical samples; compare the performance by testing in member state laboratories. The targeted country will be Ethiopia. Prepare SOPs to facilitate the transfer of the assay to member states.
 - Continue the development and testing of the fluid array system assay (Luminex) for multiple pathogen detection of respiratory diseases. Test the sequence tagging or ligation strategies in order to increase the efficiency of multiplex PCR, and hence sensitivity. The aim of these experiments is to allow the flexibility of including or excluding specific targets without affecting the sensitivity of the assay.
- Perform validation studies and transfer a multiple respiratory pathogen detection assay to selected regional laboratories (*activity G1.F.5*).
- Facilitate collaboration on laboratory testing based on PREDICT protocols (*activity G1.F.6, linked with regional sub activities C1.F7, C1.F8, S1.D1 and S1.D2*).

- Provide technical support to laboratories with SOPs and reagents to facilitate the transfer of techniques (PCR using the FRET system):
 - Transfer real time PCR-based Capripoxvirus genotyping assays to Senegal; Assist NADDEC in Uganda in the implementation of these assays. The Snapback primer assay will be offered to these laboratories.
 - Produce teaching material on the introduction of new molecular assays in a diagnostic laboratory to facilitate the transfer of molecular assays for multiple diseases, focusing on animal pox diseases, PPR and ASF.
- Continue the joint FAO/IAEA division's work on the molecular epidemiology of PPR:
 - Forty PCR amplicons of suspected PPR virus positive samples have been sent for characterization from Kenya.
 - The study of the Nigerian isolates will be finalized and published.
 - The full genome sequencing of isolates from Benin, Ghana, Ethiopia, Democratic Republic of the Congo, Uganda and Senegal will be finalized.
 - Continue to receive and characterize clinical samples suspected of PPR from Africa.

USAID | IDENTIFY OBJECTIVE 2: Enhance/Support Laboratories' timely reporting of IDENTIFY targeted diseases to national authorities, in support of their official notification to the appropriate regional and international organizations.

G2.G Support timely diagnosis and reporting for priority animal diseases, including support of laboratory policies to ensure flow of samples and information sharing.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- Reviewed existing animal health laboratory policies and developed laboratory policy guidelines for IDENTIFY targeted countries (*sub activity G2.G.5*):
 - Finalized working document defining laboratory policies;
 - Reviewed existing laboratory policies and gaps in selected pilot countries; noted strengths and weaknesses of existing policies at national and regional levels;
 - Based on the outcomes of the laboratory policy review, drafted guidelines on laboratory policy in selected fields of interest; this was done for senior management of the veterinary laboratories and the competent authorities in charge of laboratories, with further adaptation for regional context in Asia and Africa (still ongoing).
 - Presented the initiative in Africa, including the results of the review and discussions, during the fourth joint Eastern Africa epidemiology and laboratory annual coordination meeting (Bujumbura, Burundi, 16-19 July 2013); Presented recommendation number six in the final communiqué: "Considering that failures in delivery of quality laboratory services in the region are mostly attributed to an inadequate policy environment, and noting that FAO through the IDENTIFY project has embarked on developing guidelines for laboratory policy, the meeting recommended that FAO finalizes the draft guidelines for laboratory policy making and explores opportunities to pilot the guidelines in a few countries through the VET GOV programme".



Final

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- Submitted proposal (grant under the VET GOV project) for operationalizing the laboratory policy initiative at national level in three pilot countries.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Support the development of sample referral guidelines for transboundary animal diseases (TADs) (*sub activity G2.G.10*).
- Publish document on laboratory policy definitions and review laboratory policies;
- Finalize laboratory policy guidelines for IDENTIFY targeted countries, and work with regional offices to adapt the policy guidelines to a regional setting (*sub activity G2.G.2, linked with Congo Basin sub activity C2.G.3*).
- Present initiative on laboratory policy to SE Asia region (at the TAG meeting, 29-30 October 2013, Yogyakarta, Indonesia) and to West-Central Africa (annual West and Central Africa Veterinary Laboratory Network for Avian Influenza and Other Transboundary Diseases (RESOLAB) meeting, January 2014).
- Support the review of results for the public-private partnership and sustainability study of veterinary laboratories in sub-Saharan Africa, and the creation of linkages to develop laboratory policy (*sub activity G2.G.3, linked with Congo Basin sub activity C2.G.4*).

USAID | IDENTIFY OBJECTIVE 3: Laboratories have adopted or improved Quality Assurance practices, inclusive of biosafety and biosecurity measures, and a comprehensive quality management system.

G3.H External quality management (EQA) for diagnosis of targeted animal diseases.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- Provided assistance for the organization of proficiency tests (*linked with regional Congo Basin C3.H.1*):
 - Supported external quality assurance (EQA) provided for proficiency testing in avian influenza (AI)/Newcastle Disease (ND) (*linked with Congo Basin sub activity C3.H.1*).
 - Reported on proficiency test for serological diagnosis of Rift Valley fever (RVF) submitted by the Center for Emerging and Zoonotic Diseases (formerly Special Pathogens Unit), National Institute for Communicable Diseases of the National Health Laboratory Service (CEZD NICD/NHLS), Sandringham, South Africa (10 participating laboratories in Africa).

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Provide assistance for the organization of the proficiency testing (AI, ND, FMD, CBPP, RVF, PPR, ASF) (*sub activity G3.H1, linked with Congo Basin sub activities C3.H1 and C3.H2*).
- Support the organization of a backstopping mission at country level Tanzania, (South Sudan and Uganda) (*activity G3.H.2 linked with Congo Basin C3.H.2*).

C3.I Develop and conduct trainings or workshops to promote laboratory quality management, excluding biosafety/biosecurity (refer to activity group J).

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- Signed an LoA with FVI in July 2013 and initiated the development of an e-learning module on quality assurance, through partnership with FVI and CIRAD.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Finalize the e-learning module on quality assurance under the LoA with FVI.

G3.J Develop and conduct trainings or workshops to promote laboratory biosafety and biosecurity.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- N/A.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- N/A.

G3.K Targeted support laboratory quality management systems, including biosafety.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- LoA signed with FVI in July 2013 and discussions held with experts from FVI for the planning of the on-site audit/backstopping missions on QA to be performed by FVI in Africa (*sub activity G3.K1, linked with Congo Basin C3.K.J*).
- LoA signed in April 2013 with the Institute G. Caporale, Teramo, Italy to support the implementation of laboratory information systems (LIMS) in two targeted laboratories (Tanzania and Botswana) (*sub activity G3.K2, linked with regional activity Congo Basin activity C3.K.3*).
- Discussions held with experts from FVI for the development of a road map for biosafety/biosecurity by experts from FVI.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Under the LoA with FVI: On-site audit, backstopping and/or training missions on QA performed by FVI in Africa (*sub activity G3.K1, linked with Congo Basin C3.K*).
- Meeting with FVI experts to draw conclusions on past missions in African laboratories, prepare upcoming missions and discuss services conducted under the LoA.
- Conduct activities under the LoA signed with the Institute G. Caporale, Teramo, Italy that will continue to support the implementation of LIMS in two targeted laboratories (Tanzania and Botswana) (*sub activity G3.K.1, linked with Congo Basin activity C3.K.3*).
- Apply FAO experience in supporting LIMS establishment to a World Health Organization (WHO) workshop to "define and discuss options for developing laboratory information management system for public health laboratories" (October 2013, Lyon, France).
- Define road map for biosafety/biosecurity strengthening in Africa with FVI experts (*sub activity G3.K1*).

Output 2. Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened.

USAID | IDENTIFY OBJECTIVE 4: Laboratories are participating in relevant regional and international laboratory networks according to their respective abilities, disease priorities, and responsibilities.

G4.L Regional laboratory network support and coordination for animal health.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- Supported regional thematic sub-networking (i.e. rabies, ASF, CBPP, FMD, PPR):
 - OFFLU has been represented in SE Asia and West/Central Africa regional network meetings; all regional laboratories in Africa and SE Asia have participated to the second OFFLU ring trial; results submitted to individual laboratories.
- Supported regional networking meetings (*linked with regional sub activities C4.L*):

- Supported the organization of and participation in the year four work plan implementation meeting and year five planning of the IDENTIFY|FAO project; the meeting was held in Douala, Cameroun on 4-6 June 2013, and included laboratory directors and Chief Veterinary Officers (CVOs).
- Supported preparation of the Eastern Africa Veterinary and Epidemiology Laboratory Network (EARLN), and participation of the IDENTIFY |FAO management team (16-19 July 2013, Bujumbura, Burundi).
- Promoted/sponsored existing disease-based, regional, and global laboratory network meetings, including OFFLU:
 - OFFLU:
 - OFFLU Swine Influenza Virus (SIV) expert meeting in Rome, 16-17 April, 2013. This meeting gathered 25 participants to discuss achievements of the SIV group, provide updates on countries activities, review achievements and plan future activities (main funding source: NIH).
 - FAO's coordination effort under OFFLU for H7N9 laboratory data sharing and dissemination (three teleconferences organised for protocol validation data, animal experiments data sharing, inventory of information for posting on OFFLU website), table of H7N9 protocols;
 - Preparation of OFFLU technical meeting on lessons learned from HPAI vaccination (4-6 December 2013, Beijing, China; co-funding with OIE and FAO AI projects);
 - Participation in OFFLU strategic meeting (Paris, France, 6 September 2013).
 - WHO Vaccine Composition meeting:
 - OFFLU's contribution to the September WHO Vaccine Composition Meeting (H5N1, H9N2, H7N7 and H7N9 virus sequences shared, as well as antigenic and epidemiologic data);
 - Received extension of agreement for OFFLU's contribution to the WHO process of vaccine strain selection for animal influenza viruses of public health concern for the 1 January 2014 to 31 December 2018 period;
 - Continued harmonization of work with WHO on antigenic data with standard reagents produced by WHO Collaborating Centres and distributed to selected OFFLU laboratories.
- Identification of potential FAO Reference Centres (*activity G4.L4*): as of October 2013, 29 new FAO Reference Centres have officially been designated.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Support regional thematic sub-networking (i.e. rabies, ASF, CBPP, FMD, PPR) (*sub activity G4.L1*).
- Support regional networking meetings (*sub activity G4.L2, linked with regional sub activities C4.L*):
 - Provide support to the preparation of the RESOLAB handover meeting (November 2013, Bamako, Mali).
 - Provide support to the preparation of the RESOLAB annual Regional Laboratory Network Meeting, tentatively planned for January 2014.
- Promote/sponsor existing disease-based regional and global laboratory network meetings, including OFFLU (*sub activity G4.L3*):
 - Disseminate outcomes of the OFFLU technical meeting on lessons learned from HPAI vaccination (4-6 December 2013, Beijing, China).
 - Update protocol tables for H5N1 and H7N9 PCR testing, and list H5 and H7 influenza virus cleavage sites for OFFLU website.

- Signature of formal agreement between WHO, OIE and FAO on OFFLU collaboration in the WHO process of vaccine strain selection for animal influenza viruses of public health concern.
- Participate in the launch of the ASF global platform and propose links between the global platform and regional AF sub-networks (Africa).
- Continued work on designation of FAO Reference Centres (*sub activity G4.L4*):
 - Continued process for final designation of FAO Reference Centres still in the pipeline.
 - Assessment panel of new applications.

G4.M Enhancing the role of Regional Leading/Support Laboratories.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- Supported and promoted the establishment or development of Regional Leading/Support Laboratories by:
 - Analyzing annual reports submitted by regional support laboratories (RSLs) for M&E purposes to identify strengths and gaps.
 - Providing visibility to RSLs, including writing articles, participating in the second OFFLU ring trial, and supporting the participation of RSL staff in international events and trainings.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Support the establishment or development of Regional Leading/Support Laboratories (*sub activity G4.M1, linked with Congo Basin Activity C4.M.1*) by assisting preparations for the final meeting for validation/endorsement by beneficiary laboratories, CVOs, and commitment by key partners.

G4.N Supporting national laboratory networks for animal health.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- N/A.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Continue support to national laboratory networks (*sub activity G4.N1, linked with Congo Basin C4.N1*).
- Develop a tool to evaluate national laboratory networks (*sub activity G4.N2, linked with Congo Basin C4.N2*).

G4.O One Health initiatives: strengthening linkages between veterinary and public health.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- Established a four-way linking framework to improve the linkage between laboratory and epidemiological data (for H5N1 zoonotic influenza) for assessing health risks at the human-animal interface (*activity G4.O.1*):
 - Tripartite finalization of the four-way linking web summary
 - In Bangladesh: preparation of the four-way linking review mission, planned for November 2013.
- Coordinated OFFLU data contribution to the WHO Influenza Vaccine Composition Meeting (and other joint OFFLU-WHO initiatives).

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Four-way linking framework (*activity G4.O1*):
 - Bangladesh: conduct review mission in November 2013 and workshop (March 2014).
- Support One Health seminar on rabies in Africa (*activity G4.O.2, linked with Congo Basin C4.O.1*):
 - Develop with the *Istituto Zooprofilattico Sperimentale delle Venezie* (IZSVe) (FAO Reference Centre for rabies) a "rabies tool kit" to provide the methodology for a systematic approach to national trainings for rabies diagnosis and One Health seminars on rabies (*linked to regional activity 2.A.C*).

G4.P Support for participation in scientific conferences, trainings or workshops.**Activities undertaken during the current reporting period (1 April - 30 September 2013)**

- N/A.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- N/A.

2 ACTIVITIES UNDERTAKEN DURING THE REPORTING PERIOD (1 APRIL 2013 – 30 SEPTEMBER 2013) AND PLANNED ACTIVITIES FOR THE NEXT REPORTING PERIOD (1 OCTOBER 2013 - 31 MARCH 2014)

2.1 ACTIVITIES ASIA COMPONENT

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced.

USAID | IDENTIFY OBJECTIVE 1: Enhance Laboratories' ability to detect - to the appropriate level of characterization for the laboratory's capability - IDENTIFY targeted diseases

S1.A Mapping national and regional laboratory resources for animal health.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Conducted a biosafety risk assessment, as well as a laboratory assessment using the LMT, in the following locations: Regional Animal Health Office (RAHO) 6 in Ho Chi Minh City, Viet Nam from 26-27 May 2013; National Center of Veterinary Diagnosis (NCVD) in Hanoi, Viet Nam on 28 May 2013; FMD-Regional Reference Laboratory (FMD-RRL) in Nakorn Raschasima, Thailand from 5-6 July 2013; and the Center of Excellence for Emerging Infectious Diseases in Animals at Chulalongkorn University in Bangkok, Thailand from 19-21 July 2013 (*sub activity S1.A3.TH and S3.K1.r*).
- Data obtained from the laboratory mapping and assessment activities were compiled and updated for the laboratory network, and assessment results were shared with participating laboratories and relevant partners.

Planned activities for the next reporting period (1 October – 31 March 2013)

- Coordinate laboratory re-assessment activities in order to compile and update laboratory capacity data for project completion; refine laboratory mapping tool and biosafety risk assessment, working with participating laboratories in South and Southeast Asia (*sub activity S.1.A.1.reg*).

S1.B Provide laboratory equipment and supplies in a coordinated manner.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Standardized veterinary diagnostic reagents, including proficiency testing panels, were procured from the Australian Animal Health Laboratory (AAHL) and provided to 13 participating laboratories in Southeast Asia. These materials will support the proficiency testing programme for diagnosing influenza, ND, Classical Swine Fever (CSF), porcine reproductive and respiratory syndrome (PRRS), ASF and rabies.
- The fire alarm system (consisting of four units of universal power supply [UPS] to be used with four biosafety cabinets) and other biosafety supplies were provided to the National Veterinary Research Institute (NaVRI) in Cambodia.
- Biosafety supplies were provided to the National Animal Health Laboratory in Lao PDR, based on the findings and recommendations from the biosafety risk assessment.
- Three units of Powered Air Purifying Respirator were provided to the PERHILITAN Laboratory in Malaysia.
- One unit of thermal cycler (PCR machine), one unit of digital gel imaging system, one unit of UV/visible spectrophotometer, and one unit of refrigerated microcentrifuge were procured

through tender and provided to the National Institute of Animal Health (NIAH), Thailand to increase the capabilities of NIAH in brucellosis services (*also linked to S1.E1.TH*).

- Based on recommendations from the biosafety risk assessment, one biosafety cabinet and a control box LCD Display were provided to the Regional and OIE Reference Laboratory for FMD in South East Asia in Nakorn Ratchasima, Thailand.
- The procurement tender for four units of biosafety cabinets has been launched in Indonesia for provision to four laboratories, including (i) Disease Investigation Centre (DIC) Banjarbaru; (ii) DIC Wates; (iii) Public Animal Health Centre (Pusvetma) in Surabaya; and (iv) National Veterinary Drug Assay Laboratory in Serpong. The provision of these biosafety cabinets are based on recommendations from the biosafety risk assessment conducted in Indonesia from October to December 2012.
- Three units of TACO RNA/DNA extraction machines were procured and provided to three laboratories in Viet Nam, including the National Center for Veterinary Diagnosis (NCVD), Regional Animal Health Office No. 2 (RAHO 2), and Regional Animal Health Office No. 7 (RAHO 7).
- The enzyme-linked immunosorbent assay (ELISA) kits for antibody detection for PRRS, CSF, Aujeszky's disease virus were purchased to support studies on pig diseases in Viet Nam.
- The software of DNASTAR licenses were renewed and provided to the Veterinary Research Institute in Malaysia, the National Animal Health Institute, Thailand, and three laboratories in Indonesia, including DIC Bukittingi, DIC Wates, and Balai Besar Penelitian Veteriner.
- Pre-screen and screening reagents for the Indonesia Influenza Virus Monitoring (IVM) network were procured from AAHL and provided to laboratories in Indonesia (*sub activity S1.B2.ID*).

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

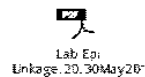
- Provide standardized veterinary diagnostic reagents, including proficiency testing panels, supplies and equipment as requested by the network laboratories or recommended in support of the proficiency testing programme, and disease diagnostic and surveillance activities.
- Support and/or facilitate the provisions of necessary supplies and equipment, based on the findings and recommendations of the biosafety assessment and cabinet testing activities to ensure the proper biosafety containment and practices in the network laboratories.
- Procure antigenic screening reagents and minor laboratory equipment for DICs in Indonesia for the IVM network.
- NCVD Viet Nam: procurement of diagnostic kits to complement Emerging Pandemic Threats (EPT)+ testing.

S1.C Strengthening the linkage between the field and laboratory.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Organized and delivered the Regional Laboratory Network Workshop on Laboratory-Field Epidemiology Linkage from 20 to 31 May 2013 in Bangkok, Thailand (*sub activity S1.C1.r*). The workshop was conducted by facilitators from AAHL, an implementing partner. There were 25 veterinary laboratory and field epidemiology staff from Cambodia, China, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand and Viet Nam attending the workshop. Outcomes included: (i) participants with knowledge and understanding of the key features related to the laboratory-field epidemiology interface; (ii) participants understood the importance of linkage between laboratory and epidemiology field staff for the effective planning and implementation of surveillance and outbreak investigation activities; and (iii)

enhanced communication and linkage between the laboratory and field epidemiology staff at the country level.



- Supported in-country lab-field pathology linkage training in Thailand: Pathology Workshop “From Field to Laboratory and Back to the Field” from 26 to 30 August 2013. The workshop was organized by the National Institute of Animal Health (NIAH), Thailand. The workshop was attended by thirty veterinary officers from national and regional livestock offices. The training was a follow-up activity of the previously offered training-of-trainer workshop, “Basics of Field and Laboratory Diagnosis”, conducted in May 2012 (*sub activity S1.C2.a.TH*).



- Supported in-country lab-field pathology linkage training in Philippines: a Downstream Training on Enhancing the Field-Laboratory Connection was organized from 23-27 September 2013. Targeted participants included veterinarians assigned to the Regional Animal Disease Diagnostic Laboratories and Animal Health Coordinators of the Regional Field Units. The training was a follow-up activity of the previously offered training-of-trainer workshop in the Philippines (*sub activity S1.C2.d.PH*).
- A ‘user acceptance’ testing and feedback workshop of a beta version of the IVM online software was successfully completed from 27-29 August 2013 in Yogyakarta in conjunction with the annual IVM Meeting.
- A selection of approximately 30-40 H5N1 virus isolates from 2012-2013 were collected at DIC Wates to be sent to AAHL.

Planned activities for the next reporting period (1 October – 31 March 2014)

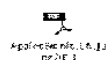
- Conduct technical backstopping and capacity building activities in Indonesia for: quality reagent production (Pusvetma/Balai Besar Pengujian Mutu dan Sertifikasi Obat Hewan); pre-screening and antigenic characterization (DIC laboratories, industry and university partners); sequencing and sequence analysis (DICs, industry and university partners); use of data management; and analysis tools developed for IVM activities.
- IVM meeting in December 2013 in Indonesia for IVM Online implementation launch and IVM online support for DICs (technical backstopping and AI data management).

S1.D Develop and conduct trainings or workshops to build diagnostic laboratory capacity.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Organized and delivered a regional workshop on applied veterinary bioinformatics with the Center of Excellence in Influenza Research and Surveillance, St. Jude Children’s Research Hospital, and the Center of Excellence for Emerging and Re-Emerging Infectious Diseases in Animals as implementing partners from 26 June to 1 July 2013 in Bangkok, Thailand (*sub activity S1.D2.r*). Fifteen veterinary laboratory staff from Bangladesh, Cambodia, China, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Philippines, Thailand, and Viet Nam participated in the workshop. Outcomes included: (i) participants with laboratory skills in veterinary bioinformatics, including nucleotide database search, sequencing protocol, sequence validation, sequence assembly, sequence alignment, nucleotide sequence analysis, phylogenetic analysis algorithms (NJ, Bayesian), Reference Data Query, and data interpretation; (ii) participants with knowledge of applying bioinformatics for disease surveillance, monitoring, prevention and control, especially in HPAI and veterinary related

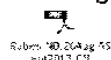
diseases; and (iii) enhanced networking and information sharing among participants and the bioinformatics experts.



- Organized and delivered a regional laboratory network workshop on diagnosis and characterisation of Influenza A (H7N9) and priority swine diseases, ASF, CSF, and PRRS at the Regional Animal Health Office Number 6 (RAHO 6), Ho Chi Minh city, Viet Nam, from 29 July to 9 August 2013 (*sub activity S1.D1.r*). Nineteen veterinary officers who are directly responsible for diagnosis of the above diseases attended the workshop from Cambodia, China, Indonesia, Lao PDR, the Philippines, Malaysia, Myanmar, Thailand and Viet Nam. The regional workshop will be followed by the proficiency testing activity to ensure the quality of diagnostic services for priority diseases at participating laboratories. The implementing partners were: AAHL; RAHO 6; and the Department of Animal Health, Viet Nam. Outcomes included: (i) increased quality diagnostic services for influenza (H7N9) and priority swine diseases in participating laboratories; (ii) enhanced diagnostic and research activities for influenza (H7N9) and priority swine diseases at participating laboratories; and (iii) enhanced communication among laboratory staff and the OIE/FAO reference centre (AAHL).



- Organized and delivered a regional laboratory network workshop on diagnosis of rabies and ND at the National Institute of Animal Health, Bangkok, Thailand from 26 August to 6 September 2013 (*sub activity S1.D1.r*). Sixteen laboratory and veterinary officers directly responsible for diagnosis of rabies and ND from the national veterinary laboratories in Cambodia, Indonesia, Lao PDR, Philippines, Malaysia, Myanmar, Thailand and Viet Nam attended the workshop. The regional workshop will be followed by the proficiency testing activity to ensure quality diagnostic service for priority diseases at the participating laboratories. The implementing partners were AAHL and NIAH, Thailand. Outcomes included: (i) increased diagnostic capability for rabies and ND at the participating laboratories; and (ii) enhanced communication among laboratory staff in the region and the world reference laboratory providing technical support to the region (AAHL).



Planned activities for the next reporting period (1 October 2013 – 1 March 2014)

- Backstopping missions to participating countries are scheduled to provide in-country training and follow-up on regional protocols to each laboratory, including diagnosis of three priority animal diseases, quality assurance, proficiency testing and general trouble shooting (linked to sub activity S3.H2).
- Provide training and applications of PREDICT tools for livestock samples in Indonesia and Viet Nam.

S1.E Strengthening regional resources for selected animal diseases.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Supported and strengthened the roles and responsibilities of the Regional Leading/Reference Laboratories in the region (*sub activity S1.E1.TH, S1.E2.VN, S1.E3.BD*).
- In collaboration with NIAH, Thailand, conducted the regional workshop on diagnosis of ND and rabies (*sub activity S1.E1.TH linked to sub activity S4.M2.a.TH*).
- In collaboration with RAHO 6, Viet Nam, conducted the regional workshop and training on diagnosis of swine diseases (*sub activity S1.E2.VN linked to sub activity S4.M2.b.VN*).

Planned activities for the next reporting period (1 October 2013 – 1 March 2014)

- Continue to support and strengthen the roles and responsibilities of the Regional Leading/Reference Laboratories in the region (*sub activities S1.E1.TH, S1.E2.VN, S1.E3.BD*).

S1.F Targeted support for building diagnostic capacity.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Supported the NaVRI-Institut Pasteur du Cambodge twinning programme through an LoA to strengthen capacities of the Government of Cambodia, using a joint animal-human-environment interface survey for HPAI in live bird markets (*sub activity S1.F2.CA*).
- Supported the Technical Assistance Programme for Enhancing Quality Laboratory Management and Services at the NAHL, Lao PDR with Mahidol-Oxford Tropical Medicine Research Unit (MORU), Bangkok, Thailand as an implementing partner (*linked to sub activity S3.K3.a.LA*).

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Continue to support the NaVRI-Institut Pasteur du Cambodge twinning programme to strengthen capacities of the Government of Cambodia (year two).
- Continue to support the NAHL-MORU technical assistance program (year two).

USAID | IDENTIFY OBJECTIVE 2: Enhance/Support Laboratories' timely reporting of IDENTIFY targeted diseases to national authorities, in support of their official notification to the appropriate regional and international organizations.

S2.G Support timely diagnosis and reporting for priority animal diseases, including support of laboratory policy to ensure flow of samples and sharing of information.

Activities undertaken during the current reporting period (1 April– 30 September 2013)

- Supported implementation and information update to the EMPRES-i and TADs Network Asia email list.
- Supported sharing of expertise and disease information across the network and among the international organizations and provided inputs when applicable.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Continue to support the sharing of expertise and disease information across the network.
- Continue to support sample referral for disease confirmation upon request from the network laboratories (*sub activity S2.G1.r*).

USAID | IDENTIFY OBJECTIVE 3: Laboratories have adopted or improved QA practices, inclusive of biosafety and biosecurity measures, and a comprehensive quality management system.

S3.H External Quality Assessment (EQA) for diagnosis of targeted animal diseases.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Conducted the Regional Proficiency Testing Programme, including procurement and distribution of the proficiency testing panels for diagnoses of influenza A, H5-influenza, PRRS, CSF, ASF, rabies and ND viruses, with AAHL as an implementing partner (*sub activity S3.H1.r*).

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Backstopping missions by AAHL experts have been planned to fourteen participating laboratories in Cambodia, Laos, Indonesia, Malaysia, Philippines, Thailand, and Viet Nam from October to December 2013. The purpose of these missions is to ensure the implementation of appropriate diagnostic protocols under a QA system. The activity is part of the 2013 Regional Proficiency Programme (*sub activity S3.H2.r*).

S3.I Develop and conduct trainings or workshops to promote laboratory quality management, excluding biosafety/biosecurity (refer to activity group J).

Activities undertaken during the current reporting period (1 April– 30 September 2013)

- Planned and coordinated a one-day International Air Transport Association (IATA) Certification Course for Shipper of Infectious Substances (IATA certification) to be held back-to-back with the Regional Laboratory Network Training of the Trainers (ToTs) Workshop on Biosafety Management (see below) (*sub activity S3.I1.r*).

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Provide an IATA certification training back-to-back with the Regional Laboratory Network Training of the Trainers (ToTs) Workshop on Biosafety Management with MORU as an implementing partner (*sub activity S3.I1.r*).

S3.J Develop and conduct trainings or workshops to promote laboratory biosafety and biosecurity.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- The 2013 Regional Biosafety Programme has been implemented. The programme included the development of regional resource materials on biosafety practices and trainings to be used at the Regional Laboratory Network Training of the Trainers Workshop on Biosafety Management (*sub activity S3.J1.r*).
- Planned and coordinated the organization of the Regional Laboratory Network Training of the Trainers Workshop on Biosafety Management, with MORU as an implementing partner.
- Delivered a follow-up biosafety training for the Sabah Wildlife Department, Kota Kinabaru, Malaysia from 25-28 July 2013 with the EcoHealth Alliance and Sabah Wildlife Department as implementing partners. The training course was attended by 23 participants from EcoHealth Alliance and Sabah Wildlife, as well as the Veterinary Research Institute, Ipoh and PERHILITAN, Kuala Lumpur (*sub activity S3.J2.MY*).
- A follow-up training on biosafety and good laboratory practices was conducted at the Regional Animal Health Office No. 6 (RAHO 6) from 20-22 June 2013 in collaboration with RAHO 6. The training course was attended by 36 staff from the national network laboratories under Department of Animal Health, Viet Nam (*Linked to sub activity S1.E2.VN*).

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Conduct the Regional Laboratory Network Training of the Trainers (ToTs) Workshop on Biosafety Management for participating laboratories with MORU as an implementing partner, from 9-20 December 2013 in Bangkok, Thailand (*sub activity S3.J1.r*).
- Distribute the regional resource materials for biosafety practices and trainings to the laboratory network (*sub activity S3.J1.r*).

S3.K Targeted support for laboratory quality management systems, including biosafety.

Activities undertaken during the current reporting period (1 April– 30 September 2013)

- Biosafety expert visits were provided to assess biosafety infrastructure, equipment and practices, and provide recommendations, including remedial activities, to four laboratories: National Centre for Veterinary Diagnosis in Hanoi, Viet Nam; Regional Animal Health Office No. 6 in Ho Chi Minh City, Viet Nam; FMD-Regional Reference Laboratory in Nakorn Raschasima, Thailand; and the Center of Excellence for Emerging Infectious Diseases in Animals, Chulalongkorn University in Bangkok, Thailand (*sub activity S3.K1.r*).
- The 2013 biosafety cabinet calibration and certification was scheduled from 14 August to 15 November 2013 for approximately 170 biosafety cabinets in 29 laboratory locations in 10 participating countries, including Cambodia, Lao PDR, Indonesia, Malaysia, Myanmar, Philippines, Thailand, Viet Nam, Bangladesh, and Nepal (*sub activity S3.K2.r*).
- Coordinated and supported activities under the Technical Assistance Programme for Enhancing Quality Laboratory Management, including quality laboratory services and biosafety management at the National Animal Health Centre, Lao PDR with MORU as an implementing partner (*sub activity S3.K3.a.LA*).
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Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Conduct the biosafety risk assessment in IDENTIFY-supported laboratories in South and Southeast Asia according to the 2014 regional biosafety programme (*linked to sub activity S1.A1.reg*).
- Coordinate and support activities related to providing technical assistance, equipment and supplies to the laboratory network based on the expert's recommendations from the laboratory assessment missions.

Output 2. Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened.

USAID | IDENTIFY OBJECTIVE 4: Laboratories are participating in relevant regional and international laboratory networks according to their respective abilities, disease priorities, and responsibilities.

S4.L Regional laboratory network support and coordination for animal health.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Planned and coordinated the Regional Laboratory Network Animal Health Laboratory-Technical Advisory Group back-to-back with the first Association of Southeast Asian Nations (ASEAN) Laboratory Directors' Forum meeting in collaboration with OIE and the Directorate General of Livestock Services, Indonesia (*activity S4.L1.r*).
- Provided support to activities in alignment with the ASEAN Regional Framework for Laboratory Capacity Building and Networking.
- The IDENTIFY|FAO Southeast Asia coordinator provided technical inputs at the Field Epidemiology Training Programme for Veterinarians, 14-16 August 2013, Bangkok, Thailand.
- The IDENTIFY|FAO Southeast Asia coordinator participated and provided technical inputs at the USAID EPT Program Asia Regional Meeting, 18-19 June 2013, Bangkok, Thailand.

- The IDENTIFY|FAO Southeast Asia coordinator participated and provided technical inputs at the tripartite meeting of IDENTIFY Project Headquarters, Regional and Country counterparts in South and Southeast Asia, 20 June 2013, Bangkok, Thailand.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Organize the Laboratory-Technical Advisory Group meeting scheduled from 29 to 30 October 2013 to be held back-to-back with the first ASEAN Regional Laboratory Directors' Forum scheduled from 31 October to 1 November 2013 in Yogyakarta, Indonesia. The meetings were jointly organized by the Directorate General of Livestock Services, Indonesia, FAO and OIE. (*sub activities S4.L1.r and S4.L2.r*).
- Circulate the updated regional protocol for diagnosis of AI, including H7N9 in SE Asia.

S4.M Enhancing the role of Regional Leading Laboratories.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Provided support on laboratory capacity building activities at the SEA Regional reference/leading animal health laboratories (*sub activities S4.M2.a.TH, S4.M2.b.VN*).
- Collaborated with NIAH, Thailand to organize a regional workshop on diagnosis of ND and rabies (*sub activities S4.M2.a.TH also linked to S1.E1.TH*).
- Collaborated with RAHO 6, Viet Nam to organize a regional workshop and training on the diagnosis of swine diseases (*sub activities S4.M2.b.VN also linked to S1.E2.VN*).
- Supported studies on pig diseases including PRRS and CSF for RAHO 6, Viet Nam through the provision of reagents for diagnosis of PRRS, CSF, and Aujeszky's disease viruses (pseudorabies) (*sub activity S4.M2b.VN*).

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Continue to support activities related to enhancing the role of Regional Leading Laboratories.
- Support the visibility of the regional reference/leading laboratories at the Regional Laboratory Network Animal Health Laboratory-Technical Advisory Group, and the first ASEAN Laboratory Directors' Forum.

S4.N Supporting national laboratory networks for animal health.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- A national laboratory coordinator was provided to support activities related to strengthening laboratory quality services at the national laboratory networks in Indonesia (*sub activity S4.N3.ID*).
- The IDENTIFY|FAO Southeast Asia coordinator participated and provided technical inputs at the Philippine Animal Health Centre Strategic Planning Workshop from 14-18 May 2013 in Quezon City, Philippines. The meeting was organized by OIE, in collaboration with the Philippine Animal Health Centre.
- The IDENTIFY|FAO Southeast Asia coordinator participated and provided technical inputs at a strategic planning workshop follow-up activity for NaVRI-Cambodia from 26-27 September 2013 in Preah Sihanouk province, Cambodia. The meeting was organized by OIE, in collaboration with NaVRI.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Continue to support activities related to strengthening the national laboratory network in participating countries.
- Support the Vietnamese National Veterinary Conference in collaboration with Hanoi University of Agriculture (*sub activity S4.N5.VN*).

S4.O One Health initiatives: strengthening linkages between veterinary and public health.**Activities undertaken during the current reporting period (1 April – 30 September 2013)**

- Provided support for four-way linking activities planned in Bangladesh and Indonesia to improve the linkage between laboratory and epidemiological experts from animal and public health sectors (*sub activities S4.O3.BD, S4.O4.ID*).

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Continue to provide support for four-way linking activities planned in Viet Nam, Bangladesh, and Indonesia to improve the linkage between laboratory and epidemiological experts from animal and public health sectors (*sub activities S4.O2.VN, S4.O3.BD, S4.O4.ID*).
- Four-way linking review mission (November 2013) and workshop (March 2014) in Bangladesh.

S4.P Support for participation in scientific conferences, trainings, or workshops.**Activities undertaken during the current reporting period (1 April – 30 September 2013)**

- No activities during the reporting period.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Coordinate and provide support for participation in scientific conferences, trainings, and workshops upon request.

3 ACTIVITIES UNDERTAKEN DURING THE REPORTING PERIOD (1 APRIL 2013 – 30 SEPTEMBER 2013) AND PLANNED ACTIVITIES FOR THE NEXT REPORTING PERIOD (1 OCTOBER 2013 - 31 MARCH 2014)

3.1 ACTIVITIES CONGO BASIN COMPONENT

Output 1. Capacity of national animal health laboratories to detect and diagnose diseases under a quality management system enhanced.

USAID | IDENTIFY OBJECTIVE 1: Enhance Laboratories' ability to detect - to the appropriate level of characterization for the laboratory's capability - IDENTIFY targeted diseases

C1.A Mapping national and regional laboratory resources for animal health.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- No mapping took place during the reporting period, as the data call was postponed at the end of the project. However, the overall mapping data were analysed and compared. As a follow-up of this analysis, the laboratory mapping tool is being revised for better results and consistency over time (*linked to global activity G1.A*).
- Compiled and analyzed the mapping exercise results in the RSLs:
 - Results of the mapping exercise were shared with the Eastern Africa Regional Support Laboratory (NAHDIC-Ethiopia) for compilation and analysis. Feedback from NAHDIC is expected. Regarding the two RSLs based in West Africa, results of the completed LMT are expected from Vom (Nigeria) and the Laboratoire National d'Elevage et de Recherches Vétérinaires (Senegal).

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Mapping national and regional laboratory resources for animal health (*sub activity C1.A.1*).
- Contribute to global compilation of updated regional data on laboratory capacity and networks (*sub activity C1.A.2*).
- Contribute to the revision and the dissemination of the FAO LMT (*sub activity C1.A.3*).
- Contribute to the laboratory interviews (*sub activity C1.A.4, linked to the global M&E effort G1.A*).

C1.B Provide laboratory equipment and supplies in a coordinated manner.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Provided equipment, supplies, manuals and equipment maintenance services (*sub activity C1.B1*):
 - Continued follow-up of diagnostic kit delivery if not yet completed. Laboratory equipment and diagnostic kits were procured for all beneficiary laboratories with a close follow-up by the FAO|IDENTIFY project team in the Congo Basin region and FAO country offices. Although there were delays in the delivery of some parcels, all procured equipment and diagnostic kits have been delivered with satisfaction.
- Assisted laboratory equipment procurement (*sub activity C1.B2*): On-site missions carried out by external and/or internal experts monitored delivery and appropriate use of procured equipment and reagents provided to beneficiary laboratories. The experts listed the items still missing that could be procured in years four or five of the project. Three on-site missions

were carried out in Congo, Democratic Republic of the Congo and Uganda during the reporting period with the following findings:

- Congo: Two experts from IZSVe took advantage of the hands-on training on rabies diagnostics held at Laboratoire de Diagnostic Vétérinaire de Brazzaville (LDVB) (Brazzaville, 3-7 June 2013) to begin using the new equipment provided by the IDENTIFY project (biological cabinet, bench autoclave, incubator, refrigerator-freezer and a UV-microscope). The experts trained laboratory staff on proper use and basic maintenance requirements. In order to optimize the use of the new equipment, a water distillatory and an auto-start power generator are urgently needed to overcome frequent power cuts and inconstant voltage issues.
- Democratic Republic of the Congo: The laboratory expert that assessed the laboratory in Goma also visited the laboratory at Kinshasa (3-6 May 2013) and checked proper reception, installation and use of laboratory equipments delivered under IDENTIFY (*also linked to sub activity C4.N*).
- Uganda: Two visits were made by FAO IDENTIFY project staff (13 July and 9 September 2013) to NADDEC (Uganda) to assess progress under the national LoA.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Provision of equipment, supplies, manuals and equipment maintenance services (*sub activity C1.B1*): purchase of basic laboratory items for the Democratic Republic of the Congo planned as a follow-up of the assessment mission in the country.
- Assist mission for installation of procured laboratory equipment (*sub activity C1.B2*): Assistance in the proper use of laboratory equipment received will be extended to other laboratories during expert on-site visits in the coming months.
- Explore possible schemes and procedures for coordinated procurement of key reagents in Africa (*sub activity C1.B3*).

C1.C Strengthening the linkage between the field and laboratory.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- National field pathology trainings were provided under LoAs with laboratories (*activity C1.C.1*) were conducted in Cameroon (April 2013) and Congo (August 2013):
 - Cameroon: A total of 61 persons from the *Laboratoire National Vétérinaire*, Cameroon (LANAVET) and field veterinary staff participated in two trainings organized in Garoua (from 9-11 April 2013 with 22 participants, and Yaoundé from 23-25 April 2013 with 41 participants) on necropsy techniques, sample collection and good shipping practices. Training reports have been made available to FAO by the LANAVET.
 - Congo: 20 participants from LDVB and field veterinary staff from six departments (Brazzaville, Cuvette Ouest, Likouala, Plateaux, Pool and Sangha) attended the training on necropsy techniques, sample collection and good shipping practices that was held from 20 to 23 August 2013. Trainings reports have been shared with FAO by the laboratory.
- Investigation and data collection on targeted diseases (*sub activity C1.C.2*):
 - Cameroon: 1 327 samples (110 percent of the 1 200 targeted samples planned in the LoA) were collected (PPCB: 265; FMD: 265; ND: 143; PPA: 189; PPR: 202) in the Far North and the North regions and tested at LANAVET in Garoua. Additional sampling activities are underway in the Adamoua Region. Laboratory analyses are *underway and the results will be compiled in the final report of the LoA*.
 - Congo: 2 224 samples were collected, out of which 1 676 were of good quality (167 percent of the 1 000 targeted samples planned in the LoA): 1 044 samples for

PPR; 476 samples for PPCB; 156 samples for ASF; 1 676 samples for FMD. The samples were submitted to LDVB as a result of a survey conducted in two departments (Cuvette and Cuvette-Ouest) from 30 June to 8 July 2013 to determine the prevalence of four priority diseases (PPR, ASF, CBPP and FMD).

- Gabon: 1 305 samples (843 for PPR and 462 for PPCB) of the 1 000 targeted samples in the LoA were collected by LNVL. Laboratory tests are underway and results will be made available in the final report of the LoA.
- Rwanda: 811 samples were collected, of which 150 were submitted to OVI for RVF confirmation.
- South Sudan: Of 500 samples targeted as per the LoA, 488 PPR and 273 RVF serum samples were submitted to CDVL, and tested using Competitive ELISA; the respective results were recorded.
- Tanzania: 616 samples (62 percent of the targeted samples as per the LoA) were collected and submitted to two zonal laboratories - Tanzania Veterinary Laboratory Agency (TVLA) centre in Iringa and TVLA centre in Tabora. 225 samples were tested for PPR; 97 for ASF; 158 for CBPP; 4 for FMD; and 132 for LSD. Sample collection activities are still ongoing and more samples are expected to be submitted to the laboratories.
- Uganda: Out of the targeted 5 000 samples, 1 931 samples (39 percent of the targeted samples as per the LoA) were submitted to NADDEC and testing is reported as ongoing.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- National Field Pathology trainings to reinforce the capacities of laboratory staff previously trained will be conducted to finalize activities under national LoAs (*sub activity C1.C.1*).
 - Central African Republic: Serious security issues following the unstable political situation prevented implementing this activity. Therefore, this activity is now planned for the next reporting period and the LoA will be extended accordingly.
 - Gabon: In the past months, many changes occurred in the management team of the LNVL, including the change of the Director. This situation has hampered the organization of the training as well as the implementation of other project activities in the country. A new scheduling of activities has been established through a no cost extension of the LoA.
- Investigation and data collection on targeted diseases will be conducted to finalize activities under national LoAs (*sub activity C1.C.2*).

C1.D Develop and conduct trainings or workshops to build diagnostic laboratory capacity and support laboratory management.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- N/A.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Develop training kits on laboratory equipment and calibration, and follow-up on previous trainings on laboratory equipment and calibration (*sub activity C1.D1*).

C1.E Strengthening regional resources for selected animal diseases.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- N/A.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Disseminate laboratory cards (available diagnostic assays and cross-cutting technologies for selected animal diseases, including zoonoses) for IDENTIFY priority diseases (*sub activity C1.E.1, linked with sub activity G1.E.1*).
- Produce and disseminate disease cards (case definition and recommended test repertoire for IDENTIFY listed priority diseases) (*sub activity C1.E.2*).
- Provide access to sequencing services to Cameroon, Ethiopia, Kenya, Democratic Republic of the Congo, Tanzania, Uganda, Nigeria, Senegal, Botswana (*sub activity C1.E.3*). The sequencing provider has been selected (*linked to sub activity G1.E.5*). The handbook will be disseminated to users (*linked to sub activity G1.E.4*).
- Assist countries on genotyping through sequencing of CBPP strains, in accordance with the validated protocol (*sub activity C1.E.4*).

C1.F Targeted support for strengthening diagnostic capacity and laboratory management.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Supported capacity development in bush meat microbiology in Congo, Central African Republic and Gabon (*sub activity C1.F.1*): validated the terms of reference of the missions, and recruited an international consultant.
- Continued to support capacity development in antimicrobial resistance for food safety, including training, supplies and sampling (*Uganda, sub activity C1.F.2*): initiated planning of the training and prepared a list of items for procurement together with the laboratory. Owing to budget constraints, this activity is no longer planned under IDENTIFY.
- Continued to strengthen advanced ASF capacities (*sub activity C1.F.3*): the tools developed by the staff from Cameroon are used routinely at the FAO/IAEA joint division for ASF genotyping. Samples from Ethiopia and Democratic Republic of the Congo were genotyped using the primers and SOPs developed.
- On site missions to develop diagnostic competence:
 - Specific assessment/on-site training on ASF in Tanzania, Uganda, Congo and Gabon (*sub activities C1.F.4 and C1.F.5*): the terms of reference of the consultant were prepared and approved.
 - On-site mission to develop diagnostic competence for CBPP in Bangui (Central African Republic), Brazzaville (Congo), Libreville (Gabon) and Uganda (*sub activities C1.F.5 and C1.F.7*): the terms of reference are completed and the international consultant has been recruited. Planning of the missions has been initiated.
 - On-site missions to develop diagnostic competence for rabies (*sub activity C1.F.6*): on-site technical assistance and hands-on training related to rabies diagnosis including rabies blind tests were organized in the national laboratory of Republic of the Congo, under the LoA with IZSvE; a hands-on rabies diagnostic training was performed in Congo (3-7 June 2013, LDVB in Brazzaville) by two experts from IZSvE, and was attended by seven trainees from LDVB and one from a public health laboratory (Laboratoire National de Santé Publique). The training addressed general information on rabies (aetiology, pathogenesis, symptoms in animals, epidemiology) and the available techniques to diagnose the disease in animals (both OIE/WHO recommended methods, as well as techniques under evaluation for rabies diagnosis or confirmation). Management of a diagnostic sample by a diagnostic laboratory, as well as recommended storage conditions and sample shipping procedures according to the international regulations (IATA) were also presented and discussed by the trainers. The trainers also stressed the importance of the biological risk assessment evaluation in the laboratory when working

with infectious agents. The improvement of the general knowledge was estimated at about 17 percent, based on a questionnaire submitted to trainees.



- On-site mission to design a strategy for the development of the national laboratory of Equatorial Guinea (*sub activity C1.F10*): the mission was postponed in order to obtain the full commitment of the officials to implement mission findings. However, this activity is not planned in year five because of budget constraints.
- Transfer of technology of protocols developed by the FAO/IAEA joint division (PCR using the FRET system) in Senegal, Uganda and Ethiopia (*linked to activity G1.F*).

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Support competence development in bush meat microbiology (*sub activity C1.F1*) in Congo and Gabon.
- Strengthen advanced ASF diagnostic capacities in Cameroon (*sub activity C1.F2*): the scientist from Cameroon will join the FAO/IAEA joint division in October 2013 for eight months under another project. However, he will contribute to the IDENTIFY project in evaluating tagged ASF primers to support the access to sequencing services by African Laboratories.
- On-site missions to develop diagnostic competence for ASF (*sub activity C1.F3*): the missions in Tanzania, Uganda, Congo and Gabon are tentatively scheduled in January/February 2014.
- On-site missions to develop diagnostic competence for CBPP (*sub activity C1.F4*): missions in Central African Republic, Congo, Gabon and Uganda are tentatively planned to start in January/February 2014.
- On-site assessment mission on local situation in central African Republic (*sub activity C1.F5*).
- On-site mission to develop diagnostic competence for rabies (*sub activity C1.F6*): trainings will be organized in Gabon and South Sudan (staff are being vaccinated).
- Develop competencies on new and advanced laboratory testing based in Cameroon (*sub activity C1.F7*): two laboratory experts will participate in a four week internship at the PREDICT laboratory in Yaoundé.
- Develop competencies on laboratory testing of samples by applying PREDICT protocols on samples from domestic animals in Cameroun (*sub activity C1.F8*).
- Field support mission held in Uganda by FAO/IAEA joint division to transfer knowledge on using tagged primers for sequencing, post-PCR product processing and shipment for sequencing, and established local capacity for post-sequencing raw data analysis (*sub activity C1.F9*).

USAID | IDENTIFY OBJECTIVE 2: Enhance/Support Laboratories' timely reporting of IDENTIFY targeted diseases to national authorities, in support of their official notification to the appropriate regional and international organizations.

C2.G Support timely diagnosis and reporting for priority animal diseases, including support of laboratory policy to ensure flow of samples and sharing of information.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Provided continued support for sample referral from national laboratories to RSLs and international reference laboratories for disease confirmation for all supported laboratories (*sub activity C2.G.1*):
 - Cameroon: Samples of FMD were sent to Plum Island and the University of Ohio, USA. All FMD diagnostic laboratory results were shared with Plum Island, the

University of Ohio and Botswana Vaccine Institute with the aim of producing a FMD vaccine.

- Rwanda: 150 suspected RVF samples were sent to Onderspoort Veterinary Institute (the OIE reference laboratory for RVF) for confirmation by DVS-Rwanda Agriculture Board on 13 November 2012.
- Contributed to the Global Consultation on laboratory policy by providing information regarding procedures in Africa (*sub activity C2.G3, linked to global sub activity G2.G.2*):
 - Five laboratories in the Congo Basin (LANAVET/Cameroon, LNVL/Gabon, Laboratoire National d'Elevage et de Recherches Vétérinaires /Senegal, NVRI/Nigeria and OVI/South Africa) were targeted as pilot laboratories for the laboratory policy review in the Congo Basin. Thus far, accurate information from laboratory policy documents was collected from Cameroon, Senegal, Gabon and Tanzania. As a result of this review, the key guidelines for laboratory policy development were presented during the EARLN annual meeting held in Bujumbura in July 2013. Three concept notes to operationalize the guidelines and strengthen laboratory policy at national level were prepared for Cameroon, Congo and Tanzania, and one concept note was prepared for a non-IDENTIFY beneficiary country (Chad). Funding to implement these pilot activities is expected from alternative sources.
- Reviewed public-private partnerships and sustainability of veterinary laboratories in sub-Saharan Africa (*sub activity C2.G.3*):
 - The terms of reference of a national consultant for the public-private partnership (PPP) study in Tanzania were developed and submitted to the FAO Representation in Tanzania. The national expert is being selected.
 - An article on PPP was published in October 2013 (p.21-23: <http://www.fao.org/docrep/018/i3470e/i3470e.pdf>). A concept note and a leaflet on PPP were also finalized. (*see embedded document*) In Cameroon, the LANAVET annex in Yaoundé is now operational and started delivering priced services to the private sector in April 2013. The LANAVET annex has been very active, with a total of 1 229 samples submitted to investigate PPR, ASF, FMD and poultry diseases.



PPP leaflet.2013

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)


- Support sample referral from national laboratories to RSLs and international reference laboratories for disease confirmation (*sub activity C2.G1*).
- Conduct sampling activities on wildlife at LDVB, Congo (*sub activity C2.G2*).
- Advocate for laboratory policy development in the Congo Basin region (*sub activity C2.G3*).
- Review public-private partnerships and sustainability of veterinary laboratories in sub-Saharan Africa (*sub activity C2.G4*): the preliminary mission of the national expert for the PPP study in Tanzania is planned on November 2013 to collect baseline information in Tanzania. This first round of the PPP study in Tanzania will be followed by another mission by international experts in Cameroon and the Democratic Republic of the Congo in 2012.

USAID | IDENTIFY OBJECTIVE 3: Laboratories have adopted or improved quality assurance (QA) practices, inclusive of biosafety and biosecurity measures, and a comprehensive quality management system.

C3.H External quality assessment (EQA) for diagnosis of targeted animal diseases.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Conducted regional proficiency testing (AI and ND, RVF, PPR, ASF) (*sub activity C3.H.1*):
 - AI and ND: Results of 2012 proficiency testing (organized by IZSve) were presented during the Eastern Africa fourth joint regional epidemiology and laboratory networks meeting held in July 2013 in Bujumbura, Burundi. For Cameroon, Congo, Gabon and Democratic Republic of the Congo, the test results will be presented at the first Central Africa RESOLAB meeting (tentatively planned in Chad, January 2014). Logistical issues hindered the completion of AI/ND proficiency testing in Rwanda; the reagents for testing were shipped from IZSve Padova in the first week of April 2013 for Rwanda to complete the AI/ND proficiency testing. All five RSLs in sub-Saharan Africa agreed to participate to the second OFFLU ring trial (organised by NVSL-USA and FLI-Germany) and submitted their results during the reporting period.
 - PPR: The third round of the EQA for molecular detection of PPR was conducted. Panels were prepared by the Joint FAO/IAEA division and shipped to Nigeria, Cameroon, Tanzania, Ethiopia, Uganda and Democratic Republic of the Congo.
 - RVF: The first round of proficiency testing for RVF serological diagnosis was completed. Ten participants have tested the panel and submitted their results to the organiser. Feedback was sent to participating laboratories in May 2013; corrective actions will be discussed during the next reporting period. Provided an assessment of the individual performance of each laboratory and the overall score and agreement between each laboratory and the Center for Emerging and Zoonotic Diseases (former special pathogen unit) of the national institute for communicable disease (South Africa), which served as the reference laboratory. The performance of two kits (the IDVET competitive ELISA and the BDSL Inhibition ELISA) were simultaneously assessed.
- Provided backstopping missions at country level to aid with EQA (*sub activity C3.H2*):
 - South Sudan: Training on EQM was conducted on 6-13 April 2013 at the Central Veterinary Diagnostic Laboratory in Juba by an international expert to provide assistance on developing Quality Laboratory Management, SOPs and laboratory bench work guidelines. A second visit for the EQA mission will be necessary, especially when the laboratory moves to a new site.


 EQA mission
 Juba, 6.13 April 2013

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Regional proficiency testing (AI and ND, FMD, RVF, PPR, ASF) (*sub activity C3.H.1*):
 - AI and ND organized by IZSve: Botswana, Cameroon, Ethiopia, Gabon, Kenya, Nigeria, Senegal, South Sudan, Tanzania and Uganda.

- RVF (with FAO/IAEA and the National Institute for Communicable Diseases/South Africa) organized for the Democratic Republic of the Congo, Ethiopia, Senegal, Tanzania and Uganda. Discussions to be held with the National Institute for Communicable Diseases/South Africa and a technical contract to be prepared by the FAO/IAEA joint division for the second EQA program for serological diagnostics of RVF virus.
- PPR organized by FAO/IAEA for Cameroon, Republic of Congo, Democratic Republic of the Congo, Ethiopia, Gabon, Senegal, Tanzania and Uganda.
- ASF (organized by an FAO reference centre) for Cameroon, Republic of Congo, Democratic Republic of the Congo, Ethiopia, Tanzania and Uganda.
- CBPP organized by CIRAD for CAF, Gabon, Republic of Congo and Uganda.
- FMD organized by IAH, Pirbright in collaboration with EU-FMD for the Democratic Republic of the Congo, Senegal, Nigeria and Botswana.
- Results of all proficiency testing (including rabies and other diseases, if any) from all partners will be integrated to shape regional testing programs (*sub activity C3.H.1*).
- Three backstopping missions will be organized at country level to aid with EQA 3 countries, according to results obtained during proficiency testing (*sub activity C3.H.3*).

C3.I Develop and conduct trainings or workshops to promote laboratory quality management, excluding biosafety/biosecurity (refer to activity group J).

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Conducted regional trainings on equipment maintenance and calibration (*sub activity C3.I.1*): five participants from Cameroon, Central African Republic, Congo, Democratic Republic of the Congo and Gabon attended the training organized from 3-7 June 2013 in Dakar, Senegal. Other participants from non-IDENTIFY beneficiary laboratories (Burkina Faso, Côte d'Ivoire, Mali, Niger, Chad and Senegal) sponsored by another funding source also attended the training. The training gathered maintenance officers who improved their skills on maintenance of key laboratory equipment, including biological safety cabinets, controlled/dust-free rooms, spectrophotometers, CO2 incubators, optical microscopy, analytical balance and an ultra deep freezer.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- N/A.

C3.J Develop and conduct trainings or workshops to promote laboratory biosafety and biosecurity.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- N/A.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- N/A.

C3.K Targeted support for laboratory quality management systems, including biosafety (at country level).

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Continued to support the laboratory biosecurity/biosafety implementation, including the completion of minor laboratory repairs (*implemented through national LoAs, sub activity C3.K1*):

- Cameroon: As a follow-up of the assessment mission conducted by an FVI expert in February 2011, a sample reception room was set up, eight staff were vaccinated against rabies and 80 percent of SOPs and other quality documents were developed and disseminated.
 - Congo: A water tank and a high water pressure pump were installed. The quality system documentation was updated.
 - Gabon: 80 percent of SOPs for diagnostic tests currently performed at the laboratory were developed. Eight staff were vaccinated against rabies.
 - Rwanda: Laboratory renovations were delayed because of lengthy local tender procedures. However, the major renovations have been carried out.
 - Tanzania: Electronic locks were installed on all three doors whilst 20 laboratory personnel involved in rabies necropsy and diagnosis (in pathology and virology sections) were vaccinated against rabies.
 - South Sudan: Renovations on the CVDL were carried out (air conditioners repaired, electricity and water system repaired, laboratory benches in place, laboratory partitioned into three units). Sustainable cold chain system put in place. As the laboratory will be moved to a new site, a visit to assess laboratory quality management needs will be required.
- Supported the implementation of LIMS in Tanzania and Botswana (*sub activity C3.K3, under LoA with IZS Teramo*). In Tanzania, LIMS- LABs Information and Management System (SILAB) has been installed on the local server at TVLA. Staff from the Sample Reception, Pathology, Bacteriology and Animal Science sections were trained and are now able to use the system autonomously. Final test reports generated by SILAB are currently sent to TVLA's customers. Interfacing the SILAB and TADinfo systems was discussed and will be explored by IZS Teramo.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Support laboratory biosecurity/biosafety implementation, (minor renovations in the laboratories) (*sub activity C3.K1*) in all countries except CAF, Equatorial Guinea and Rwanda.
- Conduct on-site audit and training on quality assurance (*sub activity C3.K2, under LoA signed with FVI*): on-site audit/backstopping missions on QA will be performed by FVI for all countries except Equatorial Guinea and Central African Republic.
- Complete support for implementation of LIMS in Tanzania and Botswana (*sub activity C3.K.3, under LoA with IZS Teramo*): in Tanzania, staff from TVLA will autonomously extend SILAB use to other sections of the laboratory with IZS Teramo's remote support.

Output 2. Linkages and communication pathways across national, regional and global laboratory and epidemiologic networks for the management of emerging zoonotic pathogens strengthened.

USAID | IDENTIFY OBJECTIVE 4: Laboratories are participating in relevant regional and international laboratory networks according to their respective abilities, disease priorities, and responsibilities.

C4.L Regional laboratory network support and coordination for animal health.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Provided support to regional networking:
 - Supported ASF regional network meeting (20-22 May 2013 Entebbe, Uganda) of the ASF Working Group for Eastern Africa (*sub activity C.4.L.1*). Launched the ASF Working Group

in Kampala during a meeting organised from 11-14 June 2013. Country focal points were appointed during the meeting. The meeting also adopted an action plan that includes consultations on national strategies for the control of ASF; modalities for the selection of regional diagnostic laboratories for ASF using the model from AI; a framework for sampling at the field level; harmonized surveillance of ASF; preparedness and contingency plans; mechanisms for information sharing between cross border districts; and cross-border collaboration in outbreak investigations. An *ad hoc* ASF sub-network working group was established to look into sylvatic cycles and bring on board other stakeholders, including the private sector, conservation agencies and farmers.

Provided support for rabies regional networking: Inputs and technical backstopping provided to the rabies RESOLAB sub-network, under the LoA with IZSve; collected and shared information on the rabies situation, including confirmed cases, by laboratories in CRA, Democratic Republic of the Congo and the two RSLs (Senegal and Nigeria); prepared the first RESOLAB rabies sub-network quarterly report. Assistance was also provided by IZSve, including the provision of sampling and laboratory diagnostic protocols, which were uploaded to the website of ECTAD Bamako. FAO and IZSve prepared an update on the laboratories' rabies diagnosis activities in Central and West Africa². Assistance has been provided for the celebration of World Rabies Day (28 September 2013) by making flyers and key messages available to rabies country focal points.

- Organized the year four work plan implementation meeting and year five planning of the IDENTIFY|FAO project, with help from laboratory directors and Chief Veterinary Officers. IDENTIFY target countries were given the opportunity to comment, make suggestions and agree to the implementation of all activities for years four and five. The meeting was held in Douala, Cameroun from 4- 6 June 2013, with 30 participants including CVOs and laboratory directors of IDENTIFY beneficiary countries in the Congo Basin Region (except Rwanda). The project's achievements in year four were discussed. Participants developed a draft of the year five workplan. The meeting provided a good forum to discuss opportunities for collaboration with PREDICT in Cameroon and Congo regarding applying PREDICT testing protocols to diagnose disease in domestic animals. A joint session of the FAO|IDENTIFY Project and PREDICT was organized to select key stakeholders in Cameroon and address sampling activities in wildlife (Congo). The final communiqué of the meeting is available on the ECTAD Bamako website³.
- Organized the fourth joint (EARLN/ Eastern African Region Epidemiology Network) annual coordination meeting, held from 16-19 July 2013 in Bujumbura, Burundi, with representatives from 10 countries and participants representing FAO, OIE, African Union Interafrican Bureau for Animal Resources, African Union Panafrikan Veterinary Vaccine Centre, IGAD and IZSve Padova. The meeting was organized within the framework of the implementation of the European Commission-funded programme entitled "Reinforcing Veterinary Governance in Africa". Two side meetings of the Eastern African Region Epidemiology Network and EARLN took place to discuss challenges faced by the national epidemiology networks and the central veterinary laboratories; also discussed was the needs assessment on epidemiology training and the report of the EA Regional Support Laboratory. The final communiqué of the meeting is available on the ECTAD Nairobi website⁴.

² <http://www.fao-ectad-bamako.org/fr/Update-on-animal-rabies-diagnostic?lang=en>

³ http://www.fao-ectad-bamako.org/fr/IMG/pdf/final_communique_IDENTIFY_Meeting_Douala2013_Eng.pdf

⁴ http://www.fao-ectad-nairobi.org/IMG/pdf/Final_communique_EAREN_EARLN_Bujumbura_meeting.pdf

- Provided funding for an officer from headquarters to attend the "Workshop on PPR Prevention and Control in the Southern African Development Community region- Preparing Southern African Development Community countries for the possible introduction of PPR into PPR-free areas (disease identification, control and management)", Dar es Salaam, Republic of Tanzania, from 10-13 June 2013.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Support activities of regional thematic sub-networks (i.e. rabies, ASF, CBPP, FMD, PPR) (*sub activity C4.L1*).
- Present activities and results of rabies RESOLAB subnetwork, including support provided by IDENTIFY in two rabies conferences (Senegal and Canada): AfroREB (8-10 October 2013, Dakar, Senegal); Rabies in the Americas/Rita (27-31 October 2013, Toronto, Canada).
- Hold one regional support laboratory annual meeting in Senegal, Botswana, Ethiopia and Nigeria (*sub activity C4.L2*).
- Hold two regional animal health networks meetings (*sub activity C4.L3*).
- Hold conclusive meeting for IDENTIFY beneficiary countries (*sub activity C4.L4*).
- Hold hand-over meeting for RESOLAB coordinators (tentatively planned for November 2013) (*sub activity C4.L5*).
- Hold annual regional laboratory network meeting (RESOLAB) (tentatively planned in Chad for January 2014) (*sub activity C4.L6*).

C4.M Enhancing the role and status of Regional Support Laboratories.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

N/A.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Hold conclusive meeting for validation/endorsement by beneficiary laboratories, CVOs and commitment by key partners (*sub activity C4.M.1*). This activity has been postponed to year five, as a hard commitment from Regional Economic Communities (RECs) is required in order to implement findings of the meeting. Discussion on institutional arrangements with RECs are underway.
- Review annual reports submitted by RSLs for M&E purposes, and to identify strengths and gaps.

C4.N Supporting national laboratory networks for animal health.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- Continued support to national laboratory network meetings and related activities (*sub activity C4.N1*): In Cameroon, 3 000 brochures and flyers on the services and products of LANAVET were produced and disseminated. At least 100 copies of scientific papers from EMPRES and IDENTIFY projects were disseminated during the workshops organized by LANAVET. An open day was organized.
- Supported the animal health laboratory in Goma (DR Congo) to carry out basic serology analysis and good practices on sampling and shipment (PPR, FMD) (*sub activity C4.N3*): a mission was conducted at the laboratoire vétérinaire de Goma (Democratic Republic of the Congo) from 6-14 May 2013 in order to: (i) assess laboratory needs (equipment and reagents) and perform routine testing (serology) on targeted diseases; and (ii) train laboratory staff on biosecurity, biosafety, sampling and shipment of samples to regional or reference laboratories. The laboratory expert also visited the laboratory at Kinshasa (from 3-

6 May 2013) to assess the implementation of the activities under the LoA, and check proper reception, installation and use of laboratory equipment delivered under IDENTIFY. Contact was also made with PREDICT to envisage collaboration between PREDICT and the national laboratory.

Planned activities for the next reporting period (1 October 2013 – 31 March 2014)

- Support minimal laboratory diagnostic capacity in Goma (Democratic Republic of the Congo) (*sub activity C4.N1*).
- Support national laboratory network in Cameroon (*sub activity C4.N1*).

C4.O One Health initiatives: strengthening linkages between veterinary and public health.

Activities undertaken during the current reporting period (1 April – 30 September 2013)

- A One Health seminar on rabies was held in Brazzaville, Congo (12-13 June 2013) (*sub activity C4.O1*): a stakeholder consultation was held before the seminar with the objective to exchange and share information on rabies and identify best practices and opportunities to control rabies in Congo. The meeting gathered fifty participants from veterinary services (central and district veterinarians) and public health services.



RabiesOneHealth.Br
azza.June2013

- Held national seminars on One Health (*sub activity C4.O3*):
 - In Cameroon, 20 participants from public health, veterinary and environmental laboratories attended a national seminar on “Establishment of public health, veterinary and environmental laboratories network in Cameroon” held in Mfou on 23 August 2013. A draft of a decree to establish the network was adopted. Participants agreed to establish a list of resource personnel, and to develop information sharing mechanisms. A second One Health seminar was organized at LANAVET Garoua on 30 August 2013. Twenty participants from universities, professional schools and various ministries (livestock, public health, environment and wildlife) attended the seminar. Participants agreed to include One Health training modules in the curricula of academia and to organize a One Health seminar in each of the 10 regions of Cameroon. These meetings are part of the group dynamics for the implementation of the One Health concept in Cameroon, which resulted in another meeting on “Advocacy for intersectorial support to laboratories” (Yaoundé, 21 August 2013). This meeting was attended by LANAVET and 19 other participants from the Ministries of Livestock, Public Health, Environment and Wildlife. The meeting participants committed to develop an advocacy document to be submitted to the national authority and the regional economic communities for funding.
 - The Democratic Republic of the Congo held the One Health seminar on 27-29 May 2013. 40 participants from Universities, Ministries from public health, Agriculture, Rural development, environnement and wildlife attended the seminar. The participants recommended other “One health” meetings to be organized, for better networking between the different sectors, and better surveillance and control of zoonotic diseases.
 - Uganda held a One Health seminar on 12 April 2013 with 56 participants from the Ministry of Agriculture, Animal Industry and Fisheries, Ministry of Health, Uganda National Bureau of Standards, National Drug Authority, district health

officers, district veterinary officers, College of Veterinary Medicine, Animal Resources and Bio-Security, Uganda Wildlife Authority, Central Public Health Laboratories, FAO and USAID. The workshop objectives were: Understanding the One Health approach to disease control; developing network and communication strategies for improved disease control; and discussing strategies on sustaining laboratory networks in Uganda and beyond for long-term benefits.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Hold national One Health seminars on rabies, in Gabon and South Sudan (*sub activity C4.O1*).
- Finalization and dissemination of rabies training kits (*sub activity C4.O2*).
- Linking laboratory activities with country One Health initiatives, including implementation of One Health roadmaps (*sub activity C4.O3*).

G4.P Support for participation in scientific conferences, trainings or workshops.

Activities undertaken during the current reporting period (1 April - 30 September 2013)

- N/A.

Planned activities for the next reporting period (1 October 2013 - 31 March 2014)

- Upon countries' request.

4 MAIN CHALLENGES ENCOUNTERED AND RESPONSE PROVIDED

- Owing to budget constraints in year five, FAO decreased the overall level of activities, ended some activities (especially those under LoAs with national laboratories), ended all support to one country previously supported under IDENTIFY (Equatorial Guinea, except for participation in regional networking meetings with RESOLAB), and decreased funding for proficiency testing and procurement of laboratory supplies. These changes will be communicated to the countries once the year five IDENTIFY workplan has been fully approved.
- Several constraints at the end of year four, including institutional arrangements with key stakeholders (beneficiary countries, RECs...) resulted in the postponement of several key activities in Africa, including: the handover meeting to designated coordinators for RESOLAB/ Regional Network of National Epidemiology Surveillance Systems for Transboundary Animal Diseases; the conclusive meeting on Regional Support Laboratories; on-site missions for rabies, ASF, CBPP and field pathology in four countries; a public-private partnership mission in Tanzania; and a follow-up QA mission in South-Sudan, for which countries expected FAO's support. The assessment mission for strategic development of a veterinary laboratory in Equatorial Guinea has been postponed in order to obtain the full commitment of the officials to implement mission findings. However, because of year five budget constraints this activity in Equatorial Guinea is cancelled. Countries and regions have been informed of these constraints.
- The low priority given to animal health in country policies and development strategies often leads to difficulties in mobilizing technical, financial and human resources at national level, thus compromising the sustainability of activities implemented under the project. Therefore, there is a need to intensify advocacy at country level and increase sustainable financial resources.
- Great efforts are being made to strengthen biosafety in SE Asia, for which the Southeast Asia Regional Biosafety Programme has been developed. Laboratory biosafety was made a priority topic at the Laboratory Directors' Forum meeting to advocate for more support from higher-level authorities. Emphasis has been made on awareness of biosafety practices among the laboratory staff in SE Asian laboratories. In Africa, only a few activities to strengthen biosafety have been conducted (training, assessment, minor repairs in the laboratory facilities) under IDENTIFY so far. However, this is a large undertaking and the development of a road map and a project with a dedicated budget is required.
- As most of the technical inputs have focused primarily on the key national veterinary laboratories in Southeast Asia, there remains a need to expand capacity building activities to other laboratories at the subnational level, and to improve the linkage of the laboratories and field staff to ensure the sustainable quality of laboratory services. It is believed that such objectives can be achieved by supporting the training/workshops at national level, and with assistance from the Regional Leading/Reference Laboratories, key national laboratories and other implementing partners. Several activities for enhancement of laboratory quality service among the national laboratory networks were planned during the next year to fulfil the above needs.
- The low level of resources allocated to veterinary laboratories by authorities in the Congo Basin continues to present a major challenge. The project is trying to address this issue through private-public partnership consultations conducted in Cameroon, Democratic Republic of the Congo and Rwanda. Outcomes of the ongoing work include: (i) targeted identification of products and services (e.g. poultry, pig and dairy sectors; post-vaccination control; and food safety analysis) that the laboratory could offer to the private sector, including an estimate of the additional resources which would be required; (ii) preparation of appropriate communications and promotion tools or activities (such as brochures summarizing recent laboratory analyses and related costs, open days, and participation in fairs) to initiate/improve client relationship and design complementary activities with other country veterinary laboratories (e.g. samples

submission, training); and (iii) review of legal status (e.g. opening of bank accounts, strengthening/training of commercial staff). By supporting the extension or improvement of laboratory diagnosis services to the private sector and addressing internal issues, the private-public partnership consultations are expected to improve the sustainability of some project activities, as well as provide contributory references to formulate a laboratory policy. Although the IDENTIFY project is improving communication between laboratories and other technical partners (including regional laboratories, FAO/OIE reference centres, national veterinary services, FAO, OIE, joint FAO/IAEA division), findings on PPP missions demonstrated the need for laboratories to engage in more transparency and communication with the private sector and other interested stakeholders on non-technical matters, such as priced services and products. This issue will be addressed during the next missions in Tanzania and Uganda, as well as follow-up missions in Cameroon, Democratic Republic of the Congo and Rwanda.

- Engagement of Regional Economic Communities and countries remains insufficient in Africa, while ASEAN countries have made great institutional progress engaging with laboratory and animal health centres in SE Asia. Discussions with RECs on the issue of Regional Support Laboratories are ongoing in Africa. FAO would like to ensure that meeting findings from the conclusive meeting on the institutionalization of RSLs are fully endorsed by RECs. ECOWAS has paved the way for such commitment by recognizing the two RSLs in West Africa, and discussions are underway with UA IBAR with the support of FAO decentralized offices.
- Most beneficiary laboratories in the Congo Basin and Southeast Asia still face the issue of low quality and quantity samples received from the field. The IDENTIFY project does not cover any surveillance activities. Building capacities in laboratories for diseases for which there is no surveillance, although they are considered priority diseases by the veterinary services, does not fulfil the project objectives. The proper development of laboratory strategy and sustainability of the skills and activities supported by IDENTIFY is hindered by weak laboratory policy and management (e.g. shortage of laboratory reagents that prevent participation in proficiency tests, no bank accounts or possibility to generate income, etc.). It is expected that these complex issues will be addressed by the guidelines on animal health laboratory policies for both the top management of the veterinary laboratories and the authorities in charge of laboratories, with further adaptation to the context of Asia and Africa regions.
- Although LoAs have been recognized as a major tool for implementation of the project, it should be emphasized that administrative complexity observed in laboratory operations has contributed to delays in project implementation. Implementation of the agreed activities as they appear in LoAs between beneficiary countries in Congo Basin and FAO was slower than expected. However, most of the issues related to the delayed completion of LoAs are justifiable. For instance, recent events in Mali (FAO ECTAD regional office) and Central African Republic, and continued challenges faced by beneficiary laboratories have slightly limited the project delivery for the past three months. As a result, the FAO-IDENTIFY project management team agreed to extend the duration of LoAs with beneficiary laboratories. The FAO project team continues close monitoring of the LoAs and provides necessary guidance through regular and effective communication. This experience should help to ensure greater autonomy to laboratories, which will enable them to contract with the private sector. This issue is being addressed by FAO through the work on laboratory policy.
- Issues on timely delivery of reagents in some countries have contributed to delayed trainings in diagnostic techniques for priority diseases (rabies in Gabon and ASF and CBPP in Central African Republic, Congo and Gabon).
- Implementation of One Health activities remains linked to the ability of countries to engage in this initiative after the One Health meeting held in Libreville in November 2012. However, FAO supports specific activities in countries such as Cameroon through the LoAs. A number of

challenges were identified during the One Health seminar on rabies held in Brazzaville, Congo (5-6 June 2013) with participants from animal and public health. The lack of overall collaboration between sectors and the absence of functional mechanisms for collaboration and coordination between human and veterinary sectors was noted. Thus far, the authorities have not formulated any realistic goals and it seems appropriate to define activities for the short- to medium-term to improve and promote rabies prevention and control. The stakeholders were very interested in the step-wise approach developed by the global alliance against rabies group of which FAO is a member. They were able to identify the activities to be implemented in the short- and medium-term to improve intersectoral collaboration and control of rabies. No incidences of rabies have been officially reported to the OIE, although the country is surrounded by rabies endemic countries. However, after the training performed by IZSve at LDVB from 3-7 June 2013 (*sub activity C1.B*), the country is now capable of detecting (animal) rabies and it is expected that a rabies case will be confirmed before the end of 2013. In addition, the outdated legislation from 1968 should be updated; clear protocols must be defined on how to address animal bites and follow-up outbreak investigations; various roles and responsibilities must be defined; and a coordination mechanism should be implemented.

5 MAIN PROGRESS MADE TOWARDS THE ACHIEVEMENT OF PROJECT OUTCOMES (FROM THE START OF THE PROJECT ACTIVITIES)

- The support provided by IDENTIFY has contributed to a greater understanding of regional animal health priorities, assessment of laboratory capacities and identification of regional and national gaps and resources.
- The direct support provided to laboratories in Africa has been greatly appreciated by the laboratories. Specifically, quality assurance, biosafety, and the maintenance and calibration of equipment has been improved, thus contributing to laboratories' capacity to conduct work with reference to internationally accredited standards (e.g. ISO 17025). Minor repairs have been made or orchestrated by the laboratories to improve biosecurity through national LoAs. National laboratories have improved their national visibility through open events, production of leaflets and radio messages. FAO has reviewed and provided feedback on national LoA progress and final reports; the template used was inspired by the FAO M&E framework (which includes performance indicators and means of verification). By working closely with the laboratories, this approach has also been a training exercise in project management for beneficiary laboratories.
- In Africa, laboratories have significantly improved their biosafety practices. In addition, good progress has been made in quality control through training provided on maintenance and calibration of equipment. However, much work remains in these areas. In Asia, during the past three years, the numbers of laboratories which participated in and received the benefit from the Southeast Asia Regional Biosafety Programme has expanded over 400 percent. Significantly improved awareness and biosafety management and practices are observed across the region. However, continued efforts are essential to reinforce trainings and promote the establishment biosafety management systems in the laboratories.
- The Southeast Asia Regional Quality Assurance Programme enabled the supported laboratories to improve the quality laboratory diagnostic service against six priority diseases, including Influenza A, ASF, CSF, PRRS, rabies and ND. The results from the proficiency testing activities carried out in past years indicated improvement in the laboratory performance in both accuracy and quality of the reported results. Problems identified in the previous years were, in most cases, solved in the following rounds of the proficiency testing programme. Through the regional proficiency testing activities, the supported laboratories in the regional network were able to harmonize and improve the test sensitivity to a satisfactory level. The improvement of the diagnostic quality has been observed across the region.
- As many priority diseases are TADs, a regional approach (where agreed) allows for rapid disease detection/identification. Response measures can be coordinated regionally for more effective control. The networks in the West/Central, Eastern Africa and Southeast Asia regions have set a good example regarding the formal and informal exchange of information, and collaborative efforts and responsibility to build laboratories in the regions. Other partners, such as the United States Department of Agriculture Animal and Plant Health Inspection Service, EuFMD Commission and CIRAD, have demonstrated an increased interest in and support for these laboratory networks. This growing confidence lends credence to the regional approach, and highlights FAO's comparative advantage in the coordination of such support and inputs. This project has supported regional laboratory networks, providing assistance with networking, strategy and policy development to regional service laboratories. In Southeast Asia, the establishment and endorsement by ASEAN of the regional laboratory capacity building and networking programme and the Regional Quality Assurance Programme represents a full engagement of the key regional stakeholder in supporting sustainable quality laboratory services across the region and has a significant impact on the regional preparedness against the newly emerging pathogen. Following the emergence of influenza A(H7N9) virus, updated diagnostic

protocols were rapidly distributed through the network and implemented at the member laboratories, with better confidence in quality services. In addition, through the established regional laboratory network, experienced laboratory staff could be quickly identified and recruited as regional resource to provide technical assistance and consultation to the supported laboratories in the region. This has enabled rapid risk assessment and emergency disease surveillance within a few months following the emergence of the virus.

- The FAO M&E framework was finalized based on the experience gained from both EPT data calls and the tripartite discussions held with the Donor regarding IDENTIFY deliverables. This M&E framework is being routinely implemented by the FAO|IDENTIFY team together with implementing partners (laboratories and technical partners through LoAs). In Asia, the FAO Laboratory Mapping Tool, along with the support for the assessment missions, has been a great asset for identifying gaps and needs at the laboratory level. Information obtained from the laboratory assessment tools was subsequently used to design and monitor the progress of the capacity building and technical assistance programmes at the laboratories. A harmonized approach was discussed during year four planning to assess the direct contribution of the IDENTIFY project to changes in supported laboratories; lab sheets have been developed for all IDENTIFY supported laboratories and are being completed on a regular basis (including mapping data, activities conducted, follow-up actions and success stories) in order to measure the project's impact on laboratory functionality. A decision was made to augment the lab sheets with a survey measuring the observed (and perceived) changes in laboratories against what was done under the IDENTIFY project. The IDENTIFY project's main outcomes (including information on trainings, proficiency testing, networking activities, success stories and lessons learned) will be presented in the report for the next "FAO Regional Conference for Africa" (March 2014) on the results of FAO's work in the region.
- This project has enabled or will shortly enable the launching of innovative initiatives, such as the genetic module in the EMPRES-i database; the four-way linking framework; the laboratory mapping tool; the development of private-public partnerships between laboratories and the animal production sector; the provision of laboratories' access to sequencing services and the FAO guidelines on laboratory policy. The genetic module represents an ideal example of a multidisciplinary success, linking virology, epidemiology and bioinformatics, and is receiving increased interest from the scientific community and policy makers. It was released to the public in March 2013. The support provided for sequencing services receives significant interest from beneficiary laboratories. Looking toward integration within a national policy, beneficiary countries and other FAO partners recognize the need to review the laboratories' organization and performance. Such measures include FAO guidelines on laboratory policy development, as well as activities to be implemented in pilot countries through alternative funding mechanisms (e.g. the VET GOV project).
- Building on the investments made with support under AI, this project sustains previously established mechanisms, such as collaborations and communication pathways between organizations, global OFFLU and regional networks. These investments are crucial to the continued development of technical laboratory capacities, especially molecular techniques, to respond to other transboundary and priority diseases.
- The project benefits from the public's increased awareness about its activities, such as understanding the importance of early detection and intervention, as well as the potential impact of pathogens with pandemic potential.
- The project has strengthened linkages between laboratory and epidemiology services by enabling veterinary services to collect samples on priority diseases through LoAs. This supports and justifies the provision of equipment and reagents to laboratories and trainings that the project has delivered since its launch.

- Discussions with PREDICT have resulted in a significant change regarding the identification of effective opportunities for collaboration with the year five FAO IDENTIFY projects in Cameroon, Congo, Viet Nam and Indonesia.



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FINAL REPORT



May 31, 2013

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Cover photo: Ministry of Health (MOH) Vice Minister Ali Ghufron and USAID Mission Director Andrew Sisson accompanied by other dignitaries including the head of the MOH for West Java province and head of Cianjur district visit SAFE program Cipanas market

STRATEGIES AGAINST FLU EMERGENCE

FINAL REPORT

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EXECUTIVE SUMMARY

This document is the final report for the Strategies Against Flu Emergence (SAFE) program, covering program start-up in March 2011 through to program closedown in June 2013.

SAFE was originally awarded as a three-year \$21,016,378 program with an end date of March 15, 2014. In May 2012, DAI was informed that due to budgetary constraints, there would be a reduction in budget and scope of work. In November 2012, a modification reduced the budget to \$7,258,200 which reduced the duration of the project to June 15, 2013. SAFE modified its strategy, eliminated inputs/activities, modified deliverables, and reduced the size of the project team to operate within the new scope of work.

The SAFE project was developed to support USAID/Indonesia's API Program to reduce the impact of AI on animals and humans and limit the emergence of a pandemic influenza virus. SAFE had four objectives:

- Objective 1 Strengthen and Expand Public Private Partnerships to Improve Good Farming Practices and Limit AI Transmission among Poultry
- Objective 2 Promote Behaviors that Lower the Risk of AI Transmission among Poultry and Increase Knowledge of Signs and Symptoms and Risk Factors for AI-Related Illnesses
- Objective 3 Increase Knowledge of Signs/Symptoms and Risk Factors for AI-Related Illness in People and Promote Behaviors that Improve Household-Level Care-Seeking in Response to AI-Related Illnesses
- Objective 4 Coordinate with and Facilitate Communication among Partners

SAFE operated in 12 high-risk districts in the provinces of West Java and Banten. This area contains a large human and poultry population as well as an active trading route for the poultry value chain with various point of H5N1 AI transmission. It also has contained the highest number of poultry AI outbreaks.

The project operated in collaboration and consultation with Government of Indonesia Ministries of Agriculture, Health, and Trade at national, provincial and district levels, poultry industry, academia, civil society and international partners.

The 2011 "Consensus Report: Priority Audiences and Behaviors for Reducing the Risk of AI Transmission in Indonesia" served to bring together the technical know-how and experience of local and international biosecurity experts in Indonesia, and served as the basis for SAFE's programming. Developed under the previous CBAIC program in 2009, SAFE led a review and

updated the document in 2011.

Under Objective 1, SAFE aimed to increase the number of Sector 3 farms adopting biosecurity and good farming practices. At the end of two years, 347 farms had self-financed changes at their farms. This outcome was achieved by: a) securing industry support, b) developing Teaching Farms as instructional areas, c) positioning the industry to expose Sector 3 farmers to new biosecurity practices at these Teaching Farms, d) having industry staff provide technical assistance to farmers to implement changes at their farms, and e) developing incentives and support mechanisms in the form of SMS communication, development of educational material aimed at farmers, "champion farmer" competition award, and field-level discussion groups.

In addition, SAFE introduced academic partners and their students to new biosecurity practices by establishing Teaching Farms at their institutions and providing new information and material to reinforce classroom curriculum.

By the end of the project, in addition to commitment from industry to continue with the 12 Teaching Farms opened under the SAFE program, four new Teaching Farms were opened completely financed by industry partners; GOPAN, the independent farmers' association, took on the communication responsibilities through the SMS system; the three academic partners have each taken responsibility for continuing with technical discussion groups; and educational materials such as the farmer-to-farmer video are being reproduced and disseminated widely by the industry.

Under Objective 2, SAFE aimed to increase the number of poultry vendors in demonstration markets adopting healthy market practices. At the end of two years, 2,721 vendors had made changes in 69 markets; 846 vendors at the demonstration markets and 1,875 vendors reached by the local government replicating the SAFE program. This outcome was achieved by: a) extensive consultation with local government; b) implementation of the Healthy Market and Consumer Empowerment Initiative; c) development of "model" live bird markets; d) physical changes at markets, and education of market managers and vendors; e) education and empowerment of women consumers surrounding the markets; and f) communication and community support mechanisms in the form of a radio serial drama, social media, community videos, linkages with sermons and religious activities, and vendor-of-the-month awards.

By the end of the project, local governments had begun replication of the program with their own resources; Aisiyiah, the largest women's religious organization in Indonesia, had officially adopted the consumer empowerment component of the program nation-wide and begun to replicate it; private sector companies had begun to partner with civil society to support the program; and communication materials had been replicated by inter-ministerial KOMNAS-Zoonosis and Aisiyiah. The MOH had plans to replicate the radio series and distribute nationally.

Under Objective 3, SAFE aimed to increase the knowledge of health care-seeking practices for AI/ILI related illnesses. At the end of two years, there is substantial evidence-based information

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and data upon which to develop future programming. This outcome was achieved by: a) designing (in collaboration with CDC, WHO and USAID), conducting and analyzing a Healthcare Utilization Survey with 2,560 respondents, and a Clinician KAP that included interviews with 545 medical doctors; b) development of priority behavior change practices and messages in collaboration with the MOH and WHO; c) field-test of the messages with the community through programming with Aisiyah; and d) analysis of the results of the field-testing.

By the end of the project Indonesian researchers, MOH, WHO and others had improved information on the care seeking behaviors of communities, and the knowledge and case management practices of physicians; and there was increased comprehension of community response to care seeking messages. SAFE has drafted findings of these activities and plans to publish peer-reviewed papers in international journals.

Under Objective 4, SAFE aimed to improve use of Avian and Pandemic information by local and international stakeholders. At the end of two years, 202 documents were accessible globally and over 2,052 visitors from 18 countries had accessed information; AI partners regularly met and shared programmatic and technical information; and SAFE partner successes and lessons learned had been shared. The program outcome had been achieved by: a) uploading documents to the newly created Indonesia API page on the Knowledge for Health website, b) financing study trips for local Indonesians, c) organizing and hosting monthly COP meetings, d) media coverage and articles, e) development of one page success stories, and f) a six-booklet project informational series.

The project ended with two well attended end-of-project forums which highlighted project outcomes, replication and sustainability; and a field visit by the MOH Vice Minister and USAID Mission Director to one of the project sites at the request of the Vice Minister who had heard of the healthy market and consumer empowerment program model.

There are numerous lessons learned and future considerations detailed in the document. The three observations applicable to the entire project are the following:

- 1) A value chain approach is required to decrease disease as it enables members of the chain to understand the impact of their practices on other member of the chain and the ultimate value of their final product.
- 2) A business model resonates with key members of the value chain; a public health perspective does not. It is possible to develop a business case that addresses both industry and public health priorities.
- 3) Priority risk reduction practices and message harmonization across donors and stakeholders reinforces change. Agreement by partners on a core set of priority biosecurity practices and technical messages for each member of the poultry value chain reduces conflicting messages and misinformation.

Additional lessons learned and considerations are included under each of the objectives.

ABBREVIATIONS AND ACRONYMS

ACIAR	Australian Centre for International Agricultural Research
AI	Avian Influenza
API	Avian and Pandemic Influenza
AusAID	Australian Agency for International Development
<i>Bappeda</i>	Development Planning Agency
BIIF	Biosecurity Improvement Innovation Fund
BUMD	Local Government-Owned Enterprise
<i>Bupati</i>	District Head
C-KAP	Clinicians' Knowledge, Attitudes and Practices Survey
CBAIC	Community Based Avian Influenza Control
CDC	Centers for Disease Control
CJ	PT. Cheil Jedang Indonesia/ PT. Super Unggas Jaya
CMU	AI Campaign Management Unit (Ministry of Agriculture)
COP	Chief of Party
COR	Contracting Officer Representative
CP	PT. Charoen Pokphand Indonesia
CRD	Chronic Respiratory Disease
CSO	Civil Society Organization
DAI	Development Alternatives, Inc.
<i>Dinas</i>	Local government service office
<i>Dinas Pasar</i>	Market Office
<i>Diskoperindag</i>	District Cooperatives, Industry and Trade Office
DOC	Day Old Chicks
DPPK	Dinas Peternakan Perikanan dan Kelautan (District Livestock, Fisheries and Marine Office)
DPR RI	National Parliament of Indonesia
EPT	Emerging Pandemic Threats
FAO	Food and Agricultural Organization of the United Nations
FAS	Financial Accounting System
FGD	Focus Group Discussion
GFP	Good Farming Practices
GOI	Government of Indonesia
GOPAN	Indonesian Association of Independent Sector 3 Poultry Producers
HMB	Hikmah Mitra Bersinar Poultry Shop

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HPAI	Highly Pathogenic Avian Influenza
HUS	Healthcare Utilization Survey
IEC	Information, Education, and Communication
ILI	Influenza-Like Illness
IP	Indelis Performa (Production Index)
IPB	Institut Pertanian Bogor (Bogor Agricultural University)
IT	Information Technology
Jabodetabek	Greater Jakarta area (consisting of Jakarta, Bogor, Depok, Tangerang and Bekasi)
Jakfa	PT. Japfa Comfeed Indonesia
JHU-CCP	Johns Hopkins University Center for Communication Programs
K4Health	Knowledge for Health website hosted by Johns Hopkins University
KAP	Knowledge, Attitudes and Practices
KBB	Kabupaten Badung Barat (District of West Java)
Komnas Zoonosis	National Commission on Zoonotic Control
KSR	PMI volunteers
LBM	Live Bird Market
M&E	Monitoring and Evaluation
MOA	Ministry of Agriculture
MOH	Ministry of Health
MOU	Memorandum of Understanding
MUI	Majelis Ulama Indonesia (Indonesian Ulama Council)
NGO	Non-Governmental Organization
PCR	<i>Polymerase Chain Reaction</i>
PDSR	Participatory Disease Surveillance and Response
PKK	<i>Pemberdayaan Kesejahteraan Keluarga</i> (women's welfare group)
PMI	Palang Merah Indonesia (Indonesian Red Cross)
PMP	Performance Monitoring Plan
PPE	Personal Protective Equipment
PPK-UI	Center for Health Research at the University of Indonesia
PPL	Field investigator
PS	Poultry Shop
PSA	Public Service Announcement
Puskesmas	Local health clinic
PVUK	<i>Petugas Veteriner Unggas Komersial</i> (Local Government Commercial Poultry Health Officer)
SAFE	Strategies Against Flu Emergence

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SMK	SMK Agro Nurul Huda vocational school
SMS	Short Message Service
SOW	Scope of Work
SP	Sierad Produce
TA	Technical Assistance
TAMIS	Technical and Administrative Management Information System
TDG	Technical Discussion Group
TF	Teaching Farm
TMF	Tunas Mekar Farm
TOT	Training of Trainers
TS	Technical Service
UNPAD	University of Padjadjaran, Bandung
US-APHIS	United States - Animal and Plant Health Inspection Service (Part of Department of Agriculture)
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WHO	World Health Organization

I. INTRODUCTION

This document represents the final comprehensive report for the Strategies Against Flu Emergence (SAFE) program, covering program start-up in March 2011 through to program closedown in June 2013. The submission of this document is in accordance with the reporting requirements stated in Section F.5 Reports and Deliverables or Outputs of Contract No. AID-EDH-I-00-05-00004-00, AID-497-TO-00-00001.

This first section of this document provides the project background, objectives, geographic area and results and lessons learned from the program, including considerations and recommendations for future planning. Section two provides a detailed description of the results (by outcome and output) of the four components that are linked to the indicators in the Monitoring and Evaluation (M&E) plan. Section three concerns program management, including operations, grants and budget. Lastly, Section four reports on monitoring and evaluation, containing the reference sheets for each indicator in the M&E plan along with program assessments and evaluation studies.

I.1 Project Background

Indonesia continues to be the country with the most reported H5N1 Avian Influenza (AI) human cases in the world. At the time of this award, Indonesia had the highest AI human case fatality rate (84%), which was partly a result of delays in obtaining medical treatment. AI outbreaks in poultry have been reported in 31 of Indonesia's 33 provinces. Surveillance data confirm that AI is endemic in most provinces on the islands of Java and Sumatra. Clearly, AI is both a public health and a business concern. To address this concern, the United States Agency for International Development (USAID) designed and awarded the SAFE project, originally as a three-year program created to support USAID/Indonesia's Avian and Pandemic Influenza (API) Program and the Government of Indonesia's (GOI's) National Strategy for Avian Influenza Control and Preparedness for Human Pandemic Influenza. The SAFE project was implemented by Development Alternatives, Inc. (DAI) and Johns Hopkins University Center for Communication Programs (JHU-CCP).

I.2 Modification to Budget and Scope of Work

SAFE was originally awarded as a three-year \$21,016,378 program with an end date of March 15, 2014. In May 2012, DAI was informed that due to budgetary constraints, there would be a reduction in budget and scope of work. In November 2012, modification # 6 reduced the budget to \$7,258,200 and truncated the duration of the project to end June 15, 2013. SAFE modified its strategy and reduced the size of the project team. A second year (15-month) workplan was developed and approved by USAID.

1.3 Project Objectives

The SAFE project, awarded on March 15, 2011, was developed to support USAID/Indonesia's API Program to reduce the impact of AI on animals and humans and limit the emergence of a pandemic influenza virus. SAFE has four objectives:

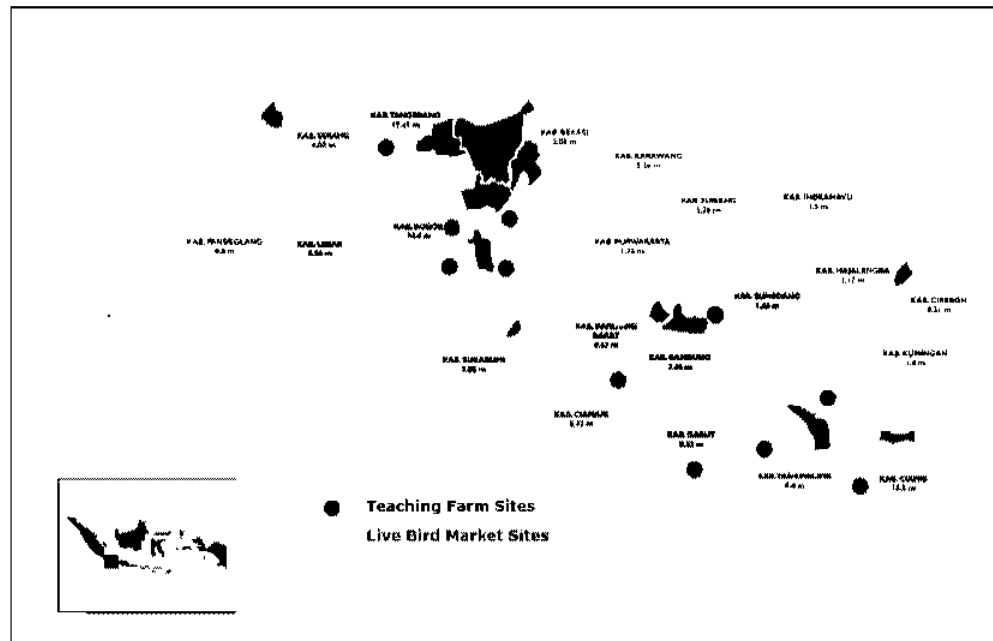
- Objective 1 Strengthen and Expand Public Private Partnerships to Improve Good Farming Practices and Limit AI Transmission among Poultry
- Objective 2 Promote Behaviors that Lower the Risk of AI Transmission among Poultry and Increase Knowledge of Signs and Symptoms and Risk Factors for AI-Related Illnesses
- Objective 3 Increase Knowledge of Signs/Symptoms and Risk Factors for AI-Related Illness in People and Promote Behaviors that Improve Household-Level Care-Seeking in Response to AI-Related Illnesses
- Objective 4 Coordinate with and Facilitate Communication among Partners

1.4 Geographic Coverage

SAFE operated in 12 high-risk districts in western Java — three districts in Banten province and nine in West Java province. These twelve districts were Ciamis, Tasikmalaya, Garut, Bandung, Bandung Barat, Cianjur, Sukabumi, Bogor, Lebak, and Serang (all Objectives), and Tangerang and Sumedang (Objective 1 only).

The large number of Sector 3 farms located in western Java and the movement of poultry through the value chain into the *Jabodetabek* (greater Jakarta area), coupled with the high density of human population, made this region a high-risk AI transmission area. Data from the government's Participatory Disease Surveillance and Response (PDSR) officers, who had been trained by the United Nations Food and Agricultural Organization (FAO), also indicated western Java to be a high-risk area, based on Sector 4 data (a proxy data point used by FAO). Concentrating on western Java optimized the effectiveness of program implementation, with a focus on Sector 3 biosecurity and good farming practices, healthy market initiatives, and consumer empowerment.

The map in Figure 1 shows the locations of the SAFE Teaching Farms (TFs) with red dots, and the locations of the program's Live Bird Markets (LBMs) with green dots.

Figure 1. SAFE Geographical Focus

1.5 SAFE Approach

SAFE built on the work of the USAID funded Community Based Avian Influenza Control (CBAIC) project and lessons learned from the GOI, the Food and Agricultural Organization of the United Nations (FAO), the United States Department of Agriculture (USDA), World Health Organization (WHO), Centers for Disease Control (CDC), Indonesia's National Commission on Zoonotic Control (*Komnas Zoonosis*) and others. The main role was to serve as catalyst by being:

Incentive-Based

Upgrading biosecurity, improving healthy practices along the poultry value chain and promoting care-seeking behaviors all took into account the fundamental question of incentives. Research, focus groups and consultative meetings clarified the business and personal motivating factors and behavioral drivers for each audience.

Entrepreneurial

The private sector recognizes and capitalizes on good ideas. SAFE encouraged the entrepreneurial spirit of early adopters of biosecurity changes and good farming practices through the "champion farm" and "vendor of the month" competitions, and uploaded and published personal achievements and impacts to motivate others to make changes.

Collaborative

SAFE worked in partnership with Indonesian leaders (both public and private) and partnered closely with international stakeholders, including FAO and WHO. The program supported overall collaboration by organizing and funding conferences, workshops and study tours to build long-term organizational and

professional relationships focused on addressing public health threats. Indonesian and international partners' work, research findings and program activities in API are now being captured in the newly created Indonesia API section of the Knowledge for Health (K4Health) website at Johns Hopkins University.

1.6 Lessons Learned and Drivers

This section summarizes the main lessons from the SAFE project and looks at the key drivers that led SAFE local partners and target audiences to assume leadership roles, implement changes, and adopt and continue the models developed under the program.

1.6.1 Lessons learned

Overall

- 1 A value chain approach enables members of the chain to see the impact of their practices on the value of the final product. In Indonesia, members of the poultry value chain tend to see themselves as isolated workers rather than part of a production team. The SAFE program introduced the value chain concept and worked with select members of the chain to help them recognize the interrelated and complex process of getting poultry to the consumer and their impact on the ultimate value of the product, which could include cost of production, food safety and ultimately consumer trust for their product. The program focused on recognizing and promoting best biosecurity practices at select points in the chain.
- 2 A business model resonates with key members of the value chain. It is not surprising that many public health professionals use a public health model when making a case for change – such as improved biosecurity practices. Businesses do not speak that language. Their operational model is based on profitability and responsibility to shareholders. Nevertheless, developing a business case that addresses both industry and public health needs is possible. The program and partners developed common goals such as reducing poultry morbidity and mortality, an overall reduction in disease transmission, and selling healthy products to consumers, even though partners developed a different roadmap and were driven by separate incentives to reach these goals. As long as the ultimate goal is the same, there is no need to become sidetracked over the reasons for reaching that goal.
- 3 Priority risk reduction practices and message harmonization across donors and stakeholders reinforces change. Agreement by partners on a core set of priority biosecurity practices and technical messages for each member of the poultry value chain reduces conflicting messages and misinformation. Subsequently, creating communication and educational materials that contain clear, concise messages that have been pre-tested with the target audience is most likely to support program goals. SAFE delivered the same priority messages through multiple channels including a teaching farm audio system, SMS messages, a disease prevention booklet, training, a farmer-to-farmer video, posters, pamphlets, games, commercial and community radio, social media and entertain-educate activities.

Private Sector Poultry Farm Intervention

- 1 Farmers will self-finance changes. When addressing biosecurity changes at the small farm (Sector 3) level, industry executives believed farmers would never change old ways. However, the SAFE program found that in a short time over 350 small farmers were able to implement biosecurity changes at their farms with technical support and guidance under a multi-pronged approach involving industry technical staff, competitions and rewards, a supportive communication (e.g. SMS) system, and the ability to visualize biosecurity through a teaching farm model.
- 2 Motivations for change are economic, social and regulatory. While research studies demonstrated that economics is still the strongest motivator for farmers and live bird market vendors to change, their standing in the community and with their families, and the threat of sanctions, are also important motivators.
- 3 Improved farmer biosecurity practices can be built into the industry incentive system. It is easy to return to old patterns if there are no disincentives to do so. Industry leadership through technical assistance, incentives and motivation, which are all part of the contractual relationship with farmers, will continue to be required.
- 4 There may be a regulatory role for government when there is a 'market failure'. When an industry which has the power to address a problem – in this case, improved biosecurity – lacks the financial incentive to solve that problem, in large part due to industry structure, impressive domestic sales growth and a non-reliance on exports, then government regulations may have a role. The challenge for the government is to identify low-cost interventions to correct the market failure, for instance, the government may consider setting and monitoring quality standards, enforcing existing regulations, improving coordination through poultry associations, and motivating industry self-regulation.
- 5 Farmer-to-farmer learning works. Farmers trust fellow farmers' experiences, particularly when they work under similar environmental and geographic circumstances. A farmer-to-farmer video in which program farmers described biosecurity changes they had implemented at their farms, and the results of those changes, incentivized farmers who were not part of the early adopter group. Personal stories carried relevance and credibility that motivated others to change.
- 6 Private/public/academic partnerships work. Where there is limited trust between the public and private sectors, academia can play a constructive, independent role in bringing all players to the table. In addition, strengthening academic curricula and providing pre-service education that provides students with hands-on practical experience produces stronger, smarter public health extension workers and industry technical staff.

Live Bird Market and Community Empowerment Intervention

- 1 Local government leadership and financing is indispensable. Local government was positioned as a lead agency through a participatory process that identified its role as a resource/technical expert for the program and as a decision-making partner together with civil society and the community. Resources available to the district were used to co-finance and complement work under the SAFE program.
- 2 Providing an operational model is essential for change and sustainability. The program guided partners in developing a model that served the interests and mission of local government institutions and civil society. This model “translated” government guidelines and standard operating procedures into day-to-day action and change supported by specific activities, outreach programs and development of materials that were then replicated by the government in non-SAFE districts.
- 3 The consumer has the power to produce change. Consumers have purchasing power. They decide where to purchase their poultry and which vendor to visit. Once consumers understood their right to clean markets and how to distinguish healthy poultry, they began to purchase from those vendors who had implemented changes such as having tiled surfaces and using soap and water to clean their stalls and equipment. This change motivated vendors who faced falling sales to make the same changes.
- 4 Private/public/civil society partnerships work. Civil society partners with extensive community networks exponentially grow the outreach efforts of local government. More established civil society organizations (CSOs) can also bring financial resources to a program. Private sector partners seem more willing to enter a relationship with the government when they can win the good will of the community by also engaging with CSOs such as Aisyyah and the Indonesian Red Cross (PMI). The end result is leveraged resources and local ownership.

1.6.2 Drivers

Economics

Both commercial farmers and live bird vendor markets were motivated to make changes if they believed they could secure and improve their livelihood and increase revenues. Incentives included reduced poultry loss, perceived overall return on investment, and higher cash flow. For small famers, better production performance during the rainy season was an added incentive. For some market vendors, cleaner stalls translated into increased sales. Even market managers were able to increase market revenues by creating new poultry zoning areas and renting the old space to new dry goods vendors.

Community Empowerment

CSOs such as Aisyyah and PMI are driven by community-focused visions. Their organizational missions focus on empowering the community to become self-sufficient. Education and health are priorities for both organizations. They are willing and able to embrace donor projects that support, augment and

intensify their missions, and provide educational and informational materials that facilitate the transfer of information and knowledge and calls for action.

Public Health

Local governments, particularly the Ministry of Health (MOH), Ministry of Agriculture (MOA) and Ministry of Trade (responsible for the markets) embrace the “healthy markets” concept and seek to improve the healthcare-seeking practices of people suffering flu-like symptoms. Working together with these three ministries contributed to a ‘one health’ approach that eventually improved cooperation across the ministries, all of which had were able to reinforce their public health goals.

2 PROGRAM RESULTS

2.1 Objective 1: Strengthen and Expand Public Private Partnerships to Improve Good Farming Practices and Limit AI Transmission among Poultry

2.1.1 *Increased Sector 3 biosecurity and good farming conditions and practices*

2.1.1a Strategy

Objective 1 strengthened and coordinated a variety of industry-focused and industry-driven biosecurity interventions specifically designed to improve biosecurity prevention, control, policy, and response, and good farming practices (GFP) in small (Sector 3) broiler farms. The scale and design of Objective 1 interventions aimed to (a) achieve impact within the targeted geographic areas with minimal investment, (b) leverage strong industry investment and support at all times, and (c) build upon successful ongoing and past work by other AI partners, including FAO, USDA and the Indonesia Dutch Partnership, among others. Objective 1 interventions focused on selected Sector 3 farms in high-risk areas of western Java, and educational institutions; two university programs and a poultry farming vocational high school located in the ten districts identified and agreed upon with USAID. The objective was accomplished through strong partnerships with Sector 1 and 2 farms, poultry shops and academia. As was the case with all other SAFE program activities, all Objective 1 activities were conducted in coordination and collaboration with partners FAO, USDA, the MOA, and Provincial and District Livestock and Animal Health Services.

The components of the strategy, which are described in detail under section 2.1.1c (Inputs), included a leadership role for the private sector; converting existing farms into “see and do” TFs – an approach supported by the poultry industry and educational institutions; capacity building of industry technical staff; field-level technical discussion groups (TDGs); an SMS communication system; field-level farmer group discussions; educational tools, materials and methodologies to support the transfer of knowledge from Technical Service (TS) staff to farms managers and workers; and a “champion farmer” competition.

2.1.1b Partners

SAFE partnered with large Sector 1 integrated poultry companies, poultry shops and educational institutions, engaging with a total of 14 partners. Sector 1 firms included Charoen Pokphand Indonesia (CP), Japfa Comfeed Indonesia (Japfa), Sierad Produce (SP), and PT. Cheil Jedang Indonesia/Super Unggas Jaya (CJ). These partners control over 78% of broiler production in Indonesia. SAFE also worked with seven poultry shops (Tunas Mekar Farm, Rinjani Poultry Shop, Sukahati Poultry Shop, Tanjung Mulya Poultry Shop, Hikmah Mitra Bersinar Poultry Shop, Multi Sarana Pakanindo Poultry Shop, and Dramaga Unggas Farm) and three educational institute partners – Bogor Agricultural University (IPB), Padjadjaran University (UNPAD), and SMK Agro Nurul Huda vocational school (SMK).

These partners are described in more detail below.

PT Charoen Pokphand Indonesia Tbk (CP)

CP is Indonesia's largest producer of poultry feed, Day Old Chicks (DOCs) and processed chickens. CP was established in 1972 as the first high-volume feed mill in Jakarta that manufactured premium quality poultry feed. CP's 2012 Annual Report recorded net sales of 21,310,925 million Indonesian Rupiah. CP's core business is agro-business, especially the manufacturing of poultry feed, DOCs and processed chicken, which is carried out by the company and its subsidiaries.

PT Japfa Comfeed Indonesia Tbk (Japfa)

Japfa is one of the largest and most integrated agro-food companies in the country. Its core business activities include animal feed manufacturing, chicken breeding, poultry processing, and aquaculture farming.

PT Sierad Produce Tbk. (SP)

SP's core business includes the production of primary processed and poultry feed, breeding and hatchery, growing farm, slaughtering and production of further processed and value-added chicken products, poultry equipment, and fishmeal production.

PT. Super Unggas Jaya (CJ)

CJ is a South Korea-based company that produces approximately 20 million Day Old Chicks (DOCs) each year.

Tunas Mekar Farm (TMF)

TMF owner Mr. Mulikhin Irmat oversees the production of 50,000 chicks per week distributed to 50 farms in its group. Ten TS staff provide oversight and technical assistance to farmers.

Sukahati Poultry Shop

This poultry shop supplies 20,000 chicks per week to an associated firm, Gn. Jati, and 30,000 chicks per week to Sukahati Poultry Shop itself. From an office in Tasikmalaya, the shop supervises about 100 farms through eight TS staff.

Rinjani Poultry Shop

This 20-year-old firm from Ciamis provides 60,000 chicks per week to 300 small farms.

Tanjung Mulya Poultry Shop

This firm, which began life in 1990, was the primary founder of SMK Agro Nurul Huda vocational school. It has 300 small farms in its group, spanning several districts, and receives about 80,000 chicks per week from a parent stock farm in Panjalu, Ciamis.

Hikmah Mitra Bersinar Poultry Shop (HMB)

HMB Poultry Shop, which opened in 2002 with an office in Sukabumi, produces about 125,000 chicks per week for various farms under the care of HMB Poultry Shop and Selaras Inti Prima.

Multi Sarana Pakanindo Poultry Shop

Multi Sarana Pakanindo Poultry Shop, whose head office is in Jakarta, produces about 200,000 chicks per week for a few relatively large farms in the Sector 3 broiler industry.

Dramaga Unggas Farm

Dramaga Unggas Farm has its office in Bogor. It produces about 55,000 broilers per week from the 70 farms in its group.

Bogor Agricultural University (IPB)

IPB has undergraduate, graduate and diploma programs. The undergraduate program awards a four-year bachelor's degree. Since 2005, IPB has offered a major-minor curriculum that includes on-farm agricultural activities and off-farm agricultural activities, covering agribusiness and agro-industry. There are nine faculties at IPB. The Animal Science faculty has a Department of Animal Production and Technology and a Department of Nutrition and Feed Technology. An average of 211 animal husbandry students graduated annually between 2004 and 2011.

Padjadjaran University (UNPAD)

UNPAD has 16 faculties, one of which is Animal Husbandry. This department offers both an undergraduate program and a postgraduate program that awards master's and doctoral degrees.

SMK Agro Nurul Huda vocational school (SMK)

SMK was founded in 2008 and it offers a technical high school diploma. It teaches students poultry industry knowledge so they can be effective in the industry. The school also teaches computer technology and light vehicle maintenance. There are currently about 240 students. Subjects include hatchery management, nutrition and feeding, growing broilers, and processing broilers. Of the 34 graduates in 2010, 15 were immediately hired to work at corporate farms in Kalimantan. Other graduates have become self-employed or moved overseas to work. There were 39 graduates in 2011, 34 of whom went to work in Java and Kalimantan while five went on to college. In 2012, SMK had 66 graduates.

2.1.1c Inputs

SAFE developed two workplans during the life of the project. Below is a summary of the main program inputs, which became activities in the workplans.

1. Strategic Consultative Meetings with Industry and Academic Stakeholders

SAFE built on the industry partnerships created under the CBAIC program and developed new relationships with poultry shops and academia. Industry and academic partners were always expected to be full participants in the program, being responsible for the ultimate results and sustained changes by

the end of the project. Various consultative meetings (particularly at the outset, but also throughout the project) focused on several areas:

- a) an assessment of current disease prevalence at the farms;
- b) proposed solutions and incentives to improve Sector 3 biosecurity;
- c) review of recent research results;
- d) commitment of industry human resources;
- e) expansion of students' hands-on practical experience before they graduated; and
- f) how best to adapt to the project's reduced funding and life-of-project, including accelerating transfer of responsibilities to the industry.

Meetings with executives of Sector 1 and poultry shops revealed information gaps and the needs, concerns and priorities of this industry segment. Proposed solutions and incentives (such as bonuses for implementing biosecurity measures) to overcome problems identified during field visits were discussed, along with establishing field-level TDGs. Discussions and consultations with MOA, FAO, USDA, AusAID and US-APHIS, among others, provided information to help eliminate duplication, enhance collaboration and coordination, and ensure that SAFE supported value-added activities. Regular meetings with the MOA's Campaign Management Unit and the FAO provided guidance and ensured that SAFE activities were supporting the national program and its priorities.

2. Industry Convention on Poultry Biosecurity

SAFE planned to conduct three annual industry biosecurity conventions as a way of committing the industry to an official review and acceptance of biosecurity-related changes by the entire industry. Budget changes ultimately reduced the number of these conventions to one, which was held in the first year of the project.

In July 2011 SAFE organized an Industry Convention on Poultry Biosecurity to address incentives and models for promoting industry-wide improvements in biosecurity. Speakers included the Deputy Minister of Agriculture and representatives from the key poultry industry associations. The 80 participants included poultry farmers, companies and shops, representatives from the government and international organizations, academics and a consumer group.

The convention had four main objectives:

1. Define and develop mechanisms and platforms for coordinating private sector responses to improve adoption of strong biosecurity compliance;
2. Identify incentives and secure private sector investments to (i) implement industry-wide disease reduction activities; (ii) strengthen biosecurity information, learning and training access; and (iii) define concrete platforms for improving private sector communication and knowledge sharing;
3. Validate industry-agreed achievable, commercially feasible and cost-effective biosecurity conditions and behaviors to be jointly promoted throughout Sector 3 farms; and
4. Define a framework and common indicators for measuring improved biosecurity.

The overarching approach of the convention was to provide a clear platform for fostering broad discussion about different investments, incentives and models for promoting a greater industry-wide response to improving biosecurity. Discussions were framed through a private sector perspective focusing on evidence that biosecurity is good for business and suitable for wide-scale industry development, rather than through a public health perspective. SAFE felt this framework would be more comprehensible to key players in the poultry value chain.

Discussions focused on achievable biosecurity results for the poultry industry. The private sector was expected to take a lead role in both the discussions and the design of industry-acceptable programs and investments, with clear incentives and achievable outcomes grounded in private sector reality. Plenary sessions were used to organize the convention around specific working group sessions with defined outputs.

Key outcomes of the convention included:

1. Better understanding of the challenges faced by the various groups in the poultry supply chain;
2. Agreement to create TFs as models of biosecurity and good farming practices;
3. Contribution of industry human resources to bring farmers to the TFs and provide technical assistance;
4. Availability of TS staff to participate in technical and communication training;
5. Creation of field-level TDGs; and
6. Access to farm mortality data.

3. *Development of Teaching Farms*

From discussions with industry executives at the end of CBAIC and more recent discussions with industry TS staff and farmers during TDG meetings in the field, it became evident that farmers wanted to “see” the biosecurity conditions and behaviors that had been presented orally at seminars and group discussions. Senior members of the industry also indicated that their staff needed to visualize the changes, clarifying that Indonesia is a “see and do” society. Members of the industry were also very much in favor of TFs that would show the conditions summarized in the SAFE Disease Risk Index that had been presented for discussion. Indonesia’s experience with model dairy farms, which have been successful in encouraging adoption of good farming practices, also reinforced this approach.

The initial strategy had been to create 30-40 TFs, saturate the priority geographic area, ensure that farmers did not have to travel far to visit a TF, and create a social norm that made it attractive and desirable to implement biosecurity improvements. After discussions with USAID, the strategy was modified to accommodate only 12 new TFs. These were opened with the following objectives:

- ✓ Model good farming and biosecurity practices
- ✓ Serve as teaching centers for capacity building in good biosecurity and other good farming practices
- ✓ Strengthen the technical capacity of students graduating from vocational schools or with degrees from universities
- ✓ Provide a venue for educational institutions to provide continuing education credits

Table 2-1 lists the TFs that were opened during the life of the SAFE project.

Table 2-1. Teaching Farms and locations

Firm/Organization	Teaching Farm	Location (District)
Rinjani Poultry Shop	Darwin	Tasikmalaya
SMK Agro Nurul Huda Vocational School	Nurul Huda	Ciamis
Sukahati Poultry Shop	Cikaleker	Tasikmalaya
Super Unggas Jaya (CJ)	Encep Rusli	Garut
Super Unggas Jaya (CJ)	H. Ujang	Bandung
Universitas Padjadjaran (UNPAD)	UNPAD	Sumedang
Sierad Produce (SP)	Tursinameta	Bogor
Tunas Mekar Farm – poultry shop	Muslikhin	Bogor
Institut Pertanian Bogor (IPB) – university	Closed	Bogor
Institut Pertanian Bogor (IPB) – university	Open	Bogor
Charoen Pokphand Indonesia (CP)/Dharmaga Unggas Farm – poultry shop	Wahyu	Tasikmalaya
Japfa Comfeed Indonesia/Ciomas Adisatwa	Solihin	Tangerang

Selection of the TFs during the initial process depended on the institutions' readiness, interest in and commitment to making the required changes, maintaining the TF, and allowing regular visits by farmers and students. The TF also had to be easily accessible (i.e., not be located at the top of a hill) and have a minimum level of infrastructure.

Once a farm had been selected to become a TF, the following steps were followed:

- The premises were assessed to identify the changes needed.
- A budget was created for the selected farm.
- Cost sharing discussions were held.
- An MOU delineating responsibilities and expectations was signed.
- Modifications to the farm were completed.
- Teaching elements were installed (e.g., signs, tour items, handouts).

The behaviors practiced at the TF were based on the priority behaviors listed in the 2011 Consensus Report: Priority Audiences and Behaviors for Reducing the Risk of AI Transmission in Indonesia. The changes implemented at one TF, Solihin, are illustrated in the before-and-after pictures below.



Solihin Teaching Farm: before and after

4. *Train Sector 1 and Poultry Shop TS Staff*

To support the transfer of knowledge and behavior change aspects of the training for TS personnel, SAFE designed and implemented training modules that improved the interpersonal communication skills of 59 TS staff and taught them how to use different tools, approaches and methodologies to communicate the importance of GFP and biosecurity measures. The training modules guided the persuasion skills needed to improve TS professional duties as they related to the improvement of Sector 3 biosecurity practices. The staff were taught the fundamentals of interpersonal communication and were led through a series of training and 'role playing' situations for handling resistant Sector 3 farmers. By the end of the training, participants had practiced relevant skills for situations where a 'sales' perspective is needed to achieve structural and/or behavioral action to improve biosecurity within the Sector 3 farms. These trainings were conducted at or near the TFs, where the "see, hear and do" techniques were demonstrated.

5. *Farmer and Student Visits to Teaching Farms*

Industry TS staff brought farmers associated with their companies to their TF. Towards the end of the project many of the companies had agreed to open their TFs to farmers from competing firms, which helped to reduce travel time for many farmers. There were also occasions when companies brought in visitors from neighboring districts and sometimes from other islands and provinces. After the tours, there was an opportunity to engage the TF owner to discuss how he overcame obstacles, and the results of the changes.

SAFE worked with its educational institute partners to ensure their students visited the TFs. These visits helped students to understand the benefits of biosecurity. Reinforcing good biosecurity and farming practices during pre-service education is both cost-effective and efficient, while changing old habits later through in-service training is costly and challenging.

SAFE staff worked with industry leadership to monitor the number of farmers that visited each TF, address quality control and key maintenance issues, and offer continuous technical guidance.



Students at SMK Agro Nurul Huda vocational school practice biosecurity techniques

6. *Technical Support to Farmers*

SAFE encouraged all farmers visiting the TFs to implement biosecurity measures and GFP. All farmers who committed to making changes received technical assistance (TA), generally from industry TS staff and selectively from SAFE staff. The project gave particular attention to farmers who had entered and won the champion farmer competition because they had already demonstrated motivation and the ability to implement changes. They became model farmers for others. As part of the technical assistance, all farms interested in making biosecurity and GFP changes received how-to guidance on upgrading the farm with new techniques and biosecurity-related construction, along with a biosecurity booklet on "Effective Measures to Reduce the Spread of Disease". SAFE made over 100 visits to individual farms during the project, and the TS staff visited over 700 individual farms multiple times. Both SAFE and TS

staff provided TA during these visits. Data were collected on the number of farms self-financing changes and the kinds of changes being made.

7. *Educational and Communication Tools and Materials*

SAFE designed, produced and distributed a booklet titled "Effective Measures to Reduce the Spread of Disease", which described, in simple terms and with many illustrations and photos, the key biosecurity measures and GFPs that visitors could observe at the TF. An illustrated poster highlighted six behaviors a farmer should practice to keep his farm safe from disease. The TF display, which was produced on heavy cardboard, was used as a wall hanging and showed biosecurity conditions that should exist at a commercial broiler farm, and some conditions that should not be present. It was designed for presentations in small group and classroom settings.

A farmer-to-farmer video that was also titled "Effective Measures to Reduce the Spread of Disease" featured SAFE program farmers and educators at commercial broiler farms talking about their personal experiences in making biosecurity changes at their farms, and the results of those changes. The video had five specific purposes:

- 1) Demonstrate the biosecurity techniques and GFPs of farmers who used these practices;
- 2) Increase credibility and adoption of the techniques by having listeners relate to the farmers that were speaking (these were real Indonesian farmers, not actors);
- 3) Provide a visual tool for local MOA offices (*Dinas*) and other government bodies to use in the field;
- 4) Serve as a training tool for industry to use with new TS staff and contract farm owners; and
- 5) Provide educational institutions with a visual tool that could be incorporated into classroom curricula.

The video targeted small (Sector 3) contract and independent broiler farmers and was filmed at TFs, educational institutions and visiting farms. It had sections on the farm entrance, farmyard, overall cleanliness requirements, doorway to the chicken house, ventilation, and disposal of dead chickens. The techniques demonstrated were easy to follow and usually inexpensive. The video also included testimonials from fellow farmers.

Around 1,300 copies of the video were distributed to the poultry industry, educational institutions, and farmers. They are now being used to educate farmers and students on how to reduce the likelihood of disease outbreaks, improve the performance of chickens, and increase farmer revenues.

8. *SMS System*

Observation and a formal survey found that farmers use their mobile phones extensively as an inexpensive means of communication. Under the project's grants program and Biosecurity Improvement Innovation Fund, SAFE established an SMS system for information dissemination, to reinforce the biosecurity measures farmers had seen at the TF, and to remind them of GFPs. It was also used as a means to inform farmers of activities of interest, such as the radio drama series and the champion farmer competition dates and winners.

SAFE implemented two SMS systems. One began early in the project and was led by the Objective 1 Team Leader. Approximately two SMS messages were sent each week to farmers, TS and educators on a number of topics, each with a series of messages that built on one other. SAFE received input from the FAO on the content of the messages. Specific product recommendations and sensitive issues (e.g. the price of chicks) were avoided. In some cases, farmers were referred to their TS.

A second pilot was implemented through a grant awarded to Satu Dunia (One World), which targeted a separate group of farmers and their TS staff with supportive biosecurity and good farming technical information. Satu Dunia introduced a more creative aspect to the messages, including motivational themes, quizzes with prizes, and acknowledgements delivered through innovative uses of interactive SMS text.

These text messages commonly led to expressions of appreciation. Mr. Suwardi from CP requested a complete set of the messages to review and share. SMS recipients gave only positive feedback on the messages, whether in conversation or through other media. The impact of the messages was evident. For example, in response to the SMS series on hot weather, on September 12, 2012 one of the farmers wrote, "We have opened the curtains."

9. Technical Discussion Group Meetings

In addition to regular field visits to project sites, SAFE created TDGs in Tangerang, Tasikmalaya and Bogor to provide a platform for continuous communication and advocacy. Small group discussions have been found to have a positive effect on uptake of new biosecurity practices. Participants included Sector 1 and poultry shop TS staff, Sector 3 broiler farmers, educators, and SAFE staff. The objectives of the discussions were to (a) troubleshoot farm problems, (b) discuss local solutions to illnesses such as Chronic Respiratory Disease, (c) conduct peer-to-peer training and problem solving, (d) learn new technical information, and (e) motivate through the sharing of success stories.



Technical Discussion Group meeting in Tasikmalaya
February 2013

Each TDG meeting was attended by about 20 TS, farmers and managers. A discussion topic such as "Ventilation in the Chicken House," was reinforced by SMS messages on the same topic.

10. "Champion Farmer" Award

SAFE introduced a "Champion Farmer" Competition to recognize early adopters of biosecurity changes. The aim of this competition was twofold: to motivate farmers to make biosecurity changes after returning from their visits to the TF, and to motivate TS staff to provide guidance for those changes. SAFE staff rated the farms of the best-qualified candidates using a scoring system for biosecurity and GFP conditions and behaviors. Farmers who implemented the most important biosecurity and GFP measures received the most points.



Ms. Herlijati receiving a Champion Farmer Award in February 2013

Each team member of the winning farm was recognized during a ceremony and received a cash prize of US\$150.

SAFE slowly transitioned the process and operation to the industry. These awards were a key motivator for farmers and TS staff, encouraging friendly competition amongst participants.

2.1.1d Key outcome

Details of the results and impact are outlined in the monitoring and evaluation (M&E) section of this Final Report. SAFE highlights below the key outcome for Objective 1.

Farmers will self-finance changes. A total of 345 Sector 3 farms self-financed biosecurity and GFP changes to reduce the transmission of AI and other diseases at their farms. Based on conversations with TF staff and industry members, SAFE believes that many more farms implemented changes, but only data backed by detailed written records are reported. In addition, towards the end of the second program year, industry replicated the SAFE TF model and self-financed an additional four TFs. Table 2-2 lists the number of biosecurity changes implemented by Sector 3 farms.

Table 2-2: Biosecurity Changes Implemented by Sector 3 Farms	
Number of Biosecurity Changes	Number of farms
12 (maximum #)	5
11	12
10	33
9	41
8	27
7	30
6	6
5	4
4	33
3	110
2	42
1	2
Total	345

2.1.2 Improvements at Sector 1 and poultry shops

2.1.2a Increased industry technical capacity

A variety of activities and routes were used to increase the technical capacity of the industry. Each is presented below.

Technical and communication training

In February 2012, 39 TS personnel were trained in three areas: (i) skills related to the supervision, management and transfer of knowledge; (ii) assessment of changes needed at Sector 3 broiler farms; and (iii) how to budget for changes that are needed. These workshops included visits to TFs, providing TS with a strong visual perspective on how to assess the needs of a typical farmer when implementing biosecurity measures. This allowed the TS to be better prepared to support farmers visiting the TFs.

A pre- and post-test comparison conducted during the training showed that participants' knowledge of the 10 topics covered by the training had increased by 53 percent.

A further 20 TS personnel were trained in May 2012 in the areas of biosecurity adoption processes, persuasion, how to answer questions presented by the farmers as objections to implementing change, and which changes to prioritize at individual farms.



Technical training in Tasikmalaya February 2012

On-the-job training

TS always accompanied SAFE staff on their visits to farms, meaning that the TS heard their recommendations. Each encounter lasted between 30 minutes and three hours. Many topics were discussed, including biosecurity (restricting the entry of visitors); good farming practices (ventilation, weighing chickens, recording mortality); data collection (mortality rates); assessing the farms for the Champion Farmer Award; activities planned (such as TDG meetings) and various other topics (e.g., selling prices, IP of the flock, construction of new chicken houses). Table 2-3 summarizes the number of Sector 3 farms visiting TFs.

Table 2-3: Summary of Sector 3 Farms Visiting Teaching Farms

Teaching Farm	Number of Farms
Cikaleker	42
Darwin Farm	25
Encep Rusli	38
IPB Closed house	19
IPB Open houses	36
Muslikin	23
Nurul Huda	128
Solihin	40
Tursinameta	48
Ujang	48
UNPAD	34
Wahyu	58
Total	539

Learning through SMS

The TS received the same SMS messages that the farmers received. It was essential that the TS were always aware of SAFE's communications (both technical and non-technical) with the farmers. The goodwill of the TS was essential, but they also needed to give farmers the same information that was being provided by SAFE. The strategy of many sources of information giving the same information and guidance was strengthened through this process.

TDG meetings

The primary audience at the 21 TDG meetings was the TS. Information presented by SAFE was intended for them to use in their work with the farmers. SAFE and the TS discussed the topics (e.g., the need for ventilation) thoroughly so that the TS would be ready to talk effectively with the farmers. Farmers, supervisors, regional managers and other industry persons also attended the TDGs and participated in the discussions.

2.1.2b Increased understanding of and dissemination of biosecurity and good farming practices and techniques

Through the development and use of the TFs, farmers and TS staff increased their understanding of the key biosecurity and good farming practices and techniques. While visiting the TFs with farmers, the TS staff learned that the farmers could change. For instance, at the grand opening of Solihin TF, one TS staff noted a farmer stating, "These are simple things. We can follow the model, especially for footwear exchange." Other farmers agreed.

Increased technical assistance to farmers from TS staff

Historically, the TS have talked to farmers about a variety of subjects, including biosecurity and GFPs, but the intervention of SAFE emphasized these subjects and "lit a fire under the TS" to engage the farmer in a problem-solving discussion on these topics. For the Champion Farmer Award, the TS encouraged the farmers in their care to make improvements and become a winner, since this would also make the TS a winner. The fact that SAFE staff were in contact with TS on a weekly basis was a constant reminder to "push" the farmers in the desired direction. In one year, the TS made more than 38,000 visits to the 753 farms in the SAFE project area. With the booklet and information from the SMS messages, the TS had new subjects to discuss and different perspectives to convey.

There is evidence that demonstrates TS staff became more focused when they talked to the farmers in their charge. For example, Mr. Surpryanto (a Japfa field investigator (PPL) under

Mr. Rofik) has 24 farms in his charge. After visiting Solihin TF, Mr. Surpryanto spoke to each of his farmers about biosecurity



Mr. Dodang, TS of Sukahati Poultry, advising Mr. Emon Sulaeman

measures. Eight have since implemented the sandal exchange system at the chicken house doors. He now aims to convince other farmers to implement this basic biosecurity technique.

Increased technical assistance to farmers from SAFE staff

SAFE and TS combined their efforts to give farmers more information. Direct farm visits by SAFE staff occurred throughout the project, with more intensive visits in the later months. TS accompanied SAFE on all farm visits. The number of visits by SAFE staff to individual farms by quarter is presented in Table 2-4.

SAFE and TS also brought together small groups of five, 10 and 20 farmers. At these meetings SAFE gave a formal presentation and then opened the floor to comments and questions.

Table 2-4. Visits to farms by SAFE staff

Quarter	Year	Number
Jan - Mar	2012	4
Apr - Jun	2012	16
Jul - Sept	2012	35
Oct - Dec	2012	34
Jan - Mar	2013	28
Total:		117

Objective 1 staff spent many days in the field providing technical guidance on issues related to biosecurity and GFPs. These discussions took place either in one-on-one settings or in small groups. The direct assistance provided by SAFE and TS to the farmers and workers included:

- identification of basic needs;
- establishment of priorities (e.g., sandal exchanges at chicken house doors, and locked gates at entrances);
- selection of simple and least expensive options;
- training on how to use existing resources (such as bamboo) at the farm; and
- Information, Education, and Communication (IEC) materials as visual reminders (e.g., posters, pamphlets) to reinforce the biosecurity practices observed at the TF and emphasized by TS and SAFE staff.



A small group of farmers and educators meet at UNPAD in March 2013

Indirect contact with the farmers via the SMS campaign was effective in conveying the messages to them. The comments below confirm that this type of communication is positive.

"They [the SMS messages] are very helpful. They remind me to always pay attention to the condition of the chicken, litter, temperature, and ventilation. Very good and useful." (Mr. Ajat)

"I often receive text messages from SAFE. They are useful for managing the chickens. Thank you." (Mr. Laksono)

"Thank you for reminding me of the importance of farm management. The information is good and useful for me and my employees." (Mr. Dedi)

2.1.2c Increased access to educational materials and information on biosecurity and good farming practices and techniques

Farmers, TS staff, educators, students and management obtained access to a variety of educational materials. Each item is presented below.

- Over 5,500 copies of the booklet titled “Effective Measures to Reduce the Spread of Disease” were distributed by SAFE. A softcopy was requested and made available to all partners.

The response to the booklet’s contents and presentation was exceptional. At a stakeholder meeting in Bogor on September 19, 2012, at which the booklet’s content and intended readership were discussed, Mr. Ruri Sarasono, Secretary General of



Teaching Farm Display at entrance to Agus Farm

GOPAN (the Indonesian Association of Independent Sector 3 Poultry Producers, which is an independent farmers’ association), stood up waving the booklet and told the audience, “This is a very good publication. We will use it in East Periangan.” After the meeting, CP Vice President Mr. Moch Fill Yunus told Dr. Miller, “The booklet is very good.”

- More than 1,300 copies of the farmer-to-farmer video titled “Effective Measures to Reduce the Spread of Disease” were distributed by SAFE.

The recipients of the video have been told that it can be copied. The video uses real farmers with whom other farmers can relate. It has received very favorable comments from farmers, TS and managers.

- A poster titled “Six Key Actions that a Farmer Should Do at the Farm” was distributed by SAFE to over 250 farms.
- The TF display was distributed by SAFE to over 100 farms.
- Over 20,000 SMS messages were sent to around 400 farmers, TS, educators and managers. These messages covered various subjects, including ventilation, litter management, and biosecurity techniques.

2.1.3 *Improvements at educational institutions*

2.1.3a *Expanded access to biosecurity lectures and information*

The educational institutions received information and technical classroom presentations during regular field visits by SAFE staff to the academic institutions, TFs and offices of educators. In addition, SAFE distributed publications, the farmer-to-farmer video, and other educational materials for discussion and reflection.

Four classroom presentations were given to over 600 students at the educational institutions, on the following topics:

1. Biosecurity from Grandparents to Consumers
2. Modern Broiler Industry in the USA
3. Biosecurity at Sector 3 Broiler Farms
4. Maximizing Potential Profit at a Sector 3 Broiler Farm Using Basic Management

These presentations were also made available to the educators in softcopy form for use in other classes with other students. Each student attending the presentation received a copy of the booklet on "Effective Measures to Reduce the Spread of Disease". Each institution also received further copies of the booklet to distribute at the TF to farmers and other visitors, and to distribute to students at lectures on biosecurity. Copies of the farmer-to-farmer video on "Effective Measures to Reduce the Spread of Disease" were distributed to academia. Educators have indicated that they will integrate the video into their classroom curricula.

A presentation on Chronic Respiratory Disease (CRD), which is a major cause of mortality in broilers, was given at the TDG meetings and was also made available to the educational institutions. Educators attending the TDG meetings received additional insights into farm problems and solutions from discussions with the farmers, SAFE staff and TS.

On March 13, 2012, Dr. Luki Abdullah, Dean of Faculty of Animal Science, IPB told SAFE "The Animal Husbandry Department is changing its curriculum. We will include a two-hour segment on poultry farm biosecurity in the new curriculum."

2.1.3b *Increased practical experience through Teaching Farm visits*

At each of the three educational institution partners the students toured the TF as part of their semester classes. Students also spent more time caring for chickens and were reminded of the importance of biosecurity and GFPs through the signage found throughout the farm. At SMK, the students participated in the construction of the TF, so they acquired first-hand knowledge of how to construct some of the biosecurity measures, including the pass-over system. Whenever students visit a TF, they practice several actions, including washing their hands with soap and water (see photo), which they may not have done before. Applying biosecurity practices on a regular basis is far more likely to be

incorporated into the memory than just reading about them. SAFE also learned that many of the students come from families that own farms, and have passed on the newly acquired information and techniques to their parents and other family members.

2.1.4 Program replication/leveraging

2.1.4a Industry financing of new Teaching Farms/training farms



Students learning at the SMK TF

Four farms associated with SAFE industry partners expressed interest in becoming TFs in order to reach farmers who lived too far away from the SAFE program TFs. These new TFs were self-financed by the industry and received TA from SAFE staff to implement the changes. They are now open and being used to disseminate and teach the biosecurity and GFPs advocated by the SAFE project. All of these farms were modified and changed in the first quarter of 2013. Each farm is discussed below.

Cibuntu Farm – Tri Group

Cibuntu Farm has already been partially modified (farm yard cleaned, ponds drained, footwear exchange installed at chicken house doors). Modifications to the farm entrance are also being planned. In addition to providing a tour of the farm with biosecurity-related explanations at key points, Cibuntu Farm plans to hold meetings of small groups of farmers in a semi-classroom environment. This activity will replicate the technical and farmer group discussions conducted under the SAFE project.

The creation of this TF followed discussion and negotiation between CP and one of its key customers, Mr. Tri Hardiyanto, who is also the Chairman of GOPAN. Mr. Hardiyanto has been very supportive of the work performed by SAFE.

Yaya Farm – Dramaga Unggas Farm

To develop a suitable TF, Mr. Yaya made changes to the parking area and introduced barriers for vehicles and people, gates with locks, a pass-over system, footwear exchange at the farm entrance and chicken house doors, proper cleaning of buildings and equipment, and good drinking water. Nearby farmers have already begun visiting the farm. In the near future, TS will collect farmers living in Banjor district and bring them to Yaya Farm to learn about biosecurity and GFPs.

H. Darto – Rinjani Poultry Shop

To make his farm suitable for a TF, Mr. H. Darto invested in changes to the parking area, barriers for vehicles and people, gates with locks, a pass-over system, footwear exchange at the entrance to the farm and the chicken house doors, hand washing equipment, proper dead chicken disposal, proper cleaning of buildings and equipment, good drinking water, and rodent control. The first group of visitors will come from the University of Indonesia.

Hendra Pangkalan Farm – TMF

This farm is used to teach about the construction of new poultry farms. Various biosecurity techniques presented in the SAFE TFs are now being incorporated in the design of new farms and being taught to farmers and managers.

SAFE has also worked with Japfa and its Bina Farm. Bina Farm is not a teaching farm but a training farm that has begun to use SAFE materials (booklets, videos and posters) to teach farm management to new TS staff and contract farmers. Several biosecurity and good farming practices are now included in the training.

2.1.4b *Academia takes over Technical Discussion Groups*

IPB, UNPAD and SMK have agreed to continue the TDG meetings in Bogor, Bandung and Tasikmalaya, respectively. They each hosted the first such meetings in March 2013. The interaction between the staff of the educational institutions and industry has been very positive. When asked to take over the meetings, the educators responded, "Yes, of course. This is one of our duties as responsible educators."

2.1.4c *GOPAN takes over SMS system*

SAFE staff sent over 20,000 messages to farmers, TS, educators and upper management via the SMS system on biosecurity and GFP topics. GOPAN has now assumed responsibility for the SMS message system and will continue to broadcast to farmers. SAFE has provided the necessary hardware and software, and a database of farmers, educators, TS and upper management to whom GOPAN can send the messages. SAFE has also provided all past messages as well as messages that can be sent out over the next year. The IT person at GOPAN has been trained by Satu Dunia on the equipment and programs, and the IT person from SAFE has also assisted the GOPAN staff. SAFE provided financial assistance sufficient for two months of these communications. GOPAN has already sent out messages to a pilot group of farmers and TS.

2.1.4d *Key educational tools replicated by industry*

As mentioned earlier, SAFE has provided the poultry industry with over 1,300 copies of the farmer-to-farmer video on "Effective Measures to Reduce the Spread of Disease", as well as softcopies of the booklet of the same name. Industry people are aware that the booklet and video can be replicated and already have plans for their replication. Mr. Tony Unandar, a private poultry farm consultant, will replicate the booklet for distribution in several provinces where he works.

2.2 Objective 2: Promote Behaviors that Lower the Risk of AI Transmission among Poultry and Increase Knowledge of Signs and Symptoms and Risk Factors for AI-Related Illnesses

2.2.1 Increased risk reduction conditions and practices at live bird markets

2.2.1a Strategy

SAFE considered the impact of the supply chain on the risk of disease transmission. This understanding led SAFE to work upstream and downstream along the poultry value chain. While upstream interventions are reflected under Objective 1, Objective 2 developed a “Healthy Market and Community Empowerment Initiative” that focused on vendors, slaughterers, transporters and market managers, and poultry consumers. This initiative was targeted to promote behaviors that lower the risk of AI transmission among poultry and between poultry and humans, and to increase knowledge of signs and symptoms and risk factors for AI-related illnesses.

The interventions support behavior changes at three levels – policy and a supportive environment, poultry marketplace and the supply chain, and community/individual demand for quality products. The activities emphasize key conditions and behaviors for risk reduction, consistency in messages across poultry supply chain audiences and consumer demand for cleaner live bird markets and healthier products.

The main target audiences are selected members of the poultry supply chain, namely poultry vendors, slaughterers, transporters and market managers at live bird markets (LBMs), and consumers in areas with a high risk of AI transmission. Interventions for these target audiences are developed around the following issues:

Market vendors, slaughterers, transporters and managers

- *Biosecurity practices:* stalls, utensils and cages cleanliness and hygiene, hand washing, cleaning and disinfection, proper waste management
- *Market management:* carcass and live bird separation, zoning, drainage, waste facilities, slaughtering outside the market, loading/unloading activities, regulation

Consumers

- *Positive and correct behaviors:* food safety knowledge and practices, including proper poultry handling, hand washing and use of clean utensils
- *Consumer empowerment:* consumers as advocates for improvements in the market

2.2.1b Gender considerations

SAFE believed engaging women in active consultation, participation and decision-making from the very beginning of the program would build women’s self-confidence and sense of empowerment, and

generate sustainable change at the community level and within live bird markets.

A woman's role

Women play a pivotal role in making decisions for their families. They play important roles as homemakers, food handlers and health providers. In addition, they make decisions related to food purchases. Specifically, it is women who go to the market, decide which market they visit, what to buy and from whom. This purchasing power could be used to influence behaviors and practices of poultry vendors in the market.

In households that keep live poultry, two thirds of female spouses are responsible for rearing them, based on data collected by SAFE in a 2012 survey. This survey also found that women were the most knowledgeable individuals in the family about the health status of other family members. Embracing women was therefore a strategic decision for the program.

Empowerment objectives

Given women's role, SAFE included them from the beginning in the Healthy Market and Consumer Empowerment Initiative and partnered with Aisiyah, a women's organization described in the next section. The empowerment objectives were two-fold: first, to improve awareness and impart knowledge for women to buy healthy poultry products, and second, to build critical thinking and thus create demand for healthier poultry products and a healthier environment at the markets. With women as empowered consumers, changes in the industry could be accelerated. Consumer demand would compel the markets to change.



A provincial livestock officer shows Aisiyah facilitators how to identify a healthy chicken carcass.

When A Woman Talks to Another Woman

Ms. Tati Masliati, a facilitator from Serang district in Banten province, felt honored when the Serang Livestock office asked her to help draft the local government's workplan for alleviating Avian Influenza in Banten. Ms. Tati stated: *"I am not a government officer or an authority figure, yet they valued my opinion. They asked me to review their workplan."*

For the Serang local government, Tati's role in SAFE's Healthy Market and Consumer Empowerment Initiative was important. Tati was trusted; she had spoken to hundreds of women in the community and impacted many more household members in Serang.

Ms. Tati became aware of her rights as a consumer and her responsibility to ask market vendors for healthy poultry products under the SAFE program. When she visits the local market now, she asks for the source of the chicken carcasses, how the vendor handled the product, and what hygiene and sanitation measures the vendor practiced. She has passed on her newly acquired knowledge and confidence to other women in her community. She says: *"We are doing something right in targeting women. They are the power of change itself. When talking in front of women, I always remind myself what I aim to accomplish. I want to bring value. I want our lives and the lives of these women to be better today than yesterday, and be better tomorrow than today."*

Ms. Tati is one of over 20,000 women reached through partner Aisiyyah, a women's religious organization that focuses on women's empowerment. Ms. Tati is an Aisiyyah committee member in Serang.



Tati Masliati, a true champion

2.2.1c Partners

SAFE partnered with three local Indonesian organizations to implement the Live Bird Market and Consumer Empowerment Initiative: PMI, Aisiyyah and Combine. These organizations are described below.

Palang Merah Indonesia (PMI)

PMI is the Indonesian Red Cross. DAI partnered with PMI under CBAIC, during which PMI acquired extensive experience undertaking AI prevention programs in 101 districts and 11 provinces across Indonesia. PMI has a large network of trained volunteers, allowing it to quickly scale up field programs.

Aisiyyah

Aisiyyah is a faith-based women's organization under Muhammadiyah (one of the two largest and most prominent Islamic organizations in Indonesia). Aisiyyah works intensively on women's empowerment, health, education, and social development issues in the community. Aisiyyah's network includes more than 20 million members across Indonesia.

Combine

Combine is a not-for-profit organization that specializes in using social and community media for development and human empowerment.

2.2.1d Inputs

SAFE developed two workplans during the life of the project. Below is a summary of the main program inputs reflected as activities in the workplans.

1. *KAP 2009 Secondary Data Analysis*

The data collected on commercial practices under the 2009 Knowledge, Attitudes and Practices (KAP) Survey were further analyzed to gain additional insight into the common practices and adherence to recommended behaviors among traders and transporters, market vendors, and poultry slaughterers. This secondary analysis was supplemented by a 2010 qualitative data analysis to explain motivations, perceptions and norms about current practices and perceived AI severity among target audiences.

2. *Rapid Needs Assessment*

In preparation for updating the "2009 Consensus Report: Priority Audiences and Behaviors for Reducing the Risk of AI Transmission in Indonesia" in June 2011, the National Convention of Poultry Biosecurity in July 2011 and the Communication Strategy Workshop in August 2011, SAFE conducted a rapid informational needs assessment of key audiences and behaviors to gain insight into the current feasibility of behaviors, interest, and economic value of particular AI risk reduction behaviors from an audience perspective. This assessment involved a series of focus groups and qualitative interviews with a small number of key informants from each target audience. The assessment revealed which behaviors were commonly practiced, less practiced, and most difficult to implement, from the perspective of the target audiences.

3. *2011 "Consensus Report: Priority Audiences and Behaviors for Reducing the Risk of AI Transmission in Indonesia"*

SAFE convened a group of national and international professionals who had been working to reduce the transmission of AI across the poultry supply chain to update the original 2009 Consensus Report. The 2011 report contained a package of 41 risk reduction behaviors across eight targeted audiences. Participants in the process included representatives from USAID, GOI, FAO, WHO, USDA, the Dutch and Australian AI programs, and other technical partners.

4. *Communication Strategy*

Early in the project, SAFE led a two-day communication strategy workshop with USAID, MOA, MOH, WHO, FAO, GOI, private sector representatives, communications experts from universities, consumer groups, and others to provide input and help finalize a communication strategy that supported SAFE objectives 1, 2 and 4. In Year 2, a communication strategy for Objective 3 was developed and integrated into the overall strategy after healthcare-seeking and health provider research studies were conducted and findings analyzed. The communication strategy defined the Indonesian context and presented a three-pronged approach covering advocacy, social mobilization, and behavior change activities; a conceptual framework; audience segmentation, draft messages and communication channels; and a monitoring and evaluation process.

5. *Strategic Consultative Meetings with Local Government and Stakeholders*

One of the main reasons for project accomplishments was the use of a participatory approach involving extensive consultation with local stakeholders. SAFE organized meetings in each province with key

stakeholders from the relevant provincial and district government offices. At these meetings there was local action planning, activity locations (markets) were jointly decided, and local ownership was created.

SAFE also conducted consultative meetings with PMI at the district level. These meetings served as ongoing opportunities to seek stakeholder input on the operational management of SAFE-based strategies and provided a forum for key stakeholders to share information, report activities and results, and coordinate amongst themselves. Participants included:

- District Livestock and Animal Health Services
- District Health Office
- Local Government Development Planning Agency (Bappeda)
- Dinas Pasar/Diskoperindag
- District MUI in collaboration with Aisyiyah

6. Healthy Market Initiative

The “healthy market” model was applied to two demonstration live bird markets (LBMs) in each of the 10 districts for a total of 20 demonstration markets. (See Table 2-5 for a list of these markets.) The model consisted of implementing AI risk reduction changes and practices focused on targeted members of the value chain – transporters, collector yards, slaughter houses, vendors and, ultimately, consumers. Each demonstration market received technical assistance in the form of participatory planning, grants, vendor training, regulation review, and communication and social mobilization activities that reinforced key biosecurity messages. Revitalization of the markets included a water tower and piping for access to clean water distribution, the installation of hand washing stations, plastic shielding and tiled table tops for vendor stalls, cleaning and disinfection of the markets, improved drainage systems, waste management, new zoning areas and caging.

More than \$22,000 in contributions from stakeholders (including vendors, local government and the private sector) complemented small USAID grants disbursed to the markets and contributed to the revitalization of infrastructure and vendor stalls, and the success and ownership of the program. After the initial grant program ended, improvements continued through a combination of vendor out-of-pocket contributions and government funding.

At the end of Year 2, maintenance plans for each market were developed to empower each market team to ensure that changes were sustained after SAFE ended. These plans included facility upkeep procedures and new biosecurity practices to be put in place to ensure the changes could be maintained. SAFE also worked with market teams to identify how maintenance activities would be funded.

Table 2-5. SAFE demonstration markets

No.	District	Working Markets
1	Ciamis	1. Pasar Manis Ciamis 2. Pasar Pangandaran
2	Tasikmalaya	1. Pasar Ciawi 2. Pasar Rajapolah
3	Garut ¹	1. Pasar Malangbong 2. Pasar Sukamukti
4	Bandung	1. Pasar Soreang 2. Pasar Sayati
5	Bandung Barat	1. Pasar Batujajar 2. Pasar Lembang
6	Cianjur	1. Pasar Sukanagara 2. Pasar Cipanas
7	Sukabumi	1. Pasar Sukaraja 2. Pasar Parungkuda
8	Bogor ²	1. Pasar Citayam 2. Pasar Jonggol
9	Serang	1. Banjar Sari (Cinkande) 2. Anyer
10	Lebak	1. Rangkas Bitung 2. Maja

The process in the market involved collective identification of problems and solutions, cooperative implementation, and resource allocation by stakeholders. SAFE served as a catalyst. This approach ensured that stakeholders at the market had experience in each stage of the process and, as a result, acquired the capacity to replicate the process. This approach also gave rise to “market champions” who would later be able to replicate the process in other markets.

By the end of the project, SAFE had provided the local government with a framework and program for a healthy market and consumer demand program. While “healthy markets” were not a new concept for government, the operationalization and scaling up of such a concept had been challenging. Government partners embraced the SAFE model as a practical and inclusive model that resulted in sustained change.

7. Customer/Consumer Demand Creation Initiative

SAFE used a demand creation consumer outreach approach to take advantage of “touch points” between the commercial sector and consumers to establish vendor/consumer trust and, in particular, community demand for high-quality poultry products. Using a range of media and community-based communication channels, SAFE’s activities generated consumer demand for higher quality poultry products. This in turn generated social pressure and financial incentives for commercial markets and vendors to improve hygiene and biosecurity. This activity was applied throughout the communities and served to apply citizen generated pressure on the specific purchase points of the private sector’s poultry value chain, encouraging them to adhere to recommended practices for clean live bird markets and healthy products.

SAFE fast-tracked consumer demand by working through subcontractor PMI and grantees Aisiyah and Combine, which organized peer-to-peer education activities in the markets for consumers, and entertainment-education events. SAFE organized partner meetings to ensure that all activities were coordinated between the three partners. The partners also utilized their media networks (including social media) to reinforce messages and provide coverage and dissemination of healthy market initiative activities and results. Aisiyah targeted Muslim females and approached consumers with religious messages and channels, whereas Combine targeted the general public and maximized the use of community-based media and channels to educate consumers. Combine also used a media literacy approach that led to community members who were sensitive to the environment and to health issues

such as AI.

Community members became involved in activities that captured their personal experiences and surrounding environment when they produced and screened short films about the healthy market initiative using mobile phones or video cameras. These activities created communities with greater confidence and positive self-efficacy, providing a strong foundation for consumer empowerment. Empowered communities had the confidence to ask for cleaner markets and stalls, and healthy poultry products.

8. Radio Serial Drama

Another core initiative to link communities with their market place was to develop a live “reality” radio initiative with local and regional radio stations, which offered a flexible and interactive communication format. Focused on biosecurity and healthy products in targeted high-risk areas, the program content consisted of interviews and profiles of members of specific sub-audiences, on-the-spot reports, information about simple ways to introduce and maintain risk reduction and biosecurity practices, and modeling of specific protective behaviors across target audiences and regions of Indonesia. Using an entertaining format to broadcast key API issues engaged audiences and resulted in greater awareness, attitudinal change, and behavioral adoption.

SAFE aired a 12-episode radio drama through 10 commercial radio stations (one in each district) and 18 community radio broadcasting stations across the 10 districts. Talk shows reinforced the messages from the radio drama. The commercial stations chosen were the most popular in each of the 10 SAFE districts, and thus had the biggest audiences. The community radio stations were chosen for their proximity to the live bird markets. Two episodes aired per week. The entire series took six weeks to air. During this period, there were three talk shows with local government Dinas staff as guests (Livestock Services, Health Office, and Industry and Trade Office) to reinforce messages and participate in live question-and-answer sessions.

The 18 community radio stations also broadcast short audio recordings of Islamic “words of wisdom” related to healthy poultry, food safety and hygiene. These messages stemmed from *Khutbah* sermons developed in Year 1. Each station had an active listenership of approximately 1,000 persons living around the markets, for a total reach of 18,000 listeners.

SAFE provided Combine with copies of the radio series to disseminate throughout its network. All the materials were made available as downloadable files on the K4H website, as well as on the Aisiyah and Combine websites and Facebook pages. The materials were protected by the “Creative Commons” copyright scheme whereby anyone can use the materials as long as they are not altered.

9. Health Communication Strategy Training

The goal of this training was to strengthen the overall communication capacity of MOA, MOH and Komnas Zoonosis personnel and other district-level officials, and to improve the communication planning and response capacity of officials. SAFE coordinated with the government and FAO to identify participants for this training program. SAFE brought over a communication expert from Johns Hopkins University to cover the following areas: leadership, communication objectives, strategy design,

networking and advocacy, engagement of stakeholders, resource sharing and analysis, audience analysis and segmentation, and use of evidence-based tools. The following skill sets were developed:

- *How to develop a communication strategy:* involvement of stakeholders, analysis, and writing;
- *How to implement a communication strategy:* pre-testing, materials production, program launching, implementation of key program activities, monitoring activities, and making mid-course changes;
- *Use of evidence-based tools:* awareness of availability of and access to tools, creation, usage, and adaptation of local tools;
- *Networking and advocacy:* participation in networks, participation in health communication advocacy efforts, coordination and management of networks;
- *Providing technical assistance to others:* determining when TA is needed and how to provide TA to others;
- *Resources leveraged/funding diversified:* implementation of cost-sharing activities; and
- *How to manage and conduct research:* hiring a research firm, developing the capacity of internal research staff, conducting research, and publishing research findings.

10. Vendor of the Month Awards

To better link consumer perceptions of quality with the desired behaviors of the vendors, SAFE established a consumer-led 'voting' system that allowed officials and the community to select their preferred vendor of the month. Examples of rewards included acknowledgement by posting the award certificate at the stall and a small prize to contribute to upgrading their stall. The vendor-of-the-month award program was conducted in the 20 demonstration markets.

11. Educational and Communication Tools and Materials

SAFE designed communication materials and tools in Years 1 and 2. Table 2-6 lists the distribution of IEC materials and campaign merchandise that were produced. Technical content was reviewed by FAO, WHO and the MOA to ensure accuracy. The MOA provided content related to *Ayam ASUH (Aman, Sehat, Utuh dan Halal)*, which is a government program to produce healthy and quality poultry products (carcasses). The program features good practices in poultry product handling and use of a cold chain. SAFE provided copies of materials to the MOA for distribution through the Ministry's network both within and outside of SAFE program districts. Communication materials identified included:

- A *Khutbah* book containing a religious perspective on biosecurity, food safety, and good business practices (Aisyiyah); and
- Mobile phone videos produced by communities and then screened in markets and communities, capturing the progress under the Healthy LBM Initiative.

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Table 2-6: Distribution List for IEC Materials and Campaign Merchandise

No	Items	Total Production	Provincial Livestock Office of West Java	Provincial Livestock Office of Banten	District Livestock Office in 10 Districts	Aisiyah	Combine	PMI	International and National Partners of SAFE*
1	Poster Central (Poultry Value Chain)	5000	425	425	500	1,000	100	2,500	50
2	Poster for Poultry Farmers	3000	225	225	500	1,000	0	1,000	50
3	Poster for Transporter	3000	225	225	500	500	0	1,500	50
4	Poster for Slaughterer	3000	225	225	500	500	0	1,500	50
5	Poster for Vendor	5000	425	425	500	1,500	100	2,000	50
6	Poster for Market Manager	3000	175	175	500	500	100	1,500	50
7	Poster for Consumer	5000	425	425	500	1,000	100	1,500	50
8	Poster for Backyard Poultry Farmer	3000	375	375	200	1,000	0	1,000	50
9	Poster for Collector	3000	375	375	200	1,000	0	1,000	50
10	Flyer for Poultry Farmer	5000	175	175	500	1,500	100	2,500	50
11	Flyer for Transporter	5000	100	100	500	2,000	100	2,150	50
12	Flyer for Slaughterer	5000	100	100	500	2,000	100	2,150	50
13	Flyer for Vendor	5000	0	0	1000	1,450	50	2,500	0
14	Flyer for Market Manager	5000	0	0	1000	1,000	50	2,950	0
15	Flyer for Consumer	5000	0	0	450	2,500	45	2,000	5
16	Flyer for Backyard Poultry Farmer	5000	0	0	450	2,500	45	2,000	5
17	Flyer for Collector	5000	0	0	450	2,500	45	2,000	5
18	Recipe	8000	400	400	500	3,500	150	3,000	50
19	Poster Consumer Demand	5000	50	50	500	2,000	100	2,250	50
20	Flyer Consumer Demand	5000	10	10	500	2,400	50	2,000	30
21	Flipchart	200	0	0	0	148	0	50	2
22	Poster for Objective 3 (Ai in Human)	3500	0	0	0	3,490	0	0	10
23	Pictorial Card	200	0	0	0	160	0	30	10
24	Ludo	25	0	0	0	14	0	10	1
25	Jingle**	1 master	Received	Received	Received	Received	Received	Received	Received
26	Radio Drama***	1 master	Received	Received	Received	Received	Received	Received	Received
27	Calendar 2012	5000	0	0	0	2,000	500	2,500	0
28	Calendar 2013	3500	0	0	0	1,000	500	2,000	0
29	Mug	6308	0	0	0	3,500	300	2,500	8
30	Vest	213	0	0	0	0	0	210	3
31	Sticker	6158	0	0	0	3,600	50	2,500	8
32	Pin	6158	0	0	0	3,000	50	3,100	8
33	Banner	200	0	0	0	80	20	100	0
34	Apron	758	0	0	0	0	0	750	8
35	Hat	788	0	0	0	0	0	780	8
36	T-shirt	1500	0	0	0	300	144	1,046	10
37	Shopping bag	6158	0	0	0	3,000	50	3,100	8

* Distributed at various meetings. Partners included: FAO, WHO, Komnas Zoonosis, MOH, MOA, Kominfo, National PMI, National Aisiyah, National Combine, USAID, DAI, and JHU documentation

** and *** played in 10 community radio stations, 10 private radio stations, and provided to all local and national partners

2.2.1e Key outcome

Details of the results and impact are outlined in the M&E section of this report. SAFE highlights below for the reader the key outcome for Objective 2.

Poultry vendors will make changes. A total of 846 vendors in the program's 20 markets introduced more risk reduction practices. An additional 1,875 vendors in 49 non-program live bird markets were inspired by the SAFE program and led by the local government to make changes and increase healthy practices.

2.2.2 Improved consumer knowledge and expectations for cleaner markets and healthier poultry products

2.2.2a Reach

SAFE initially worked in 20 subdistricts surrounding the 20 demonstration markets. During program implementation, the number of subdistricts expanded to 33 following requests from community members in the neighboring subdistricts. The expansion was led by the local governments and Aisiyah, which replicated the program model into other markets.

SAFE continued to focus its efforts on (1) advocating for change by disseminating information and using media campaigns to focus on key risk reduction key behaviors; and (2) building critical thinking and creating consumer demand for healthier poultry products and healthier environmental settings by working through consumer groups.

In addition, the 12-episode radio drama reached over 200,000 members of the poultry value chain; 21,000 women poultry consumers were empowered to ask for change; and 5,000 students and teachers learned about healthy markets and how to transfer their newly acquired knowledge to their peers. Table 2-7 summarizes the target and reach of Aisiyah and Combine grant activities.

Table 2-7. Target and Expanded Reach of Aisiyah and Combine Grant Activities

Activities by Aisiyah			Activities by Combine		
Activity	Target	Actual Reach	Activity	Target	Actual Reach
Advocacy through group Quran readings	8,000 women	12,613 * (Figure excludes replication begun in West Java)	Production of community videos	10 videos	25 videos **
Market visits by consumer groups	200	278	Radio campaign (community and private radio)	10 community radio and 10 private radio stations	Met target
Meetings with informal religious and community leaders	300	Met target	SMS blast	Twice a week update	Met target; Total recipients: 1,197
Twitter and Facebook	Twice a week updates	Met target. Reached 453 Twitter followers and 5,023 Facebook friends	Citizen journalism through online and print (bulletin) articles	120 articles (20 articles per month for six months)	141 articles developed as of March 2013, reaching 11,666 readers

Notes:

* Under the leadership of the Aisiyah West Java Provincial Chapter, activities have begun to reach an additional 40,000 women through thematic "Majlis Taklim" messages on healthy behavior, healthy poultry, and AI. Aisiyah West Java Chapter has taken up the initiative to be a pioneer in replicating the consumer empowerment program under SAFE and has targeted the remaining 18 districts in West Java. Soon, all districts and municipalities (26 areas in total) will be reached with AI messages.

** Not only the local communities surrounding the demonstration markets were involved; the nationwide community was also encouraged to become involved. Combine announced a national competition for this video activity.

2.2.2b Increased understanding/knowledge

Implementation partners and members of the value chain demonstrated increased understanding and knowledge of biosecurity issues and how these relate to live bird markets. During the initial stage of implementation, SAFE trained field facilitators from Aisiyah and Combine on behaviors that increase AI risks and the changes to be implemented under the program. After the training, the facilitators returned to their respective areas and further developed strategies and messages based on the local wisdom found in each area. Aisiyah, for instance, developed issues around healthy poultry products from the perspective of *Al Quran* and the prophet's wisdom. These messages were then translated for various communication channels, including radio, television, bulletins, Facebook, websites, and Twitter. Aisiyah also recorded seven minutes of "words of wisdom" for off-air events and public service announcements (PSAs) on radio stations.

In Year 2, SAFE conducted a consumer survey to assess consumers' knowledge of healthy poultry products and to identify whether they understood the concepts of clean poultry stalls and healthy products. The survey sample was taken from consumers who had attended religious meetings where healthy poultry product and consumer rights topics were discussed. The total sample was 200 respondents, with 79% of respondents reporting they were confident of being able to recognize the characteristics of healthy chicken carcasses sold by poultry vendors. Table 2-8 shows respondents' knowledge of the characteristics of sick chicken carcasses.

Table 2-8: Knowledge of characteristics of unhealthy/sick chicken carcasses	Number of respondents mentioning characteristic	Percentage of total surveyed
Meat does not smell fresh	160	80%
Meat does not bounce back when pressed	115	58%
Color of meat is pale (not pinkish)	131	66%
Meat blood is not fresh (blood not red)	119	60%
Carcass has bluish marks	177	89%

N: 200 (Open ended response – multiple response)

Over 80% of respondents reported two characteristics of sick chicken carcasses, namely carcasses had with bluish marks, and the meat not smelling fresh, while over 60% identified the pale color of the meat and blood not being fresh as signs of unhealthy carcasses.

"Most of the things we do with regard to food handling and processing were passed down from our mothers, and our mothers had them passed down from their mothers. We were never critical before. We followed them without asking many questions. Information such as how to handle food properly and how to practice correct behaviors on sanitation and hygiene may seem trivial to others, but are new and important to us. This is invaluable information. We never received this sort of guidance from any other sources before."

Hj. Titin Suastini, Aisiyah Facilitator for Cianjur District

2.2.2c Increased consumer action

SAFE conducted an activity called “Consumers Visit the Market”. The consumers participating were organized into groups of ten, with each group containing consumers who had attended the earlier thematic Quran reading activities. They visited the demonstration markets and spoke with poultry vendors and market managers on the state of the markets, how best to improve cleanliness, and the importance of healthy poultry products. The objective of this activity was to build confidence among consumers in asking vendors and managers questions about cleanliness, sanitation, and safety, and to practice asking for change. Consumers learned how to exercise their rights as members of a consumers’ group. This prepared them to reach out to managers and vendors as individuals in the future.

This activity developed consumers’ critical thinking and provided a platform for vendors and consumers to talk freely about consumer demands for healthier products and a healthier environment for the purchase of poultry.



An Aisiyyah facilitator explains how to ask for healthy poultry during a Quran reading activity.



During a live community radio show, Aisiyyah facilitators talk about halal food, cleanliness, and sanitation at the market.

2.2.3 Improved government, civil society and community collaboration

SAFE positioned itself as a facilitator that invited, collaborated with and accompanied the actors, consumers and stakeholders surrounding the communities. SAFE implemented this principle through stakeholder meetings, which provided a forum to:

- inform provincial and district stakeholders outside the livestock services network about SAFE's Healthy Market and Consumer Empowerment Initiative
- involve all concerned parties in district-level initiatives to select two demonstration markets
- jointly develop a district workplan to implement the initiative
- identify and mobilize human, technical and financial resources

The participants in the district consultative meetings in all 10 SAFE working districts came from diverse backgrounds, including:

- **Government:** Animal Husbandry and Agriculture Services, Health Office, Hygiene and Environmental Office, Trade and Industry Services, BUMD (District Government managing traditional markets), District Planning Bureau, Civil Order Officers, Public Works Office, Income

Office, and local parliamentarians

- *Market:* Market managers and vendor representatives
- *Community:* Informal leaders, Aisiyah facilitators as consumer representatives, and district-level Red Cross (PMI)

All of these participants shared one thing in common: they agreed that healthy poultry products should be made available, and that an effective way to achieve this is to improve the markets. This common goal served to bring them together, such that each party felt comfortable and considered the initiative as a productive effort to which they could all contribute resources according to their roles and comparative advantage.

2.2.4 Creation of strategic communication "community of interest" inter-ministerial group

As a result of the SAFE-sponsored Health Communication Strategy Workshop held in Bandung on 16-20 April 2012, 29 participants from five different ministries and agencies agreed to form an inter-ministerial "community of interest" on AI prevention and management.

The community shared a vision of working together towards an Indonesia that is a role model for AI prevention and response in Asia. At the end of the workshop, the group drafted an Avian Influenza Action Plan and agreed to meet regularly to implement the Action Plan.

The alumni of this workshop have since stayed in contact and worked closely with each other, resulting in better coordination in the area of zoonotic diseases, in particular AI. They have become a cross-sector government group striving for policy and behavioral change. SAFE sees this group as an invaluable resource that has the potential to lead and accelerate change in the government's approach to how AI is addressed, managed and controlled in Indonesia.

Two inter-ministerial meetings were held during the SAFE project. The First Inter-Ministerial Health Communication Group Meeting was held on May 30, 2012, and the second was held on February 25, 2013. At these meetings SAFE supported a new partnership between the GOI and strategic partners including Non-Governmental Organizations (NGOs) and local stakeholders, to serve as a model for disease prevention and management in Indonesia. These meetings also provided a platform for sharing information, particularly updates on the status of the Komnas Zoonosis workplan and the government's response to new strains of AI. The participants in this group agreed to continue to meet under the stewardship of Komnas Zoonosis.



Participants at Inter-Ministerial Health Communication Group Meeting, February 2013

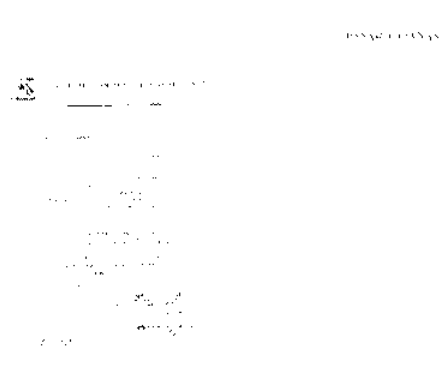
2.2.5 Program replication/leveraging

2.2.5a Local government financing of program

During the life of the program, district governments adopted components of the SAFE program design, including market manager training, market rehabilitation, healthy market competition, and use of the facilitation method. Several district heads (*Bupati*) promptly provided financial support for these efforts. The Cianjur District government supported the market with funds of Rp. 323,868,000, Bandung District provided Rp. 321,930,000 and Serang District provided Rp. 75,000,000. Several local regulations were passed or in the process of being formalized, covering market regulations and slaughtering outside markets. A total of 59 markets in five districts benefited from these activities and policies, being home to approximately 1,875 poultry vendors and 24,328 vendors of all types.

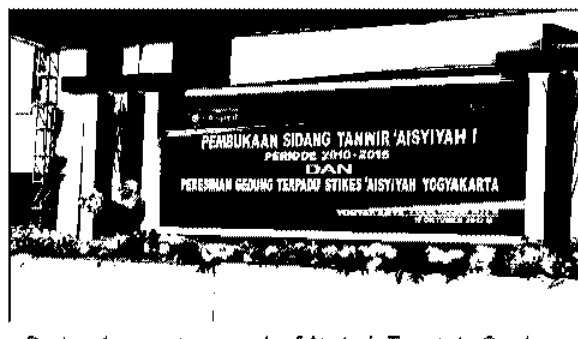


The Bupati welcomes the Healthy Markets and Consumer Empowerment Initiative and recognizes collaborative efforts.



2.2.5b Civil society replication of program

In light of the impressive results of the consumer empowerment activities, Aisiyah officially adopted the consumer component of the SAFE program design into its national program. Aisiyah West Java chapter took up the initiative to become a pioneer in replicating the program in the remaining 16 districts in West Java. Aisiyah held a Training of Trainers (TOT) program for 36 facilitators in March 2013 and is now continuing the SAFE consumer empowerment program in all 16 districts.



During the opening speech of Aisiyah Tanwir in October 2012, Aisiyah chairperson Ibu Dra. Noordjannah Djohantini stated that activities under the USAID-SAFE program to educate and empower healthy poultry consumers would be adopted by Aisiyah and implemented in other provinces.

2.2.5c Private sector financing of program

SAFE activities in the communities and markets also attracted interest from the private sector. Bank Danamon provided support in the form of a tent, entertainment, meals and snacks, medical doctors and medicine, cleaning equipment (brooms, hoes, and shovels) and waste bins for the SAFE market event. The total value of this support was around 25 million rupiah. Griya Supermarket allocated 25 million rupiah to support improvements in the Lembang market. PMI's West Java chapter is now collaborating with PT

UMRI, a mining company, to replicate market interventions in Garut Selatan (a non-SAFE working district).

2.2.5d National government replication

Three organizations have reproduced or are in the process of reproducing SAFE IEC materials with their own funding and resources – Komnas Zoonosis, MOH, and Aisiyah West Java Chapter.

- Komnas Zoonosis is producing 1,000 copies of each type of material for further distribution to local government officials.
- The MOH plans to reproduce the 12 episodes of the SAFE radio drama for further distribution to provincial health offices.
- Aisiyah West Java Chapter produced 500 copies of the SAFE poster on Avian Influenza in Humans for further distribution in the other 16 cities and districts that were not part of the SAFE program.



"I appreciate all the efforts of the healthy market. A healthy market is needed by business and in trade competition to ensure that healthy products are available to consumers. This initiative should take place in all traditional markets to reflect our seriousness about developing a healthy market to reduce disease transmission."

Drs. H. Hasnan Bey Fanani (Member of Parliament, DPR RI) during market event at Cipanas Market, Cianjur



"Traditional markets support the economy, especially the lower-income sector. Markets should be healthy and humane because they are the livelihood of many people. The West Java government supports the initiative and will make improvements to and rehabilitate traditional markets in West Java so that they become healthy markets."

West Java Governor Ahmad Heryawan at Ciawi Market event

2.3 Objective 3: Increase Knowledge of Signs/Symptoms and Risk Factors for AI-Related Illness in People and Promote Behaviors that Improve Household-Level Care-Seeking in Response to AI-Related Illnesses

2.3.1 Increased knowledge of health care seeking practices for AI/ILI-related illnesses

2.3.1a Strategy

Under the umbrella of the SAFE project and in collaboration with the Atlanta and Jakarta offices of the CDC and WHO Indonesia, two surveys were conducted in East Jakarta municipality and in Bogor district, West Java related to ILI diagnosis and treatment – a Healthcare Utilization Survey (HUS) and a Clinicians' Knowledge, Attitude and Practices (C-KAP) survey. Prior to data collection activities, SAFE and the Center for Health Research at the University of Indonesia (Pusat Penelitian Kesehatan Universitas Indonesia, or PPK-UI) obtained ethical clearance for survey implementation from the Research Ethics Committee at PPK-UI and from the CDC Atlanta Institutional Review Board. The purpose, fieldwork conducted, and several key findings of these studies are summarized here.

2.3.1b Partners

PPK-UI was selected as the research agency to conduct the fieldwork for both studies. SAFE also collaborated and consulted closely with the CDC offices in Atlanta and Jakarta, WHO and USAID.

2.3.1c Inputs

1. HUS

The HUS was designed to generate estimates of the seasonal influenza disease burden and to determine the proportion of people with Influenza-Like Illness (ILI) that seek care, their understanding of the signs and symptoms that indicate the need for care, and decision-making about when and where to seek care for respiratory illness. The HUS survey also aimed to understand perceptions about exposure to birds and of the risk of H5N1 transmission.

Data collection was accomplished through face-to-face surveys of households in East Jakarta Municipality and in Bogor District, West Java from February 8 to March 1, 2012. In total, 2,520 respondents were interviewed (1,260 respondents in each region).

There were several key findings of the HUS study:

1. Individuals frequently do not seek care at a healthcare facility when they have a fever or cough, or suffer difficulty breathing, even if they are aware that they need immediate treatment for these symptoms.
2. Households express a preference for self-treatment for respiratory symptoms using over-the-counter medications from pharmacies or by giving medicines and fluids at home.

3. Routine contact with birds in the home can diminish perceptions of risk, leading to a lower likelihood of seeking care for potential symptoms of AI.
4. Households with the highest exposure (i.e., those allowing poultry to roam freely indoors) demonstrated:
 - Weaker beliefs in the need for immediate treatment for respiratory symptoms
 - Lower self-efficacy in seeking medical care when needed
 - Lower self-efficacy in protecting themselves and their families from AI
 - Less knowledge of the sources of exposure
 - Greater likelihood of using traditional remedies instead of healthcare facilities
5. High self-efficacy about seeking care when needed is influenced by:
 - Greater knowledge of the exposure routes of AI
 - Higher perception of the severity of AI
6. Shorter waiting time before seeking care is influenced by:
 - Greater knowledge of the exposure routes of AI
 - Higher self-efficacy about seeking care when needed.

2. C-KAP

To complement the HUS survey on household care-seeking and utilization behavior, a survey was conducted among outpatient and hospital-based physicians (providing medical care for in-patients) to determine their knowledge, attitudes and practices (KAP) regarding the identification, treatment and referral of patients with suspected infection from the highly pathogenic avian influenza A (H5N1) virus. Physicians were also asked about their knowledge of seasonal and pandemic (H1N1) influenza and the risk factors for H5N1 virus infection.

The study used a cross-sectional design and face-to-face interviews. The study population was licensed physicians who provide adult and/or pediatric medical care in government and private sector health facilities in East Jakarta Municipality and Bogor District. This list was constructed based on data from District Health Offices. A purposive sample of 300 physicians in each study area was proportionally allocated among general practitioners and specialist groups. A simple random sample of physicians was then drawn from the sampling frame in each group. Data collection was conducted from March 14, 2012 to June 6, 2012. In total, 554 respondents were interviewed.

Some of the key findings of the C-KAP study were as follows:

- 1) Most clinicians know the main clinical features of AI. Clinicians seem to be aware of some of the critical differences between H5N1 and other forms of flu.
- 2) Considering the many potential sources of exposure to the H5N1 virus, clinicians tend to ask relatively few diagnostic questions (three or four, on average) to determine if suspected cases involved exposure, including handling of dead chickens, exposure to wild birds, and exposure to

infected humans. A few doctors mentioned key questions regarding potential sources of poultry exposure at wet markets.

- 3) Just under two thirds of clinicians said that treatment for H5NI should begin within one day of the onset of symptoms.
- 4) Less than half of clinicians surveyed said they had received official AI case management guidance. This guidance was generally received by clinicians at local health clinics (*Puskesmas*) and public hospitals.
- 5) Receipt of any case management guidance information has significantly improved:
 - Clinicians' knowledge of signs and symptoms of seasonal influenza, pandemic influenza (H1N1) and H5NI
 - Perception of severity of pandemic influenza (H1N1)
 - Likelihood of asking questions about specific exposures to H5NI (contact with dead poultry, handling live birds at wet markets in East Jakarta, keeping poultry at home in Bogor)
 - Likelihood of testing after learning of exposure to H5NI.
- 6) Increased exposure to mass media or professional resources regarding H5NI has significantly improved:
 - Clinicians' knowledge of the signs and symptoms of H5NI
 - Perception of the severity of H5NI
 - Likelihood of asking questions about all sources of exposure
 - Likelihood of testing for H5NI after learning of exposure.
- 7) In *Puskesmas*, case management guidance information improved clinicians' knowledge of the signs and symptoms of H5NI, but did not improve their confidence in their own knowledge, equipment and resources available to diagnose and treat H5NI.

The HUS had indicated some knowledge gaps on the part of the public about different types of influenza, risk factors (in particular, the high levels of exposure to potential H5NI sources in the wet market), and the most critical signs to look for prior to immediate care seeking. The C-KAP survey found similar gaps in knowledge among physicians, particularly about the risk factors. Relatively few clinicians ask enough diagnostic questions about the varieties of potential exposure to the H5NI virus that are described in the Indonesian case definition for suspected H5NI. These gaps in knowledge and priorities can largely be remedied through communication and information dissemination.

3. *Priority messages for care-seeking behaviors*

Based on the HUS and C-KAP survey findings, SAFE built consensus and developed priority messages to improve healthcare seeking by the general public and to improve early detection of AI by healthcare providers. During this process, SAFE consulted with international technical agencies and donors and the following MOH directorates:

- Director of Vector Borne Disease Control, Dr. Rita Kusriastuti, MSc
- Director of Communicable Disease Control, Dr. H.M. Subuh, MPPM

- Director of Surveillance, Immunization, Quarantine and Matra Health, Dr. H. Andi Muhadin, MPH

Based on this series of consultation meetings, key healthcare-seeking messages were developed. These messages can be summarized as follows:

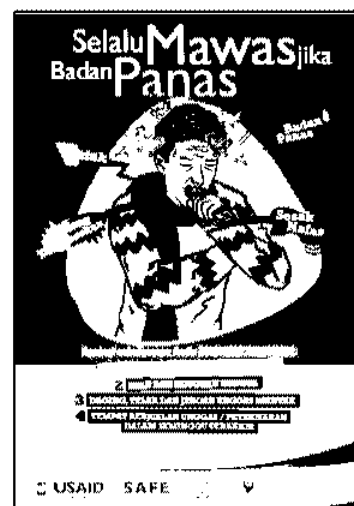
- Do not self-medicate.
- Immediately contact a health provider if you experience the following clinical symptoms: high fever (38°C or more), sore throat, cough, and difficulty breathing – especially following contact with dead or sick poultry, raw carcasses and the insides of poultry organs, poultry feathers or feces, farms or LBMs in the last seven days.
- Tell the health provider about your contact history.

4. Communication Poster with Key Messages

SAFE developed a communication poster with key messages, field-tested it with the target audience, consulted with the MOH and international partners, then finalized and produced the poster.

5. Pilot Test Communication Materials and Key Messages

Care-seeking messages were disseminated to Aisiyyah and Combine facilitators at a coordination meeting with field facilitators on December 4-10, 2012. Twenty facilitators and four regional coordinators from 10 districts and two provinces attended the socialization.



Technical briefing on care-seeking key messages with Aisiyyah facilitators in Cianjur on December 5, 2012

A total of 3,500 copies of a healthcare-seeking poster containing the key messages were distributed to the 10 districts as a communication tool for Aisiyyah facilitators. These key messages were disseminated in the field during the last round of Quran recital events in the community as well as through radio talk shows. A further 1,500 posters were distributed to local governments and the central government.

2.3.2 Increased dissemination of research findings and analysis

2.3.2a Indonesian research community

SAFE made numerous presentations to disseminate the results of the HUS and C-KAP surveys to the MOH and other stakeholders, including:

- **Presentation of HUS results at 15th International Congress on Infectious Disease**
The HUS study abstract was accepted for display as a poster board at the 15th International Congress on Infectious Disease, held in Bangkok on June 13-16, 2012.
- **Presentation of findings of HUS and C-KAP surveys to MOH and other stakeholders**
The results of the HUS and C-KAP surveys and the key messages were presented to the MOH on September 21 and 24, 2012. The first presentation was made at an evaluation meeting on influenza surveillance in East Jakarta. This meeting aimed to evaluate the influenza surveillance program in terms of case management and identification of seasonal influenza and H5N1 cases. It was attended by around 35 people, including those responsible for program implementation at ten sites in East Jakarta (six Puskesmas and four hospitals). The second presentation was held on September 24 during an information dissemination meeting on the results of Surveillance Harmonization on Epidemiology and Virology of Influenza (H5N1 and other forms of flu). Around 70 people participated in this second meeting, including staff from several divisions of the MOH.
- **Presentation on C-KAP findings at 2nd National Scientific Conference on Epidemiology**
SAFE presented the C-KAP survey findings to the committee of the Second National Scientific Conference on Epidemiology held in Bandung on October 17, 2012. This conference was attended by approximately 90 people, including university lecturers, researchers and students, health officials from several districts, and representatives of international organizations.

2.3.2b Publications

Based on the HUS and C-KAP findings, SAFE and CDC plan to publish the findings in international peer journals for peer-reviewed papers. Six potential publications have been identified and five out of these six plan to include the HUS and/or C-KAP data. The publications will involve an analysis of findings and how they influence decision making at the household level and among clinicians relating to seasonal flu, pandemic and Avian Influenza symptoms.

The paper/publication titles for SAFE are (1) Characteristics of households with ongoing vs. intermittent exposure to H5N1 avian influenza: implications for targeted interventions; and (2) Healthcare provider capacity and individuals' self-treatment of potential symptoms of H5N1 avian influenza. These drafts were completed during the life-of-project. They will be circulated for review and submitted for publication after the SAFE project has ended.

2.3.3 Increased comprehension of community response to care seeking messages

SAFE and Aisiyiah conducted a care-seeking evaluation from late February to mid-March 2013 in order to better understand targeted audience responses to the care-seeking messages developed by SAFE, and to program efforts aimed at improving healthcare-seeking practices. Two different approaches were applied in this study. SAFE employed a quantitative method using a questionnaire administered through face-to-face interviews, and a qualitative method using a Focus Group Discussion (FGD) to obtain more detailed data. A total of 200 respondents (mothers) were surveyed in the 10 program districts in West Java and Banten, and there were 36 participants in the FGDs held in three program districts (West Bandung, Tasikmalaya and Serang).

The highlights of the quantitative and qualitative findings were as follows:

- Regarding knowledge of AI symptoms, 84% of respondents (N=200) mentioned correctly the signs of AI in humans, namely high fever, coughing, sore throat and difficulty breathing. Aisiyiah, Quran recitals (*pengajian*) and posters were usually cited by respondents as their information source.
- Most participants could easily comprehend the messages. Around 35% mentioned that the messages were very easy to understand, and around 64% said the messages were quite easy to understand. The FGD findings confirmed this data. Most FGD participants recalled the image of the poster, the signs of avian flu, "*mawas jika panas*" (the poster headline), and contact with poultry. Some added that one should not underestimate flu/fever/cough and should visit a doctor or health practitioner immediately. When participants were asked about the biggest take-away message from this poster, they referred to the tagline: "Do not underestimate flu. Stay alert for AI."
- Regarding the message in the poster, the words *Kontak/contact* (contact with poultry) and *segera/immediately* (as in "go see a healthcare provider immediately") led to multiple interpretations. The words were discussed and queried by several FGD participants, who were unclear about the type of contact with poultry, or how many days one should wait before going to a healthcare provider.
- After receiving the care-seeking messages, there was a strong intention from the respondents to go to a healthcare provider immediately if they have symptoms like fever, sore throat, coughing, and have contact with poultry in the near future (reported by 76%). They mostly preferred to go to a Puskesmas (mentioned by 70%) rather than another place.
- In terms of communication channels for disseminating AI messages, they preferred small groups or face-to-face socialization, since during group socialization they could freely ask questions and discuss the issues.
- Suggestions arising from the discussion included:



FGD for care-seeking assessment

- Add the prevention messages
- Use more than one poster, and other media like flipcharts, leaflets or pocketbooks to provide detailed explanation
- Use a picture/visual to clarify the meaning of “contact with poultry”.

2.4 Objective 4: Coordinate with and Facilitate Communication among Partners

2.4.1 Improved dissemination and access to Indonesia A/PI information

2.4.1a Strategy

To facilitate coordination and communication among partners, SAFE built on platforms already developed by USAID, such as the Chief of Party (COP) meetings, and tapped into the potential of digital technology. SAFE supported regular face-to-face meetings and learning opportunities. At the beginning of Year 2, SAFE developed an online knowledge platform to share information globally. SAFE also developed articles, an informational series, and one-page program highlights, and contributed to articles in several publications to spread information on the work being conducted by the program.

2.4.1b Partners

SAFE partners included members of the COP meetings and local partners described previously under each of the objectives.

2.4.1c Inputs

1. Chief of Party Meetings

On a monthly basis SAFE hosted the API COP meetings with international donors. SAFE also held monthly meetings with FAO, MOA-CMU and USAID to share program activities and results. These two regular meetings were held to avoid duplication of effort between partners, and to share knowledge.

2. GOI Travel to Technical Workshops

GOI officials benefitted from study tours and technical conferences where they were able to see and hear firsthand models and approaches that addressed AI-related issues and could be replicated in Indonesia. SAFE supported the following individuals to attend the Emerging Pandemic Threats (EPT) meeting in Jakarta on July 2011: Prof. Sofia Mubarika; Dr. Joko Pamungkas; Prof Wayan T. Artama; and Dr. Drh. I Wayan Teguh Wibawa. In addition, SAFE also supported Dr. Tjandra Yoga Aditama and Mr. I Made Artika to travel to the United States.

3. Media Coverage and Articles

SAFE program media coverage and articles were produced in collaboration with Combine. Combine used its citizen journalist perspective and published 141 articles on www.suarakomunitas.net, which is an online platform for ordinary citizens to voice issues for mainstream media coverage. As of April 2013, 11,666 readers had read these online articles.

SAFE drafted two articles for the MOH, which then submitted them to *Tempo* magazine and *NOVA Tabloid*. These articles were intended to raise awareness of and emphasize the importance of healthy live

bird markets. SAFE also developed and disseminated two articles highlighting the Teaching Farms and the partnership with Aisyiyah.

4. *One-pager Success Stories*

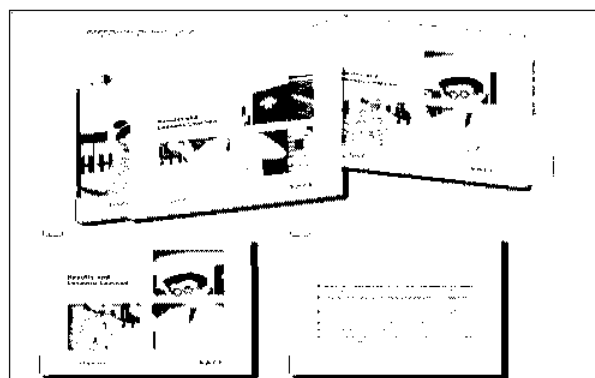
SAFE developed the following ten one-page success stories on the highlights of the SAFE program, which are reproduced in Annex 7:

1. Citizen Journalism Takes on a Consumer's Right to Healthy Poultry Products at Live Bird Markets
2. From Inspired to Inspirational
3. Market Poultry Vendors Increase Biosecurity Practices
4. Radio Drama Series Highlights Poultry Value Chain Risks and Romance
5. Koran Readings Highlight Importance of Healthy Poultry Markets and Products
6. Community Videos Spark Interest in Healthy Poultry Markets
7. Market Poultry Vendors Increase Biosecurity Practices
8. Poultry Farmers Self-Finance Biosecurity Changes
9. Vocational School Improves Student Knowledge of Good Biosecurity and Farming Practices
10. Market Manager Influences District Government Regulations.

5. *Project Informational Series*

SAFE developed six booklets to highlight results and lessons learned from the project. These booklets are listed below.

1. Healthcare Utilization Survey in East Jakarta and Bogor District, Indonesia: Healthcare Seeking for Avian Influenza and other Influenza-Like Illnesses
2. Clinicians' KAP Survey in East Jakarta and Bogor District, Indonesia: Healthcare Provider Practices for Avian Influenza and other Influenza-Like Illnesses
3. Commercial Farmer Perspectives: Biosecurity, Good Farming Practices, Motivation and Incentives



Project Informational Series package

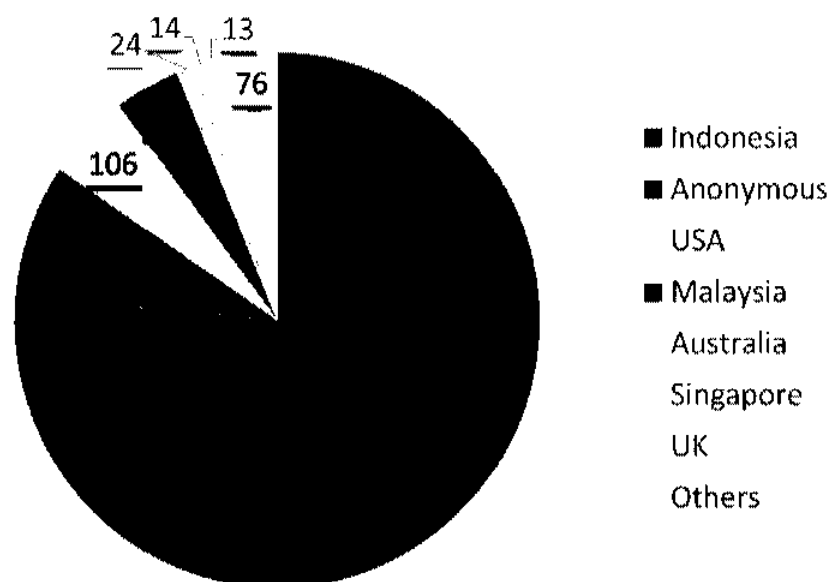
4. Teaching Farms: Improving Biosecurity and Good Farming Practices
5. Healthy Poultry Markets: Healthy Market and Community Empowerment Initiative
6. Social Media: Reinforcing Health Messages and Behavior Change Through Social, Mobile and Community Media

6. *Indonesia Avian Pandemic Information Website*

SAFE developed a site on an online platform – K4Health (Knowledge for Health) – as a tool to share knowledge and communicate experiences related to AI and Pandemic Influenza programs in Indonesia.

This website was launched in 2012 and is currently maintained by JHU-CCP, funded by USAID/Washington. K4Health is designed as a toolkit system that contains electronic collections of selected information resources on a particular topic for health policy makers, program managers, and service providers. K4Health toolkits are repositories of information on various health-related topics including family planning/reproductive health, HIV/AIDS, child health, and population and environment. Under SAFE, K4Health expanded its coverage to include AI and Pandemic Influenza Resources in Indonesia. The site is already one of the most visited on K4H.

Figure 2-1: Visitors Accessing Indonesia API Site on Knowledge for Health Website (May 1, 2012 - May 7, 2013)



The site contains 202 documents that SAFE has uploaded from API partner organizations in Indonesia. On April 2, 2013, training was conducted for representatives from the MOA, MOH, Komnas Zoonosis, FAO, WHO, and USAID in order to transfer to them responsibility for uploading documents. Representatives from these institutions were granted special access to upload their own resources as they become available so that the toolkit remains a living and dynamic platform through which all stakeholders can share the latest and most important information. The objective of the training was to ensure that the person appointed to maintain K4Health had the required understanding, skills and competency to handle the site. Through an online simulation, participants were able to learn by viewing, doing, and practicing how to upload a document and navigate the site.



Training on the use of the K4Health site was attended by seven participants representing six technical and donor organizations in Indonesia responsible for API control

7. End of Project Seminars

The Objective 1 end-of-project forum was held on April 9, 2013 in Bogor, with over 30 participants provided results and lessons learned from the program. Speakers included Maria I. Busquets, Chief of Party, Paul C. Miller, Senior Commercial Poultry Specialist, Yunita Wahyuningrum, Research/Monitoring and Evaluation Officer, industry leaders (i.e. Paulus Widanarko, Regional Manager, Cheild Jedang Indonesia (CJ)), farmers (i.e. Ms. Harlijeti, Herlijeti Farm), educators (i.e. Mr. Iwan Setiawan, SMK vocational school). Topics discussed included: findings of the program; impact on the farms (i.e. number of farms which made changes, number of conditions that were changed); impact on the educational institutions (i.e. number of students who visited the Teaching Farms); sustainability and replication (i.e. TriGroup is converting a commercial farm to a Teaching Farm, CJ has made commitment to build numerous Teaching Farms). Of note is that during his presentation Mr. Widanarko stated, "We now know that farmers will change." The industry expressed appreciation for the work conducted bySAFE and stated they would continue to use the educational material and advice provided.

The Objective 2 end-of-project forum was held at the 9th Technical Briefing Meeting on Biosecurity and Animal/Human Health Surveillance on 17 April 2013 at MOA. The meeting was held in collaboration with MOA, USAID and FAO.. Speakers included Maria I. Busquets, Chief of Party, Heri Haerudin, Team Leader, and Yunita Wahyuningrum, Research/Monitoring and Evaluation Officer. Topics included: program inputs, outcomes and results; impact on the markets and vendors (program and non program); and replication and leveraging. It was attended by approximately 35 participants from different units of MOA, FAO, WHO, and SAFE. Replication of the Objective 2 program by local government, civil society and private sector reinforced continuation of the program.

8. MOH Vice Minister/USAID Mission Director Visit SAFE Program Live Bird Market

On May 8, 2013, MOH Vice Minister Ali Ghufroon and USAID Mission Director Andrew Sisson, accompanied by other dignitaries including the head of the MOH for West Java province and head of Cianjur district, visited SAFE program Cipanas market. The Vice Minister requested the visit after hearing about the biosecurity changes at the SAFE program markets and the public/private/civil society partnerships forged to implement and finance the changes. The visit included approximately 100 representatives from government and SAFE civil society partners. Speakers included the market representative, the head of Cianjur, the SAFE COP and the Vice Minister.

Guests toured the market and observed some of the changes instituted by the program such as access to clean water supply, repairing of drainage and sewer systems, and tiled table tops at vendor stalls. They also took note of hand washing stations and separate areas for carcasses and live birds.

The visit ended with a tour of the market and discussions with vendors in the new zoning area for live birds. Mission Director Sisson congratulated SAFE and indicated the importance of such programs particularly with the appearance of the new H7N9 strain of Avian Influenza.



USAID Mission Director Andrew Sisson speaks with program poultry vendor at Cipanas market

3 PROGRAM MANAGEMENT

3.1 Introduction

SAFE's COP formed a senior management team that included the Senior Commercial Poultry Expert, the Social and Behavior Change Communication Expert, the Community and Government Liaison, the Senior Finance, Procurement and Grants Manager, and a Monitoring and Evaluation Specialist.

The SAFE subcontractors were JHU-CCP and PMI. The main grantees were Aisiyah and Combine.

DAI's headquarters in Bethesda, Maryland provided additional technical and administrative oversight, responded to USAID requests for contractual information, and issued invoices and other financial statements. DAI home office support, including Finance, Contracts, Procurement, Information and Management Technology, and Human Resources/Recruitment offices, ensured the COP had the management support, expertise and resources needed to manage SAFE and meet or exceed USAID expectations.

3.2 Operations

SAFE provided program operations, administrative and financial management support to achieve program results that complied with USAID regulations and DAI policies and procedures.

SAFE effectively utilized DAI's TAMIS (Technical and Administrative Management Information System) and FAS (Financial Accounting System). Both systems were tailored to meet technical and administrative needs to ensure compliance. TAMIS allowed project staff to perform administrative functions that were critical to effective project management, including grants management, procurement procedures, subcontractor management, and travel procedures. Time stamps of reviews and approvals provided an audit trail.

FAS reflected local labor laws, automating some of the most complex elements of field financial management including payroll, tax withholding and payment of remittances, cash advance tracking, and monitoring local subcontract and activity budgets. In addition, FAS imposed strict controls over financial data and assigned different levels of rights to various users. Time stamps of modified transactions also provided an audit trail report with information about transactions and modifications.

In addition to the systems mentioned above, SAFE developed and used a number of manuals and policies to aid staff, including a grants manual, personnel policy, procurement manual, operations manual, security policy, travel policy and vehicle use policy.

Since SAFE's activities affected more than one objective, SAFE held biweekly meetings for all staff and weekly senior management meetings to ensure integration and resolve any management, administrative

or programmatic issues. Other measures taken by the COP and the Senior Finance, Procurement and Grants Manager included holding biweekly meetings with the USAID Contracting Officer Representative (COR), Dr. Artha Camellia, and the Alternative COR, Mr. Bambang Heryanto, to review successes and challenges, bottlenecks and achievements.

3.3 Budget

In January 2012, SAFE was verbally informed by USAID there would be substantial budgetary cuts to the project and to refrain from starting new activities. On July 17, 2012, DAI received a notice from USAID explaining that SAFE's budget would be reduced by 65.5%. In light of the reduced funding available, SAFE reduced the period of performance for several major subcontractors and for the entire SAFE project.

Due to the substantial funding cuts, DAI also had to reduce staffing by eliminating six positions: Government & Community Liaison, Public Private Partnership Specialist, Monitoring and Evaluation Officer, one Grants and Contracts Specialist, and two Program Officers. SAFE combined the Behavioral Research Analyst and Monitoring and Evaluation Officer positions and responsibilities.

On November 5, 2012, DAI received a signed modification to the SAFE contract covering the reduction in the budget, a revised Scope of Work (SOW), and a reduced period of performance. On November 14, SAFE submitted a revised workplan covering the period March 15, 2012 to June 15, 2013 along with a revised two-year Monitoring and Evaluation Plan and Performance Monitoring Plan.

As a result of the budgetary cuts and reduced period of performance, SAFE had to eliminate key inputs, including the number of TFs and markets, the PVUK/private sector model, TF upgrades, BIIF grants, strategic communication training, an instructional video for use by GOI, a second series of the radio drama, and many other inputs, reducing the impact initially planned for the project.

3.4 Grants

The SAFE grants program represented a key tool for supporting activities in Western Java and Banten under Components 1 and 2. SAFE successfully completed 25 grants, 20 of which were allocated for making improvements at 20 demonstration markets at LBMs under Objective 2. SAFE issued two grants each to Combine and Aisiyah, who were responsible for campaign activities to raise awareness and promote consumer demand for clean LBMs and healthy poultry products. SAFE also implemented an SMS pilot project aiming to maximize communication between TS staff and more than 50 farmers to reinforce the biosecurity messages and promote positive behavior change.

SAFE's initial grant budget of \$1 million was reduced to approximately \$358,000 under the revised SOW as a result of funding cuts. SAFE received grant proposals from the University of Indonesia and evaluated proposals for the social media RFA, but these were all cancelled as a result of funding cuts. SAFE informed several potential grantees that it was no longer able to fund grant applications under the BIIF.

SAFE FINAL REPORT

All grants were administered based on guidelines and policies in the USAID-approved grants manual. All grants were reviewed and approved by USAID's COR. Comprehensive results of these grants are consolidated in Table 3-1.

Table 3-1: Summary of Grants Activities

Grant Number	Grantee	Goal(s)	Number of Beneficiaries	Grant Amount (USD)
G-001	Combine Resource Institution	Establish an information system on the community basis and through various media (audio, picture, text, internet, social media and SMS) as tools for campaigning the efforts of protecting consumers' health from the dangers of the Avian Influenza virus (AI H5N1)	Direct: 5,400 ¹ Indirect: 21,600	\$47,289.00
G-002	Aisyyiah	Create awareness to buy healthy poultry products among consumers to improve their understanding and critical thinking on healthy poultry products through a consumer empowerment program	Direct: 5,940 ² Indirect: 23,760	\$50,000.00
G-003	Koperasi Kowapi Cita Lestari	1. Revitalization of drainage 2. Revitalization of market roof 3. Revitalization of foot path inside the market 4. Revitalization of market's gate 5. Revitalization of temporary trash dumper 6. Revitalization of vendor stalls 7. Provision of hand washing stand and clean water 8. Provision of apron for carcass vendor 9. Provision of cleaning equipment (trash cart, wearpack, boots, trash bin)	Direct: 30 Indirect: 590	\$6,000.00
G-004	Koperasi Pedagang Pasar Mitra Usaha	1. Revitalization of market roof 2. Revitalization of carcass vendor stalls 3. Revitalization of poultry slaughter area and its drainage 4. Provision of trash cart 5. Provision of cleaning equipment (sprayer, disinfectant, mask, gloves, boots) 6. Provision of apron for carcass vendor 7. Provision of freezer for carcass products 8. Provision of poultry cage from plastic material	Direct: 35 Indirect: 682	\$6,000.00
G-005	Asosiasi Pedagang Paguyuban Karya Bakti	1. Revitalization of market road 2. Revitalization of drainage 3. Provision of aprons, boots, sprayers, mica cutting board for carcass vendor	Direct: 40 Indirect: 1167	\$6,000.00
G-006	Koperasi Cahaya Anugrah	1. Revitalization of market road 2. Revitalization of drainage 3. Revitalization of temporary waste dumping	Direct: 20 Indirect: 310	\$6,000.00
G-007	CV Islamedia	1. Revitalization of drainage 2. Revitalization of market floor	Direct: 61 Indirect: 2,148	\$6,000.00

Grant Number	Grantee	Goal(s)	Number of Beneficiaries	Grant Amount (USD)
G-008	Koperasi Pasar Mandiri Pangandaran	1. Revitalization of drainage 2. Revitalization of floor 3. Revitalization of carcass vendor stalls 4. Provision of clean water (wells and piping)	Direct: 28 Indirect: 320	\$6,000.00
G-009	Koperasi Hasanah	1. Provision hand washing stand and clean water (piping and wells) 2. Revitalization of temporary waste dumper 3. Provision of carcass hanger, boots, trash bin for carcass sellers 4. Provision of PPE and biosecurity equipment at slaughter area (sprayer, boots, disinfectant, waste bin, wearpack, mask)	Direct: 15 Indirect: 300	\$6,000.00
G-010	Koperasi Warga Pasar (Kowapas) Sentausa	1. Provision hand wash stand and clean water (piping and well) 2. Revitalization of carcass vendor stalls 3. Revitalization of drainage 4. Provision of mica cutting board, trash bin for carcass sellers 5. Provision of PPE and biosecurity equipment at slaughter area (sprayer, boots, disinfectant, waste bin, wearpack, mask)	Direct: 17 Indirect: 350	\$6,000.00
G-011	UD Saba Desa	1. Revitalization of temporary waste dumper 2. Revitalization of drainage 3. Revitalization of market floor 4. Provision of trash bin, apron, gloves, boots, fiber cutting board for carcass vendor 5. Revitalization of vendor stalls	Direct: 34 Indirect: 530	\$6,000.00
G-012	Koperasi Syariah Pedagang Pasar Malangbong	1. Provision of clean water (piping) 2. Revitalization of vendor stalls into ceramic 3. Provision of boots, gloves, apron and mica cutting board for carcass vendor 4. Revitalization of poultry slaughter area and its drainage 5. Revitalization of temporary waste dumping 6. Provision of cleaning equipment (wearpack, power sprayer, floor wiper, shovel, trash bin)	Direct: 27 Indirect: 564	\$6,000.00
G-013	Koperasi Pasar Surya Kencana Cipanas	1. Revitalization of carcass vendor stalls and floor 2. Provision of livebird cage 3. Revitalization of drainage revitalization 4. Provision of hand-washing station 5. Provision of trash bin and trash cart 6. Provision of cleaning equipment (power sprayer, soap, broom, shovel, bucket)	Direct: 44 Indirect: 1,967	\$6,000.00

Grant Number	Grantee	Goal(s)	Number of Beneficiaries	Grant Amount (USD)
G-014	Paguyuban K-5 Pasar Sukanagara	1. Revitalization of carcass vendor stalls 2. Revitalization of drainage 3. Revitalization of market road 4. Provision of power sprayer 5. Provision of clean water (piping) 6. Provision of trash bin	Direct: 72 Indirect: 512	\$6,000.00
G-015	PT Putra Bangsa Sakti	1. Revitalization of drainage 2. Revitalization of temporary waste dumper 3. Provision of biosecurity equipment (power sprayer, disinfectant, masks, boots) 4. Provision of apron, trash bin, gloves for carcass vendor 5. Provision of cleaning equipment (trash cart, shovel, masks, boots, gloves) 6. Provision of poultry cage	Direct: 35 Indirect: 610	\$6,000.00
G-016	Koperasi Siliwangi Sejahtera	1. Revitalization of temporary waste dumping 2. Provision of hand wash stand and clean water 3. Revitalization of vendor stalls into ceramic 4. Provision of boots, gloves, apron and mica cutting board for carcass vendor 5. Revitalization of poultry slaughter area 6. Provision of Power sprayer and cleaning equipment (coverall, floor wiper, shovel, trash bin)	Direct: 30 Indirect: 261	\$6,000.00
G-017	CV Graphis	1. Provision of power sprayer and cleaning equipment 2. Revitalization of sewage system 3. Provision of apron, mask, mica cutting board for carcass vendor 4. Provision of trash cart 5. Revitalization of carcass vendor stalls 6. Revitalization of temporary waste dumping	Direct: 27 Indirect: 710	\$6,000.00
G-018	CV Gading Mas	1. Provision of power sprayer and cleaning equipment 2. Revitalization of sewage system 3. Provision of apron, mask, mica cutting board for carcass vendor 4. Provision of trash cart 5. Revitalization of carcass vendor stalls 6. Revitalization of temporary waste dumping	Direct: 27 Indirect: 1,327	\$6,000.00

Grant Number	Grantee	Goal(s)	Number of Beneficiaries	Grant Amount (USD)
G-019	Koperasi Wanita Srikandi Pabuaran	1. Revitalization of drainage 2. Revitalization of market floor 3. Revitalization of vendor stalls 4. Provision of livebird cages 5. Provision of cleaning equipment (power sprayer, trash bin, trash cart, boots, gloves, disinfectant) 6. Provision of apron, mica cutting board, gloves, masks for carcass sellers 7. Provision of clean water (piping)	Direct: 76 Indirect: 674	\$6,000.00
G-020	Yayasan Ponpes Al-Hikmah Kopu	1. Revitalization of drainage 2. Revitalization of carcass vendor stalls 3. Provision of biosecurity equipment (power sprayer, disinfectant, masks, boots) 4. Provision of apron, trash bin, gloves for carcass vendor 5. Provision of cleaning equipment (trash cart, shovel, masks, boots, gloves) 6. Provision of poultry cage	Direct: 70 Indirect: 650	\$6,000.00
G-021	PO Shandi Anugrah Mandiri	1. Revitalization of slaughter area 2. Revitalization of vendor stalls 3. Provision of poultry cage 4. Revitalization of temporary waste dumper 5. Revitalization of drainage 6. Provision of power sprayer and Personal Protective Equipment (PPE) for biosecurity implementation 7. Provision of trash cart and trash bin	Direct: 15 Indirect: 172	\$6,000.00
G-022	PO Shandi Anugrah Mandiri	1. Revitalization of drainage 2. Revitalization of slaughter area 3. Provision of poultry cage 4. Provision of power sprayer and PPE for biosecurity implementation 5. Provision of clean water (well and water pump)	Direct: 14 Indirect: 230	\$6,000.00
G-023	Satu Dunia/One World	Build an SMS system that will encourage breeders and traders to actively exchange information and knowledge, utilizing the breadth and speed of technology to more quickly and widely deliver information and knowledge about livestock health and the importance of contributing to better biosecurity.	Direct: 70 ³ Indirect: 650	\$41,367.00
G-024	Combine Resource Institution	1. Educate consumers about healthy poultry products 2. Encourage key behaviors related to food safety and processing 3. Empower consumers and communities to demand healthy poultry products 4. Create a platform through SMS, online media and radio networks within the chain of poultry business involving consumers and other related stakeholders	Direct: 215,650 ⁴ Indirect: 862,600	\$50,000.00

Grant Number	Grantee	Goal(s)	Number of Beneficiaries	Grant Amount (USD)
G-025	Aisiyyah	1. Increase the capacity of local leader (motivator and facilitator) to become skilled advocates for AI related issues 2. Carry out the discussion of religious meeting in the market with traders, transporters of poultry and poultry cutters on Islamic business 3. Carry out a religious meeting in the community to conduct consumer education and consumer empowerment 4. Carry out market visits with customers to establish communications with poultry traders 5. Develop and distribute teaching materials (advertising and pocket book) about healthy consumer empowerment in Islamic perspective 6. Disseminate teaching materials and activities on healthy birds of consumer empowerment through online media	Direct: 374,427 ⁵ Indirect: 1,570,508	\$50,000.00

Notes

¹ Direct beneficiaries are people who listened to the community radio broadcasts (18 radios X estimation 300 listener per area) and indirect beneficiaries are family members of the radio listeners (# of radio listener X 4 persons).

² Direct beneficiaries are participants at Aisiyyah 'pengajian' and indirect beneficiaries are family member of pengajian participants (# of pengajian participants X 4 persons).

G-003 to G-022: Direct beneficiaries are the vendors who directly received the material/equipment/improvement generated by the grants. Indirect beneficiaries are the total number of vendors in the market who were also affected by the improvements.

³ Direct beneficiaries are farmers and Technical Service (TS) staff who registered in SMS gateway system and indirect beneficiaries are total number of farmers who were directly supervised by the TS (13 TS X approximately 50 farmers for each TS).

⁴ Direct beneficiaries are calculated from: SMS = 1,200; bulletin = 1,500; radio = 200,000; website = 12,000 and community video = 950 and indirect beneficiaries are direct beneficiaries x 4 family members.

⁵ Direct beneficiaries is calculated from: audio messages (Kuitum) = 12 edition x 300 CDs x 100 listeners; Khutbah book = 2,000; Facebook = 5,023; religious events = 6,673; consumer visit = 278; and Twitter = 453. Indirect beneficiaries are calculated from: (direct beneficiaries x 4 family members) + (Replication West Java in the remaining 16 districts/municipalities through 700 branches of Aisiyyah group Quran reading x 4 family members). (374,427 x 4 = 1,497,708) + (700 x 6 facilitators and 700 x 20 participants = 18,200 x 4 family members = 72,800). The number for indirect beneficiaries has not taken into consideration that Aisiyyah distributed SAFE IEC materials to their branches in 33 provinces during Aisiyyah's National Meeting in Yogyakarta in October 2012.

4. MONITORING AND EVALUATION

4.1 Introduction

SAFE developed a performance monitoring system to collect data and present the results for program indicators in a timely and reliable manner. Performance monitoring focused on progress in achieving indicators defined for program activities/inputs, outputs and outcomes. The monitoring system combined quantitative and qualitative methods in order to collect and present data of good quality.

In reference to quantitative methods, units were either measured or counted, or questions were asked according to a defined questionnaire so that the answers could be coded and analyzed numerically. SAFE quantitative performance monitoring activities ranged from the simple counting of inputs/activities, such as the number of training participants and the number of communication materials produced, to the more complex processes, such as surveys based on the use of questionnaires and sampling respondents – especially at the outcome level. Quantitative performance monitoring was carried out at all levels of the program results (outcomes, outputs and inputs/activities).

SAFE used qualitative monitoring as a way of looking at why and how certain activities were conducted or achievements made. Activities conducted as part of the qualitative performance monitoring included site visits to capture SAFE success stories, FGDs, regular observation visits to farms and LBMs, and observations of behavior changes that related SAFE activities to changes in AI/ILI-related behaviors.

Quality assurance was applied to both quantitative and qualitative data. . SAFE involved local partners and stakeholders in monitoring roles and data collection to ensure program ownership. Data collection forms were distributed and partners were trained in their use. Activities to support quality assurance included regular field visits, supervision and activity report reviews. In addition, SAFE program staff and the M&E officer conducted spot checks and carefully reviewed data originating from partners to ensure their accuracy.

The sections below include a report on the Performance Monitoring Plan outcomes and outputs and a summary of project activities and deliverables.

4.2 Performance Monitoring Plan

This section contains the Performance Monitoring Plan (PMP) Framework, Performance Indicator Reference Sheets and Workplan Activities and Deliverables which represent project inputs.

4.2.1 Performance Monitoring Plan (PMP) framework

The SAFE program PMP framework was developed to contribute to the USAID API Results Framework at the time of award. The relationship of the SAFE Outcomes is included below for reference. The SAFE PMP was used as a management tool to plan and manage the process of assessing and reporting progress towards achieving SAFE's program outputs, outcomes and overall results.

SAFE Program Link to USAID API Results Framework

Overall USAID Goal: Reduced impact of H5N1 in Indonesia on animals and human and limit emergence of pandemic threat

Animal

Human

Sub-goals:

1. Refined knowledge about how H5N1 virus is circulating in poultry
2. Improved control of H5N1 in poultry

Sub-goals:

1. Strengthen early detection and treatment of H5N1 (and H1N1) in high risk areas
2. Minimized risk of H5N1 and H1N1 re-assortment

IR 1

Biosecurity & vaccination program at commercial poultry farms are improved and established

IR 1

Improved early recognition of signs and symptoms of H5N1-related illness at household/community levels

IR 2

Promoted health seeking behavior in communities in H5N1-related illness

IR 3

Effective management of H5N1-related illness at health facility level



SAFE



OUTCOME 1
IMPROVED BIOSECURITY
AND GOOD FARMING
PRACTICES AT SECTOR 3
BROILER FARMS IN HIGH-
RISK AREAS

OUTCOME 2
IMPROVED RISK REDUCTION
PRACTICES WITHIN LIVE
BIRD MARKETS (LBM)

OUTCOME 3
INCREASED KNOWLEDGE OF HEALTH CARE-SEEKING PRACTICES FOR
AI/ILI-RELATED ILLNESS

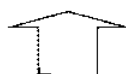
OUTCOME 4
USE OF A/PI INFORMATION BY LOCAL AND INTERNATIONAL STAKEHOLDERS

Table 4-1 below, summarizes SAFE's four "Outcomes", nine "Outputs" and accompanying indicators. There are a total of 13 indicators; four outcome level indicators and nine distinct output level indicators.

Table 4-1: Summary of SAFE Outcomes and Outputs

Objective I

	I. IMPROVED BIOSECURITY AND GOOD FARMING PRACTICES AT SECTOR 3 BROILER FARMS IN HIGH-RISK AREAS
	I.i. # of farms adopting biosecurity and good farming practices at sector 3 broiler farms



OUTPUT	I.1 Sector 1 poultry companies and poultry shops encourage and support implementation of changes in biosecurity and good farming conditions at sector 3 broiler farms	I.2. Increased knowledge and understanding of biosecurity and good farming conditions among farmers and students
	I.1.i # of poultry industry Technical Services (TS) staff working with and contributing to SAFE Program	I.2.i # of farmers who self-financed changes in biosecurity and good farming conditions at their farm
OUTPUT INDICATORS	I.1.ii # of technical visits by TS and SAFE staff to TFs to support and monitor changes in biosecurity & GFP conditions	

Objective 2

	2. IMPROVED RISK REDUCTION PRACTICES WITHIN LIVE BIRD MARKETS (LBM)
	2.i. # of poultry vendors in demonstration markets adopting healthy market practices



OUTPUT	2.1. Increased technical support, participation and coordination among key stakeholders	2.2. Empowered consumer who demands healthy poultry product	2.3. Cleaner physical facilities for poultry vendors in LBMs	2.4. Improved coordination among ministry program/communication staff (same as output 3,2)
OUTPUT INDICATORS	2.1.i # of Dinas technical visits to LBMs	2.2.i. Percentage of consumers who know and exercise their consumer right	2.2.i. # of markets with revitalized facilities to support improved biosecurity practices.	2.4.i. # of multi- ministerial AI communication action plans

Objective 3

	3. INCREASED KNOWLEDGE OF HEALTH CARE-SEEKING PRACTICES FOR AI/ILI-RELATED ILLNESS
	3.i. Percentage of survey respondents who can identify AI/ILI symptoms



OUTPUT	3.1. Community members reached with key AI-ILI health care seeking messages	3.2. Improved coordination among ministry program/communication staff (<i>same as output 2.4</i>)
OUTPUT INDICATOR	3.1.i. # of community members who receive care-seeking messages on AI/ILI-related messages	3.2.i. # of multi ministerial AI communication action plans

Objective 4

	3. USE OF A/PI INFORMATION BY LOCAL AND INTERNATIONAL STAKEHOLDERS
	4.i # of unique visitors on the A/PI Indonesia Knowledge for Health site of Johns Hopkins University



OUTPUT	4.1. Access to A/PI information by local and international stakeholders	4.2. Improved access to updated best practices knowledge by local MOA and MOH stakeholders
OUTPUT INDICATORS	4.1.i. # of documents uploaded to the site by Indonesian partners and SAFE staff	4.2.i. # and type of subject matter accessed by partners attending conferences, workshops and meetings

4.2.2 Performance indicator reference sheets

This section contains the reference sheet for each of the 13 Outcome and Output performance indicators. Each sheet describes the indicator, unit of measurement, target for the 27-month life of project, and final target achievement. The remarks section adds additional detailed information.

OBJECTIVE 1. STRENGTHEN AND EXPAND PUBLIC PRIVATE PARTNERSHIPS TO IMPROVE GOOD FARMING PRACTICES AND LIMIT AI TRANSMISSION AMONG POULTRY

<i>PMP Outcome</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
Outcome I: Improved biosecurity and good farming practices at sector 3 broiler farms in high risk areas	I.i Number of Sector 3 broiler farms that score at least 60 out of 100 points on a weighted survey	Number of farms	50	64 (128%)	

Final Achievement:

- The final achievement of this outcome was 64 Sector 3 broiler farms that scored at least 60 out of 100 points for biosecurity and good farming practices adoption. This achievement was 128% of the total program target.
- The 64 farms had visited the teaching farms and received technical assistance from TS and SAFE staff to adopt biosecurity and good farming practices through weekly visits to the farms, one-on-one discussions, informal group discussions, and educational materials. The average score for these farms was 79 for condition implementation and 75 for practices adoption.
- Most of the changes implemented on the farms consisted of constructing fences, parking areas outside the farms, footwear exchange at chicken house doors, hand washing facilities, good drinking water, and cleaning and disinfecting the chicken house and equipment. Simplicity, low cost and being easy to adopt were the main reasons reported by farmers for implementing these structural changes rather than others.
- Visiting a TF, support from SAFE and TS staff, and the farmer competition were the external factors that encouraged farmers to implement biosecurity and good farming practices on their farms.
- Detailed information on the achievement figures stated above can be found in Annex I.

<i>PMP Output</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
OUTPUT 1.1: Sector 1 poultry companies and poultry shops encourage and support implementation of changes in biosecurity and good farming conditions at Sector 3 broiler farms	1.1.i Number of Sector 1 and poultry shop TS staff transferring their knowledge and supervising targeted farm, biosecurity and GFP changes at farms	Number of Sector 1 and poultry shop TS staff	25	39 (156%)	<ul style="list-style-type: none"> The final achievement of this output was 39 poultry industry TS staff working and contributing towards SAFE program goals. These TS came from Rinjani PS, Tanjung Mulya PS, Cheil Jedang PT, Sierad Produce PT, Darmaga Unggas PS/CPI, Tunas Mekar Fram PS, Japfa PT. An additional 27 TS staff were trained in Year 1 and are serving the industry Detailed information on this output can be found in Annex 2.
	1.1.ii Number of technical visits by TS and SAFE staff to TFs to provide direction and support on biosecurity & GFP changes	Definition: Number of technical visits by TS and SAFE staff to TFs	600	800 (133.3%)	<ul style="list-style-type: none"> The final achievement of this output was 800 technical visits conducted by TS and SAFE staff to TFs. 246 technical visits were carried out by SAFE staff and 554 by TS staff. TS staff on average made three one-on-one visits per month to TFs.
OUTPUT 1.2: Increased knowledge and understanding of biosecurity and good farming conditions among farmers and students	1.2.i Number of Sector 3 farms that self-financed changes in biosecurity and good farming conditions	Number of Sector 3 farms	300	345 (115%)	<ul style="list-style-type: none"> The final achievement of this output was 345 Sector 3 broiler farms that self-financed changes in biosecurity and good farming conditions. Over 80% of farmers implemented footwear exchange at the chicken house doors, and almost 80% upgraded their hand washing facilities. Other conditions that were improved including proper disposal of dead chicken, record sheets, clean buildings and equipment, good drinking water, and parking area outside the farm (implemented by around 40% of farmers). Detailed information on this output can be found in Annex 3.

OBJECTIVE 2: PROMOTE BEHAVIORS THAT LOWER THE RISKS OF AI TRANSMISSION AMONG POULTRY AND INCREASE KNOWLEDGE OF SIGNS, SYMPTOMS AND RISK FACTORS FOR AI-RELATED ILLNESS

<i>PMP Outcome</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
OUTCOME 2: Improved risk reduction practices within live bird markets (LBMs)	2.i Number of market vendors with improved stalls in 20 demonstration markets	Number of market vendors	800 in 20 demo markets	846 (105.7%) Additional 1875 in non-program markets	<ul style="list-style-type: none"> • A total of 1,875 poultry vendors in 49 non-program markets adopted the SAFE program. These changes were financed by local government and market managers and vendors. • A total of 2721 vendors improved practices – a 340% increase over target.

Final Achievement:

- The final achievement of this outcome was 846 poultry vendors in 20 demonstration markets adopting healthy market practices. This achievement represented 105.7% of the total program target in the program area. A greater target was reached when an additional 49 markets implemented components of the SAFE program reaching an additional 1,875 poultry vendors.
- Changes in biosecurity practices could be shown through stall improvements such as revitalizing display tables, using appropriate poultry cages, and using mica cutting boards, and implementing biosecurity practices such as cleaning vendor stall areas, proper disposal of poultry waste, washing hands with soap, and using appropriate equipment. Improved practices in the market cannot be separated from the support provided by market management staff, the local government, the poultry vendor association and other related stakeholders.
- There was strong involvement by the local government in the adoption of the SAFE healthy market program in 49 non-program live bird markets. This was shown through replication in other markets, development of policies and regulations, budget allocations, and capacity building implementation. A total of 1,875 market poultry vendors in 49 non-program live bird markets were impacted by adoption of the SAFE healthy market program.
- Detailed information on the achievement figures stated above can be found in Annex 4.

<i>PMP Output</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
OUTPUT 2.1: Increased technical and financial support, participation and coordination among key stakeholders	2.1.i Number of technical visits conducted by Dinas (Local Government) to assist with LBMs	Number of technical visits	80	741 (926.2%)	<ul style="list-style-type: none"> • The Dinas' related markets are Trade and Industry, Animal Husbandry, and Health. • The following technical visits were conducted by at least one of the local Dinas' referenced above : <ul style="list-style-type: none"> - 1 market manager training (Mar 2012) - 20 PRA in first year (Feb 2012) - 20 <i>gebyar pasar</i>/market events (Mar 2012) - 100 market implementation activities (first year) - 480 market implementation activities (second year) - 20 maintenance plan meetings (Sep-Dec 2012) - 20 peer-to-peer volunteer orientations (first year) - 80 peer-to-peer volunteer orientations (second year)
OUTPUT 2.2: Empowered consumer who demands healthy poultry product	2.2.i Percentage of survey respondents from target audience who have knowledge on healthy poultry products and ask for clean poultry stalls and healthy products	Percentage of survey respondents	60% of total sample	<p>74% of the total sample (N:200) had ever asked a poultry vendor to improve cleanliness (123.3%)</p> <p>84% of the total sample (N:200) had ever asked a poultry vendor to provide healthy poultry products (140%)</p>	<ul style="list-style-type: none"> • SAFE conducted a consumer survey to assess consumer knowledge about healthy poultry products and identify whether they had asked for clean poultry stalls and healthy products • Method: quantitative, using a questionnaire (face-to-face interviews) • The survey population was consumers who attended religious meetings where the topics were healthy poultry products and consumers' right to obtain healthy poultry products • Total sample: 200 respondents (20 respondents per district) <p>The following data concerns the number of consumers reached through Quran recitals and consumer visits to market activities conducted by Aisyiyah:</p> <ul style="list-style-type: none"> • 12,165 consumers received socialization on healthy chicken products. • 278 consumers met with vendors and practiced requesting healthier products and cleaner market as part of a group exercise.

<i>PMP Output</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
OUTPUT 2.3: Cleaner physical facilities for poultry vendors in LBM	2.3.i Number of markets with improved facilities	Number of markets	20	20 (100%)	Improvements in the 20 program markets included: <ul style="list-style-type: none"> • Drainage revitalization • Revitalization of temporary waste dumpsters • Revitalization of vendor stalls • Hand washing stands • Piping clean water channels.
OUTPUT 2.4: Improved coordination among ministry program/communication staff	2.4.i Number of multi-ministerial AI communication action plans	Number of multi-ministerial AI communication action plans Unit: Number	1	1 action plan developed (100%)	<ul style="list-style-type: none"> • Five Ministries were part of the SAFE Inter-Ministerial Health Communication Group. • Two meetings were held for this group. The first meeting discussed the draft Avian Influenza Action Plan and gathered input for AI prevention and management efforts in Indonesia. • The second meeting was held to share lessons learned and best practices from SAFE implementation in the field, with the aim of handing over some of the SAFE program elements to the government, and encouraging exchange of information among government agencies in the areas of AI prevention, control and management, including the most recent Komnas Zoonosis workplan.

OBJECTIVE 3: INCREASE KNOWLEDGE OF SIGNS/SYMPTOMS AND RISK FACTORS FOR AI-RELATED ILLNESS IN PEOPLE AND PROMOTE BEHAVIORS THAT IMPROVE HOUSEHOLD-LEVEL CARE-SEEKING IN RESPONSE TO AI-RELATED ILLNESS

<i>PMP Outcome</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
OUTCOME 3: Increased knowledge of healthcare-seeking practices for AI/ILI-related illness	3.i Percentage of survey respondents who can identify AI/ILI symptoms	Percentage of survey respondents	60% of total sample	84% of total sample (N=200) can identify the signs of AI in humans (140%)	

Final Achievement:

- The final achievement of this outcome was 84% of the total sample (N=200) correctly mentioning the signs of AI in humans, namely, high fever, coughing, sore throat and difficulty breathing. This achievement constituted 140% of the total program target.
- SAFE and Aisiyiah conducted a care-seeking evaluation in order to better understand targeted audience responses to the care-seeking messages developed by SAFE and to program efforts aimed at improving healthcare-seeking practices. SAFE employed the quantitative method using a questionnaire administered through face-to-face interviews, and the qualitative method using an FGD to obtain more detailed data. A total of 200 respondents (mothers) were surveyed in the 10 program districts in West Java and Banten, and there were 36 participants in FGDs held in three program districts (West Bandung, Tasikmalaya and Serang).
- After receiving care-seeking messages, around 76% of respondents stated that in the future they would go to a healthcare provider immediately if they had symptoms like fever, sore throat, coughing, and had been in contact with poultry. They mostly preferred to go to a Puskesmas (mentioned by 70%) rather than other sites, due to its accessibility and low cost.
- Quran recitals (pengajian) and posters were the information sources most often reported by respondents.

<i>PMP Output</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
OUTPUT 3.1: Community members reached with key healthcare-seeking messages	3.1.i Number of community members who receive care-seeking messages on AI/ILI-related messages	Number of community members	200	444 (222%)	<ul style="list-style-type: none"> • 444 participants attended socialization on AI in humans through Quran recitals in Dec 2012-Jan 2013. • Detailed information on the date and place of these Quran recitals can be found in Annex 5. • In some areas, Aisiyyah facilitators continue to conduct Quran recitals on the topic of AI in humans.
OUTPUT 3.2: Improved coordination among ministry program/communication staff	3.2.i Number of multi-ministerial AI communication action plans	Number of multi-ministerial AI communication action plans	1	1 action plan developed (100%)	<ul style="list-style-type: none"> • Same indicator as output 2.4 under Objective 2

OBJECTIVE 4: FACILITATE COORDINATION AMONG PARTNERS BY SHARING INFORMATION AND HOSTING MEETINGS

<i>PMP Outcome</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
OUTCOME 4: Use of A/PI information by local and international stakeholders	4.i Number of unique local and international visitors to the A/PI Indonesia Knowledge for Health site	Number of unique visitors	2,000	2,052 (102.6%)	

Final Achievement:

- The final achievement of this outcome was 2,052 unique visitors to the A/PI Indonesia Knowledge for Health (K4Health) site. This achievement represented 102% of the total program target.
- The site is hosted by the JHU Knowledge for Health Project. K4Health is designed as a toolkit system that contains electronic collections of relevant information on a particular topic for health policy makers, program managers, and service providers.

<i>PMP Output</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
OUTPUT 4.1: Access to A/PI information by local and international stakeholders	4.1.i Number of documents uploaded to the site by Indonesian partners and SAFE staff to share knowledge on health issues	Number of documents uploaded	75	202 (269.3%)	<ul style="list-style-type: none"> • 202 documents had been uploaded as of April 29, 2013 • Documents uploaded came from MOA, MOH, FAO, WHO, and other AI-related organizations.

<i>PMP Output</i>	<i>Indicator</i>	<i>Unit of Measurement</i>	<i>Target Over Life of Project</i>	<i>Final Achievement</i>	<i>Remarks</i>
OUTPUT 4.2: Improved access to updated best practices knowledge by local MOA and MOH stakeholders	4.2.i Number and type of subject matter accessed by partners attending conferences, workshops and meetings by SAFE-funded professionals	Number of subject matters accessed	5	6 (120%)	<p>This output was limited because attendance at conferences and workshops was discontinued early in Year 2 following funding cuts.</p> <p>SAFE supported the following individuals to attend the EPT meeting in Jakarta on July 2011: Prof. Sofia Mubarika; Dr. Joko Pamungkas; Prof Wayan T. Artama; and Dr. Drh. I Wayan Teguh Wibawa.</p> <p>SAFE also supported Dr. Tjandra Yoga Aditama and Mr. I Made Artika to travel to the United States</p>

Workplan Activities and Deliverables/Inputs

The project inputs, that is, the workplan project activities and deliverables, and the quarter in which they were each planned and completed are summarized below in Table 4-2.

Table 4-2: Summary of Workplan Activities and Deliverables/Inputs

No.	ACTIVITIES	DELIVERABLE	Schedule	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	REMARKS
OBJECTIVE 1: Strengthen and expand public private partnerships in high-risk districts to improve biosecurity and good farming practices in order to limit AI transmission													
Act. 1.1.	Build on existing relationships with the public and private poultry sectors and engage new partners to build commitment for	Listing of meetings with stakeholders and field visits	Planned Actual										
Act. 1.2.	Design, organize and convene an industry convention on poultry biosecurity	Convention Summary Report	Planned Actual										
Act. 1.3	Establish a Biosecurity Innovation Fund	Biosecurity Innovation Fund Concept	Planned Actual										
		Biosecurity Innovation Fund Literature	Planned Actual										
		Biosecurity Innovation Fund Roadshow presentation	Planned Actual										
Act. 1.4	Develop new or strengthen existing Teaching Farms that will model good farming and biosecurity practices	Teaching Farm concept write-up	Planned Actual										
		Eleven (11) Teaching Farms	Planned Actual										
Act. 1.5.	Develop educational and informational materials for use at Sector 3 teaching farms, and educational institutions	Training and education material	Planned Actual										
		Package of communication tools, best practices and methodologies to support biosecurity implementation	Planned Actual										
Act. 1.6	Train Sector 1 and poultry shop technical service staff and select Sector 3 farms/managers and farmers to transfer their knowledge of GFB/biosecurity practices	Eleven (11) technical/ communication skills training sessions - 100 Technical Staff trained and 500 farms reached	Planned Actual										SAFE collapsed 11 training sessions, which companies had originally requested be held separately, into two sessions that mixed TS personnel from different companies. This decision improved the learning process and saved money. A total of 59 TS staff were trained. This number reflects the reduction in funding and life-of-project.
Act. 1.7.	Identify and test incentives for private industry to adopt biosecurity practices	SOW and action plan with at least one Sector 1 Firm to measure the effectiveness of biosecurity practices	Planned Actual										SAFE took a different approach to testing incentives and instead used the Teaching Farms and the BIF grant program to test and study industry and farmer motivation and incentives
Act. 1.8.	Develop and implement a system to monitor implementation of activities	Program Monitoring Plan	Planned Actual										
		Data collection sheets	Planned Actual										

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No.	ACTIVITIES	DELIVERABLE	Schedule	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	REMARKS	
OBJECTIVE 1: Strengthen and expand public private partnerships in high-risk districts to improve biosecurity and good farming practices in order to limit AI transmission														
Act. 1.1.1	Hold strategic consultative meetings with industry and academic stakeholders	Summary results in Quarterly Reports	Planned											
			Actual											
Act. 1.1.10.	Conduct farmer and student visits to the teaching farms	Summary number of visits in Quarterly Reports	Planned											
			Actual											
		Report on Champion Farmer competition results	Planned											
			Actual											
Act. 1.1.11.	Provide technical support to farmers to adopt and implement new biosecurity and good farming practices	Summary farm changes in Quarterly Reports	Planned											
			Actual											
		Report on SMS pilots	Planned											
			Actual											
Act. 1.1.12	Produce and distribute educational and communication materials	Farmer-farmer video production	Planned											
			Actual											
		Farmer-to-farmer video dissemination	Planned											
			Actual											
Act. 1.1.13	Develop and establish technical discussion groups meetings	Summary findings in Quarterly Reports	Planned											
			Actual											

No.	ACTIVITIES	DELIVERABLE	Schedule	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	REMARKS
Act. 2.1	Conduct analysis: KAP 2009 secondary data analysis.	KAP 2009 Secondary Data Analysis Summary Report	Planned Actual										
Act. 2.2	Conduct rapid needs assessment	SAFE Rapid Need Assessment Summary Report	Planned Actual										
Act. 2.3	Update 2009 "Consensus Report: Priority Audiences and Behaviors for Reducing the Risk of AI Transmission in Indonesia"	2011 Consensus Report: Priority Audiences and Behaviors for Reducing The Risk of AI Transmission in Indonesia	Planned Actual										Review of the final document by all stakeholders took longer than planned in part because FAO technical staff had to leave country due to internal visa related issues. As FAO was technical lead partner SAFE believed the document could not be completed without their review.
Act. 2.4	Develop Communication Strategy	Communication Strategy Development Workshop Communication Strategy Document	Planned Actual Planned Actual										
Act. 2.5	Organize and conduct consultative meetings	Listing of stakeholder meetings List of Demonstration Live Bird Markets (LBMs)	Planned Actual Planned Actual										
Act. 2.6	Develop SoW and conduct training for PHU	Signed subcontract with PMI One testing session	Planned Actual Planned Actual										New changes in PMI management resulted in a slow and bureaucratic internal subcontract approval process. PMI's two-month delay in signing the subcontract also impeded the commencement of various activities under Objective 2
Act. 2.7	Implement healthy market initiative	20 grants awarded to 20 Demonstration LBMs in 10 districts	Planned Actual										SAFE submitted all 20 proposals to USAID in Q4. An unexpected request to compare unit prices of commodities in the proposals with Gal district unit prices slowed down the approval process.
Act. 2.8	Conduct capacity building program for market managers and vendors	Training materials and curriculum 10 workshops conducted in 10 districts	Planned Actual Planned Actual										This activity was delayed by PMI's delay in signing its subcontract.
Act. 2.9	Conduct customer/consumer demand creation initiative	Award subcontract to one to two NGO/Community Groups to create demand for healthy markets and products	Planned Actual										
Act. 2.10	Create and air radio serial drama	Develop and air 12 radio serial drama episodes across community radio channels across 10 priority districts	Planned Actual										SAFE was not pleased with the initial development of characters and draft of the episodes. The subcontractor was required to re-design the scripts.
Act. 2.11	Investigate viable mobile phone applications	Report with recommendations	Planned Actual										

No.	ACTIVITIES	DELIVERABLE	Schedule	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	REMARKS
OBJECTIVE 2: Promote behaviors that lower the risks of AI transmission among poultry and increase knowledge of signs, symptoms and risk factors for AI-related illness													
Act 2.12	Provide support for select Ministry of Agriculture personnel to participate in short-term health communication and promotion training	Conduct KC CA assessment with relevant MoA units	Planned										Despite several meetings with MOA/CPLU and MOH, it took longer than anticipated for these ministries to identify personnel that would participate in these meetings. This delay also caused a significant delay in conducting the assessments. A draft was completed mid Year 1 but the delay in the assessment impacted finalizing the final training materials.
		Develop capacity building training based on needs assessment	Planned										
		Implement capacity building training	Actual										
		Regular district operational meetings	Planned										
		Provincial advocacy/updates meetings	Planned										
Act 2.13	Organize and conduct consultative meetings to develop and establish local ownership	District technical sustainability meetings	Actual										Training was conducted on 16-20 April 2012
		Partner's planning workshop	Planned										
		Summary of community outreach activities (peer-to-peer, enter-educate, video screening, consumer group visits to markets, religious events) in Quarterly Reports	Actual										
		Summary of healthy poultry and market, electronic/mass media activities, SMS blasts, broadcast, Al-jizyah and COMBINE webinars, Facebook and Twitter) in Quarterly Reports	Planned										
		Advocacy training for facilitators	Actual										
Act 2.14	Establish local NGO involvement to create consumer demand activities	Capacity building workshop on SMS	Actual										
		Summary toolkits/aid (short films on healthy market initiatives, bulletin on healthy poultry and markets, audio recording for community radio, and Kevgenh books)	Actual										
			Planned										
			Planned										
			Actual										

SAFE FINAL REPORT

No.	ACTIVITIES	DELIVERABLE	Schedule	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	REMARKS
OBJECTIVE 2: Promote behaviors that lower the risks of AI transmission among poultry and increase knowledge of signs, symptoms and risk factors for AI-related illness													
Act. 2.15.	Support improvement of vendor stalls	Summary of modifications in Quarterly Reports	Planned										
			Actual										
Act. 2.16.	Maintain market improvements	LBM maintenance plans	Planned										
			Actual										
Act. 2.17.	Establish Vendor of the Month award	Healthy market community activities conducted	Planned										
			Actual										
Act. 2.17.		Summary of vendor award program in Quarterly Reports	Planned										
			Actual										
Act. 2.18.	Air radio serial drama	Radio serial drama episodes aired	Planned										
			Actual										
Act. 2.19.	Develop targeted communication tools to support changes in LBMs	EC materials developed	Planned										
			Actual										

No.	ACTIVITIES	DELIVERABLE	Schedule	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	REMARKS	
OBJECTIVE 3: Increase knowledge of signs/symptoms and risk factors for AI-related illness in people and promote behaviors that improve household level care-seeking in response to AI-related illness.														
Act. 3.1	Design, contract and manage a health utilization survey and clinician KAP survey to better understand the social, economic, and cultural factors and disincentives that affect care-seeking behavior and referral follow-through in East Jakarta	Health Utilization Survey Report	Planned										The KAP survey was delayed because of changes required to meet multiple stakeholders' needs and the delay in obtaining the IRB approval by CDC Atlanta. Data collection was completed end of April.	
			Actual											
		Clinician KAP Survey Report	Planned											Activity was delayed as a result of reduction in contract budget and revised scope of work.
			Actual											
Act. 3.2	Design, implement and produce formative research report on Western Bin care-seeking behaviors and barriers in consultation with WHO	Care-seeking Behaviors and Barriers Report	Planned									This is the same workshop as under Act. 2.12. It was conducted on 16-20 April 2012		
			Actual											
Act. 3.3	Provide support for selected Ministry of Health personnel to participate in health communication and promotion training program	Capacity building workshop	Planned									Based on discussions with the ministries and their limited connectivity access to internet it was decided this was not a useful approach. Instead, SAFE developed the Knowledge for Health website (www.k4health.org) under Activity 4.3.		
			Actual											
Act. 3.4	Create new report versions of the HUS and C-KAP	Condensed HUS Word report Condensed C-KAP Word report	Planned									D/R		
			Actual											
Act. 3.5	Present findings from HUS and C-KAP to MOH, partners and stakeholders	Presentation of HUS and C-KAP to international stakeholders	Planned											
			Actual											
		Priority messages on care-seeking behaviors drafted	Planned											
			Actual											
Act. 3.6	Build consensus and develop priority messages for care-seeking behaviors	Priority messages on care-seeking behaviors finalized	Planned											
			Actual											
		Final communication strategy document	Planned											
			Actual											
Act. 3.7	Develop a communication strategy	EC material developed, pre-tested, finalized, and produced	Planned											
			Actual											
Act. 3.8	Develop a communication poster with key messages	EC materials and messages disseminated	Planned											
			Actual											
Act. 3.9	Disseminate care seeking key messages		Planned											
			Actual											

No.	ACTIVITIES	DELIVERABLE	Schedule	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	REMARKS
OBJECTIVE 4: Facilitate coordination among partners by sharing information and hosting meetings													
Act. 4.1.	Organize and host monthly Chief of Party meetings	Monthly meeting	Planned Actual										
Act. 4.2.	Support project-related domestic and international travel for Indonesian government counterparts on other parties	5 person travel to regional conferences and workshops	Planned Actual										
Act. 4.3.	Disseminate best practices and lessons learned	Facebook page	Planned Actual										As a result of limited access to FB at the workplace by MOA, MOH and USAID, the FB page was replaced by Knowledge for Health website (www.k4halth.org).
Act. 4.4.	Document highlight SAFE activities	Articles/press clippings/success stories	Planned Actual										
Act. 4.5.	Develop, produce and disseminate an information series	Five documents developed	Planned Actual										
		Five documents produced and disseminated	Planned Actual										
Act. 4.6.	Upload APR stakeholder information onto K4H website	APR stakeholder information available on portal	Planned Actual										
Act. 4.7.	Hold informal end-of-project forum (s)	One or two end-of-project forums held	Planned Actual										

4.3 Assessments and Evaluation Studies

4.3.1 Assessments

4.3.1a *Rapid informational needs assessment of key audiences and behaviors for reducing the risk of AI transmission*

The KAP study conducted by CBAIC in 2009 documented critical public perceptions and attitudes that framed the challenges that SAFE and its partners would face in developing a sustainable effort to reduce the risk of human H5N1 infections. Social, cultural, and economic factors play an important role in the extent to which individuals, businesses, and government organizations act to limit the impact and spread of these diseases.

During the CBAIC program, FAO, WHO and other technical partners had developed risk reduction behaviors for different audiences. There were 41 key behaviors for eight target audiences. These behaviors would certainly reduce the transmission risk if they were implemented well. Key data on audiences and adoption of key behaviors were needed before program implementation in order to provide basic data for SAFE program and activity development. Qualitative findings from a 2009 KAP Survey showed different levels of feasibility in implementing each risk reduction behavior for each audience. Some behaviors were commonly practiced, others were less practiced, and still others were perceived as difficult to implement for various reasons.

SAFE conducted a rapid informational need assessment of key audiences and behaviors for reducing the risk of AI transmission to obtain insight into current key behavior implementation in each target audience. The need assessment provided input on the adoption, interest, and value of particular behaviors and identified factors that facilitate or hinder the target audience in adopting risk-reduction behavior. The rapid assessment used the qualitative method, with a series of focus groups and interviews with a few key informants from each target audience.

The assessment found that behavior adoption is influenced by several factors:

- *Health* – Health and disease considerations of self, family, neighbors and community.
- *Social* – Social or cultural pressures, norms or practices.
- *Economic* – Determinants related to price, cost, profit or loss.
- *Regulatory* – Government (national to village) or corporate regulation, policy, ordinance and/or rules.

Some factors can be considered barriers for key audiences to practice the recommended key behaviors. These barriers include:

- Lack of knowledge on the importance and reasons that lead to the need to adopt key behaviors
- Economic reasons – Behaviors are performed or not practiced based on financial benefits or business purpose

- Social barriers – A mindset that believes the current behavior does not need to be changed because it is a common habit embraced by many people
- Limited access and supporting infrastructure
- Structural barriers – One reason that behavioral change is hard to achieve is that it is closely related to policy issues, whereas key audiences in the group do not have the authority to make policy decisions.

Incentives for behavior change in the poultry value chain tend to be dominated by financial incentives. Health incentives alone do not appear to be sufficient to encourage behavior change.

4.3.1b KAP 2009 secondary data analysis

In 2009, the USAID funded CBAIC conducted a KAP study to understand perceptions of H5NI A1 and analyze audience behavior regarding the poultry value chain. The KAP looked at each audience's perception of A1 risk, intended or actual A1 risk reduction behaviors practiced, and specific program outcomes under the CBAIC program. The survey employed both quantitative and qualitative instruments and was conducted in Banten, DKI Jakarta and West Java.

Under SAFE, as the follow-on project, a secondary analysis of the same KAP raw data was conducted, supplemented by qualitative data analysis to further explain motivations and barriers to change. This analysis focused on behaviors specific to four commercial sector audiences (traders, transporters, poultry vendors, and slaughterers). Areas analyzed included cleaning practices, poultry handling, waste disposal and overall perceptions about reporting, perceived threat, and levels of self-efficacy. The report summarized the findings of this secondary analysis, which were used to inform SAFE programmatic design and work. A summary of the analysis follows.

- Respondents in the commercial sector indicated a high level of perceived susceptibility to and severity of A1. Most members of each audience in the commercial sector group expressed high to moderate levels of confidence in preventing A1 transmission in villages and working places. This indicates that A1 is considered as a dangerous yet preventable disease. Thus, behavioral change communication is still needed to maintain people's awareness of the threats posed by A1 and other poultry diseases. This can be done by promoting the importance of performing the recommended key behaviors.
- Findings show that people practice the behaviors under different motivations, including economic, health, and social norms. The economic factor is the strongest determinant, and it may therefore be effective for any behavioral change campaign to consider giving economic incentives as well as emphasizing the health benefits.
- Of all the key behaviors recommended for reducing the risk of A1 transmission among target audience groups, behaviors related to personal and equipment hygiene were considered by most participants as crucial for avoiding taking work viruses home.
- However, hygiene behaviors are not fully implemented by people. Findings show that in terms of hand washing with soap behavior, in practice most people only used water, and no soap. Cleaning the equipment using detergents was only done when the vehicles looked dirty or smelled bad.

4.3.1c *Technical needs assessment for Sector 3 broiler farmers*

Prior to developing the TFs, the Objective 1 team aimed to be effective in demonstrating biosecurity aspects at the TFs. The team aimed to create demonstrations at the TFs that farmers would find useful, rather than recycle information they already knew. Accordingly, the TFs were developed based on responses from several farmers and observations at farms. Secondary information – including FAO, ACIAR and CBAIC reports – was also consulted, but farmers had not been systematically consulted. The team was concerned that other biosecurity techniques and GFPs were being overlooked. Comprehensive data gathering would help support future TFs, and modifications to existing farms.

The assessment was intended to identify (i) farmers' level of knowledge about biosecurity and the technical aspect of GFPs for reducing poultry disease transmission, (ii) to what extent the farmers had practiced biosecurity measures on the farm, and (iii) the factors that facilitate, incentivize or hinder farmers in adopting the recommended biosecurity practices. Three FGDs were held with Sector 3 broiler farmers, in Tangerang, Bogor and Tasikmalaya.

The assessment explored in detail the following technical aspects of biosecurity measures:

- Selection of appropriate fencing
- Orientation of building for ventilation
- Obstruction of flow of air through chicken house
- Use of fans inside chicken house
- Use of footwear exchange system at chicken house
- Use of pass-over system

Key findings of the assessment are summarized below.

- The farmers believed there were three key factors that directly influenced their productivity – weather, DOC, and feed. Biosecurity was only perceived as important when they were about to start a new cycle and when there was an outbreak.
- Footwear exchange was a familiar technique for all farmers. Most of the farmers claimed to already have a footwear exchange system in place, but for practical reasons had been unable to implement the system routinely.
- Fences were considered as an unnecessary burden where there were no issues with security or strong winds. The farmers had limited knowledge about the types and functions of fences, believing that fences were unrelated to improving productivity.
- The pass-over system was a new technique for the farmers. Some farmers who had no fences said this technique was impossible for them. For farmers who had installed a fence, the technique was seen as impractical and expensive.
- Incentives for farmers were cheap and easy-to-use technology which allowed them to practice biosecurity while improving productivity. They needed to be convinced by a success story from a successful farmer.

4.3.2 Evaluations

SAFE conducted three evaluation studies during the life of the project – a Commercial Farm Evaluation Study, a Live Bird Market Study: Surveillance of Live Bird Markets, and a Care-Seeking Assessment. The summaries below cover the purpose of each study, the methodology used, implementation in the field, and several key findings from these evaluations.

4.3.2a Commercial farm evaluation

SAFE conducted this study during Year 2 to measure changes at the farm level attributable to the TF program. This study was intended to measure changes in conditions and in good farming and biosecurity practices that reduce the risk of AI and other poultry disease transmission. SAFE used a mixed-method approach to gather both qualitative and quantitative data. The evaluation was also grouped by farm characteristics. These characteristics included TFs, specific intervention farms and a control group. For interventions made at the specific intervention farm group, SAFE focused on TA conducted by TS personnel and SAFE staff, and educational materials provided by SAFE. The control group of Sector 3 farms comprised of farms not receiving program services or interventions, but similar to those farms receiving the service or intervention. Baseline information was collected before the program was initiated.

Baseline data were obtained in May 2012, with an endline survey being conducted by the PPK-UI team on February 11-21, 2013. Table 4-3 shows the survey sample for the baseline and endline studies.

Table 4-3. Survey Sample

Farm Category	Baseline Sample (2012)	Endline Sample (2013)
Teaching Farms	12	12
Intervention Farms	94	20
Control Farms	20	10
Total	126	42

The baseline sample included 126 respondents while for the endline sample 42 respondents (Sector 3 broiler farms) were interviewed and their farms observed (including 12 TFs, 20 Sector 3 intervention farms and 10 Sector 3 control farms). Quantitative data collection focused on conditions and practices implemented in the farm, and poultry mortality data. Qualitative data collection used in-depth interviews with 13 informants, including TF farmers, farmers receiving interventions (among the 20 farms), control site farmers, TS staff, representatives of Sector 1 and poultry shop management, and academics. These in-depth interviews had three purposes: identify the incentives and barriers to change, uncover the reasons for their behavior change, and obtain lessons learned from SAFE program implementation. Key findings are summarized below.

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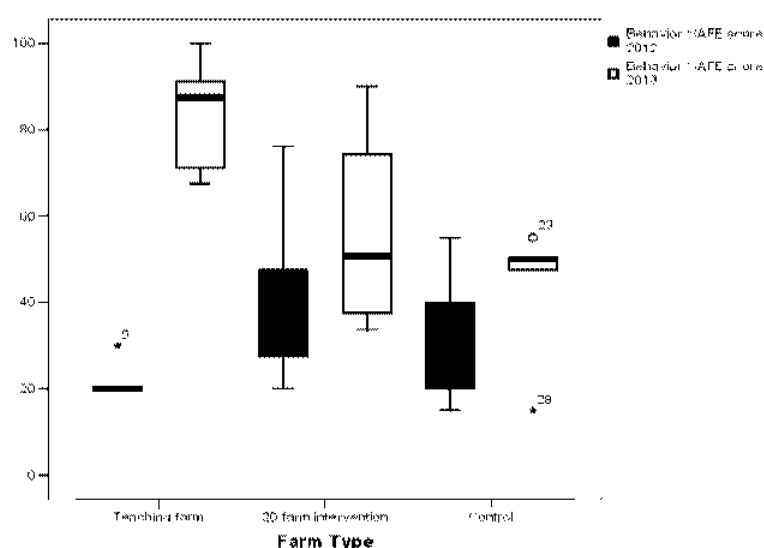
- 1) Biosecurity conditions in the intervention farms and TFs improved. The score on biosecurity conditions in Sector 3 intervention farms increased from an average of 32 to 44, while in TFs it jumped from 24 to 81. Both figures are statistically significant. In a control group, some small changes were detected (from 23 to 28), but these were not statistically significant. See Table 4.4 for details.

Table 4-4: Biosecurity Conditions in 2012 and 2013 at Teaching, Intervention and Control Farms

Biosecurity condition	All	Intervention		Control		Teaching Farm		Total	
	2012	2012	2013	2012	2013	2012	2013	2012	2013
N	144	20	20	10	10	12	12	30	42
Entrance Area	%	%	%	%	%	%	%	%	%
Parking area outside the farm	18	35	90	20	80	50	100	30	90
All gates have locks	15	25	35	0	0	0	92	17	43
Pass-over area and/or pass through area	1	0	10	0	0	0	100	0	33
Footwear for visitors at entrance area	7	5	30	0	0	0	75	3	36
Boots or other footwear for employees at entrance area	13	10	35	10	0	0	67	10	36
Equipment for hand washing and soap	23	15	75	10	20	0	100	13	69
Chicken House Door Area	%	%	%	%	%	%	%	%	%
Footwear in the chicken house near the step-over barrier	32	25	30	20	40	0	50	23	38
Small fenced area for the footwear in the chicken house	20	20	20	0	0	0	58	13	26
Dead bird/chicken	%	%	%	%	%	%	%	%	%
All acceptable methods of disposal	38	45	60	20	20	91.7	75	37	55
A record sheet is available to record the mortality	98	100	50	90	90	100	42	97	57
General condition	%	%	%	%	%	%	%	%	%
All parts of the building and equipment are free of old organic material	66	65	75	50	60	0	75	60	71
Good drinking water	96	100	95	100	100	75	100	100	98
Biosecurity score									
Mean	31	32	44	23	28	24	81	28	51
Minimum/Maximum	10/68	15/63	10/74	10/55	15/38	15/30	68/93	10/63	10/93
Significance (between years in each type)		0.005		0.307		0.002		0.000	
Significance (between farm types)		0.000							

- 2) Changes in biosecurity conditions in intervention farms were evident in the parking area outside the farm, equipment for hand washing and soap, acceptable method of dead chicken disposal, footwear for visitors and employees in the entrance area, and availability of good drinking water.
- 3) Biosecurity implementation behavior in the intervention group and TFs also changed towards better practices, as shown in Figure 4-1. The score in Sector 3 (intervention) farms rose from 40 to 54. TFs had a dramatic increase, from 21 to 83. Control farms also showed behavior change, with the score rising from 32 to 46. According to discussions with TS staff, some of the control farms may also have been influenced (halo effect or induction) by the TF program. However, the mean score in the control group in 2013 was still slightly lower than that of the intervention group.

Figure 4-1: Behavior scores in 2012 and 2013 by Farm Type



- 4) Positive change in behavior was noted primarily at the front gate, with cars parked outside the farm, the gate locked, pass-over and pass-through systems in place, and hand washing by staff and visitors. Some other improved behaviors were also revealed, such as dead chicken being disposed of properly, and chicken houses and equipment being clean. A few areas still require further changes, including regular staff/visitor footwear changes and dips, not selling any dead chickens, and immediate treatment of sick chickens.
- 5) Based on an analysis of the correlations between knowledge, condition and behavior variables, a correlation was found between behavior and biosecurity conditions. The better the conditions, the higher the behavior score, and vice versa. Therefore, interventions can commence at either side.

- 6) The complementary data derived from the qualitative study revealed further information. Assigning TFs as role models received a positive response from informants on SAFE interventions. They were generally satisfied with the SAFE design of TFs as role models. Most informants mentioned that with the existence of TF, they had the opportunity to learn from farmers who had already taken some of these steps. Lessons learned by farmers who visited a TF included important points on biosecurity, as well as management aspects. The issues studied by farmers visiting the TF included building fences, hand washing, changing clothes, changing footwear, and cage/chicken house management. The fuel used in heaters, and DOC, were also discussed.

Selected quotes from farmers and TS staff regarding lessons learned from the TF

"...before the teaching farm existed... we didn't know that we must wash footwear, change sandals... but now after teaching farm, we learn step by step how to change footwear when entering chicken cage..." (Sector 3 Farmer in Tasik)

"After the grand opening of this TF, we invited farmers... they learned and are enthusiastic... we received 30 farmers from Subang, Cirebon, Indramayu... this coincided with training that we held...so we included the biosecurity topics in that training...we strengthened them not only in theory, but also in practice." (TF Farmer in Bandung)

"...it helps Sector 3 farmers who did not know about biosecurity before, how to maintain healthy poultry, so now this TF exists, it helps... we are not just giving instruction to farmers to practice good biosecurity, farmers can see the teaching farms directly... they can see the benefits of having a fence, good biosecurity... to reduce depletion or mortality... health aspects are there as well," (TS Staff)

- 7) After learning from the TF, implementation still appears to be variable and partial. Some farmers said that some of the biosecurity elements could be applied, while other farmers still deemed them unfeasible. Their reasons for not implementing these measures included the state of the farm's contours, a lack of money, and their preference for existing materials. Many farmers followed the TF recommendations, but some faced difficulties and barriers in implementing the biosecurity measures. Constraints often cited were that the measures were too complicated or difficult, they had had a bad experience, they lacked funds, or were simply unwilling to change. One year of project implementation was insufficient to achieve maximum results. The third year initially programmed for the SAFE project could have reinforced the changes and addressed some of these lingering barriers to change.

Selected quotes from farmers and TS staff on changes made to their farms

"...I instructed the worker to change the footwear, wash or dip first... this is mandatory..." (Sector 3 farmer in Tasik)

"...the influence on the farmer is substantial, firstly because of the education...we have received much knowledge about chicken, cleanliness of the cages, the quality of chicken... I have introduced many changes...fences, hand washing, sandal exchange..." (Sector 3 farmer in Bandung)

"...the constraint here is capital or funding from the farmer. They want to build fences... a good fence costs a lot... so perhaps they will build them from bamboo first... they prioritize small things to support biosecurity..." (TS staff in Ciamis)

- 8) Economic, social and health issues were the main motivations and incentives for farmers to implement the biosecurity and good farming practices. Economic determinants such as profits at harvest time and reduced mortality were the perceived positive impacts.

4.3.2b Live bird market evaluation

The purpose of the LBM Study was to measure changes in the program-assisted LBMs as a result of SAFE's Healthy Market and Community Initiative Program. The changes being evaluated included changes in conditions and biosecurity practices that reduce the risk of AI and other poultry disease transmission, and changes in the presence of H5N1 AI at vendor stall areas.

SAFE conducted three cycles of swab data collection during the life of the program. PCR testing was used to monitor these changes, with the same five-swab protocol as that used in the FAO Jabodetabek program. In addition, an epidemiology survey was carried out to identify conditions and biosecurity practices among market poultry vendors. Information, data and sampling were collected from 20 LBMs where SAFE program interventions took place, while 10 non-intervention LBMs served as control sites in 10 districts in West Java and Banten.

The IPB team randomly selected 10 poultry vendors as respondents for the epidemiology survey and took five of them per market as swab test samples. The sampling frame was provided by a PMI facilitator. The swab test was conducted in the same five areas as before:

- Tables where carcasses are displayed
- Baskets holding cut chicken
- Waste bins (containing wet poultry waste)
- Processing tables (cutting boards)
- Wet cloths.

A total of 133 samples were collected in the first data collection period and 150 swab samples were collected from the environment around the stall area in the second and third data collection periods. Three hundred poultry vendors and 30 market managers were interviewed using a structured questionnaire for the epidemiology survey. PCR testing used the same five-swab protocol as in the FAO program. The PCR results (Table 4-5) show the results for the H5N1 AI virus.

Table 4-5: Presence of H5N1 Virus in swab samples collected from traditional markets in West Java and Banten Provinces

District	Market	Intervention/ control	PCR Result 1 st Round (May 2012)	PCR Result 2nd Round (Nov 2012)	PCR Result 3rd Round (Feb 2013)
Sukabumi	Sukaraja	Intervention	Negative	Negative	Negative
	Parung Kuda	Intervention	Negative	Negative	Negative
	Cibadak	Control	Negative	Negative	Negative
Cianjur	Cipanas	Intervention	Negative	Negative	Negative
	Sukanagara	Intervention	Negative	Negative	Negative
	Muka	Control	Negative	Positive	Negative

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District	Market	Intervention/ control	PCR Result 1 st Round (May 2012)	PCR Result 2nd Round (Nov 2012)	PCR Result 3rd Round (Feb 2013)
Bogor	Jonggol	Intervention	Negative	Negative	Negative
	Citayam	Intervention	Negative	Negative	Negative
	Citeureup	Control	Negative	Negative	Negative
Serang	Anyer	Intervention	Negative	Negative	Negative
	Cikande	Intervention	Negative	Negative	Negative
	Sirih	Control	Negative	Negative	Negative
Garut	Malangbong	Intervention	Negative	Negative	Negative
	Sukamukti	Intervention	Negative	Positive	Negative
	Wanaraja	Control	Negative	Negative	Negative
Lebak	Rangkasbitung	Intervention	Negative	Positive	Negative
	Maja	Intervention	Negative	Negative	Negative
	Malimping	Control	Negative	Negative	Negative
Bandung	Soreang	Intervention	Negative	Negative	Negative
	Sayati	Intervention	Negative	Negative	Negative
	Ciwidey	Control	Negative	Positive	Negative
Bandung Barat	Lembang	Intervention	Negative	Positive	Negative
	Batujajar	Intervention	Negative	Negative	Negative
	Cililin	Control	Negative	Negative	Negative
Tasikmalaya	Ciawi	Intervention	Negative	Negative	Negative
	Rajapolah	Intervention	Negative	Negative	Negative
	Manonjaya	Control	Negative	Negative	Negative
Ciamis	Manis	Intervention	Negative	Positive	Negative
	Pananjung	Intervention	Negative	Negative	Negative
	Banjarsari	Control	Positive	Negative	Negative
Total Positive Results			1	6	0

The first survey indicated that AIV H5N1 was present in the LBM environment with low prevalence (n=1) and in the second survey more positive results were found (n=6). This finding was related to the season and climate situation. The first survey was conducted during the dry season (in May) when the viability of AI in the environment is lower. The second survey was conducted during the rainy season, when the risk factors for AI prevalence are higher. In the third survey there were no positive results in any market.

To complement the market surveillance above, a study was conducted to identify the biosecurity conditions and practices at the market level and at poultry vendors at two different times. The first survey was conducted on May 21-29, 2012 and the second survey on February 4-14, 2013, using a questionnaire and biosecurity checklists. The biosecurity checklist was used to assess the market location and buildings, facilities provided, control of poultry origin, poultry health management, and

personal hygiene and sanitation. The biosecurity assessment checklist for poultry vendors was intended for live poultry vendors, poultry slaughtering vendors, and poultry carcass vendors, and was used to assess the vendor stalls, availability of facilities at the stalls, handling of chicken carcasses, equipment provided, personal hygiene, and the sanitation level of the equipment and environment. The market was then categorized as 'good', 'fair' or 'poor'. Table 4-6 shows the results for the biosecurity conditions and practices at the market level.

Table 4-6. Biosecurity conditions and practices at the market level pre and post program interventions

District	Market Name	Level of market biosecurity conditions					
		Survey 1			Survey 2		
		Good	Fair	Poor	Good	Fair	Poor
		n	n	n	n	n	n
BANDUNG	Soreang	0	0	1	0	1	0
	Sayati	0	0	1	0	1	0
GARUT	Malangbong	0	1	0	1	0	0
	Sukamukti	0	1	0	0	1	0
TASIKMALAYA	Ciawi	0	1	0	0	1	0
	Rajapolah	0	1	0	0	1	0
CIAMIS	Manis	0	1	0	0	1	0
	Pananjung	0	1	0	0	1	0
WEST BANDUNG	Panorama Lembang	0	1	0	0	0	1
	Batujajar	0	1	0	0	0	1
CIANJUR	Cipanas	0	1	0	0	1	0
	Sukanagara	0	0	1	0	0	1
SUKABUMI	Sukaraja	0	0	1	0	1	0
	Parung kuda	0	0	1	0	1	0
BOGOR	Jonggol	0	0	1	0	0	1
	Citayam	0	0	1	0	0	1
LEBAK	Rangkas Bitung	0	1	0	1	0	0
	Maja	0	0	1	0	1	0
SERANG	Cikande	0	0	1	0	1	0
	Anyer	0	0	1	0	0	1
TOTAL		0	10	10	2	12	6

Table 4-6 shows that after eight months of program implementation, two markets improved their biosecurity conditions to the 'good' category in the second survey (Malangbong Market in Garut and Rangkas Bitung Market in Lebak). Two additional markets moved from poor to fair (Soreang Market

and Sayati Market in Bandung) and the number of markets categorized as 'poor' fell from 10 to 6 in the second survey.

The level of biosecurity conditions and practices at the poultry vendor level in all intervention markets also showed improvement in the second survey. The percentage of live poultry vendors in the 'fair' category rose from 38% to 56%. Poultry slaughterers also showed an increase in this category, from 37% to 63%, while the proportion of carcass poultry vendors categorized as 'fair' rose from 46% to 72%. Details of the findings are shown in Table 4-7.

Table 4-7: Biosecurity conditions and practices at the poultry vendor level pre and post program interventions

Vendor	Survey 1						Survey 2					
	Good		Fair		Poor		Good		Fair		Poor	
	n	%	N	%	n	%	n	%	n	%	n	%
Live poultry vendor	0	0%	13	38%	21	62%	5	15%	19	56%	10	29%
Poultry slaughterer	0	0%	11	37%	19	63%	2	7%	19	63%	9	30%
Carcass poultry vendor	0	0%	82	46%	96	54%	6	3%	126	72%	42	24%

Improvements were noted in several biosecurity practices, including the frequency of cleaning poultry cages, using ceramic material for display tables, using plastic cutting boards, cleaning knives in running water with soap, cleaning display tables, and using boots while working in the market. However, some practices still need to improve, such as always washing hands with soap, wearing special clothes or aprons while working, and changing clothes after work.

4.3.2c Healthcare-seeking evaluation

SAFE and Aisiyiah conducted a care-seeking evaluation from the end of February to mid-March 2013 in order to better understand targeted audience responses to the care-seeking messages developed by SAFE and to program efforts aimed at improving healthcare-seeking practices. The areas that were evaluated included:

- Recall of care-seeking messages;
- Response to/acceptance of care-seeking messages disseminated through materials and community activities;
- Appropriateness of channels of communication; and
- Intention to act after receiving the message.

Two different approaches were applied in this study. SAFE employed a quantitative method using a questionnaire administered through face-to-face interviews, and a qualitative method using FGDs to obtain more detailed data. A total of 200 respondents (consumers) were surveyed in the 10 program

districts in West Java and Banten, and there were 36 participants in FGDs held in the three program districts (West Bandung, Tasikmalaya and Serang).

The key finding from the assessment was strong recall of the care-seeking message on AI symptoms in humans. Around 84% of respondents mentioned the AI symptoms, including fever, coughing, sore throat and difficulty breathing. Other topics included the poster tagline, influenza symptoms, and contact with sudden-death chickens. However, messages about the other risk factors were still not mentioned by at least half of respondents. Table 4-8 summarizes recall of topics on care-seeking messages.

Table 4-8: Recall of Care-Seeking Message Topics

N: 200 (multiple response)

Topic	Percentage
AI symptoms in humans	84%
<i>Mawas jika badan panas</i> (poster tagline)	67%
Influenza symptoms	60%
Contact with sudden-death chicken	60%
Contact with sick poultry	50%
Do not treat yourself	47%
Go to healthcare provider	47%
Poultry contact	47%
Contact with raw meat, eggs and inner organs	34%
Contact with place where poultry sold in last seven days	26%
Tell healthcare provider about poultry contact history	21%
Contact with farm in last seven days	20%

The findings from the FGDs confirmed this quantitative data. In general, all participants claimed to be familiar with AI messages, having heard them during the thematic Quran recitals by Aisiyiah about two or three months previously. Most FGD participants mentioned the AI symptoms in humans correctly, and some were able to differentiate between AI and common flu. In general, all participants could easily comprehend the messages. They said that people should not underestimate flu/fever/cough and should visit a doctor or health practitioner immediately. Some of their responses are repeated below.

"...The symptoms are high fever, coughing, difficulty breathing, actually it is similar to common flu...but there is contact with poultry before getting sick...maybe like touching poultry, handling the chicken..." (from FGD in West Bandung)

"The symptoms are like flu, the difference is having difficulty breathing...contact with poultry...with sudden-death poultry or going to the market and buying chicken..." (from FGD in Tasikmalaya)

Although most participants reported that the messages were easy to understand, some of the messages brought multiple interpretations. The terms "contact" (contact with poultry), "immediately" (go to see a healthcare provider immediately) and "do not treat yourself" were still perceived unclearly and queried

by several participants. They needed detailed information about contact with poultry and they wanted to know the reasons and how many days they should wait before going to a healthcare provider.

Participants preferred small group or face-to-face socialization to television, since during group socialization they were free to ask questions and discuss the issues. They had heard about AI from television, but only news or information about victims. They said they had heard this technical information from SAFE for the first time.

Some suggestions from the participants included:

- Adding AI prevention messages;
- Using more than one poster and other media such as flipcharts, leaflets or pocketbooks; and
- Using pictures/visuals or an additional explanation to clarify the meaning of abstract words like “contact” and “immediately”.

In general, there was good acceptance of the care-seeking messages. There were no strong objections to the message and poster developed by SAFE. Having received this information, there is now a strong intention to immediately go to a healthcare provider when they get influenza and have had contact with poultry the previous day. In the survey, 76% of respondents reported being very likely to immediately go to a healthcare provider. Most said that they would go to a Puskesmas (70%) due to its accessibility and the low cost.

ANNEXES

Annex I: Farms with a Score of 60 or above Representing Biosecurity Physical Changes and Practices				
No.	Farm	District	Conditions	Practices
1	Aak/Jamilah	Tasikmalaya	82	81
2	Aan	Majalaya	75	65
3	Abdul Hari	Bogor	70	70
4	Abdul Jawad	Bogor	90	65
5	Acim Ali	Bogor	70	61
6	Acep	Bandung Barat	70	70
7	Ade Jaenal	Ciamis	99	100
8	Agus Andri	Garut	70	70
9	Agus cikalong	Bandung	70	80
10	Ajat Darajat	Garut	72	75
11	Ali Yahya	Bogor	84	85
12	Amas Setiawan	Bandung	82	77
13	Asep Mimin	Ciamis	97	100
14	Asep Mulyana	Bandung	77	65
15	Asun	Bogor	70	70
16	Awang	Bogor	65	65
17	Ayat	Tasikmalaya	89	90
18	Bu Dedeh	Bogor	70	60
19	Cecep Dedi	Garut	66	53
20	Dedeh	Bandung	65	70
21	Dedy	Lebak	69	80
22	Deni Suryana	Garut	88	65
23	Drs. Ottoman Adil	Bogor	73	75
24	Eman Sulaiman	Tasikmalaya	89	69
25	Emun Mamun	Tasikmalaya	88	81
26	Endi	Bogor	70	65
27	Endang Juanda	Ciamis	99	90
28	Ending	Ciamis	97	100
29	Fuad	Depok	70	61
30	Firman	Ciamis	93	100
31	Gunawan	Bogor	65	65
32	Hendra	Bogor	70	60
33	Hendri	Tangerang	82	71
34	Herlijati	Sumedang	78	75
35	Hj.Euis Bojong	Bandung	75	75
36	Ikar Ikhsan	Bogor	81	75

Farms with a Score of 60 or above Representing Biosecurity Physical Changes and Practices				
No.	Farm	District	Conditions	Practices
37	Iyan/H.Darto	Bogor	98	100
38	Komar	Bogor	85	69
39	KRS	Karawang	73	60
40	Lilik	Lebak	76	76
41	Lurah Cepi	Bogor	65	65
42	Momon	Bandung	70	80
43	Nana	Ciamis	86	87
44	Nano / Naja	Bogor	87	75
45	Nanang	Bandung	83	83
46	Nanung	Ciamis	78	80
47	Nunu	Tasikmalaya	77	80
48	Oding	Bogor	97	92
49	Oyon	Ciamis	70	75
50	Ridwan	Depok	80	65
51	Samsul	Bogor	75	75
52	Sanusi	Lebak	77	80
53	Selvyana	Bogor	88	90
54	Simon	Bogor	74	79
55	Sueb	Tasikmalaya	92	90
56	Sujana	Bandung	75	75
57	Sumiarso	Bogor	66	79
58	Ucu Kuswara	Tasikmalaya	89	65
59	Uus	Garut	79	76
60	Yaya	Banjar	85	75
61	Yanuar Adie Wibhowo	Bogor	90	75
62	Yoyo	Garut	65	60
63	Yudi Rudianto	Tasikmalaya	78	65
64	Yuyun	Ciamis	70	60

Annex 2: Number of Industry Technical Service Staff Providing Biosecurity and Good Farming Technical Assistance to Farms					
No.	Teaching Farm	Organization/Firm	No.	Technical Service	
				Past	Present
1	Cikaleker	SUKAHATI PS	1		Dadang
			2		Subagyo
			3		Eko Purwanto
			4		Harry P.A
2	Darwin	RINJANI PS	5	Agung Supratiknya	
			6		Didi Faridi
			7		Agus Heri
			8		Rasyid Ridha
3	SMK Agro Nurul Huda	TANJUNG MULYA PS	9		Iwan Setiawan
			10		Jajang Rustaman
			11		Wawan
			12		Usman Firmansyah
4	Encep Rusli	CHEIL JEDANG PT.	13	Rojiun	
			14	Teddy	
5	UNPAD	PADJAJARAN UNIVERSITY	15		Endang Sudjana M.Sc
6	H. Ujang	CHEIL JEDANG PT.	16		Lukman Zaenudin
			17	Catur Darminto Putro	
7	Tursinameta	SIERAD PRODUCE PT.	18		Koko Santoso
			19	Djatismiko	
			20		Sudhianto
			21		Giran
			22		Rizal
8	Wahyu TF	DARMAGA UNGGAS PS/CPI	23		Noor Riyadi
			24		Asep Tjahyana
			25		Rofii
			26		Miftahul Arifin

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Number of Industry Technical Service Staff Providing Biosecurity and Good Farming Practices Technical Assistance to Farms					
No.	Teaching Farm	Organization/Firm	No.	Technical Service	
				Past	Present
			27		Suwardi
9	Muslikhin TF	TUNAS MEKAR FARM PS	28	Younky Brian Sukma	
			29		Jaswadi
			30		Agung Budi Prasetyo
			31		Rofiq
			32		Latiful
			33		Yuliana
10	IPB TF	IPB UNIVERSITY	34		Widodo
11	Solihin TF	JAPFA PT.	35		Rofik
			36		Andi Sawali
			37		M.Riswanto
			38		Supriyanto
			39		Budi Indra

Annex 3: Number of Sector 3 Farms that Self-Financed Changes in Biosecurity and Good Farming Conditions

Number of farms	Parking area outside the farm	Footwear at the entrance to the farm		All gates have locks	Pass-through or pass-over	Upgraded hand washing area	Footwear exchange at the chicken house doors		Proper disposal of dead chickens	Record sheet	Buildings and equipment clean	Good drinking water
		For staff	For visitors				Footwear for the inside of the chicken house	Small fenced area for the footwear				
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
9		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
6	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓
4	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓
4	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓
2	✓	✓				✓	✓	✓	✓	✓	✓	✓
1	✓	✓		✓			✓	✓	✓	✓	✓	✓
12	✓		✓			✓	✓	✓	✓	✓	✓	✓
1	✓	✓	✓			✓	✓	✓		✓	✓	✓
1	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓
12	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓

Number of Sector 3 Farms that Self-Financed Changes in Biosecurity and Good Farming Conditions												
		Footwear at the entrance to the farm					Footwear exchange at the chicken house doors					
Number of farms	Parking area outside the farm	For staff	For visitors	All gates have locks	Pass-through or pass-over	Upgraded hand washing area	Footwear for the inside of the chicken house	Small fenced area for the footwear	Proper disposal of dead chickens	Record sheet	Buildings and equipment clean	Good drinking water
4			✓			✓	✓	✓	✓	✓	✓	✓
2		✓				✓	✓	✓	✓	✓	✓	✓
1	✓	✓					✓	✓	✓	✓	✓	✓
1	✓	✓	✓	✓			✓		✓	✓	✓	✓
1	✓	✓	✓			✓	✓		✓	✓	✓	✓
1	✓	✓	✓	✓		✓	✓		✓		✓	✓
5	✓	✓	✓	✓		✓	✓		✓	✓	✓	
1	✓					✓	✓	✓	✓	✓	✓	✓
3	✓	✓				✓	✓	✓		✓	✓	✓
6	✓			✓			✓	✓	✓	✓	✓	✓
1	✓			✓		✓	✓	✓	✓		✓	✓
6	✓	✓		✓		✓	✓		✓	✓	✓	✓
4	✓	✓		✓		✓		✓	✓	✓	✓	✓
1	✓	✓	✓	✓		✓	✓			✓	✓	✓
1		✓				✓	✓	✓		✓	✓	✓
1	✓	✓	✓	✓			✓			✓	✓	✓
1	✓			✓	✓			✓	✓	✓	✓	✓
1	✓	✓				✓	✓		✓	✓	✓	✓
3	✓	✓				✓		✓	✓	✓	✓	✓

Number of Sector 3 Farms that Self-Financed Changes in Biosecurity and Good Farming Conditions

Number of farms	Parking area outside the farm	Footwear at the entrance to the farm		All gates have locks	Pass-through or pass-over	Upgraded hand washing area	Footwear exchange at the chicken house doors		Proper disposal of dead chickens	Record sheet	Buildings and equipment clean	Good drinking water
		For staff	For visitors				Footwear for the inside of the chicken house	Small fenced area for the footwear				
1	✓	✓		✓		✓	✓		✓	✓	✓	
6	✓	✓	✓	✓		✓			✓	✓	✓	✓
2	✓	✓						✓	✓	✓	✓	✓
1			✓			✓	✓		✓	✓	✓	✓
11	✓					✓	✓	✓		✓	✓	✓
1		✓						✓	✓	✓	✓	✓
1	✓	✓		✓		✓		✓		✓	✓	✓
6	✓	✓				✓		✓		✓	✓	✓
2	✓					✓		✓	✓	✓	✓	✓
1	✓					✓	✓		✓	✓	✓	✓
1	✓	✓		✓		✓			✓	✓	✓	✓
2	✓							✓	✓	✓	✓	✓
1	✓	✓	✓			✓				✓	✓	✓
1	✓		✓	✓					✓	✓	✓	✓
1	✓		✓			✓			✓	✓	✓	✓
1		✓	✓			✓				✓	✓	✓
3	✓			✓		✓			✓	✓	✓	✓
1	✓					✓			✓	✓	✓	✓

Number of Sector 3 Farms that Self-Financed Changes in Biosecurity and Good Farming Conditions												
Number of farms	Parking area outside the farm	Footwear at the entrance to the farm		All gates have locks	Pass-through or pass-over	Upgraded hand washing area	Footwear exchange at the chicken house doors		Proper disposal of dead chickens	Record sheet	Buildings and equipment clean	Good drinking water
		For staff	For visitors				Footwear for the inside of the chicken house	Small fenced area for the footwear				
1	√			√					√	√	√	√
2	√								√	√	√	√
1						√			√	√	√	√
1	√					√					√	√
1	√								√			
2						√						
1					√	√	√	√	√			
9							√	√	√			
41							√	√				
101						√	√	√				
2					√	√	√	√				
30						√	√	√	√			
345	Total											

Annex 4: Number of Market Poultry Vendors with Improved Stalls in 20 Demonstration Markets

Province	No.	Market's Name	District	Total poultry population per day												
				Poultry Population	Carcas**				Livebird sold in market and taken home				Livebird slaughtered in market			
					Male	Female	Total vendor	%	Male	Female	Total vendor	%	Male	Female	total vendor	%
Westjava	1	Jonggol	Bogor	1800-2000	15	19	34	94	3	0	3	6	0	0	0	0
	2	Citayam	Bogor	3500-4500	16	3	19	50	5	0	5	25	5	0	5	25
	3	Cipanas	Cianjur	3500-4000	32	20	52	42	15	0	15	28	7	0	7	28
	4	Sukanagara	Cianjur	1250	7	7	14	90	10	0	10	10	0	0	0	0
	5	Sukaraja	Sukabumi	1200-1700	11	3	14	83	2	0	2	17	0	0	0	0
	6	Parung Kuda	Sukabumi	7000	14	3	17	34	7	3	10	33	17	3	20	46
	7	Soreang	Bandung	3200	16	8	24	94	3	0	3	6	0	0	0	0
	8	Sayati	Bandung	3500	15	6	21	70	3	0	3	15	3	0	3	15
	9	Batujajar	Bandung Barat	2200-2600	14	12	26	90	2	0	2	5	2	0	2	5
	10	Panorama Lembang	Bandung Barat	2700-3400	27	8	35	92	5	0	5	8	0	0	0	0
	11	Sukamukti	Garut	1200	3	12	15	83	3	1	4	7	0	0	0	0
	12	Malangbong	Garut	2000-2500	6	19	25	50	4	1	5	50	0	0	0	0
	13	Ciawi	Tasikmalaya	3500-4000	8	30	38	71	15	0	15	9	2	0	2	20
	14	Rajapolah*	Tasikmalaya	2500-3000	23	4	27	100	0	0	0	0	0	0	0	0
	15	Manis	Ciamis	2200	27	20	47	90	11	0	11	5	11	0	11	5
	16	Pananjung	Ciamis	460	10	9	19	66	15	5	20	17	10	0	10	17
Banten	17	Rangkas Bitung	Lebak	4500-5000	20	8	28	57	3	1	4	3	0	0	0	40
	18	Maja	Lebak	1800	4	2	6	44	2	1	3	4	8	4	12	60
	19	Anyer	Serang	5500-6000	53	47	100	45	15	2	17	55	0	0	0	0
	20	Banjarsari/Cikande	Serang	5000-5500	29	21	50	40	24	2	26	60	0	0	0	0
					350	261	611		147	16	163		65	7	72	
TOTAL Vendors and Slaughterers					846											

Annex 5: Number of Community Members who Received Care-seeking Messages on AI/ILI-related Messages

No.	District	Dates of Implementation	Location (village and sub district)	Facilitator	Topics	Remarks	Audience ¹	
							F	M
1	Bandung	December 3, 2012	Masjid An-Nuur, Sayati Hilir	Facilitator-motivator 'Aisyiyah	Healthy carcass, how to process carcass, signs of AI	Well received, useful knowledge	50	
2	Tasikmalaya	December 9, 2012	Monthly gathering in Sariwangi	Facilitator-motivator 'Aisyiyah	Healthy poultry and AI in human	Well received, new knowledge for most participants, questions related to signs of AI	104	
3	Garut	December 18, 2012	Aula Antares, Garut	Facilitator-motivator 'Aisyiyah	AI in human		24	
4	Bogor	December 29, 2012	MT Nurhasanah/Pojo Salak-Jonggol	Neneng, Tuti, Suhartini	Healthy market, HAUS, and symptoms of AI	Enthusiast	33	
5	Bogor	December 31, 2012	MT Al-Hidayah/Bengkong Kaler Joggol	Neneng, Tuti, Suhartini	Healthy market, HAUS, and symptoms of AI	Enthusiast	54	
6	Bogor	January 4, 2013	MT Amanah II/Pabuaran RT 01/09, Citayam	Herma, Lina, Ria	Healthy market, HAUS, and symptoms of AI	Enthusiast	33	
7	Bandung Barat	January 13, 2013	Citapen, Cihampelas	Facilitator-motivator	AI in human	Enthusiast	48	2
8	Bogor	January 14, 2013	TK Pertiwi/Jonggol	Neneng, Tuti, Suhartini	Healthy market, HAUS, and symptoms of AI	Enthusiast	34	
9	Sukabumi	January 15, 2013	Mesjid Al-Ittihad, Jalan Gaolpara, Desa Sukamekar, Kecamatan Sukaraja.	Dr.H.Ike Racmawati, M.Si	Healthy carcass and AI in human	Responded well, especially because there is film being played about slaughtering and processing carcass. Enthusiasm also come with the proper use of IEC materials (poster and flyer)	62	
Subtotal							442	2
TOTAL PARTICIPANTS							444	

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Annex 6: SAFE Partner Contact Information

Palang Merah Indonesia

<http://pmi.or.id>

Jl. Jend. Gatot Soebroto Kav. 96

Jakarta Selatan 12790

Telp: 021-7992325

No.	Name	Position	Email	Telephone
1	Dr. Erlina Kartabrata	PMI Propinsi West Java - Pengurus Propinsi Bidang Kesehatan		081320249356
2	Abidin	PMI Bogor - Kepala Markas		081282834554
3	Hery Hidayat	PMI Cianjur - Kepala Markas	hery_yayan@yahoo.com	0817437071
4	Agus Permadi	PMI Bandung - Ka Divisi bidang Kesehatan	ibenk_permadi@yahoo.co.id	081221680314, 08164867446
5	Syahmudin	PMI Bandung Barat - Bidang Kesehatan masyarakat dan Bencana	syahmudin56@yahoo.com	081335432762
6	S. Trismanto	PMI Sukabumi - Bidang Kesehatan Masyarakat		081563292214
7	Agus Heryanto	PMI Garut - Bidang Sukarelawan	heryanto_agus61@yahoo.co.id	085223641605
8	Usep Mulyadi	PMI Tasikmalaya - Kesehatan Masyarakat dan Sukarelawan	pmi.kab.tasik@gmail.com	081320456420
9	Agus Azid	PMI Ciamis - Pencegahan dan Penanggulangan Bencana	ucok.71@yahoo.com	085223030905
10	Didit Sadeli	PMI Serang - Bidang Penanggulangan Bencana	adyat.rhankaz@gmail.com	081286645942, 081809123321
11	Martajaya	PMI Lebak - Kepala Markas	joypmi_lbk@yahoo.com	081806639359

Aisiyiah

<http://www.aisiyiah.or.id>

Jl. KH. Ahmad Dahlan No. 103

Yogyakarta

Telp: 0274-389486

Program Management

No.	Name	Position	Telephone
1	Dra. Noordjannah Djohantini, MM, M.Si	Steering Committee	0811266018
2	Tri Hastuti Nur R, M.Si	Program Manager	081227941412
3	Hajar Nur Setyowati, S.S	Program Assistant	087839990903
4	Sri Utami, SE	Financial Officer	081328790930
5	Laras Wiendyawati, SE	Supporting Staff	081578800245

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West Java Facilitator/Motivator

No.	Name	Position	Address	Telephone
1	Muthiah Umar	Ketua PWA Jabar	Jl. A. Yani No. 614 Bandung	81809141745
2	Ia Kurniati	WK PWA Jabar	Komp. Fajar Raya A.3 No. 8 Cimahi Utara	022-6644149, 0811215641
3	Heni Nur'aeni, SH	WK PWA Jabar	Jl. Sukaleveur No. 36 Bandung	81321711052
4	Mulyati	Skretaris PWA Jabar	Jl. Salakadomas No. 6 / G.14 Cibaduyut Permai Bandung	81220295588
5	Tia Setiawati	Wakil Skretaris PWA Jabar	Sanggar Indah Banjaran Blok LM No. 11 Kab. Bandung	81321163722
6	Nikmah Zaita Kurniawati, ST	Wakil Skretaris PWA Jabar	Jl. Raya Cianitaly Bandung	08156049214, 70378070
7	Yati Mulyati	Bendahara PWA Jabar	Jl. A. Yani No. 66 Slamet II 36/137 D Bandung	022-7275612, 081321601949
8	Teti Rahmawati	Ketua ME PWA Jabar	Jl. Pasil Honje Lamping 2 No. 9 RT 05/01B Kel. Padasuka Bandung	082119119239, 022-88883753
9	Ririn Dewi Wulandari	Ketua LPP PWA Jabar	Permata Kopo F.113 Sayati Bandung	022-85449679, 085220991673
10	Siti Djaodjah Anisa	Mjl Kes. PWA Jawa Barat	Komplek Sukamenak Indah Blok RE No. 3 Bandung	81321832821
11	Haginah Rahayu	Sekretaris Mjl. Tabligh PWA Jabar	Jl. Karapitan I No. 122/36 A	022-76223567, 082116300344
12	Dra. Hj. Yulia Sadikin	Ketua PDA Kab. Bandung	Komplek Balanoeng Siaj Indah G2 No. 23 Cijaug	022-5953249, 085659958883
13	Yati Nurhayati	Sekretaris PDA Kab. Bandung	Jl. Kopo Sayati GG Sayati II No. 5A Bandung	082130247080, 085362570472
14	Yeni Aryasri, dr	Sekretaris II PDA Kab. Bandung	Jl. Majalaya Rancaekek No. 298 B Babkan Jeruk Bandung	022-70809673, 085885223378
15	Mamah Juariah	Bendahara PDA Kab. Bandung	Jl. Kopo Sayati 8 No. 190 Rt05/07 Sayati Bandung	022-5922763, 91536884
16	Yeni Andriani	PDA Kab. Bandung	Bumi Abdi Negara Blok M 23 Rancaekek Kab. Bandung	022-7793135, 081322665155
17	Turiah	Sekretaris PCA Bandung Selatan	Jl. Kopo Gg Umroh RT 04 RW 07 Ds. Sayati Margahayu Bandung	82116730420
18	Nining Yuningsih	KW KT I PDA Bandung Barat	Kp. Ronggo Rt 03/06 No. 65 Ds. Cihampelas Kab. Bandung Barat	85221178022
19	Hj. Mesaroh	Ketua mjl. Tabligh PDA Bandung Barat	Kp. Ronggo Rt 03/06 Ds. Cihampelas Kab. Bandung Barat	85721575801
20	Dra. Nining Suniartiningsih	Dikdasmen PDA Bandung Barat	Kp. Rancamanjah RT 06/06 Ds. Citapen Cihampelas Kab. Bandung Barat	081809868933, 085320687393
21	Hj. Nina Rochamina	PCA Cihampelas PDA Bandung Barat	Ronggo Cihampelas No. 36 Rt 01/06 Kab. Bandung Barat	85353566922
22	Odas Setiawati	WK PCA Lembang PDA Bandung Barat	Jl. Barulaksana Jayagiri Lembang Kab. Bandung Barat	85722271699
23	Euis Yeti Herawati	Bendahara PCA Lembang PDA Bandung Barat	Jl. Bakti Sejati 71 Lembang Bandung Barat	87822520333
24	Neneng Sulaesih	Ketua I PDA Bogor	Perum Griya Kenari Mas 49/14 Cileungsi Bogor	81383225386
25	Erma Hermawati	WK PDA Bogor	Setu Tengah Leuwimekar Leuwiliang Bogor	85218859106

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No.	Name	Position	Address	Telephone
26	Suhartini	Sekretaris II PDA Bogor	Perum Griya Kenari Mas D4-10 Cileungsi Bogor	021-8231457, 081210429210
27	Tuti Mulyana	MKLH PDA Bogor	Desa Cibitung Kulon RT 02/06 Kec. Pamijahan Bogor	0251-7160353, 081399796861
28	Ir. Amriah Malili, S.Pd.I	Ketua PCA Bojonggede PDA Bogor	Perum Graperi I Bojong Depok Baru Bojonggede Bogor	021-36129689, 081316538698
29	Lina Marlina	Mjl. Kader PDA Kab. Bogor	Citeureup I 05/04 Barengkok lw Liagig Bogor	87770396148
30	Hj. Ening Suningsih	Ketua PDA Ciamis	Jl. Jend. Sudirman No. 63 RT 03/05 Keli Kes. Ciamis	0265-774839, 081323232025
31	Dra. Muslihat, M.Pd	Sekretaris PDA Ciamis	Dsn. Linggamanik RT 03/07 Pangankiran Ciamis	81323647575
32	Hj. Onah, S.Ag	Mjls. Tabligh PDA Ciamis	Dusun Gunung Asih II Ds Margalayu Cikoneng	81323008817
33	Dra. Hj. Enung Yuwarlina, MM	PDA Ciamis	Jl. Bojong Humi No. 105 Ciamis	0265-773891, 081323145741
34	Hj. lin Suminar	PDA Ciamis	Jl. Rancapetir No. 20 Ciamis	81320468624
35	Endus Dushiah	Mjls. Ekonomi PDA Ciamis	Jl. HOS Cokroaminoto No. 682 Ciamis	0265-771710, 085323073351
36	Leni Herlina	PCA Pangandaran Ciamis	Dsn Gembor RT 01/05 Desa Cikembulan Sidamulih Ciamis	85223836601
37	Siti Mu'minah	PCA Pangandaran Ciamis	Jl. Siliwangi No. 275 RT/RW 05/03 Pangandaran Kab. Ciamis	0265-639748, 085221658700
38	Hj. Titin Suastini	Ketua PDA Cianjur	Perum Kota Baru Blok D4 No. 12 Cianjur	85624096501
39	Anna Rustianti	Ketua Mjl. Kesehatan PDA Cianjur	Griya Lber Indah Blok B 3No. 12 Cianjur	81573183126
40	Yuliana Handraeni Putri, S.Pd.I	Ketua Mjl. Tabligh PDA Cianjur	Jl. R. Cugenang No. 88 Cianjur	85659536335
41	Eta Juliaha	Ketua Mjls. Kader PDA Cianjur	Jl. Siti Jenang 05/07 No. 150 Cianjur	85721261444
42	Raifalah	PCA Sukanagara PDA Cianjur	Kp. Sukalaksana Rt 01/03 Ds Sukalaksana Kec. Sukanagara Cianjur	
43	Yuniati	PCA Sukanagara PDA Cianjur	Kp. Leuwi Gunder Rt 05/01 Sukanagara Cianjur	85759457349
44	Hj. Siti Rokayah	Ketua Mjls Tabligh PDA Garut	Panawuan No. 855 RT 03 RW XI Sukajaya Kec. Tarogong Kidul Garut	81573129959
45	Hj. Nanny Sumarni	Anggota MKLH PDA Garut	Jl. Madalagiri Gg Hardjo No. 204 Kab. Garut	0262-233683, 08122284249
46	Yana Yuliana, S.Pd	Ketua PCA Banyuresmi PDA Garut	Kp. Pungkur Rt 03 RW 01 Ds. Pamekarsari Banyuresmi Garut	0262-238901
47	N. Cucu Asmayawati	Anggota PDA Garut	Kp. Bebedahan Rt 01 RW 07 Garut	81312897115
48	N. Endah Surtiasih, S.Pd.I	WK PCA Malanbong Garut	Kp. Muncang Agung Malanbong Garut	85222031899
49	Juju Komariah	Ketua Mjls Tabligh PCA Banyuremi PDA Garut	Kop. Ngompod Ds Pamekarsari Garut	0262-236681
50	Kokom Komariah, S.Sos, M.Si	Mjls. Kesehatan PDA Sukabumi	Jl. R. Syamsudin SH No. 50 Sukabumi	81573208404
51	Nunun Fitria Zainun, S.Kp	Mjls. Kesehatan PDA Sukabumi	Jl. R. Syamsudin SH No. 50 Sukabumi	81314426528

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No.	Name	Position	Address	Telephone
52	Ilah Islahiah, S.Kom	Mjls. Kesehatan PDA Sukabumi	Cikole Sukabumi	85316766545
53	Siti Hindun, BSC.Psy	Mjls. Kesehatan PDA Sukabumi	Jl. Cimanuk 163-Garut	82118883038
54	Nor Norisanti, S.Sos, M.Si	PDA Sukabumi	Perum Sindang Palay Jl. Cempaka No. 66A Sukabumi	85720298642
55	Idah Siti Faridah, S.Pd	Ketua II PDA Tasikmalaya	Kp. Kalieung RT 09/03 Linggawati Tasikmalaya	0265-547360. 082119505649
56	Hj. Sukaesah	Bendahara PDA Tasikmalaya	Kp. Linggasari RT 01 RW 16 Singaparna Tasikmalaya	0265-545461, 081323988118
57	Dra. Ega Lichaeni Devi	Mjls Kesehatan PDA Tasikmalaya	Perum Borolong Indah No. 14-15 Cintaraja Singaparna Kab. Tasikmalaya	0265-2550289, 0812129807400
58	Rosmini, S.Pd.I	Ketua PCA Cigalontang PDA Tasikmalaya	Kp. Baleendah RT 05/01 Sukanianah Cigalontang Tasikmalaya	0265-541047, 085223942534
59	Tismayaningsih	Ketua I PCA Sariwangi PDA Tasikmalaya	Kp. Nagrog Jayaratu Sariwangi Tasikmalaya	85294473212
60	Wiwi Nirmala Dewi	Sekretaris PCA Padakembang PDA Tasikmalaya	Kubang Eceng Mekarjaya Padakembang	85321504740

Banten Facilitator/Motivator

No.	Name	Position	Address	Telephone
1	Tati Masliati, S.Pd.I	PWA Serang	Jl. 45 Kuranji Taktakan Serang	81932405443
2	Suirat	M.Kesehatan PWA Banten	Jl. Empat Lima Kaujon Singandaru Serang	85695156563
3	Mastu'ah Hasyim	PWA Banten	Pasir Indah Blok F 145 Serang	81911194234
4	Jahriah	M.Kader PWA Banten	GPA Blok E6/No. 18 Dalung Kota Serang	828528537
5	Pipin Supinah	M.Tabligh PWA Banten	Jl. Empat Lima RT 03/13 Kaujon Baru Serang	87774292243
6	Mega Amelia, S.Sos	M.Kesehatan PWA Banten	Perum Safira E2 No. 10 Taktakan Serang	81319490321
7	Dra. Hulaiyah	M.Kader PWA Banten	Jl. Empat Lima No. 23 Kaujon Baru Serang	85959188182
8	R. Adawiyah	PDA Serang	Pasar Sirih Kamasan Cinangka Serang	87871525315
9	JuneriKusumawati	PDA Serang	Kp/Ds. Beberan Rt 03/01 Kec. Ciruas Kab. Serang	81388562411
10	Aslah	PDA Serang	Tirtayasa RT 06 RW 02 No. 177 Serang	0571-5866393
11	Hj. Ucu Ismaeti	PDA Serang	Kp. Lapong Rt 05 RW 05 Ds.Kec. Kragilan Serang	81210736465
12	Nursiah	PDA Serang	Kp. Pasar Sirih Cinangka Rt.04 RW 1 Serang	87808123100
13	Uum Umyanah	PDA Lebak	Jl. BTN Mandala Ds. Kaduagung Tengah Cibadak Lebak Banten	81287641521
14	Lina Hendriyani, S.Pd	PDA Lebak	BTN Sumurbuang, Rangkasbitung Lebak Banten	87773552022
15	Tatu, S.Pd	PDA Lebak	Kp. Cikondang Rt 06/ RW X Pandeglang Banten	85211906196
16	Teti Umiyati	PDA Lebak	Kp. Cibahbul Rt 01 RW 01 Rangkasbitung Timur Banten	87773691117
17	Maemanah	PDA Lebak	Kp. Muharakebon Kelapa Lebak Banten	8567783286
18	Titin Supartini	PDA Lebak	Jl. RA Kartini No. 10 L RT 02 RW 10 Rangkasbitung Lebak Banten	81910807726

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<http://combine.or.id/>

Jl. KH Ali Maksum 183 Pelemsewu, Panggungharjo

Sewon Bantul

Yogyakarta

Telp: 0274-411123

No.	Name	Position	Email	Telephone
1	Budhi Hermanto	Advisor	boedhihermanto@gmail.com	8112504160
2	Kiswi Radat	Program Manager	kiswiradat@yahoo.com	81578070314

Annex 7: One-Page Success Stories



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FROM THE AMERICAN PEOPLE

SUCCESS STORY

Market Manager Influences District Government Regulations



Photo: SAFE

Mr. Asep Tresna, an advocate for good management practices in markets, believes vendor participation is the key to better market management.

"It used to be hard to collect the market fee from the vendors because they didn't see any improvements. Now the situation had changed, not only do we have improved facilities, but the vendors also actively participate in maintenance activities."

Asep Tresna, market manager in Baleendah market, District of Bandung

Just recently, Mr. Asep Tresna was invited by the Bandung district House representative to participate in the revision of the district's market fee regulations for all live bird markets in the district, based on his experience with the SAFE program.

Asep, who has been managing Baleendah market for three years and is also a representative of the Market Managers' Forum in the district of Bandung, received a grant from SAFE to improve biosecurity in his market. He knew that one of the greatest challenges he faced was convincing his market vendors to participate in the maintenance and expansion of these biosecurity changes.

His work with SAFE taught him that improved interpersonal communication and regular meetings with his vendors were essential in solving market problems. During the meetings, vendors communicated their aspirations, listened to the management's perspective and slowly built a more trusting relationship. This improved collaboration resulted in vendors agreeing to a new and higher fee structure assessment for the market. The fee is used for cleaning, security and market maintenance.

Asep's personal story and success in convincing all of the vendors in his market to pay the market fee influenced decisions at the wider district level (Perda Retribusi No. 11/2012 on Public Service Fee Collection). The result was a new fee structure requiring all vendors in the district to pay between Rp. 2,000 - Rp. 6,000 per day, defined by type of commodity sold and size of stall.

His next goal is to have the local government develop a local regulation on poultry zoning. "It was part of the government's campaign three years ago, but then everyone seemed to forget. The SAFE program has reminded all of us about the issue again."

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FROM THE AMERICAN PEOPLE

SUCCESS STORY

Market Poultry Vendors Increase Biosecurity Practices



Vendors use glass to keep the carcass clean

Photo: Palang Merah Indonesia

SAFE facilitates biosecurity improvements and practices in the poultry value chain. The traditional market, where live poultry are sold and slaughtered and sometimes taken home live, is one of Avian Influenza's disease transmission points.

Over 800 market vendors have made biosecurity related improvements and market managers have led important infrastructure modifications to promote lower-risk behaviors at the markets and offer healthier poultry products.

SAFE has teamed with the Indonesian Red Cross and other local civil society and government partners to work with twenty demonstration poultry markets in western Java. The goal was to create an integrated and locally "owned" program that would empower the community and market vendors to identify risky conditions and behaviors at the market and create strategies to decrease the risk of AI transmission.

Field facilitators assisted market managers and vendors, and the surrounding communities to assess market conditions, develop an improvement plan, identify human and financial resources, and implement the program with the assistance of the local government. Involving consumers who learned to request cleaner stalls and healthy poultry products served as a business incentive for vendors who wanted to attract more customers.

"I can serve the consumer better because my new display is made of glass now. It is much cleaner, healthier, no flies and the carcass does not dry easily. It looks pretty too."

Ms. Denok, carcass vendor at Ciawi market, Tasikmalaya

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SUCCESS STORY

Vocational School Improves Student Knowledge of Good Biosecurity and Farming Practices



Teaching Farm at SMK Nurul Huda vocational school

SMK Nurul Huda opened its doors in 2008 and graduated its first class in 2011. On average, 60 students graduate every year with a high school specialization in poultry farming and computer skills. Ninety percent of them are immediately hired by the poultry industry as technical service and support staff.

In 2012, SAFE opened a teaching farm at SMK Nurul Huda to support upgrading of the curricula and hands-on experience with biosecurity and good farming practices. The 230 students are able to see up close a series of changes such as a new fence that separates the farm from the community area, a sandal exchange system, improved ventilation at the chicken houses, a dead bird pit for safe disposal of sick or dead chickens, and other biosecurity practices that decrease the transmission of poultry diseases such as Avian Influenza.

Most of the students currently enrolled come from poultry rearing families which means their new knowledge extends beyond the classroom. A third year student explained how she is sharing what she learns about biosecurity with her father. While difficult at first, her father is beginning to change old ways, little by little. He now understands the importance of improving disease control to protect his livelihood.

Upgrading pre-service education curricula has proven to be more cost-effective and efficient than spending human and financial resources to provide in-service training to modify risky practices after years of service. SMK's new graduates will be better prepared to support and champion good biosecurity and farming practices across Indonesia.

"Now we have standards for biosecurity instruction and necropsy equipment, and our farm is much cleaner."

Mr. Iwan Setiawan, Assistant Director

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FROM THE AMERICAN PEOPLE

SUCCESS STORY

Poultry Farmers Self-Finance Biosecurity Changes



Teaching Farm with a pass over system

Photo: SAFE

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The teaching farms are private broiler farms associated with the largest industry poultry producers, poultry shops and academic institutions. They model biosecurity and good farming practices and were developed as a response to the need for farmers to "see" these practices in action.

Farmers in the area of the teaching farms, and university and vocational school students have made over 1000 visits to the teaching farms to see first-hand and learn about biosecurity. Another 200 visits have been made by industry technical and management staff, and international organizations. Visitors understand biosecurity procedures through multisensory education that employs visual, aural and interactive techniques. The visiting farmers then received technical support to implement changes in their farms by SAFE and industry staff.

Approximately 80% of the changes implemented include footwear exchange at two separate entrances, building a fence and upgrading the hand washing area. These changes were deemed to be the simplest and least expensive to make. About 25% of the farms also built a dead bird pit for safe disposal of sick or dead birds. All the farmers receive educational materials including access to a recently produced farmer-to-farmer video. A "Champion Farmer" award recognizes those farms that have implemented the most important changes as well as the technical industry staff that provided the technical support.

"I invested IDR 2 million to improve my farm with a new gate for vehicles and people. I also built fences and began the use of the sandal exchange system at the chicken house doors."

Mr. Sanusi, Sanusi Farm

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FROM THE AMERICAN PEOPLE

SUCCESS STORY

Radio Drama Series Highlights Poultry Value Chain Risks and Romance



Live community radio – Aisiyah facilitators highlight the importance of market sanitation, cleanliness, consumer rights and halal food.

"I laughed when listening to it. The show had funny moments, especially when it comes to romance in the market. At the same time, I wondered what disease was affecting Mr. Ajat. I think the drama has given me a lot of useful information on how poultry products are processed and sold in the market. One must be very selective on what products to buy these days,"

Nia Nurniati, one of the listeners of the radio drama

SAFE launched a twelve-episode radio drama on Avian Influenza risks found throughout the poultry value chain.

The plot begins with a vendor falling seriously ill and being absent from the market for some time. Later, it is discovered that he has caught AI. The main character then sets off to investigate how he caught the disease, accompanied by a female vendor, when a romance develops. They visit a local farmer and learn about good farming practices. They also visit a slaughterhouse and meet a transporter who does not perform regular cleaning and disinfecting.

Finally, they discover that a chicken collector has been paying a garbage collector to buy dead chickens from a farmer. The dead chicken carcasses are then resold in the market at low prices.

In the last episode, the vendor who had fallen ill in the first episode recovers and returns to the market. He had gone to the community health center promptly, received treatment, been referred to a public hospital, and then recovered.

The drama series has been broadcast to approximately 200,000 listeners across Banten and West Java.

Episodes are sometimes followed by talk shows where experts from the government's Livestock Services, and Industry, Cooperatives and Trade office answer listeners' questions on good farming practices, healthy markets and waste management, and Avian Influenza in humans.

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FROM THE AMERICAN PEOPLE

INDONESIA

SUCCESS STORY

Koran Verses Linked to Clean Markets and Healthy Poultry



Religious event in the community, integrating Koran teachings, healthy poultry products and food safety.

PHOTO: SAFE

Indonesia's Ministry of Agriculture healthy poultry products program focuses on products that are safe, healthy, whole and prepared according to local religious custom. Locally it's known as ASUH (Aman, Sehat, Utuh and Halal).

The SAFE project partnered with Aisyiyah, Indonesia's largest muslim women's organization, to support their outreach to poultry markets and surrounding communities to ensure that ASUH, and *thayyib* (cleanliness), were being practiced at the twenty project markets that served the local communities in western Java.

Issues of safe poultry products, hygiene and sanitation were linked to verses from the Koran and delivered at religious events commonly held once a week at a mosque, *mushalla* or community gathering facility.

With market vendors, Aisyiyah facilitators approached the topic from the view of good business ethics and demonstrated how to conduct an appropriate halal transaction. At community religious gatherings topics were food safety, and consumers' power to influence the markets.

Government officials participated in events and encouraged other leaders to conduct similar events in their respective areas. In Cianjur, Aisyiyah promoted and endorsed Koran readings with 60 women's organizations to further disseminate the key messages to their members.

Aisyiyah also developed a series of Khutbah (public sermon) books for vendors and consumers containing religious perspectives on biosecurity, food safety, good business practices, hygiene in Islam, business ethics in Islam, healthy markets, and the rights and obligations of consumers.

Koran recital events in the communities surrounding the 20 live bird markets reached over 5,500 people.

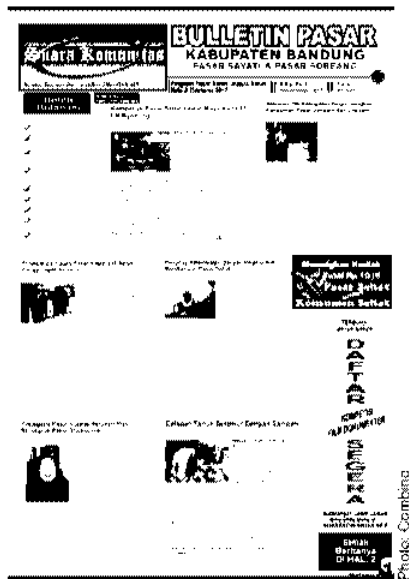
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SUCCESS STORY

Citizen Journalism Takes on Social Change



Citizen journalists write and produce bulletins to share news, information and experiences of market stakeholders

Written by the community with assistance from SAFE facilitators, 16 editions of market bulletins were published during the last quarter of 2012. Each edition was distributed to market managers, vendors, consumers, government stakeholders and civil society organizations.

SAFE believes in the power of a consumer to trigger social change. Experience also demonstrates that changes in social norms are best accepted when desired behaviors are modeled by those around us.

In citizen journalism, communities themselves capture their own personal experiences around an important issue and report back to the community. SAFE uses citizen journalism as an effective tool to support a consumer demand campaign aimed at changes in live bird markets to support safer poultry purchases and improved poultry products for the community.

Participating communities report better confidence and positive self-efficacy, providing a strong foundation for consumer empowerment.

Articles written appear in live bird market bulletins and partners' news portals and websites showcasing the story of a vendor or a slaughterer's experience with adoption of healthy practices. More than 100 articles on healthy poultry and healthy markets have been uploaded thus far to partner facebook pages and websites. These articles have received more than 6,000 page views in a short period of time.

Topics highlighted include product zoning in the market, how to identify healthy poultry products, results of consumer visits to the market, and community gatherings focused on healthy poultry products.

The citizen journalism activities attracted the interest of Bogor's district office of Information and Communication who asked for SAFE assistance in conducting a three-day training on citizen journalism for 15 volunteers who work with the government's Radio Teman Bogor.

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INDONESIA

SUCCESS STORY

From Inspired to Inspirational



Mr. Denny (left), receiving additional tools for cleaning and disinfecting from the local government while still Sukaraja market manager.

Photo: Palang Merah Indonesia

"The market manager training has inspired me. I learned practical steps and processes to handle complex problems in the market. These practical steps are small but effective."

Mr. Denny, Sukaraja market manager

Together with 19 fellow market managers, Mr. Denny attended a market manager training organized by SAFE. During the training, he learned about the principles of a healthy market, product zoning, basic sanitation and hygiene. He also learned about the role of the market manager. At that time, no one really knew how the training had inspired Mr. Denny.

When he returned to Sukaraja, one of the demonstration markets supported by SAFE, he immediately began improving the cleanliness of his market but just a few months later he was reassigned. The move took him to Warung Kiara market which was much bigger than Sukaraja, and located on the side of the main road.

When he moved, he brought with him the inspiration, knowledge and skills he had acquired during the market manager training. Very soon he was able to form a vendor association and establish a system for fund raising.

He was able to encourage vendors to establish a vendor's group and contribute IDR 1,000 per day for petty cash. In total he collected IDR 21 million. A portion of the funds was used to improve vendor stalls including replacement of table tops from wood to ceramic.

His newest idea is to rent the space in front of the market for carnival activities, a popular attraction in Sukabumi. Rental fees collected will be used for additional physical improvements to the market and a portion will launch a social contribution fund for vendors and family to cover expenses in case of illness.

Champions like Mr. Denny exemplify how market managers can provide healthy and quality poultry products to their customers while serving the business needs of their vendors.

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FROM THE AMERICAN PEOPLE

SUCCESS STORY

Community Videos Spark Interest in Healthy Poultry Markets



Video screening at Maja market

Photo: Corbino

Approximately 60 community members attended the inaugural screening of a community video at Maja market entitled “I’m afraid my chicken carries the AI virus”.

The story begins with a backyard poultry owner seen listening to a radio talk show about AI. He hears a government expert explain the signs and symptoms of AI in chickens and the dangers AI poses to humans. He becomes anxious when he thinks one of his chickens might be infected. Believing his wife has taken the chicken to the nearest market to sell, he heads to the market to stop the transaction. He wanted to cull the chicken and dispose of it properly, as explained during the radio talk show. In the end, he discovers his wife never brought the chicken to the market.

Along with citizen journalism activities, SAFE has utilized audio-visual media to support the project’s Healthy Market Initiative.

SAFE facilitated training of community members to develop and screen short videos depicting risky behaviors observed at traditional poultry markets to encourage reflection and discussion.

Twenty-seven videos have been produced using mobile phones and video cameras. In one video, a group of high school students share concerns about the conditions at their neighborhood traditional market and how it can no longer be regarded as a safe food market. Another video documents market conditions in Bogor by mixing testimonials from housewives and vendors.

This intervention found that people who saw themselves practicing risky behaviors such as slaughtering poultry without proper protection, tossing waste from slaughtering activities, or selling and buying unhealthy chicken carcasses, were more likely to recognize and acknowledge the dangers of such behaviors.

Based on the success of the video initiative, SAFE and partners launched a competition for short films with the theme “healthy traditional markets for healthy consumers”. In early 2013, three winners were selected by a panel composed of judges from the Jakarta Art Institute, filmpela-jar.com and Blogger Nusantara.

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FROM THE AMERICAN PEOPLE

SUCCESS STORY

Consumer Empowerment Across West Java Province



Group exercise involving healthy poultry products before Koran reading

"We regard the Consumer Empowerment Program as our organization's mandate. It is at the very core of Islamic principles and values to work towards improvement and empowerment."

Ms. Heni Nur'aeni, SH, Vice Chairperson of Aisyiyah West Java Chapter

Imagine thousands of women in 700 *Majlis Taklim* (Koran reading groups) across West Java reciting and studying the wisdom of the holy Koran and prophet Muhammad and applying the words to the role of women as home makers, food handlers and health providers, and discussing Avian Influenza prevention and control.

In West Java this is soon to be a reality. Under the leadership of Aisyiyah's West Java provincial chapter, approximately 40,000 women will be reached through thematic Koran reading groups related to healthy poultry, healthy practices, and Avian Influenza. All 26 districts and municipalities will be reached under the initiative of Aisyiyah's West Java Chapter to replicate the consumer empowerment program implemented under the SAFE program.

One of the women who attended a Koran reading in West Java said "Before I didn't know that Bird Flu has symptoms similar to the common flu. It is a normal practice in my family to self-medicate first before going to see a doctor. Ever since I attended the Koran reading organized by Aisyiyah, I have a commitment with myself to not put my family members at risk. I clean up properly, choose only healthy carcass when shopping at the market, and cook properly. If someone in my family falls sick, I will definitely ensure they go to a doctor and I will tell the doctor about his/her contact history with poultry, if any."

Aisyiyah's network includes more than 20 million members across Indonesia. SAFE's consumer empowerment program was officially embraced by the national board in October 2012. The organization has plans to replicate in other geographic areas.

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SAFE
STRATEGIES AGAINST FLU EMERGENCE

STRATEGIES AGAINST FLU EMERGENCE (SAFE)

YEAR TWO WORKPLAN

March 15, 2012 – June 15, 2013

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YEAR TWO WORKPLAN

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March 15, 2012 – June 15, 2013

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LIST OF ABBREVIATIONS

ADS	Automated Directive System (USAID)
AI	Avian Influenza
A/PI	Avian and Pandemic Influenza
ARI	Acute Respiratory Infection
AusAID	Australian Agency for International Development
BCC	Behavior Change Communication
BIIF	Biosecurity Improvement Innovation Fund
C&D	Cleaning and Disinfection
C-KAP	Clinician's Knowledge, Attitudes and Practices
CDC	Centers for Disease Control
CJ	PT. Cheil Jedang Indonesia
CMU	AI Campaign Management Unit (Ministry of Agriculture)
COP	Chief of Party
COR	Contracting Office Representative (USAID)
CP	PT. Charoen Pokphand Indonesia
DAI	Development Alternatives, Inc.
FAO	Food and Agricultural Organization of the United Nations
FAS	Field Accounting System
GFP	Good Farming Practice
GOI	Government of Indonesia
HPAI	Highly Pathogenic Avian Influenza
HUS	Healthcare Utilization Survey
IDI	Ikatan Dokter Indonesia (Association of Indonesian Medical Doctors)
IBI	Ikatan Bidan Indonesia (Association of Indonesian Midwives)
IEC	Information, Education and Communication
ILI	Influenza-like illness
IPB	Bogor Agricultural Institute
Jabodetabek	Jakarta, Bogor, Depok, Tangerang and Bekasi (Greater Jakarta)
JHU-CCP	Johns Hopkins Bloomberg School of Public Health, Center for Communication Program
JSI	John Snow, Incorporated
K4H	Knowledge for Health
KAP	Knowledge, Attitudes and Practices
KOMNAS Zoonosis	National Committee on Zoonosis
LBM	Live Bird Market
MOA	Ministry of Agriculture
MOH	Ministry of Health
MOU	Memorandum of Understanding
NGO	Non-Government Organization
PCR	Polymerase Chain Reaction
PDSR	Participatory Disease Surveillance and Response
PKK	Pemberdayaan Kesejahteraan Keluarga (government-supported women's family welfare group)
PMI	Palang Merah Indonesia (Indonesian Red Cross)
PMP	Performance Monitoring Plan
S3BF	Sector 3 Broiler Farm

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SBCC	Social and Behavior Change Communication
SMK	SMK Nurul Huda Vocational School
TAMIS	Technical and Administrative Management Information System
TF	Teaching Farm
TMF	Tunas Mekar Farm
TS	Technical Service
UNPAD	University of Padjadjaran, Bandung
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USG	United States Government
WHO	World Health Organization

EXECUTIVE SUMMARY

This workplan is the second and final workplan for SAFE. It covers a period of 15 months, from March 15, 2012 to June 15, 2013. The original Year 2 workplan, submitted in April 2012 was placed on hold at the request of USAID because of a significant budget cut followed by a revised scope of work and changes to the contract that were completed on November 5, 2012 followed by the submission of this workplan.

The original SAFE objectives remain the same:

- Objective 1. Strengthen and Expand Public Private Partnerships to Improve Good Farming Practices and Limit AI Transmission among Poultry
- Objective 2. Promote Behaviors that Lower the Risk of AI Transmission Among Poultry and Increase Knowledge of Signs and Symptoms and Risk Factors for AI Related Illnesses
- Objective 3. Increase Knowledge of Signs/Symptoms and Risk Factors for AI-Related Illness in People and Promote Behaviors that Improve Household-Level Care-Seeking in Response to AI-Related Illnesses
- Objective 4. Coordinate with and Facilitate Communication among Partners

This final workplan has been modified to reflect the following changes:

- significant budget cuts;
- new scope of work due to the de-scoping process that needed to be undertaken as a result of the budget cut, resulting in a delay in Year 2 workplan approval and implementation;
- new activities on hold as the new SOW was being negotiated;
- reduction in staffing and reorganization of staff responsibilities; and
- elimination of multiple key inputs such as the number of teaching farms and markets, the PVUK/private sector model, upgrades to teaching farms, the grants Biosecurity Improvement Innovation Fund, strategic communication training, instructional video for use by GOI, radio drama series #2, and many others.

This workplan builds on the accomplishments of Year 1, which are highlighted below and described in more detail in the Program Overview section.

- Public and private sectors committed to making changes for improved biosecurity;
- Improved Indonesian technical, management and programmatic capacity;
- Indonesia's first poultry teaching farms operating in an effort to control disease;
- Demonstration live bird market (LBM) action plans in place;
- Information, education and communication materials and tools developed;
- Civic organizations engaged and committed to empowering poultry consumers;
- Demonstrated commitment to cost sharing;

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- Research completed for evidenced-based programming; and
- Baselines collected for quantitative and qualitative evaluation.

SAFE will continue to be incentive-based, entrepreneurial and collaborative. These approaches have proven to be essential in securing commitment, motivation and change.

In addition, given the severe decrease in budget and accompanying reduction in performance period, SAFE has adjusted its strategy to emphasize the following tenets during the last 15 months:

➤ *Concentrate efforts.*

SAFE will focus efforts on the same 12 western Java districts where it worked in Year 1, and work with key partners in the poultry industry, academic institutions, NGOs, local and national government, and international partners. Efforts will also focus on fortifying the key messages developed under the 2011 “Consensus Report: Priority Audiences and Behaviors for Reducing the Risk of AI Transmission in Indonesia.”

➤ *Reinforce local ownership.*

SAFE will accelerate the transfer of responsibilities to local partners and continue to collectively implement the program, evaluate progress and conduct mid-term corrections.

➤ *Produce tools to sustain efforts.*

SAFE’s approaches and models have been well received by local partners. A minimum of five documents will be produced to capture the methodology, interventions, models or results of work performed in the areas of research, biosecurity changes at commercial farms, consumer demand results at live bird markets, and use of social media as a catalyst for change.

As stated earlier, SAFE will continue to operate in the same high-risk districts in western Java, which include three districts in Banten province and nine districts in West Java province. These twelve districts are Ciamis, Tasikmalaya, Garut, Bandung, Bandung Barat, Cianjur, Sukabumi, Bogor, Lebak, and Serang and only under Objective 1, Tangerang and Sumedang.

SAFE will continue to target three critical points in the poultry value chain to decrease the transmission of H5N1: (a) the poultry industry, including contract and independent farmers that harvest the broiler chickens; (b) traditional live bird markets where chickens are sold; and (c) the poultry consumer, including customers at live bird markets. The activities to be implemented are described in more detail under each of the objectives below.

During the period covered by this workplan, Objective 1 will: 1) Continue to hold strategic consultative meetings with industry and academic stakeholders; 2) conduct farmer and student visits to the teaching farms; 3) provide technical support to farmers to adopt and implement new biosecurity and good farming practices; 4) produce and distribute educational and communication materials; and 5) develop and establish technical discussion groups meetings. SAFE will capture the changes and document the results under the monitoring and evaluation plan.

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Objective 2 will: 1) organize and conduct consultative meetings to develop and establish local ownership; 2) establish local NGO involvement to create consumer demand activities; 3) support improvement of vendor stalls; 4) maintain market improvements; 5) establish vendor of the month award; 6) air radio serial drama; 7) develop targeted communication tools to support changes in LBMs; and 8) provide health communication strategy workshop to ministry program/communication staff (Same as Objective 3, activity 8). SAFE will capture the changes and document the results under the monitoring and evaluation plan.

Objective 3 will: 1) analyze data from the Healthcare Utilization Survey (HUS) and the Clinician's Knowledge, Attitudes and Practices (C-KAP) Survey; 2) create new report versions of the HUS and C-KAP; 3) present findings from HUS and C-KAP to MOH, partners and stakeholders; 4) build consensus and develop priority messages for care-seeking behaviors; 5) develop a communication strategy; 6) develop a communication poster with key messages; 7) disseminate care-seeking key messages; and 8) provide health communication strategy workshop to ministry program/communication staff (Same as Objective 2, activity 8). SAFE will conduct a qualitative evaluation, through partners, to measure acceptance of messages, materials and channels of communication as well as offer recommendations for future programming.

Objective 4 will: 1) document/highlight SAFE activities; 2) develop, produce and disseminate information series; 3) upload A/PI stakeholder information onto K4H website; 4) organize and host monthly COP meetings; 5) hold informal end-of-project forum (s); and 6) support project-related domestic and international travel for Indonesian government counterparts or other parties.

By the end of the project, SAFE expects to have achieved the following:

- ✓ Improved biosecurity and good farming conditions and practices at Sector 3 broiler farms;
- ✓ Embedded biosecurity technical assistance in poultry industry technical farm visits;
- ✓ Integrated SAFE biosecurity materials into poultry industry and academic training and classroom curricula;
- ✓ Improved risk reduction conditions and practices of live bird market vendors;
- ✓ Healthy market and community empowerment initiatives replicated by local government and civic organizations;
- ✓ Engaged and knowledgeable consumers that demand cleaner markets and healthy poultry products;
- ✓ Social media and civic society partners interacting with target audiences;
- ✓ A functional platform for sharing Indonesia-related avian and pandemic flu information and documentation;
- ✓ Healthcare Utilization Survey (HUS) and the Clinician's Knowledge, Attitudes and Practices (C-KAP) research completed and analyzed, and findings disseminated.
- ✓ An information series that captures and disseminates highlights of the SAFE experience.

I. OVERVIEW OF PROGRAM

Program Objectives

The Strategies Against Flu Emergence (SAFE) project, awarded March 15, 2011, was developed to support USAID/Indonesia's Avian and Pandemic Influenza (A/PI) Program to reduce the impact of AI on animals and humans and limit the emergence of a pandemic influenza virus. SAFE has four objectives:

- Objective 1. Strengthen and Expand Public Private Partnerships to Improve Good Farming Practices and Limit AI Transmission among Poultry
- Objective 2. Promote Behaviors that Lower the Risk of AI Transmission among Poultry and Increase Knowledge of Signs and Symptoms and Risk Factors for AI-Related Illnesses
- Objective 3. Increase Knowledge of Signs/Symptoms and Risk Factors for AI-Related Illness in People and Promote Behaviors that Improve Household-Level Care-Seeking in Response to AI-Related Illnesses
- Objective 4. Coordinate with and Facilitate Communication among Partners

Objective 1

Objective 1 will focus on private sector partnerships to improve good farming practices and limit AI transmission among poultry. The public sector continues to be very limited in its ability to provide value-added technical assistance to the private sector. These limitations, coupled with the inherent private and competitive nature of the poultry industry and a continued distrust of each other impedes the ability to form public/private sector partnerships that are open, transparent and productive. Other international partners have found the same challenges. Nevertheless, SAFE continues to invite and include the public sector in commercial sector activities whenever feasible and also keeps the national and local governments involved in SAFE activities with the private sector. Documents from the information series will be shared with both public and private sectors.

During the period covered by this workplan, Objective 1 will: 1) continue to hold strategic consultative meetings with industry and academic stakeholders; 2) conduct farmer and student visits to the teaching farms; 3) provide technical support to farmers to adopt and implement new biosecurity and good farming practices; 4) produce and distribute educational and communication materials; and 5) develop and establish technical discussion groups meetings. SAFE will capture the changes and document the results under the monitoring and evaluation plan.

Objective 2

Objective 2 will: 1) organize and conduct consultative meetings to develop and establish local ownership; 2) establish local NGO involvement to create consumer demand activities; 3) support improvement of vendor stalls; 4) maintain market improvements; 5) establish vendor of the month award; 6) air radio serial drama; 7) develop targeted communication tools to support changes in LBMs; and 8) provide health communication strategy workshop to ministry program/communication staff

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(Same as Objective 3, activity 8). SAFE will capture the changes and document the results under the monitoring and evaluation plan.

Objective 3

The work under Objective 3 will be limited in scope. Funding, a new performance period, and the need to prioritize will not enable the project to increase knowledge of all relevant signs/symptoms and risk factors for AI-related illnesses. Priority behaviors that improve household-level care-seeking will be selected based on research findings and highlighted by existing partners through a limited communication campaign.

Objective 3 will: 1) analyze data from the HUS and C-KAP Survey; 2) create new report versions of the HUS and C-KAP; 3) present findings from HUS and C-KAP to MOH, partners and stakeholders; 4) build consensus and develop priority messages for care-seeking behaviors; 5) develop a communication strategy; 6) develop a communication poster with key messages; 7) disseminate care-seeking key messages; and 8) provide health communication strategy workshop to ministry program/communication staff (Same as Objective 2, activity 8). SAFE will conduct a qualitative evaluation, through partners, to measure acceptance of messages, materials and channels of communication as well as offer recommendations for future programming.

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Objective 4 will: 1) document/highlight SAFE activities; 2) develop, produce and disseminate information series; 3) upload A/PI stakeholder information onto K4H website; 4) organize and host monthly COP meetings; 5) hold informal end-of-project forum(s); and 6) support project-related domestic and international travel for Indonesian government counterparts or other parties.

Building on Year I Foundation

The next 15 months will build on the partnerships, commitments, strategies, research and overall program work accomplished during Year I. These are highlighted below:

- **Public and private sectors committed to making changes for improved biosecurity.** Commitments were secured from poultry industry senior management, IPB and UNPAD universities, SMK Nurul Huda vocational school, owners of the Teaching Farms (TFs), LBM managers, and local governments in the high-risk provinces of West Java and Banten.
- **Improved Indonesian technical, management and programmatic capacity.** Technical Service (TS) industry staff, farm owners, managers and workers, local government animal husbandry professionals, LBM managers and field facilitators received group or one-on-one training in areas such as biosecurity and good farming practices; motivational, planning, finance and supervision skills; application of new approaches and techniques to reduce transmission of poultry disease and improving production; cleaning and disinfection techniques at LBMs, and effective approaches to managing LBMs and motivating and supporting changes by vendors. Indonesian Red Cross (PMI) facilitators were trained in participatory approaches, needs

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assessments, mapping techniques, problem identification, problem solving, proposal development, stakeholder analysis, and advocacy.

- **Indonesia's first poultry teaching farms operating in an effort to control disease.** The first 11 (and an additional one in the first month of Year 2) Indonesian TFs were created to respond to the need for Sector 3 farm workers and students to visualize biosecurity and good farm management practices, and to move beyond traditional classroom and hands-on field-level training. This learning approach is simple but powerful.
- **Demonstration live bird market action plans in place.** These plans were developed collectively by LBM managers, vendors and local government offices. Government and stakeholder consultative meetings in all program districts, joint assessments and decisions on the selection of 20 demonstration markets, and participatory mapping of these markets resulted in local ownership of SAFE program activities by District Livestock Services staff, District Industry and Trade Office staff, market managers, and members of the market's poultry supply chain including vendors, slaughterers and transporters. These action plans for change will contribute to a reduction in the risk of disease transmission both among poultry and from poultry to humans.
- **Information, education and communication materials and tools developed.** SAFE developed, field tested and vetted with partners a set of communication materials based on the "2011 Consensus Report: Priority Audiences and Behaviors for Reducing the Risk of AI Transmission in Indonesia", which SAFE updated through a collaborative effort this year.
- **Civic organizations engaged and committed to empowering poultry consumers.** SAFE awarded grants to two NGOs – Aisiyah and COMBINE – to implement a consumer empowerment campaign directed at influencing and motivating the consumer to demand clean LBMs and healthy poultry products. Aisiyah's area of expertise is conducting consumer demand generation activities through a faith-based approach and messaging. COMBINE's strength is maximizing the use of community-based media.
- **Demonstrated commitment to cost sharing.** Despite facing financial constraints, Sector 3 broiler farms contributed an average of 16% towards the total cost of upgrading their farms to become TFs. Inputs included labor, supplies and fencing materials, and sometimes cash. NGO grantees Aisiyah and COMBINE are contributing 10.5% in in-kind contributions. While the recipients of the 20 grants for LBM improvements are required to contribute a minimum of 10% of costs, in practice they are contributing an average of 16.3%, with the funds coming from both market vendors and stakeholders. Local government offices have committed to contribute disinfectant as well as labor and expertise to the demonstration market managers and vendors.
- **Research completed for evidenced-based programming.** Five research surveys, studies and analyses were conducted in Year 1: 1) Healthcare Utilization Survey (HUS); 2) Clinician's Knowledge, Attitudes and Practices (KAP) Survey; 3) KAP 2009 Secondary Data Analysis; 4) Rapid Needs Assessment; and 5) Sector 3 Broiler Farm Survey. The results of these studies will inform programming during the next 15 months.

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- **Baselines collected for quantitative and qualitative evaluation.** In close collaboration with its partners, SAFE designed two evaluation studies that will support monitoring and evaluation efforts. The Commercial Farm Evaluation Study and the Live Bird Market Evaluation Study are designed to provide evidence-based information on changes in biosecurity conditions and practices at Sector 3 broiler farms and LBMs in West Java and Banten provinces.

Program Approach

SAFE has refined its approach to working with government, private sector, civic organizations, community groups and other stakeholders to counteract the significant disruption caused by the reduction in budget and resulting shortened performance period. SAFE is leveraging program efforts from Year 1 and focusing on the activities that make the greatest difference in the ability to achieve and sustain results and have the greatest impact on those served by the project.

SAFE will continue to use approaches practiced since the launch of the project, which have proven to be essential in securing commitment, motivation and change. They are described below:

- *Incentive-based.* Motivations and behavioral drivers relevant to each targeted audience group will continue to be the focus – from the commercial sector to the community.
- *Entrepreneurial.* The entrepreneurial spirit of early adopters of biosecurity, good farming practices and clean markets will continue to be a driving force behind change.
- *Collaborative.* Extensive collaboration with Indonesian leaders, the public and private sectors, and international stakeholders will continue to be a cornerstone of the program.

In addition, SAFE will:

➤ **Concentrate efforts.**

SAFE will focus efforts on the 12 western Java districts where it has been working and will continue to engage the key partners in the poultry industry, academic institutions, NGOs, local and national government, and international partners. Efforts will also focus on fortifying the key messages developed under the “2011 Consensus Report: Priority Audiences and Behaviors for Reducing the Risk of AI Transmission in Indonesia”, ensuring appropriate practices remain in place at the 12 TFs, and supporting consumer demand initiatives for healthier markets and poultry products.

➤ **Reinforce local ownership.**

SAFE will accelerate the transfer of responsibilities to local partners and continue to collectively implement the program, evaluate progress and conduct mid-term corrections.

➤ **Produce tools to sustain efforts.**

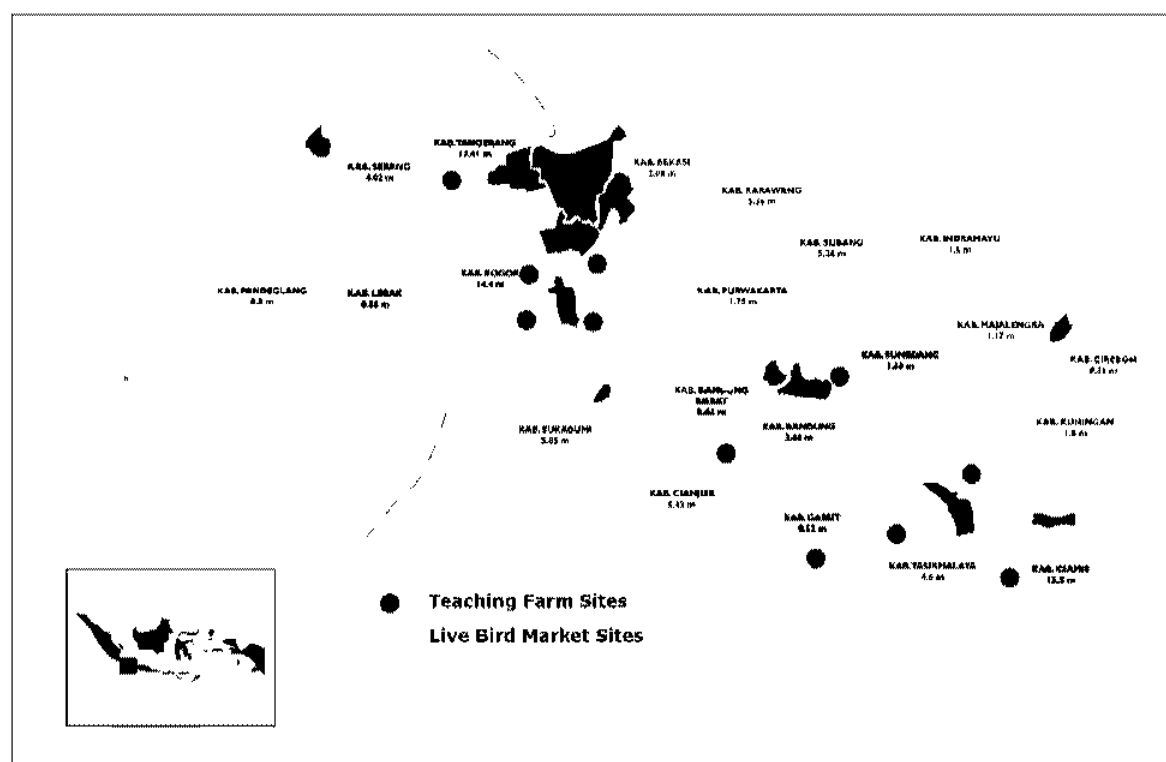
SAFE’s approaches and models have been well received by local partners. A minimum of five documents will be produced to capture the methodology, interventions, models and results of work

performed in the areas of research, biosecurity changes at commercial farms, consumer demand results at live bird markets, and use of social media as a catalyst for change.

Geographic Focus

During Year 1 SAFE operated in 12 high-risk districts in western Java; three districts in Banten province and nine districts in West Java province. These twelve districts are Ciamis, Tasikmalaya, Garut, Bandung, Bandung Barat, Cianjur, Sukabumi, Bogor, Lebak, and Serang and only under Objective 1, Tangerang and Sumedang. These districts are the busiest trading routes for poultry in Indonesia. The map in Figure 1 shows the locations of the TFs with red dots and the locations of the Healthy LBM Initiative with green dots.

Figure 1. SAFE Geographical Focus in Year 2



The large number of Sector 3 farms located in western Java and the movement of poultry through the value chain into the Jabodetabek (Greater Jakarta) area, coupled with the high density of the human population, make this region a high-risk AI transmission area. Data from the FAO-trained government Participatory Disease Surveillance and Response (PDSR) officers also indicate western Java to be a high-risk area. These data are derived from Sector 4, which is a proxy data point used by FAO.

Concentrating on western Java optimizes the effectiveness of program implementation, with a focus on Sector 3 biosecurity and good farming practices, healthy market initiatives, and consumer empowerment.

2. PROGRAM PLANNING, MANAGEMENT, REPORTING AND CLOSEDOWN

Program Planning

The 15-month workplan presented in this document was developed in close collaboration with partners. SAFE convened a workplan retreat that was attended by all key SAFE partners – Ministry of Agriculture (MOA)/CMU, MOH, FAO, PMI, and poultry industry representatives. Team leaders reviewed and led a discussion on each objective's outcomes and outputs. Inputs and recommendations from partners were accommodated in this workplan. This participatory approach helped establish links with existing programs, reduce duplicative efforts, clarify questions, and strengthen the overall workplan. After the reduction in budget, USAID and SAFE discussed priority activities and chose those that will make the greatest difference in achieving and sustaining results and that have the greatest impact on the objectives of the project within the new timeframe for performance.

Program Management

Adjustments

The scale of change in program budget, implementation period and workplan required significant changes in management.

First, the organizational structure required to support the activities was modified. Six positions were eliminated, 50% of those were professional staff. The positions eliminated included Government & Community Liaison, Public Private Partnership Specialist, Monitoring and Evaluation Officer, a Grant and Contracts Specialist, and two Program Officers. SAFE has combined the Behavioral Research Analyst with the Monitoring and Evaluation Officer responsibilities. Please see Annex I for the revised management structure of the SAFE team.

Second, senior managers are meeting more frequently to address program implementation issues and ensure all deliverables are completed on or before schedule. While SAFE reports to USAID on a quarterly basis, internally, deliverables are set on a monthly deadline schedule. In addition, one-on-one meetings with the COP focus on identifying and addressing any barriers that may cause a delay in implementation.

Third, SAFE informed all key partners of the changes in budget and life-of-project. Transfer of responsibilities is taking place earlier, which is causing some discomfort to partners that are not yet ready to assume these responsibilities. SAFE manages these issues on a case-by-case basis.

Fourth, the Project's Performance Monitoring Plan (PMP) was modified to reflect the budget cut and resulting decrease in performance period.

Fifth, cost containment and management, which are always a priority for DAI projects, have taken on even greater weight because of the 65.5% decrease in budget. The project budget will now be monitored on a bi-weekly basis as opposed to a monthly basis.

Finally, monitoring visits by the Research/M&E specialist have been increased in order to collect additional qualitative information, and evaluation plans have been modified with university partners to

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account for the reduced life-of-project and to ensure data collection and reports are completed and submitted based on the new timeline.

The COP continues to be responsible for ensuring that all staffs perform effectively to meet the deliverables outlined in the workplan, and for subcontract management of JHU-CCP and PMI.

Meeting Schedules

Teamwork is essential, as many of the project's activities affect more than one objective. In addition to the more frequent Senior Management Team and one-on-one meetings described above, all-staff meetings are held every two weeks. These meetings focus on programmatic integration as well as management, administrative and programmatic issues. Problem-solving, coordination and compliance with USAID and DAI regulations are agenda items at every meeting.

The biweekly meetings that began in Year I with the COR and assistant COR will continue, thus ensuring that USAID is apprised of successes and challenges, bottlenecks and achievements, which will become particularly important during the final 15 months.

Internal Systems

Internal controls, manuals and systems implemented during Year I continue to serve the project. In Year I, under the direction of the COP, the Senior Finance, Procurement and Grants Manager developed a personnel manual as well as procurement, travel and vehicle policies. Staff use these administrative policies and procedures to help reduce risk, control costs, and ensure compliance with USG and USAID regulations. SAFE's Technical and Administrative Management Information System (TAMIS) allows project staff to perform administrative functions critical to effective project management, including among other things grants management, procurement procedures, subcontractor management, and travel procedures. Time stamps of reviews and approvals provide an audit trail.

SAFE's Field Accounting System (FAS), which is a secure software accounting application, combines an accounting database back-end with a customized front-end, integrating the specific needs of the project and client. The FAS has been customized to reflect local labor laws, automating some of the most complex elements of field financial management including payroll, tax withholding and payment of remittances, cash advance tracking, and monitoring of local subcontract and activity budgets. In addition, the FAS imposes strict controls over financial data and assigns different levels of rights to the various users. Time stamps of modified transactions provide an audit trail report with information about transactions and modifications.

DAI/Bethesda

DAI's headquarters in Bethesda, Maryland will continue to provide additional oversight, respond to USAID requests for contractual information, and issue accurate invoices and other financial statements. DAI home office support offices, including Finance, Contracts, Procurement, Information and

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Management Technology, and Human Resources/Recruitment offices, will continue to ensure that the COP has the management support, expertise and resources needed to manage SAFE and meet or exceed USAID expectations.

DAI home office technical backstop has been reduced substantially. STTA from abroad or Indonesia has been eliminated. Anahit Gevorgyan will provide minimal management support to SAFE and serve as the point of contact in the DAI home office. She will also lead quarterly project reviews with the COP to discuss and resolve project management, technical, and/or information issues quickly and efficiently. DAI home office Project Coordinator Nicole Russo's Level of Effort (LOE) has also been reduced, but she will continue to provide administrative support to SAFE regarding all financial and administrative issues and will conduct a site visit during closedown.

Program Reporting

In accordance with our contract and modifications, SAFE will submit the following program and financial reports and assist with other reporting requirements as needed by USAID.

Program Reports

- Annual Monitoring and Evaluation Report within ten working days after the start of the fourth fiscal quarter
- Monthly Report within five days after the end of each month
- Quarterly Reports within ten working days after the start of each fiscal quarter

Financial Report

- Pipeline Analysis Report within 30 calendar days following the end of each fiscal quarter
- Accrual Report no later than the 20th of March, June, September and December covering the period through the end of the reporting Quarter

Program Closedown

SAFE will submit a closedown and disposition plan before the last six months of the project outlining the staff demobilization plan, disposition plan for SAFE inventory and the steps for the closedown of the project. SAFE field staff will work closely with staff in Bethesda to ensure a successful closedown of the project that is in compliance with USAID regulations and DAI procedures.

3. IMPLEMENTATION OF PROGRAM

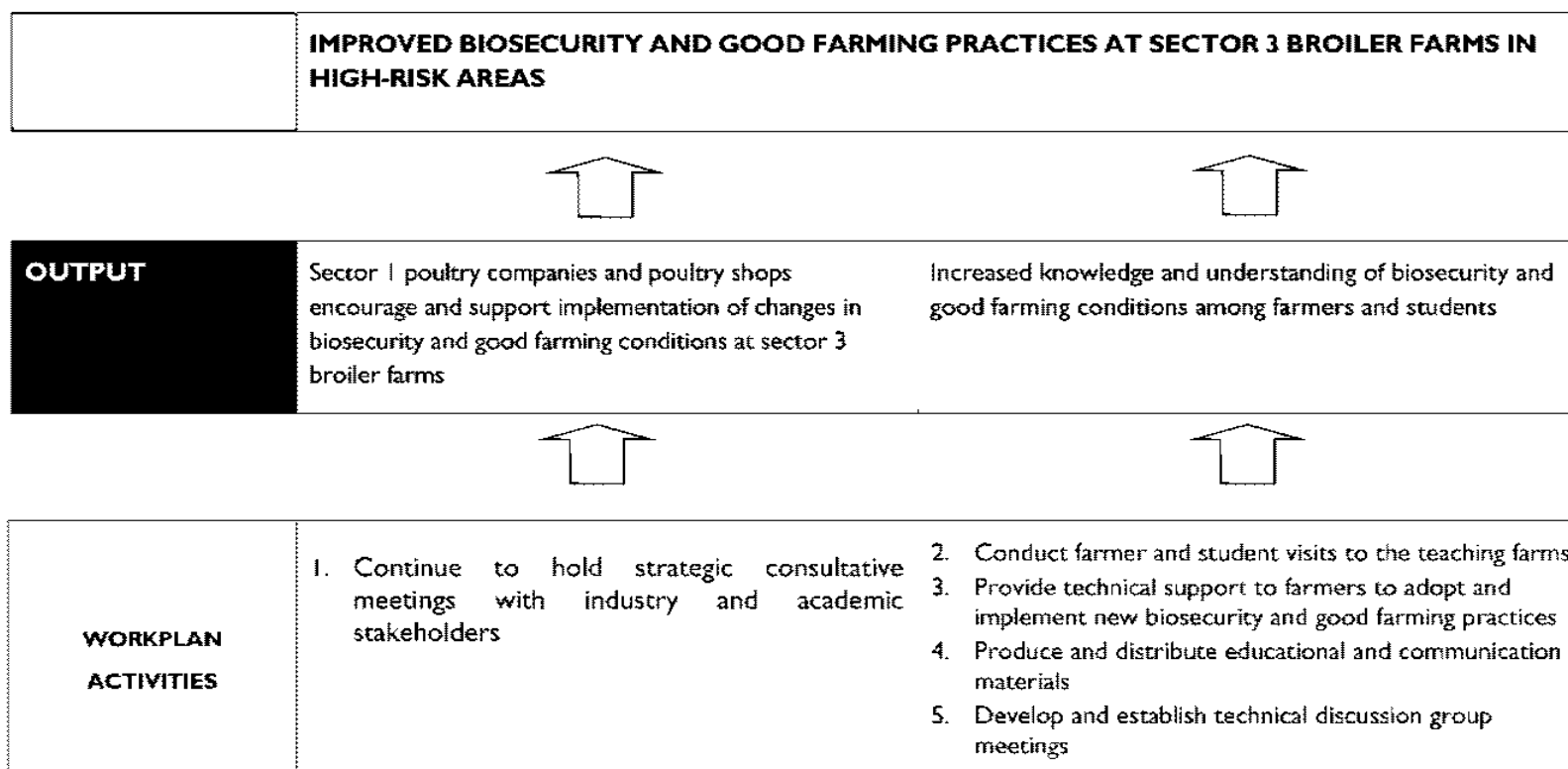
The program implementation plan embraces a modified and accelerated approach, as explained earlier. It builds on a strong foundation centered on creating local ownership, active partnerships with public and private sector leadership, incentives and motivation, and consultation and productive working relationships with FAO, WHO, Government of Indonesia (GOI) ministries and coordinating bodies. SAFE will no longer expand but instead concentrate efforts, reinforce local ownership by accelerating to the extent possible the transfer of responsibilities to local partners, and produce and disseminate communication, educational and practical tools to sustain efforts long after SAFE has ended.

SAFE has strived to use multiple interventions for a single outcome, including combining program and policy interventions. One example is combining consumer demand activities with in-market policy implementation. Combinations are often more effective than any one intervention alone. SAFE also works across objectives. For example, SAFE will bring together the MOA and MOH as well as the KOMNAS Zoonosis coordinating body to work together as one team at the Strategic Health Communication Workshop, thus combining Objective 1, 2 and 3 stakeholders. Several of the communication interventions will also reach across objectives. For example, the radio drama series has 12 episodes each directed at a different poultry value chain worker as well as healthcare decision makers at the household level.

Activities proposed are also often interdisciplinary in nature and may encompass more than one critical program area, especially when addressing public health issues. For instance, science, economics, sociology and technology may all be incorporated in an activity.

The section below details program implementation by objective. Each program activity is linked to the SAFE PMP framework outputs and outcomes. The framework below represents only the activities (inputs), outputs and outcomes for Year 2. The updated PMP document, which will be submitted separately, includes inputs, outputs and outcomes for the entire SAFE life-of-project.

OBJECTIVE 1: Strengthen and expand private, and public/private partnerships in high-risk districts to improve biosecurity and good farming practices in order to limit AI transmission among poultry



OBJECTIVE 1: Strengthen and expand private, and public/private partnerships in high-risk districts to improve biosecurity and good farming practices in order to limit AI transmission among poultry

Overview

During the final 15 months of the project, Objective 1 will build on industry-focused and industry-driven biosecurity interventions. SAFE and industry TS will continue to monitor and support the 12 TFs, facilitate Sector 3 Broiler Farm (S3BF) farmer visits to the TFs and technically support biosecurity and good farming practice (GFP) changes at those farms. Various techniques are being used to motivate and support these changes. They include SMS pilots, dissemination and use of a farmer-to-farmer video, and field-level technical discussion groups that identify practical solutions to biosecurity problems. As in Year 1, the scale and design of Objective 1 interventions will (a) achieve impact within the targeted geographic areas with moderate investments, (b) leverage committed poultry industry investment and support, and (c) build on the successes of past and ongoing work by other partners such as FAO, USDA and the GOI.

Objective 1 will have five core activities during the final 15 months:

- Activity 1. Continue to hold strategic consultative meetings with industry and academic stakeholders
- Activity 2. Conduct farmer and student visits to the teaching farms
- Activity 3. Provide technical support to farmers to adopt and implement new biosecurity and good farming practices
- Activity 4. Produce and distribute educational and communication materials
- Activity 5. Develop and establish technical discussion group meetings

Objective 1 Outcome and Activities



Activity Descriptions

ACTIVITY 1. CONTINUE TO HOLD STRATEGIC CONSULTATIVE MEETINGS WITH INDUSTRY AND ACADEMIC STAKEHOLDERS

Industry and academic partners are full participants responsible for the ultimate results and sustained changes at the end of the project. The consultative meetings will focus on how best to: a) adapt to the reduced funding and life-of-project, b) accelerate transfer of responsibility, and c) move Year 3 industry commitments to Year 2, whenever possible. SAFE will also continue to seek advice from the MOA/CMU and FAO.

ACTIVITY 2. CONDUCT FARMER AND STUDENT VISITS TO THE TEACHING FARMS

Activities 2 and 3 are greatly impacted by the reduced funding, and even more so by the reduction in SAFE's performance period. The original strategy needs to be compressed, requiring a careful balance of funding allocation, level of effort and prioritization. While SAFE wishes to bring as many farmers as possible to the TF, this intervention requires an extensive level of effort from industry TS staff, thereby reducing the time they dedicate to Activity 3 – technical support to farmers wishing to implement biosecurity and GFP. This balancing of efforts, which is unique to each industry partner, will be continually monitored and adjusted as SAFE implements these two tasks.

Teaching farms will be monitored on a regular basis by SAFE and industry TS staff to ensure that appropriate biosecurity practices are followed, equipment and grounds are maintained properly, and visitors have access to the TFs. TS also provide technical support to the TF staff and conduct field-level training sessions that aim to provide practical solutions to biosecurity and good farming practice challenges. TS staff will put into practice the training they received during Year 1 on inter-personal skills, persuasive arguments, and practical and inexpensive solutions based on TF techniques.

SAFE will use several strategies to accelerate farmer visits to the TF. SAFE will work with industry TS staff to promote the champion farmer competition to incentivize farmers and technical staff to establish and maintain new biosecurity and GFPs. Audits of "early adopter" farms demonstrate that farmers are beginning to implement changes one step at a time, starting with the easiest practices such as shoe exchanges at the poultry house entrance. SAFE and the industry will expand promotion of the competition, which has been received favorably.

In addition, SAFE will work with academia partners to ensure students also visit the TFs. These visits will help students understand the benefits of biosecurity. Reinforcing good biosecurity and farming practices during pre-service education is cost-effective and efficient. Changing old habits later through in-service training is costly and challenging.

SAFE will also target farmers who live within easy access of the teaching farm – up to one hour of travel time. SAFE staff will work with industry leadership to monitor the percentage of farmers living within one hour away that have visited each TF. This will be the priority group. SAFE and TS staff will also focus on those farms located over one hour away from a TF. To bring this second group to the TF, industry will consider covering the transportation costs of these farmers to the TF while SAFE will provide them with a learning experience that will include a review of what they have observed, discussion of solutions to the challenges they see in implementing the changes, presentation of the farmer-to-farmer video (which will contain testimonials of fellow farmers), and educational materials to take home.

ACTIVITY 3. PROVIDE TECHNICAL SUPPORT TO FARMERS TO ADOPT AND IMPLEMENT NEW BIOSECURITY AND GOOD FARMING PRACTICES

SAFE will encourage all farmers visiting the teaching farms to implement biosecurity and GFP. All farmers committed to making changes will receive technical assistance, mostly by industry TS staff and selectively by SAFE staff. The project will pay particular attention to farmers who have entered and won the champion farmer competition because they have already demonstrated motivation and the ability to implement changes. They can become model farmers for others. All farms interested in making biosecurity and GFP changes will receive as part of the technical assistance how-to guidance on upgrading the farm with new techniques and biosecurity-related construction, and the biosecurity booklet.

SAFE will also implement additional changes at the TF that include improved movement control of people, equipment and supplies into the farm; water analysis and water treatment; examples of good ventilation; and use of boiling pots for dead chickens.

ACTIVITY 4. PRODUCE AND DISTRIBUTE EDUCATIONAL AND COMMUNICATION MATERIALS

In addition to IEC materials produced in Year 1, SAFE will distribute information on biosecurity and good farming practices through SMS messages and a farmer-to-farmer video.

SMS pilots

SAFE will test two SMS pilots. One was started by the Objective 1 Team Leader and targets TF farmers, industry TS staff and S3BFs. It reinforces biosecurity measures farmers have seen at the TF and reminds them of good farming practices as well as informing them of activities of interest such as the radio drama series and the champion farmer competition. A second pilot will be implemented through a grant awarded to Satu Dunia, which will target a separate group of farmers and their TS with supportive biosecurity and good farming technical information. Satu Dunia will add a more creative side to the messages including motivational aspects, quizzes with prizes, and acknowledgements delivered through innovative uses of interactive SMS text.

Farmer-to-farmer video

Farmers learn from each other. SAFE will develop a locally produced video that shows real farmers talking about new biosecurity techniques and practices at their farms. The farmer-to-farmer video targets Sector 3 contract and independent broiler farmers and will be filmed at TFs and visiting farms. The video will include footage of the good biosecurity and farming practices and techniques taught at the TF, such as pass-overs and dead chicken disposal, and proper ventilation of poultry houses. The video will also include testimonials from fellow farmers.

The purpose of the video is five-fold: 1) demonstrate techniques of biosecurity and good farming practices by farmers who have used the practices; 2) increase credibility and adoption of the techniques by having the listener relate to the farmer that is speaking – these are real Indonesian farmers, not actors; 3) provide a visual tool for Service Offices (*Dinas*) and other government bodies to use in the field; 4) provide a training tool for industry to use with their TS staff; and 5) provide educational institutions with a visual tool that can be incorporated into classroom curricula. This video will be beneficial and critical to supporting and reinforcing the new techniques the TFs have introduced, particularly given the early departure of SAFE.

SAFE will also share the locally produced USDA video with appropriate local stakeholders.

ACTIVITY 5. DEVELOP AND ESTABLISH TECHNICAL DISCUSSION GROUP MEETINGS

In addition to regular field visits to project sites, SAFE will continue the technical discussion groups in Tasikmalaya and Bogor to provide a platform for continuous communication and advocacy. Small group discussions have been found to have a positive effect on uptake of new biosecurity practices. Participants include Sector I and poultry shop TS staff, S3BF farmers, educators, and SAFE staff. The objectives of the discussions are to (a) troubleshoot farm problems, (b) discuss local disease solutions, (c) conduct peer-to-peer training and problem solving, (d) learn new technical information and (e) motivate through the sharing of success stories.

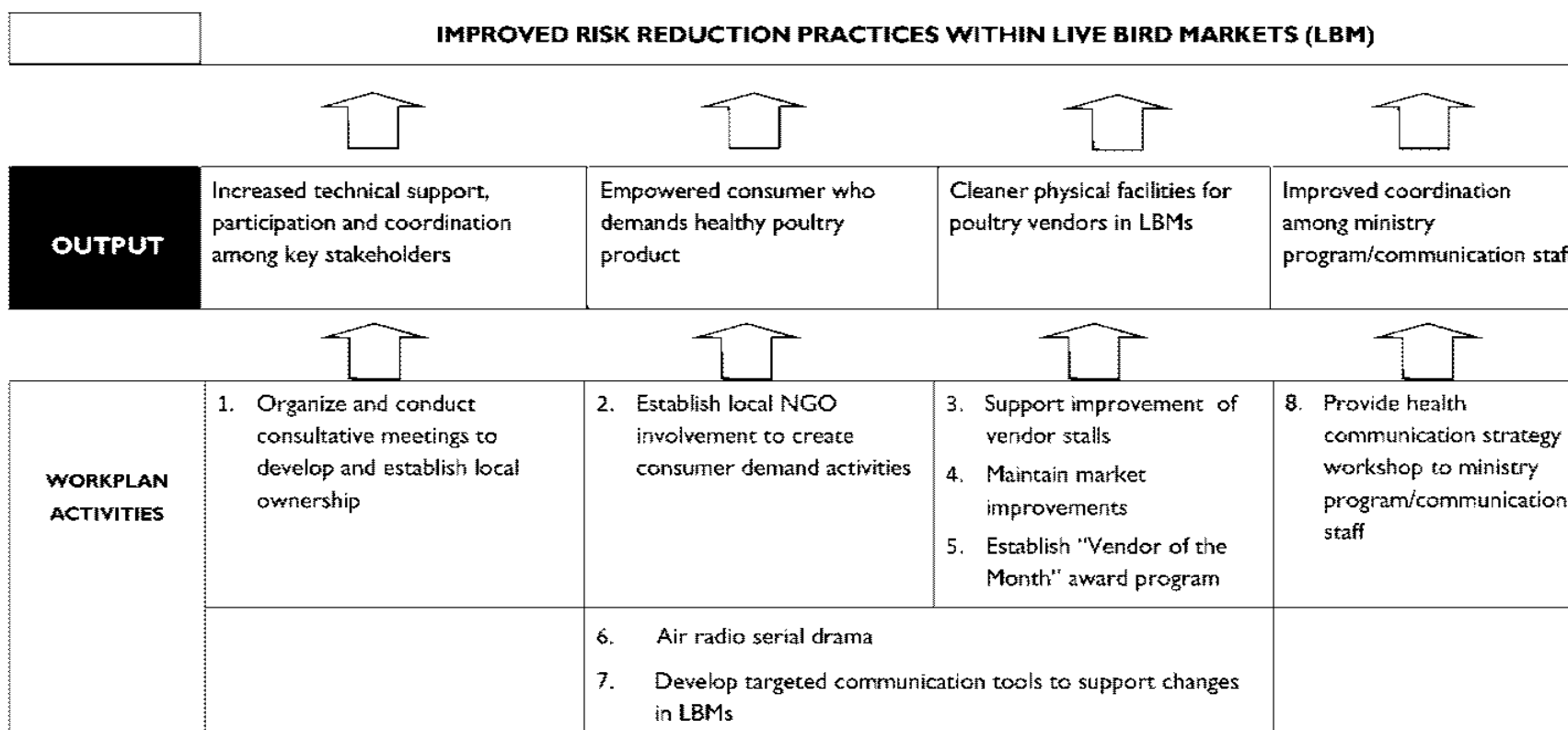
SAFE will continue to encourage the private sector – companies, farms and poultry shops – to engage local government, e.g., PVUK and other local animal health officers. SAFE will also continue to play a role in facilitating and encouraging TFs to share information and provide more access to farmers beyond their group members.

YEAR TWO WORKPLAN

Deliverables and Timeline

OBJECTIVE ACTIVITIES	DELIVERABLE	QUARTERS					
		Q1 Apr - Jun 2012	Q2 July - Sept 2012	Q3 Oct - Dec 2012			
ACTIVITY 1. Continue to hold strategic consultative meetings with industry and academic stakeholders	Summary results in Quarterly Reports	X	X	X			
ACTIVITY 2. Conduct farmer and student visits to the teaching farms	Summary number of visits in Quarterly Reports	X	X	X			
	Report on Champion Farmer competition results		X	X			
ACTIVITY 3. Provide technical support to farmers to adopt and implement new biosecurity and good farming practices	Summary farm changes in Quarterly Reports		X	X			
ACTIVITY 4 Produce and distribute educational and communication materials	Report on SMS pilots						
	Farmer-farmer video production			X			
	Farmer-to-farmer video dissemination						
ACTIVITY 5. Develop and establish technical discussion group meetings	Summary findings in Quarterly Reports	X	X	X			

OBJECTIVE 2: Promote behaviors that lower the risks of AI transmission among poultry and increase knowledge of signs, symptoms and risk factors for AI-related illness



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Objective 2. Promote Behaviors that Lower the Risk of AI Transmission Among Poultry and Increase Knowledge of Signs, Symptoms and Risk Factors for AI-Related Illnesses**Overview**

During the final 15 months of the project SAFE will continue to work with members of the poultry supply chain, namely poultry vendors and market managers at traditional live bird markets (LBMs), and poultry consumers including market customers in the surrounding areas. The application of citizen-driven pressure on biosecurity and other market-based sanitation/hygiene measures to guide poultry purchasing decisions will be a key element of the program.

Utilizing the momentum created in Year 1, SAFE will continue work in close partnership with local government, support modification of vendor stalls and vendor practices, accelerate the BCC campaign for consumer demand generation, empower LBM stakeholders to maintain changes and biosecurity practices, establish a "vendor of the month" award program, reinforce key messages with the airing of a radio serial drama, develop targeted communication tools to support changes in LBMs, conduct a national/provincial Health Strategic Communication Workshop, and capture the changes and document the results under the M&E plan.

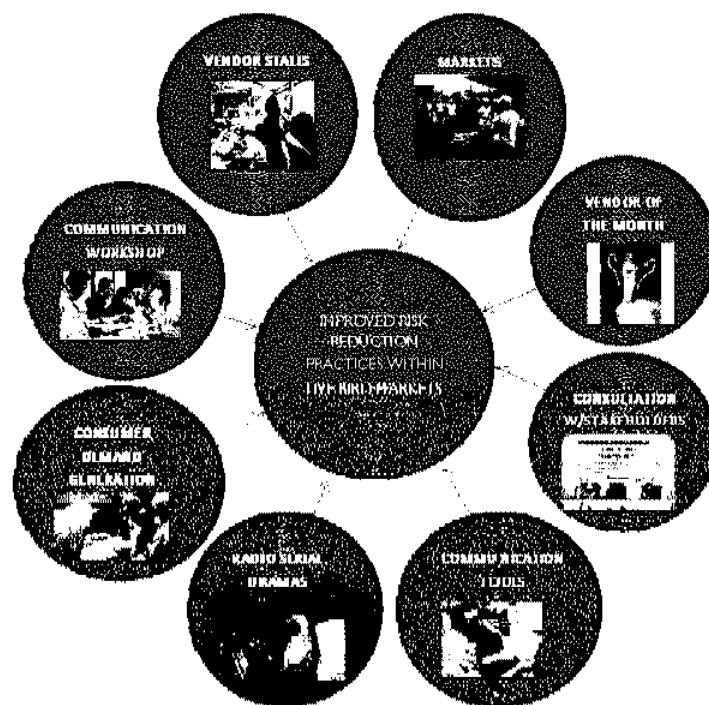
SAFE will continue to work in close consultation and coordination with MOA/CMU, MOH, WHO, FAO, Provincial and District Livestock Services, and other essential stakeholders to build a lasting program and to support government expansion of the program.

Objective 2 will have eight core tasks:

- Activity 1. Organize and conduct consultative meetings to develop and establish local ownership
- Activity 2. Establish local NGO involvement to create consumer demand activities
- Activity 3. Support improvement of vendor stalls
- Activity 4. Maintain market improvements
- Activity 5. Establish Vendor of the Month award
- Activity 6. Air radio serial drama
- Activity 7. Develop targeted communication tools to support changes in LBMs
- Activity 8. Provide health communication strategy workshop to ministry program/communication staff (*Same as Objective 3, activity 8*)

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Objective 2 Outcome and Activities



Activity Descriptions

ACTIVITY 1. ORGANIZE AND CONDUCT CONSULTATIVE MEETINGS TO DEVELOP AND ESTABLISH LOCAL OWNERSHIP

SAFE's most important legacy under this objective is to provide local government with a framework and program for a healthy market and consumer demand program. While "healthy markets" are not a new concept for government, the operationalization and scaling up of such a concept has been challenging. Government partners are embracing the SAFE model as a practical and inclusive model that results in sustained change. SAFE will continue to work with local government ministries at the provincial, district and sub district levels to support local adoption of the SAFE model. Consultative meetings will also serve as a platform for information sharing, consultation, coordination and decision-making that will facilitate communication, coordination, resource sharing and ultimate sustainability of the program. SAFE will also continue to seek advice from the MOA/CMU and FAO.

ACTIVITY 2. ESTABLISH LOCAL NGO INVOLVEMENT TO CREATE CONSUMER DEMAND ACTIVITIES

SAFE will fast track consumer demand activities for healthy markets and poultry products. SAFE, subcontractor PMI, and grantees Aisiyah and COMBINE, will organize peer-to-peer education activities in the markets for consumers, and entertainment-education events. SAFE will organize a partners' meeting to ensure that all activities are coordinated between the three partners. Partners will utilize their media networks (including social media) to reinforce messages and provide coverage and dissemination of healthy market initiative activities and results. Aisiyah will target Muslim

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females and will approach the consumer with religious messages and channels whereas COMBINE will target the general public and will maximize the use of community-based media and channels for consumer education. COMBINE will also use a media literacy approach that will lead to the creation of community members who are sensitive to the environment and to health issues such as AI.

Community members will be involved in activities that capture their personal experiences and surrounding environment, and they will continue to produce and screen short films about the healthy market initiative, created on mobile phones or video cameras. The result of these activities will be communities with greater confidence and positive self-efficacy, providing a strong foundation for consumer empowerment. Empowered communities will have the confidence to ask for cleaner markets and stalls, and healthy poultry products.

ACTIVITY 3. SUPPORT IMPROVEMENT OF VENDOR STALLS

In Year 1 market managers and local partners developed proposals detailing changes in the markets to improve sanitation in the market, and thus contribute to reducing the threat of animal-to-animal or animal-to-human transmission of Highly Pathogenic Avian Influenza (HPAI). SAFE will make improvements to the marketplace through the SAFE grants program. These changes will be made in collaboration with market managers and vendors as well as the Cooperatives, Industry and Trade Office.

Examples of changes that will be made include improved drainage systems, upgraded stalls, waste dumpsters, new zoning areas, caging, and a water tower and piping for access to clean water distribution. These changes in market conditions coupled with the training of market vendors and the BCC campaign for consumer demand generation (described below) constitute the core of this objective.

ACTIVITY 4. MAINTAIN MARKET IMPROVEMENTS

Sustaining changes at the LBMs has always been a priority objective. A team of market stakeholders at each market – including the market manager, field facilitator, vendors, beneficiaries, and grant committee – will finalize maintenance plans. The plan will empower each team to ensure that changes are sustained after SAFE ends. It will contain facility upkeep procedures and new biosecurity practices that need to be put in place to ensure changes can be maintained. SAFE will work with market teams to identify how maintenance activities will be funded. Options currently under consideration include monetary contributions to pay for waste collection and clean water, and a compulsory monthly vendor fee for the communal use of refrigeration. To strengthen support for these changes, SAFE, its facilitators and Dinas staff will build broader market capacity and skillsets in biosecurity, hygiene and sanitation through healthy market community activities.

ACTIVITY 5. ESTABLISH VENDOR OF THE MONTH AWARD

To better link consumer perceptions of quality with the desired behaviors of the vendors, SAFE will establish a consumer-led text 'voting' system that allows citizens to select their preferred vendor of the month, and will reward commercial sector players with social recognition for hygienic facilities and healthy poultry practices. For this to be successful, vendors will need to be motivated to

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become a 'vendor of choice'. Examples of rewards may include acknowledgement by posting the vendor's photograph in the center of the market, a gift to help them upgrade their stall, or a nominal financial incentive.

The vendor-of-the-month award program will be conducted in 20 demonstration markets. By the end of the project, 80 vendors will have been recognized.

ACTIVITY 6. AIR RADIO SERIAL DRAMA

SAFE will air the 12-episode radio drama through 10 commercial radio stations (one in each district) and 18 community radio broadcasting stations across the 10 districts. Talk shows will reinforce the messages from the radio drama. The commercial stations chosen are the most popular in each of the 10 SAFE districts, and thus have the biggest audiences. The community radio stations were chosen for their proximity to the live bird markets.

There will be two episodes aired per week. The entire series will take six weeks to air. During this period, there will be three talk shows with local government Dinas staff as guests (Livestock Services, Health Office, and Industry and Trade Office) to reinforce messages and participate in live question-and-answer sessions.

The 18 community radios will broadcast short audio recordings of Islamic "words of wisdom" related to healthy poultry, food safety and hygiene. These messages stem from the *Khutbah* sermons developed in Year 1. Each station has an active listenership of approximately 1,000 persons living around the markets, for a total reach of 18,000 listeners.

SAFE will also provide COMBINE with copies of the radio series for dissemination through their networks. All the materials will be made available as downloadable files on the K4H website, and on the Aisiyah and COMBINE websites and Facebook pages. The materials will be protected by the "Creative Common" copyright scheme whereby anyone can use the materials as long as they are not altered.

ACTIVITY 7. DEVELOP TARGETED COMMUNICATION TOOLS TO SUPPORT CHANGES IN LBMs

SAFE will build on the communication materials and tools developed in Year 1 and identify gaps and needs based on field program implementation results. Technical content will be reviewed by FAO, WHO and the MOA to ensure its accuracy. The MOA has already agreed to provide content related to *Ayam ASUH*. *Ayam ASUH (Aman, Sehat, Utuh dan Halal)* is a government program to produce healthy and quality poultry products (carcasses). The program features good practices in poultry product handling and use of a cold chain. SAFE will provide copies of materials to the MOA to be distributed through the Ministry's network both within and outside of the SAFE program districts. Communication materials that have already been identified include:

- A *Khutbah* book containing a religious perspective on biosecurity, food safety, and good business practices (Aisiyah).
- Mobile phone videos produced by communities and then screened in markets and communities, capturing the progress under the Healthy LBM Initiative.

YEAR TWO WORKPLAN**ACTIVITY 8. PROVIDE HEALTH COMMUNICATION STRATEGY WORKSHOP TO MINISTRY PROGRAM/COMMUNICATION STAFF (Same as Objective 3, activity 8)**

In implementing its Year 1 program, SAFE coordinated and worked with national and local MOA and MOH staff. In the spirit of "One Health" and the desire to address both poultry and human health diseases together, and with the need to improve skills in communication and strategy development, SAFE planned a health communication workshop during Year 1 for staff from the MOA, MOH and KOMNAS Zoonosis who are regularly involved in the planning and development of AI-based communication programs. Participants were identified based on the goals of the workshop and SAFE conducted a needs assessment with each person in preparation for the training. The workshop was moved to Year 2 as a result of discussions early in the project.

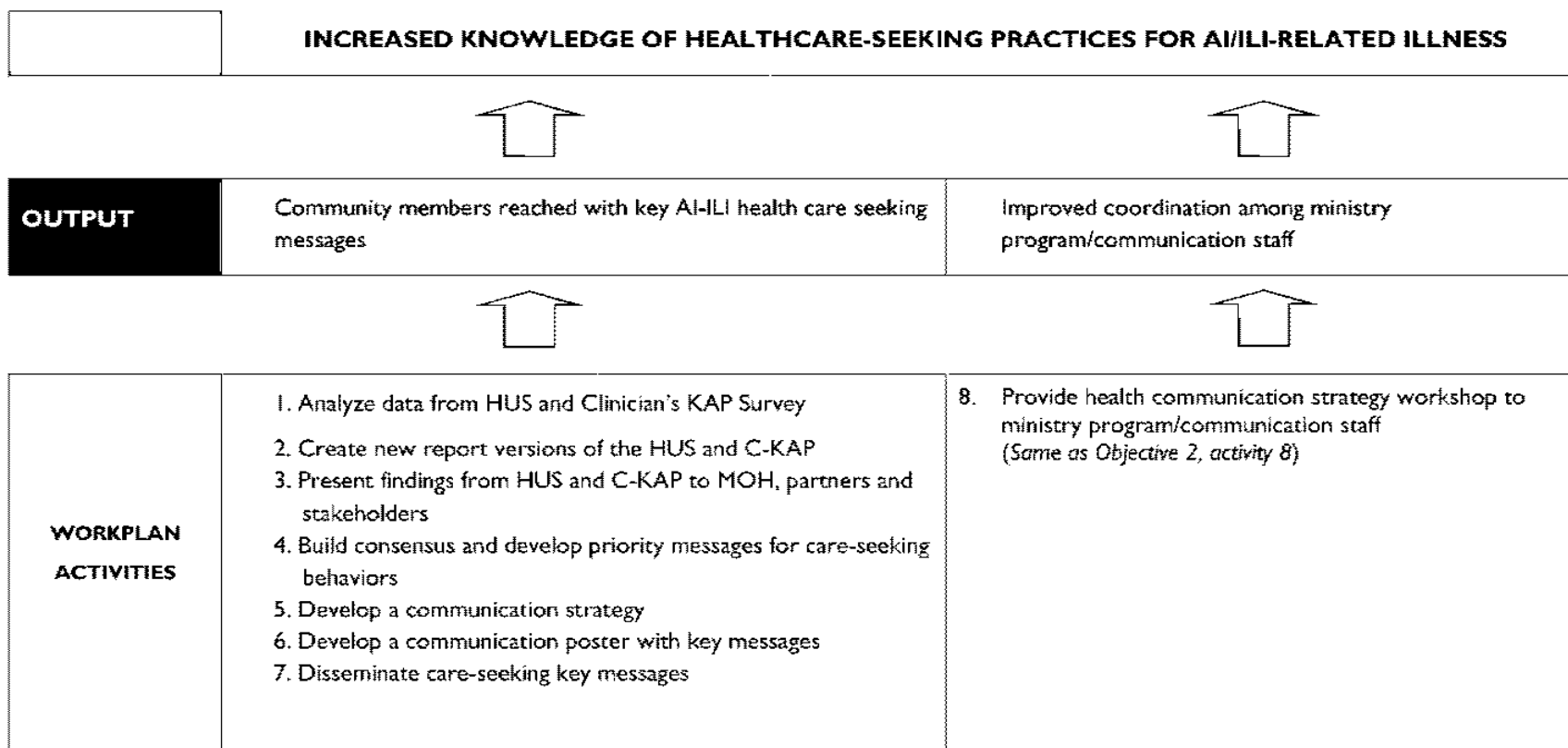
The goal of the workshop training is to improve communication planning and response, and strengthen the overall communication capacity of national and provincial-level officials between and among agencies. The training will take place in April 2012 and will be led by Ben Lozare, director of training and capacity building at JHU-CCP. Training topics will include leadership, communication objectives, strategy design, networking and advocacy, engagement of stakeholders, resource sharing and analysis, audience analysis and segmentation, and use of evidence-based tools.

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Deliverables and Timeline

OBJECTIVE 2 ACTIVITIES	DELIVERABLE	QUARTERS					
		Q1 Apr - Jun 2012	Q2 Jul - Sept 2012	Q3 Oct - Dec 2012			
ACTIVITY 1 Organize and conduct consultative meetings to develop and establish local ownership	Regular district operational meetings	X	X	X			
	Provincial advocacy/update meetings		X	X			
	District technical sustainability meetings		X	X			
ACTIVITY 2 Establish local NGO involvement to create consumer demand activities	Partner's planning workshop		X				
	Summary of community outreach activities (peer-to-peer, enter-educate, video screening, consumer group visits to market, religious events) in Quarterly Reports	X	X	X			
	Summary of healthy poultry and market electronic/social media activities (SMS blasts broadcast, Aisyiyah and COMBINE websites, Facebook and Twitter) in Quarterly Reports		X	X			
	Advocacy training for facilitators		X				
	Capacity building workshop on SMS			X			
	Summary tools/job aids (short films on healthy market initiative, bulletin on healthy poultry and markets, audio recording for community radio, and <i>khutbah</i> books	X	X	X			
	Summary of modifications in Quarterly Reports	X					
ACTIVITY 3 Support improvement of vendor stalls							
ACTIVITY 4 Maintain market improvements	LBM maintenance plans		X				
	Healthy market community activities conducted	X	X	X			
ACTIVITY 5 Establish Vendor of the Month award	Summary of vendors award program in Quarterly Reports		X	X			
ACTIVITY 6 Air radio serial drama	Radio serial drama episodes aired		X	X			
ACTIVITY 7 Develop targeted communication tools to support changes in LBMs	IEC materials developed	X					
ACTIVITY 8 Provide health communication strategy workshop to ministry program/communication staff (Same as Objective 3, activity 8)	Report on Health Strategic Communication Workshop	X					

OBJECTIVE 3: Increase knowledge of signs/symptoms and risk factors for AI-related illness in people and promote behaviors that improve household-level care seeking in response to AI-related illness



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Objective 3: Increase Knowledge of Signs/Symptoms and Risk Factors for AI-Related Illness in People and Promote Behaviors that Improve Household-Level Care Seeking in Response to AI-Related Illness

Overview

Indonesia has the highest human case fatality rate from AI in the world. The fatality rate has remained above 80 percent for several years. Data from the MOH and WHO reveal that the median length of time between onset of illnesses and hospital admission is six days, which is often too late to prevent death, and much longer than in countries with lower fatality rates.

SAFE will use the key findings from a 2012 Healthcare Utilization Survey (HUS) and a 2012 Clinician's KAP (C-KAP) Survey to develop program activities. The HUS was conducted to understand how households make their healthcare-seeking decisions. One of the key findings was that about 65 percent of respondents seek care within 48 hours of onset of an acute illness episode. However, as mentioned above, it takes about six days to be admitted to a hospital. This suggests that SAFE will need to further analyze the data to understand what aspects of the healthcare system cause this considerable delay in hospitalization.

In consultation with WHO and MOH, the main efforts will be to jointly reach consensus on the key findings stemming from the HUS and C-KAP Survey; transform each of the PowerPoint presentation reports into additional reports; develop a communication strategy with target audiences; develop consensus on key messages; pre-test and finalize the messages; design, pre-test and finalize communication material(s); and use existing partners PMI, Aisyiyah and COMBINE to reach communities with key healthcare-seeking messages. SAFE will conduct a qualitative evaluation and document the results under the monitoring and evaluation plan.

Objective 3 will have eight core activities:

- Activity 1. Analyze data from HUS and C-KAP Survey
- Activity 2. Create new report versions of the HUS and C-KAP
- Activity 3. Present findings from HUS and C-KAP to MOH, partners and stakeholders
- Activity 4. Build consensus and develop priority messages for care-seeking behaviors
- Activity 5. Develop a communication strategy
- Activity 6. Develop a communication poster with key messages
- Activity 7. Disseminate care-seeking key messages
- Activity 8. Provide health communication strategy workshop to ministry program/communication staff (*Same as Objective 2, activity 8*)

Activity Descriptions

ACTIVITY 1. ANALYZE DATA FROM HUS AND CLINICIAN'S KAP SURVEY

The HUS was conducted to develop estimates of the seasonal influenza disease burden and to determine the proportion of persons with ILIs that seek care, their understanding of signs and

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symptoms that indicate the need for care, and decision-making about when and where to seek care for respiratory illnesses.

The Clinician's KAP (C-KAP) Survey was conducted among all primary care outpatients and hospital-based physicians providing medical care for in-patients in East Jakarta municipality and in the district of Bogor, West Java who provide medical care for children or adults. The aim was to determine their knowledge, attitudes and practices (KAP) with regard to the identification, treatment and referral of patients suspected to be infected with the H5N1 A1 virus. Physicians were also surveyed on their knowledge of seasonal influenza.

During Year 1, SAFE summarized and presented the HUS topline findings. During Year 2, SAFE will conduct a deeper analysis of the HUS findings and submit a report. SAFE will also summarize and present the topline findings for the C-KAP Survey and submit a report. CDC-Atlanta will conduct a deeper analysis of this study.

The HUS findings will be used to address barriers and inform preventive educational strategies at the community level to reduce avian-to-human transmission of H5N1 A1 and to reduce delays in care seeking that can result in higher-than-necessary mortality rates. The findings of the C-KAP Survey will be used to inform healthcare provider education efforts to improve H5N1 case management and support earlier detection and antiviral treatment. In addition, findings will be inputted into the SAFE communication strategy. SAFE will make all reports available to stakeholders.

ACTIVITY 2. CREATE NEW REPORT VERSIONS OF THE HUS AND C-KAP

SAFE will develop condensed versions of the HUS and C-KAP as part of SAFE's end-of-project information series. These versions will focus on research to practice audiences and will target those working in the area of health programming, such as professionals working in a ministry of health and holding managerial and decision-making positions, both locally and internationally.

ACTIVITY 3. PRESENT FINDINGS FROM HUS AND C-KAP TO MOH, PARTNERS AND STAKEHOLDERS

SAFE will convene a meeting for stakeholders to present the HUS and C-KAP Survey findings. Participants will be drawn from:

- WHO
- MOH
- Ikatan Dokter Indonesia (IDI, Association of Indonesian Medical Doctors)
- Ikatan Bidan Indonesia (IBI, Association of Indonesian Midwives)
- Universities (Faculties of Public Health)

ACTIVITY 4. BUILD CONSENSUS AND DEVELOP PRIORITY MESSAGES FOR CARE-SEEKING BEHAVIORS

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SAFE will schedule a meeting with USAID, WHO, and CDC to review and discuss the HUS and C-KAP findings and determine evidence-based behavior changes required to improve healthcare-seeking practices related to AI. A subsequent meeting will be held with the MOH to finalize the priority behavior change messages. SAFE will develop and pre-test messages with target audiences, share results with the extended team, and finalize messages.

ACTIVITY 5. DEVELOP A COMMUNICATION STRATEGY

In consultation with WHO and the MOH, SAFE will develop a strategy for targeted populations that will promote appropriate healthcare-seeking practices. The communication strategy will be a short, SAFE project strategy to document the background, evidence-based approach and process. The strategy will highlight key HUS findings and the process of message development and selection of channels to conduct a limited campaign on care-seeking behaviors. This strategy will focus on a cost-effective, quick and efficient manner to reach high-risk audiences in the existing 10 SAFE high-risk districts. SAFE will use existing partner communication channels and networks to disseminate and reinforce improved healthcare-seeking messages.

ACTIVITY 6. DEVELOP A COMMUNICATION POSTER WITH KEY MESSAGES

SAFE will design, pre-test, finalize and produce a poster to encourage care-seeking practices. A dissemination plan, based on SAFE funding, will be developed in coordination with the extended team. The 12th and final episode of the radio drama series will be developed with a message that reinforces seeking healthcare at a nearby facility if someone in the family experiences AI/ILI symptoms and has had recent contact with poultry.

ACTIVITY 7. DISSEMINATE CARE-SEEKING KEY MESSAGES

The HUS topline findings show that interpersonal communication and social networks play an important role in providing information at the community level. SAFE will work with existing programs and partners in the field, including PMI, Aisyiyah and COMBINE, and their extensive grass-roots networks, to communicate messages that endorse positive and rapid healthcare-seeking behaviors. The messages will be part of the content that is distributed through all communication channels used by SAFE program interventions, such as *pengajian* (Quran readings), peer-to-peer education, social media, and the radio drama. SAFE will also disseminate these key messages to farmers and the poultry industry and LBM audiences under Objectives 1 and 2. The materials and radio series will be made available to the MOH and its *Desa Siaga* program, for further dissemination.

ACTIVITY 8. PROVIDE HEALTH COMMUNICATION STRATEGY WORKSHOP TO MINISTRY PROGRAM/COMMUNICATION STAFF (Same as Objective 2, Activity 8)

In Year 1 SAFE coordinated with KOMNAS Zoonosis, MOA and MOH officials to conduct a communication skills needs assessment and identify participants for SAFE training programs. Training participants in the Health Strategic Communication Workshop will be MOA and MOH personnel and members of KOMNAS Zoonosis who are regularly involved in the planning and

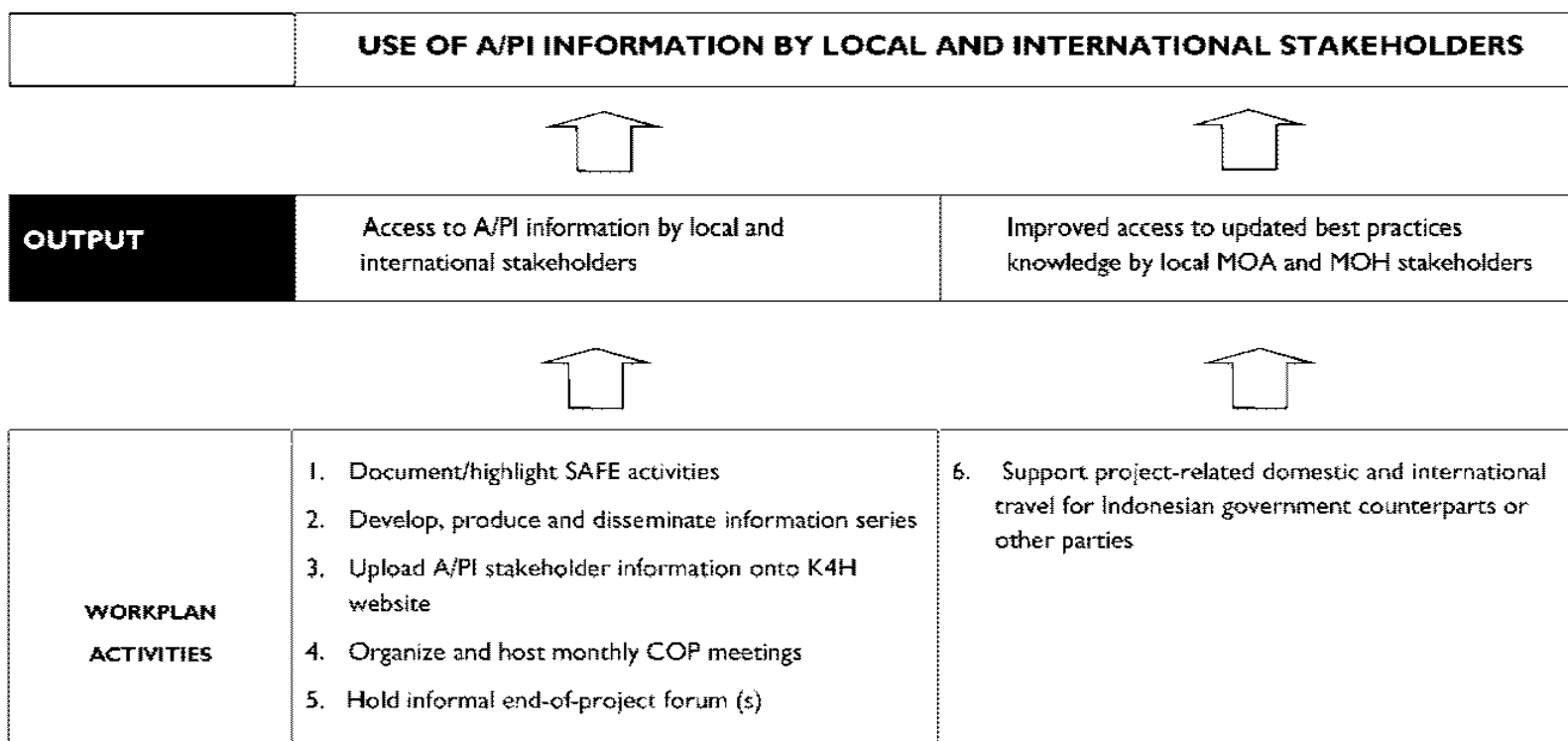
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development of AI-based communication programs. The training goals will be to improve communication planning and response, and to strengthen the overall communication capacity of national and provincial-level officials between and among agencies. The training will be organized in April 2012 and will be led by Ben Lozare of JHU-CCP. Training topics will include engagement of stakeholders, resource sharing and analysis, audience analysis and segmentation, use of evidence-based tools, communication objectives, strategy design, and networking and advocacy.

YEAR TWO WORKPLAN

Deliverables and Timeline

OBJECTIVE 3 ACTIVITIES	DELIVERABLE	QUARTERS					
		Q1 Apr - Jun 2012	Q2 Jul - Sept 2012	Q3 Oct - Dec 2012			
ACTIVITY 1 Analyze data from HUS and Clinician's KAP Survey	HUS and C-KAP final report	X					
ACTIVITY 2 Create new report versions of the HUS and C-KAP	Condensed HUS Word report Condensed C-KAP Word report		X				
ACTIVITY 3 Present findings from HUS and C-KAP to MOH, partners and stakeholders	Presentation of HUS and C-KAP to international stakeholders	X					
ACTIVITY 4 Build consensus and develop priority messages for care-seeking behaviors	Priority messages on care-seeking behaviors drafted		X				
	Priority messages on care-seeking behaviors finalized		X				
ACTIVITY 5 Develop a communication strategy	Final communication strategy document			X			
ACTIVITY 6 Develop a communication poster with key messages	IEC material developed, pre-tested, finalized, and produced			X			
ACTIVITY 7 Disseminate care-seeking key messages	IEC material and messages disseminated			X			
ACTIVITY 8 Provide health communication strategy workshop to ministry program/communication staff (Same as Objective 2, activity 8)	Report on Health Strategic Communication Workshop	X					

OBJECTIVE 4: Facilitate coordination among partners by sharing information and hosting meetings

YEAR TWO WORKPLAN**Objective 4. Coordinate With and Facilitate Communication Among Partners****Overview**

In Year 2 SAFE will continue to build on the established professional and collegial relationships with the leadership and technical staff of Indonesian and international partners including MOA/CMU, local government, MOH, FAO, WHO, JSI, AusAID, CDC and executives from the Indonesian poultry industry. SAFE will also continue to host regular coordination meetings and working groups that facilitate the sharing of information and consensus building. A new global information platform containing Indonesian A/PI resources will go live this year and SAFE will hold an informal end-of-project forum(s).

Objective 4 will have six core tasks:

- Activity 1. Document/highlight SAFE activities
- Activity 2. Develop, produce and disseminate information series
- Activity 3. Upload A/PI stakeholder information onto K4H website
- Activity 4. Organize and host monthly COP meetings
- Activity 5. Hold informal end-of-project forum (s)
- Activity 6. Support project-related domestic and international travel for Indonesian government counterparts or other parties

Activity Descriptions**ACTIVITY 1. DOCUMENT/HIGHLIGHT SAFE ACTIVITIES**

SAFE will continue to document and highlight SAFE activities through articles, press clippings and success stories.

ACTIVITY 2. DEVELOP, PRODUCE AND DISSEMINATE INFORMATION SERIES

The purpose of this series is to capture and share SAFE findings, models and lessons learned. The audiences for this series are the GOI and industry, animal and human health partners and global practitioners; researchers and program professionals in the fields of pandemic and avian influenza, other zoonotic diseases, ILI and ARI; and other local partners. SAFE will develop a minimum of five documents on five themes, selected from those below.

1. Health Care Utilization Survey in East Jakarta and Bogor District Indonesia: Healthcare Seeking for Avian Influenza and other Influenza-Like Illnesses (referenced under Objective 3);
2. Clinicians' KAP Survey in East Jakarta and Bogor Districts Indonesia: Healthcare Provider Practices for Avian Influenza and other Influenza-Like Illnesses (referenced under Objective 3);

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3. Commercial Farmer Perspectives: Biosecurity, Good Farming Practices, Incentives and Benefits (referenced under Objective 1);
4. The Teaching Farm: An Innovative Approach to Improving Biosecurity;
5. Healthy Markets and Community Initiative: A Supply - Demand Interplay; and
6. Social Media as a Catalyst for Improved Health.

ACTIVITY 3. UPLOAD A/PI STAKEHOLDER INFORMATION ONTO K4H WEBSITE

The Indonesia A/Pandemic “Knowledge for Health” (K4H) (www.k4health.org) website was launched earlier in the year. The purpose of this Internet presence is to provide a platform to globally disseminate research findings, communication materials and educational tools, best practices, and lessons learned from A/PI programs in Indonesia. The page currently showcases documents from the GOI, FAO, WHO, JSI-Deliver, USAID and SAFE. During the remainder of the SAFE project, we will continue to upload key documents and grant access to USAID's key local and international A/PI partners to upload their own resources as they become available so that the site is a living and dynamic platform through which all stakeholders can share the latest and most important information.

ACTIVITY 4. ORGANIZE AND HOST MONTHLY CHIEF OF PARTY MEETINGS

SAFE will continue to host COP meetings for USAID and USAID A/PI implementing partners to facilitate coordination, planning and data sharing.

ACTIVITY 5. HOLD INFORMAL END-OF-PROJECT FORUM (S)

SAFE will hold one or two informal forums or meetings to cost-effectively and efficiently transfer the core elements of the SAFE project to local stakeholders. The symbolism of this exchange marks the completion of the USAID/SAFE partnership with the industry and local government, and highlights the responsibility entrusted to these partners. The details of the forum(s) will be finalized in consultation with USAID.

ACTIVITY 6. SUPPORT PROJECT-RELATED DOMESTIC AND INTERNATIONAL TRAVEL FOR INDONESIAN GOVERNMENT COUNTERPARTS OR OTHER PARTIES

The SAFE program will continue to finance participation in key meetings, conferences or study tours by government officials and other relevant stakeholders. SAFE will continue to coordinate with USAID to identify study tours that can provide a learning environment that encourages participation from multiple sectors (public, private, nongovernmental) and the development of new problem-solving skills.

YEAR TWO WORKPLAN

Deliverables and Timeline

OBJECTIVE 4 ACTIVITIES	DELIVERABLE	QUARTERS					
		Q1 Apr - Jun 2012	Q2 Jul - Sept 2012	Q3 Oct - Dec 2012			
ACTIVITY 1 Document/highlight SAFE activities	Articles/press clippings/success stories	X	X	X			
ACTIVITY 2 Develop, produce and disseminate an information series	Five documents developed						
	Five documents produced and disseminated						
ACTIVITY 3 Upload A/PI stakeholder information onto K4H website	A/PI stakeholder information available on portal	X	X	X			
ACTIVITY 4 Organize and host monthly Chief of Party meetings	Monthly meetings	X	X	X			
ACTIVITY 5 Hold informal end-of-project forum (s)	One or two end-of-project forums held						
ACTIVITY 6 Support project-related domestic and international travel for Indonesian government counterparts or other parties	Travel to regional/international conferences and/or workshops	X					

YEAR TWO WORKPLAN**4. GRANTS ADMINISTRATION****Grants Program**

SAFE's initial grant budget of \$1 million was reduced to approximately \$358,000 under the revised SOW. SAFE had received proposals from the University of Indonesia and evaluated proposals for the social media RFA, but these were all cancelled as a result of funding cuts. SAFE had to inform several potential grantees that it was no longer able to fund grant applications under the Biosecurity Improvement Innovation Fund (BIIF).

However, SAFE will issue several grants that contribute towards SAFE program objectives. SAFE has allocated part of the grants program for making improvements at the LBM. In Year 2, SAFE will award 20 small grants to 20 demonstration markets to make improvements in the marketplace.

SAFE will also issue grants to increase awareness and promote consumer demand for clean LBMs and healthy poultry products. The campaign activities will be coordinated with COMBINE and Aisiyah, which began implementing Healthy LBM Initiative activities through grants issued in Year 1.

SAFE also will implement an SMS pilot project that aims to maximize communication between TS staff and more than 50 farmers to reinforce biosecurity messages and promote positive behavior change.

Management and Administration

The Grants and Contracts Specialist will work closely with the Chief of Party, the Senior Finance, Procurement and Grants Manager, and the Objective team members to successfully implement the grants program.

All grants will be executed in compliance with the USAID ADS (Automated Directive System) 302.3.4.8 and 302.3.5.6 and the grant awards will be administered in accordance with the requirements of 22 CFR 226, ADS 303, the provisions of the Contract, and applicable federal law, which are fully described in the Grants Manual. Before awarding a proposed grant, SAFE will obtain prior written approval from USAID, including approval as to (1) the identity of the proposed grantee, (2) the amount of the proposed grant, and (3) the nature of the grant activities.

The Grants and Contracts Specialist will be responsible for successful implementation of the grants program of the SAFE project. The Grants and Contracts Specialist will ensure that the daily operation and routine administrative functions of the SAFE grants are well administered and that the outcomes of the grants program activities support the targeted end results of the SAFE project. The Grants and Contracts Specialist is the primary liaison with grantees, both monitoring the program and providing training and technical assistance in areas such as proposal writing, management, and program operation. The Grants and Contracts Specialist will make sure that grant funds are available for the program and will provide assistance in financial management to the grantee if needed.

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The technical specialists and the Grants and Contracts Specialist will assure that work progress has been made according to the agreement, that invoices are made correctly, and that progress and financial reports and other administrative requirements have been made, met and submitted prior to disbursement. A comprehensive electronic grants management system is included in TAMIS to streamline and simplify grants management.

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5. MONITORING AND EVALUATION**Overview**

A separate Monitoring and Evaluation and PMP document will be submitted under separate cover as a complement to this workplan. This section provides a brief summary of the M&E work that will be conducted during Year 2.

SAFE uses monitoring as an integral part of the project's daily program implementation to assess progress against objectives. SAFE uses monitoring for the early identification of problems and to ensure that the process and timeline will meet workplan requirements. During Year 2, SAFE staff will continue to conduct field level monitoring of activities, subcontractors and grantees. The evaluation records information about lessons learned during implementation or from work already done, and assesses overall outcomes and program impact.

Monitoring

SAFE will continue to conduct field-level monitoring of activities, subcontractors and grantees as part of project management. Overall program monitoring will be conducted by the SAFE Research and Monitoring & Evaluation officer, SAFE team leaders and their program staff, poultry industry staff and project implementation subcontractors. SAFE senior staff will also ensure that implementing and monitoring the strategy includes concentrating efforts, reinforcing local ownership, and producing tools to sustain efforts.

SAFE staff will monitor TFs to ensure that the new biosecurity and GFPs, and techniques such as the "pass over" and "pass through" systems, are being complied with correctly. The industry TS staff will also conduct monitoring visits to support the changes implemented at the TFs and other Sector 3 commercial farms. The findings from these visits will be captured through trip reports and qualitative data. SAFE and partners are collecting five main information sources from the field. These are:

a. *Distribution of Communication and Educational Materials*

This information indicates the distribution of the booklet on "Effective Measures to Prevent the Spread of Disease", Sector 3 poster and leaflet, teaching farm display, and merchandise to target audiences including farmers, academia and the poultry industry.

b. *Teaching Farm Visitors*

This information indicates the number of farms, farmers and students that visit the teaching farms. The data are monitored monthly and collected routinely by the SAFE Objective 1 team through the guest books available at each Teaching Farm. The data on the location of the farms help to identify the number of visitors from farms located at different distances from the TF (i.e., less than an hour, 1.5 hours, and more than 2 hours). This data will be used by SAFE to encourage the poultry industry to bring farmers to the TFs.

c. *Biosecurity and Good Farming Practices Technical Assistance to Farms*

This information indicates the technical assistance provided by SAFE and the TS staff to farms.

YEAR TWO WORKPLAN**d. *Changes in Biosecurity and Good Farming Conditions***

This information is collected quarterly by TS staff, and Objective 1 team members also do spot checks to validate the data. Examples of changes include parking areas outside the farm, locks at the entrance gates, footwear exchange, hand washing facilities, sandal exchange, and dead chicken disposal.

e. *Mortality data*

This information is collected on a continuous basis during regular field visits. It indicates poultry mortality by farm cycle. This information will be coupled with additional information collected by PPK-UI and presented at the end of Year 2.

Activities at demonstration markets and within the community will be monitored by SAFE staff and facilitators.

The monitoring forms for PMI facilitators cover:

- Market conditions before and after the intervention;
- Advocacy/consultative meetings;
- Peer-to-peer consumer outreach;
- Stakeholder participation in the market; and
- Distribution of communication materials.

The monitoring forms for Aisiyah facilitators cover:

- Consumer group visits to markets;
- Quran recitals in markets and communities;
- Advocacy training for Aisiyah facilitators;
- Communication materials developed and distributed (Kultum, Kutbah book); and
- Posting of updates in social media.

The monitoring forms for Combine facilitators cover:

- SMS gateway;
- Communication materials developed and distributed (short movie, bulletin);
- Radio drama, talk show and Kultum broadcast; and
- Posting of updates in social media.

The field facilitators will conduct monitoring visits and report back using custom templates. SAFE will also monitor dissemination of care-seeking messages in coordination with our partners. Financial staff will monitor select activities, particularly grants, to ensure compliance with USAID requirements and federal law.

The TAMIS system will continue to be used to capture and create reports from data gathered or received from the field. Updates on progress and challenges faced will be provided to USAID through the quarterly reports.

Evaluation

SAFE will conduct two evaluation studies: a Commercial Farm Evaluation Study, and a Live Bird Market Evaluation Study. Given the reduction in funding and that one year of work has been eliminated, SAFE has made adjustments to the evaluation plan, as described below.

YEAR TWO WORKPLAN***Commercial Farm Evaluation Study***

SAFE will conduct an evaluation in March 2013, implemented by the University of Indonesia. The purpose of the evaluation will be to measure changes in commercial farms as a result of SAFE interventions. Specifically:

- (i) Changes in conditions (structural) that reduce the risk of AI and other poultry disease transmission. Examples include restricting access to farms through locks on gates, fenced areas, and putting in place a pass-over system.
- (ii) Changes in good farming and biosecurity practices that reduce the risk of poultry disease transmission. Examples include the use of a footwear exchange system and appropriate disposal of dead chickens.

The same checklist used to collect the baseline data will be used. Forty-two farms will be evaluated: 12 teaching farms, 20 farms that have visited the teaching farms and instituted changes, and 10 control farms in the same area with similar characteristics.

- (iii) In addition, for industry teaching farms, SAFE will gather changes in the incidence of poultry mortality.

Live Bird Market Evaluation Study

The LBM study will be conducted in three periods over the duration of the entire program. The baseline was taken on May 2011, the second round of swab tests will be conducted in November 2012, and the final evaluation study will be conducted in March 2013 by Bogor Agricultural Institute (IPB). The purpose of the LBM Study is to measure changes in the program-assisted LBMs as a result of SAFE interventions. The changes evaluated will include:

- (i) Changes in conditions that reduce the risk of AI and other poultry disease transmission. Examples include the creation of a zoning area, and access to waste bins and waste management.
- (ii) Changes in biosecurity practices that reduce the risk of poultry disease transmission. Examples include appropriate disposal of poultry waste, cleaning of vendor stall areas, and appropriate apron usage.

Twenty SAFE demonstration markets and 10 control markets in the same area with similar characteristics will be evaluated. Baseline data will be collected by IPB to measure presence of H5N1 AI at vendor stall areas. The IPB sample collectors and government Dinas staff will be trained in collection techniques by FAO staff. The same five-swab protocol used by FAO in its surveillance activities will be used by SAFE. PCR testing will be conducted on the market samples and the results will be analyzed. SAFE will develop a plan to crosscheck lab results to ensure comparability of laboratory analysis between samples taken from LBMs under the SAFE project and other LBMs under FAO/MOA projects. SAFE will also thoroughly review the results and elements of the various markets with FAO, USAID, and other relevant stakeholders to identify key factors that account for any differences in the results.

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SAFE will conduct the second and final rounds of data collection at the same time as surveillance is conducted by FAO.

Care-Seeking Assessment

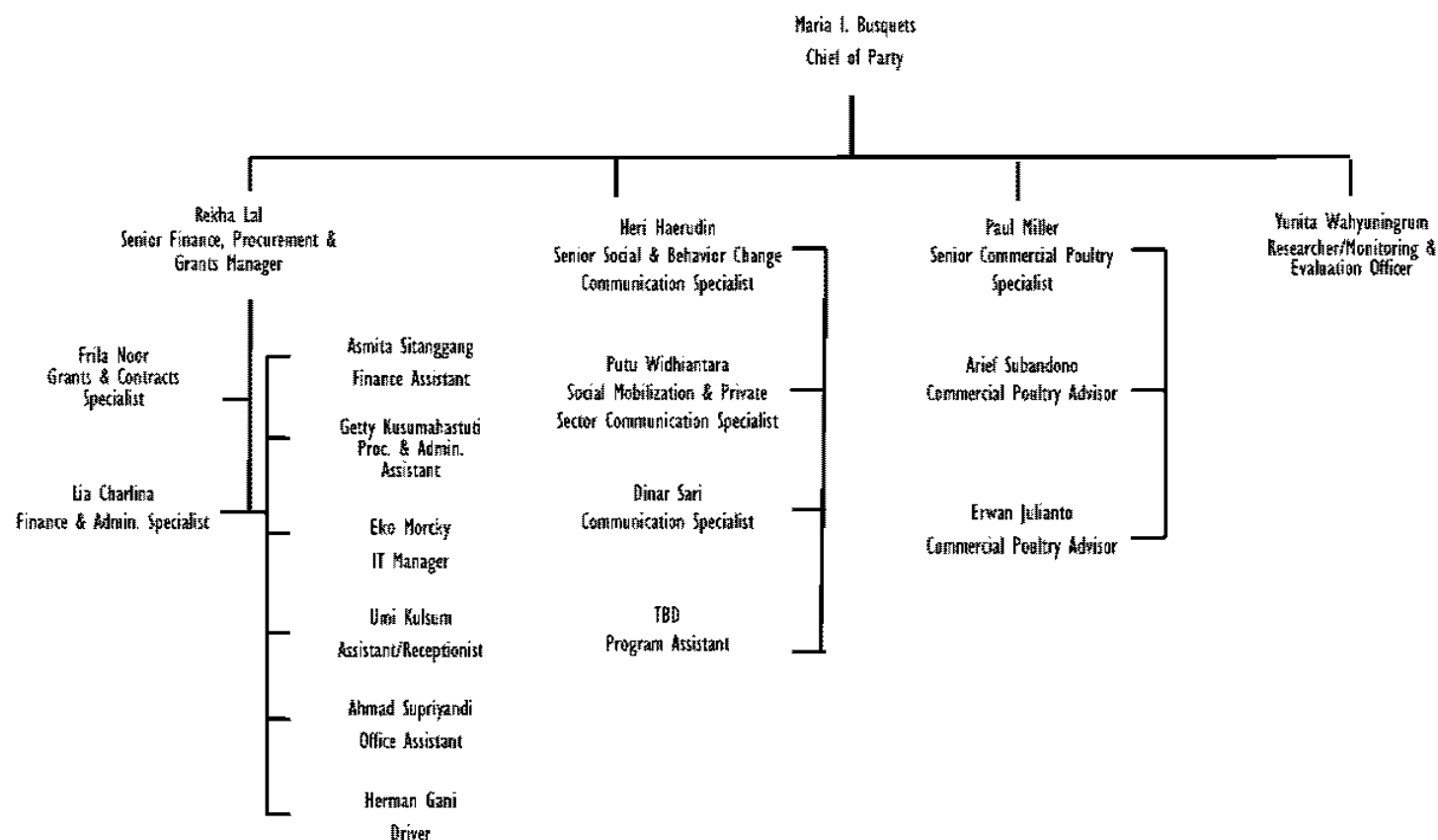
SAFE will conduct a qualitative assessment in March 2013 through partners PMI, Aisiyah and COMBINE in order to better understand targeted audience responses to program efforts aimed at improving healthcare-seeking practices.

The areas evaluated will include:

- (i) Response to/acceptance of care-seeking messages disseminated through materials and community activities
- (ii) Response to radio series
- (iii) Appropriateness of channels of communication
- (iv) Recommendations for future programming

The audiences and districts targeted will be the same as those under Objectives 1 and 2.

ANNEX I: SAFE ORGANIZATION CHART

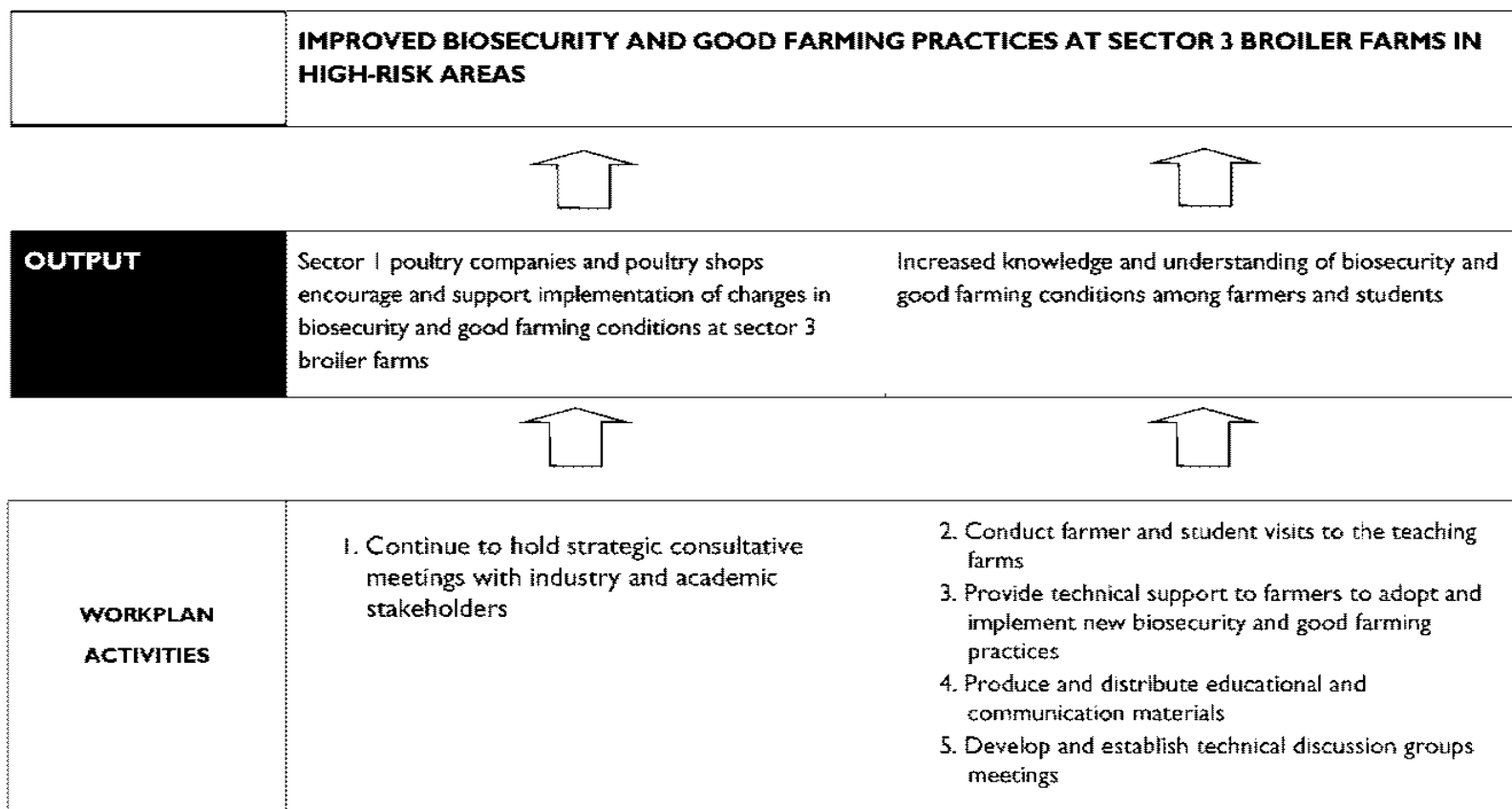


ANNEX II. BUDGET

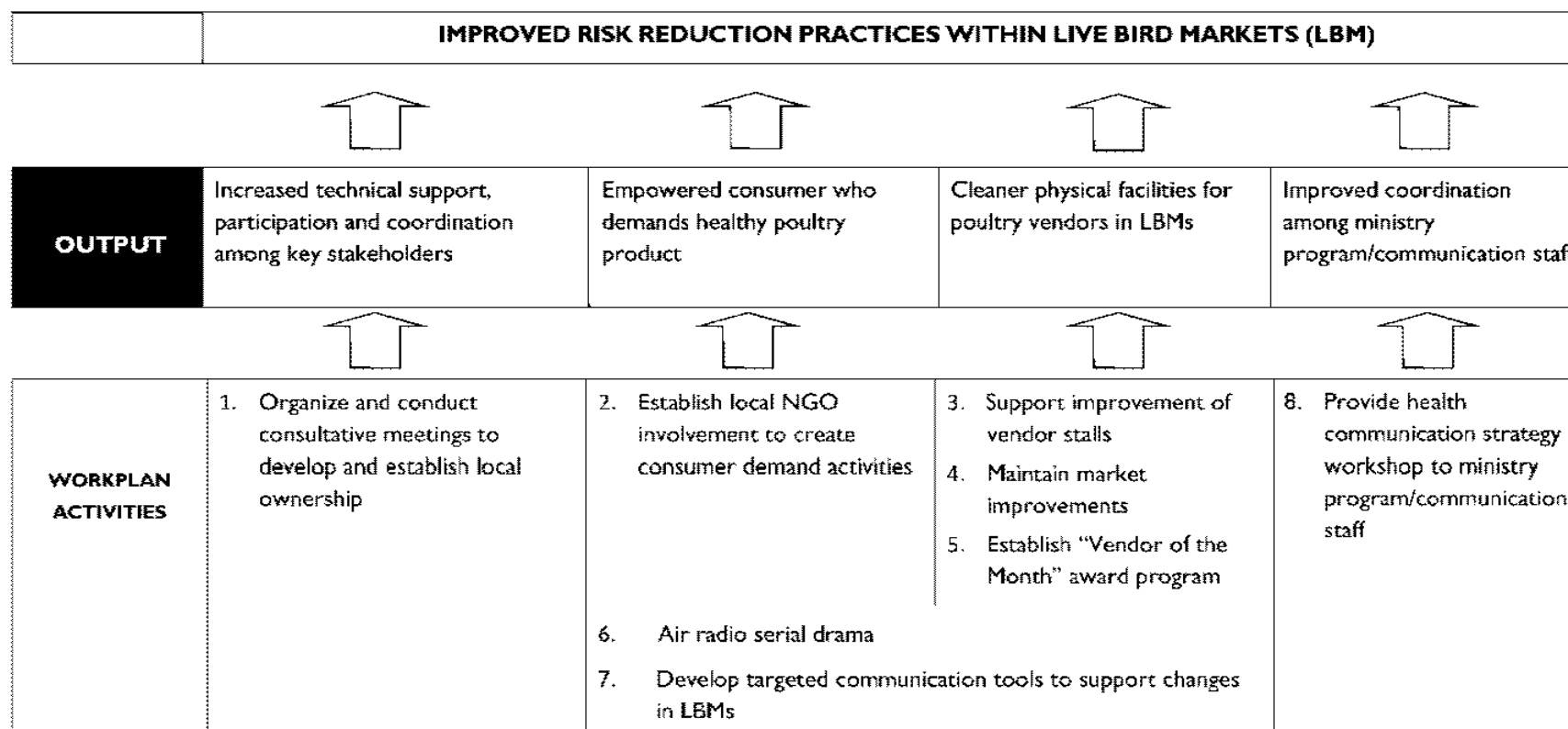
CLINS	New Contract Task Order Budget	Obligated Amount	Invoiced	Accruals	Projections	Total Year 1-3
			Mar 2011 - Oct 2012		Nov 1, 2012 - June 15, 2013	
OBJECTIVE 1	\$2,997,381	\$2,997,381	\$2,420,285	\$69,099	\$565,657	\$3,055,041
OBJECTIVE 2	\$2,896,170	\$2,896,170	\$2,046,411	\$184,264	\$674,310	\$2,904,985
OBJECTIVE 3	\$1,101,543	\$1,101,543	\$674,405	\$184,264	\$171,249	\$1,029,919
OBJECTIVE 4	\$263,106	\$263,106	\$153,015	\$23,033	\$92,208	\$268,256
TOTAL	\$7,258,200	\$7,258,200	\$5,294,115	\$460,661	\$1,503,424	\$7,258,200

ANNEX III. SUMMARY OF OUTCOMES, OUTPUTS AND ACTIVITIES

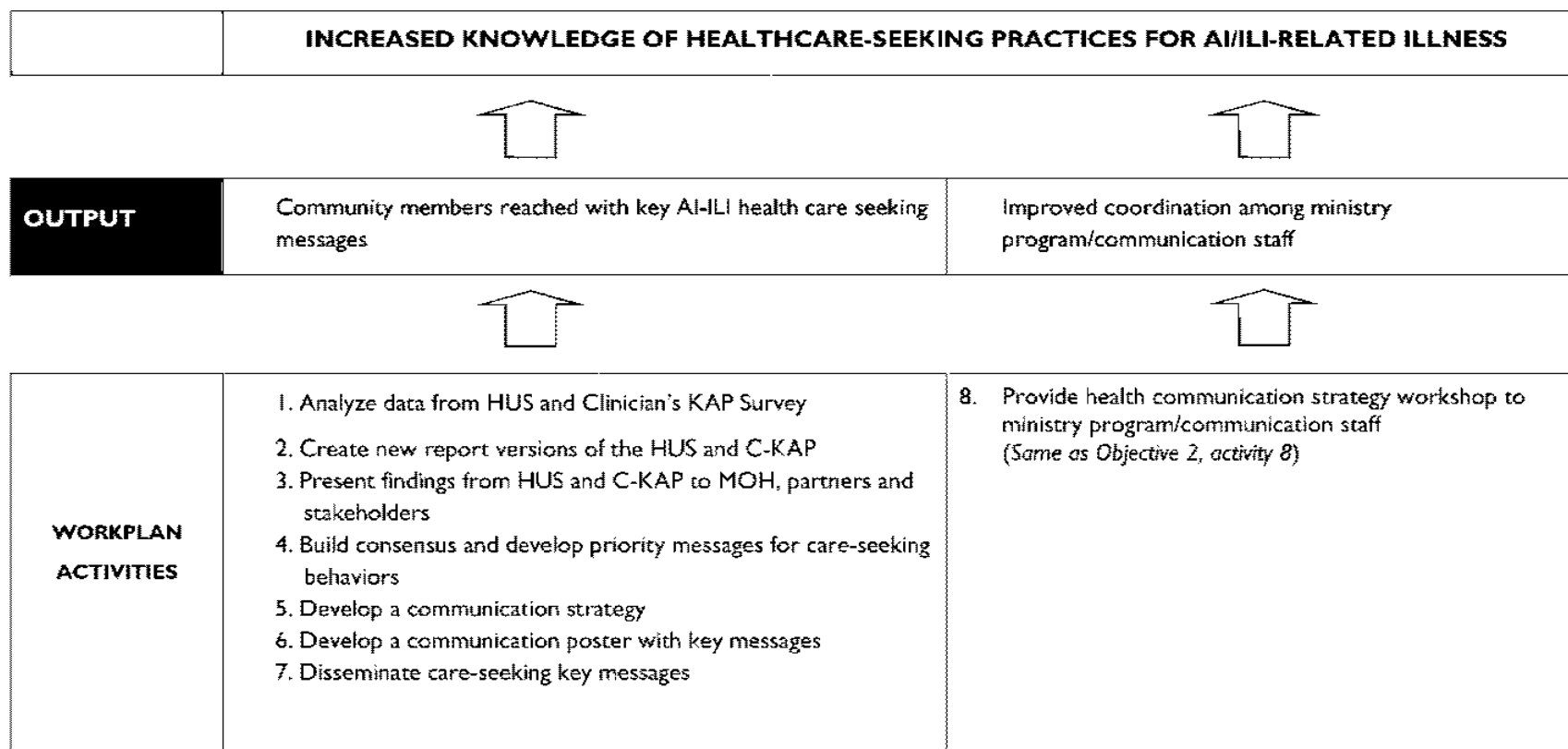
OBJECTIVE 1: Strengthen and expand private, and public/private partnerships in high-risk districts to improve biosecurity and good farming practices in order to limit AI transmission among poultry

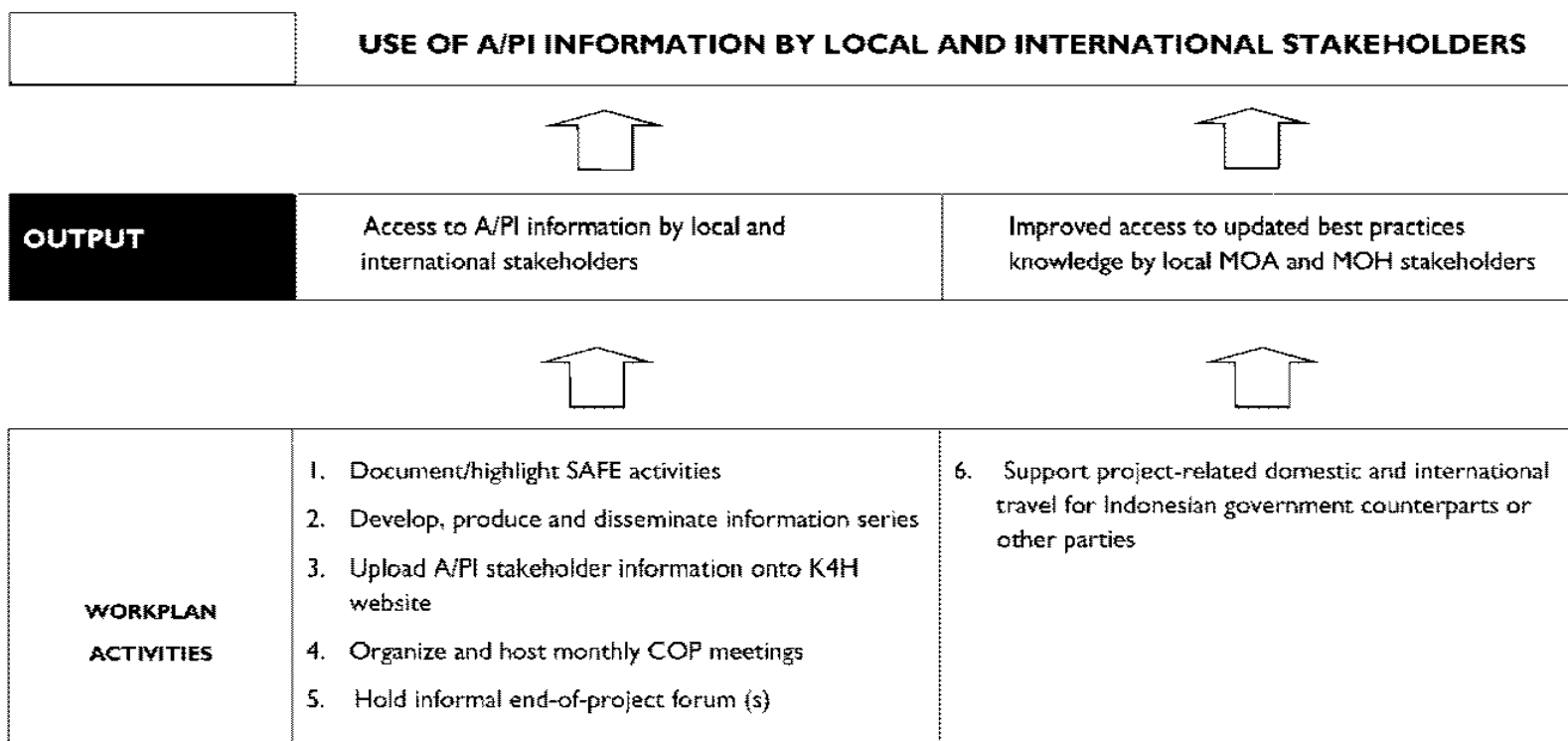


OBJECTIVE 2: Promote behaviors that lower the risks of AI transmission among poultry and increase knowledge of signs, symptoms and risk factors for AI-related illness



OBJECTIVE 3: Increase knowledge of signs/symptoms and risk factors for AI-related illness in people and promote behaviors that improve household-level care seeking in response to AI-related illness



OBJECTIVE 4: Facilitate coordination among partners by sharing information and hosting meetings

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ANNEX IV. SUMMARY OF DELIVERABLES AND TIMELINE

OBJECTIVE ACTIVITIES	DELIVERABLE	QUARTERS					
		Q1 Apr - Jun 2012	Q2 July - Sept 2012	Q3 Oct - Dec 2012			
ACTIVITY 1. Hold strategic consultative meetings with industry and academic stakeholders	Summary results in Quarterly Reports	X	X	X			
ACTIVITY 2. Conduct farmer and student visits to the teaching farms	Summary number of visits in Quarterly Reports	X	X	X			
	Report on Champion Farmer competition results		X	X			
ACTIVITY 3. Provide technical support to farmers to adopt and implement new biosecurity and good farming practices	Summary farm changes in Quarterly Reports		X	X			
ACTIVITY 4 Produce and distribute educational and communication materials	Report on SMS pilots						
	Farmer-farmer video production			X			
	Farmer-to-farmer video dissemination						
ACTIVITY 5. Develop and establish technical discussion groups meetings	Summary findings in Quarterly Reports	X	X	X			

YEAR TWO WORKPLAN

OBJECTIVE 2 ACTIVITIES	DELIVERABLE	QUARTERS					
		Q1 Apr - Jun 2012	Q2 Jul - Sept 2012	Q3 Oct - Dec 2012			
ACTIVITY 1 Organize and conduct consultative meetings to develop and establish local ownership	Regular district operational meetings	X	X	X			
	Provincial advocacy/update meetings		X	X			
	District technical sustainability meetings		X	X			
ACTIVITY 2 Establish local NGO involvement to create consumer demand activities	Partner's planning workshop		X				
	Summary of community outreach activities (peer-to-peer, enter-educate, video screening, consumer group visits to market, religious events) in Quarterly Reports	X	X	X			
	Summary of healthy poultry and market electronic/social media activities (SMS blasts broadcast, Aisyiyah and COMBINE websites, Facebook and Twitter) in Quarterly Reports		X	X			
	Advocacy training for facilitators		X				
	Capacity building workshop on SMS			X			
	Summary tools/job aids (short films on healthy market initiative, bulletin on healthy poultry and markets, audio recording for community radio, and <i>khutbah</i> books	X	X	X			
	Summary of modifications in Quarterly Reports	X					
ACTIVITY 3 Support improvement of vendor stalls							
ACTIVITY 4 Maintain market improvements	LBM maintenance plans		X				
	Healthy market community activities conducted	X	X	X			
ACTIVITY 5 Establish Vendor of the Month award	Summary of vendors award program in Quarterly Reports		X	X			
ACTIVITY 6 Air radio serial drama	Radio serial drama episodes aired		X	X			
ACTIVITY 7 Develop targeted communication tools to support changes in LBMs	IEC materials developed	X					
	Report on Health Strategic Communication Workshop	X					
ACTIVITY 8 Provide health communication strategy workshop to ministry program/communication staff (Same as Objective 3, activity 8)							

YEAR TWO WORKPLAN

OBJECTIVE 3 ACTIVITIES	DELIVERABLE	QUARTERS				
		Q1 Apr - Jun 2012	Q2 Jul - Sept 2012	Q3 Oct - Dec 2012		
ACTIVITY 1 Analyze data from HUS and Clinician's KAP Survey	HUS and C-KAP final report	X				
ACTIVITY 2 Create new report versions of the HUS and C-KAP	Condensed HUS Word report Condensed C-KAP Word report		X			
ACTIVITY 3 Present findings from HUS and C-KAP to MOH, partners and stakeholders	Presentation of HUS and C-KAP to international stakeholders	X				
ACTIVITY 4 Build consensus and develop priority messages for care-seeking behaviors	Priority messages on care-seeking behaviors drafted		X			
	Priority messages on care-seeking behaviors finalized		X			
ACTIVITY 5 Develop a communication strategy	Final communication strategy document			X		
ACTIVITY 6 Develop a communication poster with key messages	IEC material developed, pre-tested, finalized, and produced			X		
ACTIVITY 7 Disseminate care-seeking key messages	IEC material and messages disseminated			X		
ACTIVITY 8 Provide health communication strategy workshop to ministry program/communication staff (Same as Objective 2, activity 8)	Report on Health Strategic Communication Workshop	X				

YEAR TWO WORKPLAN

OBJECTIVE 4 ACTIVITIES	DELIVERABLE	QUARTERS					
		Q1 Apr - Jun 2012	Q2 Jul - Sept 2012	Q3 Oct - Dec 2012			
ACTIVITY 1 Document/highlight SAFE activities	Articles/press clippings/success stories	X	X	X			
ACTIVITY 2 Develop, produce and disseminate an information series	Five documents developed						
	Five documents produced and disseminated						
ACTIVITY 3 Upload A/PI stakeholder information onto K4H website	A/PI stakeholder information available on portal	X	X	X			
ACTIVITY 4 Organize and host monthly Chief of Party meetings	Monthly meetings	X	X	X			
ACTIVITY 5 Hold informal end-of-project forum (s)	One or two end-of-project forums held						
ACTIVITY 6 Support project-related domestic and international travel for Indonesian government counterparts or other parties	Travel to regional/international conferences and/or workshops	X					



**TECHNICAL AND POLICY DISCUSSION ON IMPROVING
THE PREVENTION AND CONTROL OF H5N1 HIGHLY PATHOGENIC AVIAN INFLUENZA
IN HIGHLY AFFECTED AND NEIGHBORING COUNTRIES**

23-25 April 2012, Ho Chi Minh City, Viet Nam



**REPORT OF THE MEETING
HO CHI MINH CITY, VIET NAM, 23-25 APRIL 2012**

Report prepared by: David Payne, Consultant, on behalf of FAO Viet Nam



Disclaimer:

This report does not necessarily represent the views of the organizations that supported the meeting or the views of the Government of Vietnam who hosted the meeting.

Executive Summary

At the beginning of 2012, the H5N1 HPAI virus continues to reside primarily in the poultry populations in about five to ten countries despite efforts by countries and the international community to decrease the burden of disease. Since 1996, the virus has undergone considerable genetic evolution and has expanded its geographic range. Some recent variants of the virus are not susceptible to existing poultry vaccines applied in some national control programs. The H5N1 HPAI virus is still considered a serious pandemic threat.

A previous *Technical Discussion on Best Practices for Prevention and Containment of H5N1 Highly Pathogenic Avian Influenza* organized by the Government of Indonesia and the United States Agency for International Development (USAID) in Bali in March 2010 brought together five highly-affected countries (Bangladesh, China, Egypt, Indonesia, and Viet Nam) to share lessons learned and identify best practices in responding to HPAI H5N1.

A second technical- and policy-level discussion for prevention and control of H5N1 HPAI was organized from April 23 to 25, 2012 in Ho Chi Minh City, Viet Nam. In addition to the five highly-affected countries that participated in the Bali meeting, the April 2012 discussions also included four neighboring countries (Cambodia, Lao PDR, Myanmar, and Thailand) which have reported periodic poultry outbreaks and some human H5N1 cases. The meeting was hosted by the Government of Viet Nam, with financial and technical assistance from USAID.

The technical discussions focused on (i) sharing key programmatic lessons learned and best practices, and identifying opportunities to replicate these successes in other countries; and (ii) on discussing and identifying possible solutions to key unresolved issues related to preventing and controlling H5N1 HPAI infections in poultry and humans and monitoring H5N1 HPAI viral evolution.

Participants in the meeting included high-level technical representatives from Ministries of Health and Ministries of Agriculture in the participating countries, as well as international technical partners from the headquarters and field offices of FAO, WHO, UNSIC, USAID, US CDC, USDA and Collaborating and Reference Centers.

Mr. Diep Kinh Tan, Vice-Minister of the Ministry of Agriculture and Rural Development (MARD), Viet Nam opened the meeting, affirming the value of regional and global cooperation and the importance of learning from past experiences and identifying the next steps to build strong national responses and effective regional and inter-country cooperation to address H5N1 and other potentially-serious zoonotic diseases.

Mr. Robert W. Ogburn, U.S. Deputy Consul General in Ho Chi Minh City, noted that the meeting was an important opportunity to take stock of and carry forward important and timely policy discussions around a persistent health concern of our time -- avian influenza.

Dr. Emil Agustiono, Deputy Coordinating Minister of the Coordinating Ministry for People's Welfare, Indonesia provided a summary of the previous technical discussion in Bali in March 2010. Mr. Andrew Clements from USAID/Washington provided a summary of the current HPAI H5N1 situation in the world.

Four sessions were organized to provide an opportunity for participating countries to share poster presentations on **best practices and lessons learned**, addressing the following topics:

1. Improving surveillance for reservoirs of H5N1 HPAI virus and monitoring of "silent" infections in animals (including in vaccinated poultry) and people;
2. Improving surveillance for molecular changes in H5N1 HPAI viruses residing in poultry, wild birds, humans, and other animals e.g. swine;
3. Improving the efficacy of outbreak surveillance and control in poultry; and
4. Improving detection and treatment of H5N1 infections in humans using existing systems such as influenza-like illness (ILI) surveillance and early warning/alert systems.

Individual country teams discussed the poster presentations and then reported back to the plenary on what they had learned and which best practices they might be interested to know more about or potentially apply in their own countries. A number of common themes emerged, focusing on:

- Field Epidemiology Training Programs (FETP) and Applied Veterinary Epidemiology (AVET/FETP-V) programs
- Surveillance and early detection of animal disease outbreaks
- Outbreak detection and community-based surveillance (CBS)
- Collaboration between the animal health and human health sectors
- Monitoring virus evolution and poultry vaccine matching
- Live Bird Market (LBM) biosecurity
- Enhancing various other aspects of disease control
- Improving detection and treatment of H5N1 infections in humans
- Cooperation between neighboring countries

Four sessions were organized to explore **key unresolved issues**, focused on the following questions:

1. How can countries and the global community most effectively identify key reservoirs of H5N1 HPAI (and their interconnectivity) and what interventions can be applied to reduce disease burden?
2. What current practices are likely driving evolution of the H5N1 virus and how can countries and the global community most effectively monitor for

- the presence and movement of new viral variants (and other influenzas) in key species to ensure efficacy of interventions and assess pandemic risk?
3. How can countries improve H5N1 HPAI cross-border cooperation and coordination to diminish the likelihood of the virus spreading from country to country?
 4. How can countries sustain essential components of H5N1 HPAI prevention, monitoring, and control programs when faced with declining funding?

Each session was led by a moderator, with comments from expert panel members followed by plenary discussions. For each question, key issues and possible areas for action were identified.

In the final session of the conference, Dr. Dennis Carroll, USAID/Washington noted that USAID and other partners would identify opportunities to follow up and build on the country exchanges during the meeting in order to strengthen country responses and international cooperation. Dr. Carroll also emphasized the need to respond to changing funding levels and to intensify regional and global coordination in responding to HPAI H5N1. Dr. Carroll expressed his strong appreciation to all participants for their contribution, and in particular to the Government of Viet Nam as host of the meeting.

Dr. Subhash Morzaria, FAO particularly noted the value of the innovative format of poster presentations developed by USAID as an effective way to promote sharing of experiences in a highly interactive way with a diverse group of participants. Dr. Morzaria noted the good results also of the panel discussion sessions, providing expert feedback and raising important issues and challenges as well as ways to address key unresolved issues. Dr. Morzaria expressed his appreciation for meeting participants, the national organizing committee and the support team. He also thanked USAID for their leadership and support to the meeting itself and the wider area of HPAI H5N1.

Dr. Hoang Van Nam, Director-General of the Department of Animal Health of the MARD thanked participants on behalf of the Government of Viet Nam, noting that the meeting had provided an important opportunity for learning, discussion of key unresolved issues, and identification of next steps for national responses and regional and inter-country cooperation. Dr. Hoang Van Nam also thanked USAID for their support for the meeting and their wider ongoing support on HPAI H5N1.

In line with the objectives of the meeting to promote technical and policy exchanges between participating countries and agree on actions to enhance coordination on key issues, a number of bilateral meetings were held, providing an opportunity for individual country delegations to exchange specific information and experiences on areas of common interest. Brief summaries of the topics discussed in the bilateral meetings are available.

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Acronyms Used

AI	Avian influenza
ARI	Acute respiratory infection
ASEAN	Association of Southeast Asian Nations
AVET	Applied Veterinary Epidemiology Training
BCC	Behavior change communications
CBS	Community-based surveillance
CBT	Cross-border trade
CMU	Campaign Management Unit (Indonesia)
DAH	Department of Animal Health (Viet Nam)
ECTAD	Emergency Centre for Transboundary Animal Diseases (FAO)
FETP	Field Epidemiology Training Program
FETP-V	Field Epidemiology Training Programs for Veterinarians
FMD	Foot and Mouth Disease
GETS	Gathering Evidence for a Transitional Strategy project (Viet Nam)
HPAI	Highly pathogenic avian influenza
IHR	International Health Regulations
ILI	Influenza-like illness
IMCAPI	International Ministerial Conference on Animal and Pandemic Influenza (organized in Hanoi, Viet Nam in April 2010)
LBM	Live bird market
LPAI	Low pathogenic avian influenza
MARD	Ministry of Agriculture and Rural Development (Viet Nam)
MBDS	Mekong Basin Disease Surveillance project
MOA	Ministry of Agriculture
MOH	Ministry of Health

MOU	Memorandum of Understanding
NIAH	National Institute of Animal Health (Thailand)
NVS	National Veterinary Services (Indonesia)
OIE	International Organization for Animal Health
PAHI	Partnership for Avian and Human Influenza (Viet Nam)
PCR	Polymerase chain reaction
PRRS	Porcine Reproductive & Respiratory Syndrome
PSD-R	Participatory Disease Surveillance and Response (Indonesia)
RDMA	Regional Development Mission for Asia (USAID)
SAARC	South Asian Association for Regional Cooperation
SARI	Severe acute respiratory infection
SIV	Swine Influenza Virus
SMS	Short message service (via mobile phone)
SPS	Sanitary and Phytosanitary
SOP	Standard operating procedure
UN	United Nations
UNSIC	United Nations System Influenza Coordinator
US CDC	United States Centers for Disease Control and Prevention
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WHO	UN World Health Organization

1. Background to the meeting

In 1996, a new variant of H5N1 HPAI virus first emerged in East Asia and since that time, more than 17,000 poultry outbreaks and 600 human infections have been reported from 62 countries in Africa, Asia, Europe, and the Middle East.

Between 30 and 31 March 2010, USAID and the Government of Indonesia hosted a *Technical Discussion on Best Practices for Prevention and Containment of H5N1 Highly Pathogenic Avian Influenza* in Bali to strengthen existing interventions against H5N1 HPAI by promoting dialogue among five countries (Bangladesh, China, Egypt, Indonesia, and Viet Nam) that accounted for >90% of H5N1 HPAI infections in poultry and humans. The technical discussion focused on: a) identifying key programmatic successes or "best practices"; b) identifying how these successes were achieved; and c) identifying opportunities to replicate these successes in other countries. Best practices highlighted during the meeting included: active surveillance for poultry outbreaks; mass poultry vaccination; cleaning and disinfection of live bird markets; matching poultry vaccines with currently circulating strains of H5N1 HPAI virus; market chain analysis; improved referral, clinical management, and infection control for human cases; and communications and awareness-raising. As a follow-up to the Bali meeting, a number of inter-country technical exchanges were planned. The first such exchange took place in March 2011 between China and Viet Nam to discuss the role of vaccination in H5N1 HPAI control in endemic situations with a focus on: the current situation and future prospects; epidemiological tools to support risk-based surveillance, targeted vaccination and risk reduction interventions; and a roadmap for HPAI H5N1 control in China and Viet Nam.

At the beginning of 2012, the H5N1 HPAI virus continues to reside primarily in the poultry populations in about five to ten countries despite efforts by countries and the international community to decrease the burden of disease. Since 1996, the H5N1 HPAI virus has undergone considerable genetic evolution, including recombination and, in just the past few years, a newer variant (clade 2.3.2.1) has expanded its geographic range from Southeast Asia to Eastern Europe, East Asia, and South Asia. Some variants of clade 2.3.2.1 are antigenically different enough from other H5N1 HPAI clades so that, in some countries where poultry vaccination is used, the efficacy of programs to control the virus in poultry is compromised.

Despite the fact that all H5N1 human infections to date appear to have been the result of transmission of the virus from poultry (and/or poultry products) to people, H5N1 HPAI virus is still considered a serious pandemic threat because of (1) its continued presence in poultry in numerous countries and (2) its ability to infect humans and cause severe disease with an apparent average fatality rate of about 60%.

Two years after the meeting in Bali, it had become clear that in some countries simply monitoring for and controlling outbreaks in poultry has not produced additional gains. Instead, the continuing entrenchment of the H5N1 virus in poultry populations along with on-going evolution and geographic spread of new viral clades with different epidemiological and antigenic profiles highlights the importance of reassessing and refining existing prevention, monitoring, and control strategies, particularly those targeting poultry populations that serve as reservoirs for the virus. The recent decreases in national and international funding for H5N1 HPAI prevention and control put a premium on making existing interventions and programs more effective. To assist in this process, a second technical and policy level discussion for prevention and control of H5N1 HPAI was planned for April 2012 in Ho Chi Minh City, Viet Nam. In addition to the five highly-affected countries that participated in the Bali meeting, the April 2012 discussions also included four neighboring countries (Cambodia, Lao PDR, Myanmar, and Thailand) which have reported periodic poultry outbreaks and some human H5N1 cases.

The meeting took place from April 23 to 25, 2012 at the New World Saigon Hotel in Ho Chi Minh City, Viet Nam. The purpose of the meeting was to provide an opportunity for a mix of technically oriented senior professionals and policy makers plus international technical partners from nine countries affected by the H5N1 virus to share their successes and discuss unresolved issues.

The technical discussions focused on sharing key programmatic successes or "best practices" that have led to important outcomes or impacts, sharing how these successes were achieved, and identifying opportunities to replicate these successes in other countries; and on identifying possible solutions to unresolved issues related to H5N1 HPAI prevention and control.

The objectives of the meeting were to provide country representatives with an opportunity to:

- Participate in an exchange among representatives from countries principally affected by the H5N1 virus of lessons learned and best practices that are related to preventing and controlling H5N1 HPAI infections in poultry and humans as well as monitoring H5N1 HPAI viral evolution;
- Discuss the current State-of-the-Art in addressing HPAI
- Identify opportunities for replication of lessons learned and best practices;
- Discuss specific unresolved issues related to preventing and controlling H5N1 HPAI infections in poultry and humans and monitoring H5N1 HPAI viral evolution; and
- Identify steps for addressing these unresolved issues.

The expected deliverables of the meeting were:

- Sharing of specific best practices in Bangladesh, Cambodia, China, Egypt, Indonesia, Lao PDR, Myanmar, Thailand, and Viet Nam that have resulted in important outcomes or impacts;
- Identification of opportunities to replicate specific best practices in other countries and next steps needed to adopt these best practices; and
- Identification of possible solutions to unresolved issues related to H5N1 HPAI prevention and control.

Participants in the meeting included high-level technical representatives—below Vice Minister level—from Ministries of Health and Ministries of Agriculture from Bangladesh, Cambodia, China, Egypt, Indonesia, Lao PDR, Myanmar, Thailand and Viet Nam, including some senior policy makers who are empowered to make decisions related to disease prevention and control. In addition to the country representatives, international technical partners from the headquarters and field offices of the UN Food and Agriculture Organization (FAO), the UN World Health Organization (WHO), the UN System Influenza Coordinator (UNSIC), the US Agency for International Development (USAID), the US Centers for Disease Control and Prevention (US CDC), the US Department of Agriculture (USDA), and Collaborating and Reference Centers also participated in the meeting.

2. Summary of proceedings

2.1 Opening session

Mr. Diep Kinh Tan, Vice-Minister of the Ministry of Agriculture and Rural Development (MARD) of the Socialist Republic of Viet Nam welcomed the members of country delegations, representatives and technical experts from the international agencies and other participants to the meeting. He briefly noted the experience of Viet Nam as a highly-affected country responding to HPAI H5N1 since late 2003, and emphasized the importance that the Government of Viet Nam has placed on sharing experiences with other countries within the region as well as with other highly affected countries throughout the world, in order to ensure a well-coordinated and effective overall global response.

The Vice-Minister affirmed the value of previous exchanges, including the *Technical Discussion on Best Practices for Prevention and Containment of H5N1 Highly Pathogenic Avian Influenza* organized in Bali in March 2010 by the Government of Indonesia, the US Agency for International Development (USAID) and the *International Ministerial Conference on Animal and Pandemic Influenza (IMCAPI)* hosted by the Government of Viet Nam together with the United States Government, the European Union and the United Nations system in Hanoi in April 2010, which identified important achievements, lessons and remaining challenges for the global response to H5N1. He noted that the conclusions of these meetings had been applied in Viet Nam's national response through the development of the Viet Nam Integrated National Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases for the period 2011 through 2015.

The Vice-Minister welcomed the opportunity to host a follow-up discussion to the Bali meeting, thanking the US Government for their support and welcoming the inclusion of some neighboring countries of highly-affected countries that participated in the Bali meeting, including Cambodia, Lao PDR, Myanmar and Thailand. He described the meeting as an opportunity to learn from the best practices and lessons of each country, to identify and discuss key challenges and unresolved issues related to preventing and controlling H5N1 in poultry and humans as well as monitoring H5N1 viral evolution, and to formulate joint next steps and practical, effective options to build strong national responses and effective regional and inter-country cooperation to address H5N1 and other potentially-serious zoonotic diseases.

Speaking on behalf of the US Government as sponsor and co-organizer of the meeting, Mr. Robert W. Ogburn, U.S. Deputy Consul General in Ho Chi Minh City, noted that the meeting was an important opportunity for representatives from nine countries and key international agencies to take stock of and carry forward important and timely policy discussions around a persistent health

concern of our time -- avian influenza. He referred to the similar exchange two years previously in Bali hosted by the Government of Indonesia, which was followed by many fruitful exchanges among participating countries, and described the meeting in Ho Chi Minh City as the next step in promoting an effective dialogue among five partner countries from the Indonesia meeting as well as neighboring countries still affected by avian influenza.

The Deputy Consul General noted that the meeting was occurring at a critical time, when governments and donors have increasingly limited resources, which will require some difficult decisions. He emphasized the need for future planning to be based on an awareness of the many technical and financial challenges and further thinking about long-term strategies for assessing the risk posed by the avian influenza virus. He thanked the Government of Viet Nam for agreeing to host the conference.

Dr. Emil Agustiono, Deputy Coordinating Minister of the Coordinating Ministry for People's Welfare, Indonesia provided a summary of the previous *Technical Discussion on Best Practices for Prevention and Containment of H5N1 Highly Pathogenic Avian Influenza* organized in Bali in March 2010.

Mr. Andrew Clements, Deputy Director of the Pandemic Influenza & Other Emerging Threats Unit, USAID/Washington provided a summary of the current HPAI H5N1 situation in the world.

2.2 Sharing Best Practices and Lessons Learned

2.2.1 Overview of the section on sharing best practices and lessons learned

This section of the meeting provided an opportunity for meeting participants to participate in an exchange among representatives from countries principally affected by the H5N1 virus of lessons learned and best practices related to preventing and controlling H5N1 HPAI infections in poultry and humans as well as monitoring H5N1 HPAI viral evolution.

The best practices/lessons learned presentations prepared by country team participants consisted of “posters” highlighting best practices, successes and potential applications, and continuing challenges. These presentations were used to interactively share information among all participants and foster a rich technical dialogue among the affected countries. The guidelines for the preparation of poster presentations are available at Annex IV.

The poster sessions on best practices and lessons learned focused on the following topics:

1. Improving surveillance for reservoirs of H5N1 HPAI virus and monitoring of “silent” infections in animals (including in vaccinated poultry) and people (12 poster presentations from 7 countries)
2. Improving surveillance for molecular changes in H5N1 HPAI viruses residing in poultry, wild birds, humans, and other animals e.g. swine (11 poster presentations from 6 countries)
3. Improving the efficacy of outbreak surveillance and control in poultry (12 poster presentations from 6 countries)
4. Improving detection and treatment of H5N1 infections in humans using existing systems such as influenza-like illness (ILI) surveillance and early warning/alert systems (4 poster presentations from 4 countries)

The full list of poster presentations is available at Annex IV. Poster presentations from the previous technical discussion in Bali in March 2010 were also displayed.

Soft copies of each poster presentation were distributed on a flash memory drive at the conclusion of the meeting. Soft copies of all presentations are available from PAHI Secretariat, Viet Nam and are expected to be made available online in PDF format by PAHI Secretariat in future.

2.2.2 Country Team Discussions and Reporting Back

Following the poster walk sessions, each individual country team met together to discuss the poster presentations and identify what had been learned from the best practices and lessons learned from the other countries, to review the comments made by other teams on their own country team posters, and to review which lessons learned and best practices from other countries could be adopted by the country team in their own national response. Each country team

also identified any questions or comments they would like to raise to the other country teams.

During the first session on the morning of day three, each country team reported back to the plenary on the contents of their internal team discussions, focusing on what they had learned and which best practices they might be interested to know more about or potentially apply in their own countries.

Generally, country delegations noted the value of this session as a way to learn from the experiences of other countries and to identify best practices and lessons learned that might be applied in their own country programs and also form the basis for future cooperation and exchange between the participating countries.

A number of common themes emerged from the feedback from individual countries on the poster sessions, focusing on the following topics:

- Field Epidemiology Training Programs (FETP) and Applied Veterinary Epidemiology (AVET/FETP-V) programs
- Surveillance and early detection of animal disease outbreaks
- Outbreak detection and community-based surveillance (CBS)
- Collaboration between the animal health and human health sectors
- Monitoring virus evolution and poultry vaccine matching
- Live Bird Market (LBM) biosecurity
- Enhancing various other aspects of disease control
- Improving detection and treatment of H5N1 infections in humans
- Cooperation between neighboring countries

A summary issues discussed in relation to these topics is outlined below.

Field Epidemiology Training Programs (FETP) and Applied Veterinary Epidemiology (AVET/FETP-V) programs

- Many countries expressed interest in the FETP and FETP-V programs being applied in a number of participating countries, and requested these countries to share their experience and curricula.
- Countries including Bangladesh, Myanmar and Lao PDR expressed interest in developing an FETP program for human health.
- Countries including Bangladesh, Cambodia, Indonesia and Lao PDR expressed interest in developing an FETP-V program. In Indonesia, for example, it was suggested this could potentially be developed in alongside and complementary to the existing FETP program.
- Viet Nam noted that they have already established FETP and AVET programs, however they are currently concerned about financial sustainability of these programs and would like more information from countries such as China and Thailand about how they have managed to ensure ongoing national funding for their equivalent programs for more than a decade.

Surveillance and early detection of animal disease outbreaks

- Several countries noted the need to strengthen surveillance for early detection and response to animal disease outbreaks. There was particular interest in country experiences with LBM surveillance and duck surveillance.
- Cambodia asked about whether there was any experience in applying a trace-back system in LBM surveillance. Indonesia also noted the interest in LBM surveillance, and suggested the need for further discussion on this, including potentially better standardization of sample selection and methodologies (cloacal versus fecal samples), as well as ways to reduce the cost of sampling and testing. Thailand noted the lessons from studies and surveillance in LBM, including the active environmental surveillance in Indonesia and Viet Nam's oro-pharyngeal sampling. They noted their interest in applying these approaches in Thailand to learn more about virus sources.
- In relation to their poster on duck surveillance, Lao PDR noted the comments from other countries that their sero-prevalence was quite low compared to the virus isolation in Lao PDR. Lao PDR requested more information on the methodologies applied for surveillance in ducks in different countries, noting some comments from some countries on the approach and results of the surveillance in Lao PDR to date, and also raising the question of whether duck surveillance should be standardized across different countries.
- Indonesia expressed interest in the Bangladesh experience of compensation to farmers for culling, as something that could also possibly be applied in Indonesia. Egypt also requested further information on experiences with culling and compensation.

Outbreak detection and community-based surveillance (CBS)

- Countries including Egypt and Lao PDR expressed interest in local surveillance experiences shared at the meeting, including the PDS-R system from Indonesia and the CBS model applied in Viet Nam. There were requests to share further information about the impact of these systems for early disease detection.
- Viet Nam noted that other countries had expressed interest in the CBS model presented at the meeting, including about the ongoing costs and how it could be made sustainable for the long term and replicated nationwide.
- Cambodia, Lao PDR and Egypt also expressed interest in Bangladesh's experience of applying SMS-based outbreak reporting as a good practice for early detection and reporting of outbreaks.
- Egypt noted that they have also been applying SMS-based reporting since 2008.

- Cambodia and Lao PDR identified SMS-based reporting as a possible aspect for application in their countries, however requested more information on how it could be applied and the potential impact.

Collaboration between the animal health and human health sectors

- Countries including Indonesia and Lao PDR noted the similar activities across several countries related to joint field investigations between animal health and human health sectors.
- More information on country experiences in developing sustainable models for joint human and animal outbreak investigation teams was requested by Lao PDR.
- China noted their intention to continue strengthening communication and collaboration between human health and animal health sectors for joint training and improved surveillance. China also expressed interest in the experience of Viet Nam in implementing integrated CBS including surveillance for both human and animal diseases.

Monitoring virus evolution and poultry vaccine matching

- There was significant interest in the experience of different countries in tracing the evolution of the HPAI H5N1 virus over time, including the importance of monitoring virus circulation for poultry vaccine matching. Viet Nam's poster on virus characterization was noted by several countries.
- Bangladesh noted that effective poultry vaccination requires a good molecular surveillance system, which requires high-level laboratory capacity. They noted that it may also require in-country vaccination capacity. They expressed interest in having more information on the RE-6 vaccine.
- Egypt requested further information on the impact of vaccination in terms of reducing the virus load in the environment as seen in poultry outbreaks and the incidence of human infections. They also raised questions about the prospects for an effective vaccine for use in day-old chicks.
- Vietnam requested to have more information from other countries on their vaccination experience. They referred to the vaccination challenges in the face of changes in the virus strain and their current reliance on procuring vaccines from other countries.

Live Bird Market (LBM) Biosecurity

- Countries including Cambodia, China, Egypt, Lao PDR, Myanmar and Viet Nam noted their interest in further sharing of experiences related to improving LBM biosecurity and noted various aspects for possible application in their own countries.

- There was interest in the application of market cleaning and rest days. Noting the experience of Bangladesh on applying a weekly rest day in LBM markets, other countries raised the question of how all birds could be moved out for cleaning. It was suggested that a monthly rest-day might be more feasible. Further information was also requested on ways to measure improvements in LBM cleanliness.
- China mentioned the aspect of SOPs for LBM biosecurity.
- Egypt noted their interest in the involvement of the private sector in renovation of LBM in Bangladesh, including with some government incentives, as something that could potentially be applied in Egypt.
- Viet Nam expressed interest in experiences related to rolling out enhanced biosafety activities in LBM nationwide at different levels, however also noted the challenge of attracting vendors and consumers to the new markets after they have been upgraded.

Enhancing various other aspects of disease control

- Countries including China, Egypt and Myanmar expressed interest in applying experiences in hatchery biosecurity improvements.
- Egypt noted their interest in poultry hatchery quality improvement, mapping, legislation and auditing systems. They requested further information on the results of hatchery quality improvement in terms of impact on controlling disease. They also requested more information on the application of vaccination in poultry hatcheries in Viet Nam.
- Bangladesh noted their interest in possibly applying GPS mapping of commercial farms to support planning, surveillance and rapid response.
- Egypt expressed interest in having more information on the Gathering Evidence for a Transitional Strategy (GETS) program in Viet Nam.
- The good practices shared by Thailand in relation to breeding farms and certification linked to compartments and zones were noted by Indonesia as something that they could possibly apply. Viet Nam particularly noted that they would like to enhance the role of the private sector in disease control activities, drawing on the experiences of countries like Indonesia and Thailand in public-private partnerships.
- Several countries expressed their interest in enhancing farm biosecurity, including ways to assist poultry farmers to improve decision-making related to biosecurity, management and vaccination. Thailand's experience in improving poultry farm biosecurity was noted.

Improving detection and treatment of H5N1 infections in humans

- Several of the participating countries shared their experiences on ILI, SARI, pneumonia and similar surveillance activities in the human health sector. Topics of interest for further information sharing included selection of sentinel sites and provision of feedback to doctors.

- Lao PDR noted their interest in the experience of hospital-based surveillance for ILI/SARI/pneumonia in detected H5N1 human cases in some countries. Lao PDR noted that other countries had been interested in whether their hospital-based ILI/SARI surveillance has detected any human H5N1 cases, and how they detect community cases. They advised that no human H5N1 cases have been detected through hospital-based ILI/SARI surveillance, and that community surveillance is carried out through health care workers, event-based surveillance and a toll-free hotline.
- Thailand noted the lessons from China's hospital-based extensive network for AI surveillance. Indonesia also noted the One Health approach applied by MOH and MOA in China on ILI surveillance as something that could potentially be applied in Indonesia. They requested more information on some specific aspects of China's ILI surveillance.
- Viet Nam noted that their current ILI surveillance activities are mostly funded from international assistance, particularly from US CDC. They expressed interest in having more information from countries like China that are funding their own ILI surveillance from national sources on how they were able to mobilize government funding and how long it took to achieve sustainability.
- Thailand noted the lessons from Bangladesh about active surveillance of farm workers as a high-risk population. Thailand expressed interest in applying the lessons and experiences from other countries on active surveillance in high-risk poultry farms. Thailand expressed interest in conducting additional studies on surveillance in ducks, including surveillance of duck farmers, looking at the animal-human interface.

Cooperation between neighboring countries

- Several countries expressed interest in cross-border studies, cooperation and information sharing in relation to HPAI H5N1.
- Cambodia requested further information on any experience of joint surveillance between different countries. Myanmar also expressed interest in cross-border studies.
- Viet Nam commented on the challenges of border markets and cross-border trade, for example in spent hens, and raised the question of whether source countries for such cross-border trade could have any plans for enhancing ILI surveillance amongst these poultry populations.

2.3 Addressing Unresolved Issues

2.3.1 Overview of the section of the meeting on addressing unresolved issues

Four sessions were organized during day two and day three of the conference to explore key unresolved issues related to H5N1 HPAI. Each of these sessions consisted of an 85-minute plenary discussions related to H5N1 HPAI prevention, monitoring, and control for issues that do not yet have a clear way forward. The expected output for each session was a set of specific policy and/or technical recommendations related to the topic of the session.

Each session focused on a particular question, as follows:

1. How can countries and the global community most effectively identify key reservoirs of H5N1 HPAI (and their interconnectivity) and what interventions can be applied to reduce disease burden?
2. What current practices are likely driving evolution of the H5N1 virus and how can countries and the global community most effectively monitor for the presence and movement of new viral variants (and other influenzas) in key species to ensure efficacy of interventions and assess pandemic risk?
3. How can countries improve H5N1 HPAI cross-border cooperation and coordination to diminish the likelihood of the virus spreading from country to country?
4. How can countries sustain essential components of H5N1 HPAI prevention, monitoring, and control programs when faced with declining funding?

A moderator led and facilitated the discussion for each session, together with 4-5 panel members with specific expertise and experience throughout the region related to the specific question being discussed.

Breakdown of the Unresolved Issues discussion session

Time allotment	Format	Comments
10 minutes	Challenge statement (see above)	Moderator
20 minutes	Comments/perspectives from an expert panel	5 minutes for each of the 4-5 panelists
65 minutes	Commentary and discussion	Open to entire group
10 minutes	Final summary of key policy issues and recommendations	Moderator

A rapporteur was also assigned for each session to take notes, focusing on the key issues identified in relation to the question, as well as possible areas where action might be taken ("actionables").

2.3.2 Main contents of the sessions on addressing unresolved issues

Dr. Dennis Carroll, Director of the Pandemic Influenza & Other Emerging Threats Unit, USAID/Washington introduced this section of the meeting, recalling the context over the past 6-7 years of responding to a situation of explosive growth and movement of the HPAI H5N1 virus throughout the world, and the achievements in bringing the virus under control, with the result that the situation in 2012 is now very different to the situation faced in 2006. Dr. Carroll noted that HPAI H5N1 does not now represent the same level of threat as it previously did in terms of the number of affected countries, the geographic distribution of the virus within affected countries and the amount of time between the onset and control of outbreaks.

In this context, Dr. Carroll also emphasized the ongoing challenges posed by the virus, and the need for the meeting participants to collectively question whether the questions that have been focused on during the previous 6 years continue to be the most relevant questions looking ahead 1, 2, 5 and 10 years into the future. He noted the expectation of reduced resources for HPAI H5N1 in future, requiring considerations about how to use available resources in the most effective way.

Dr. Carroll emphasized that these sessions were meant to be considered as open and frank opportunities for brainstorming and raising provocative issues, with the purpose of identifying both areas to adjust or tweak existing activities, as well as areas where more substantial changes to existing approach could be considered.

Unresolved Issue #1: Identifying Key Reservoirs

Challenge question:

How can countries and the global community most effectively identify key reservoirs of H5N1 HPAI (and their interconnectivity) and what interventions can be applied to reduce disease burden?

Moderator: Dr. Subhash Morzaria, Regional Manager, FAO ECTAD RAP

Panel members:

- Dr. Hossain Mosharraf, Additional Secretary, Ministry of Fisheries and Livestock, Bangladesh
- Dr. Xinyan Zhai, Research fellow, China Animal Disease Prevention Control Center, China
- Eric Joseph Brum, Chief Technical Advisor, FAO Indonesia
- Dr. Phan Quang Minh, Deputy Director of Epidemiology Division, DAH Viet Nam
- Dr. Les Sims, Veterinarian

Rapporteur: Mr. Andrew Clements, Deputy Director of the Pandemic Influenza & Other Emerging Threats Unit, USAID/Washington

Summary of the discussion

Dr. Morzaria introduced the session, recalling the significant achievements in moving from a situation where a total of 63 countries had been affected by the virus in previous years to the currently situation with only 5 countries endemic and a further 4-5 sporadically infected.

Dr. Morzaria noted that the international response had reached something of a crossroads, with a perception that the disease will stay in the endemic countries over the coming 10-15 years due to the lack of biosecurity in production systems and the difficulty in making further progress in controlling the virus unless significant changes can be made in the poultry sector in a context of various economic drivers.

Dr. Morzaria noted some specific challenges raised in the poster sessions, including biosecurity in duck populations in some countries, the identification of the virus through LBM surveillance despite the lack of widespread outbreaks, and situations where wild birds have been responsible for introducing H5N1 viruses.

Dr. Morzaria requested the panel members to provide perspectives on the question of whether the current approach to surveillance should continue or required significant changes. Following the initial comments of the panel members, discussion was opened up to the whole meeting.

A range of key issues were identified by panel members and other meeting participants during the discussion session, including:

- Defining infection reservoirs: sources of virus that can further infect susceptible populations; elimination of reservoir removes disease threat
- Suspected reservoirs: poultry (including domestic ducks) in live bird markets and farms for HPAs; wild birds might be reservoirs, but likely more for LPAs.

- Poultry sector seen as the major reservoir for H5N1 HPAI virus; limited biosecurity present and economic disincentives exist which limit ability to improve biosecurity.
- Viral surveillance in poultry on farms and live bird markets as well as in wild birds.
- Passive surveillance focusing on poultry outbreaks which does not necessarily identify reservoirs; some active surveillance being used, but enough to identify key reservoirs?
- Despite decreases in reported poultry outbreaks and human cases in some countries, virus continues to persist and cause sporadic infections.
- Monitoring virus in domestic ducks and LBMs; often find more infections than those reported in outbreaks; what control measures are used when sub-clinical infections or "exposed" birds (seropositive) are found? Is culling of birds without clinical infections allowable?
- Outbreak monitoring used to control disease where there are clinical infections; does not address sub-clinical/silent infections.
- Intensive H5N1 surveillance is heavily donor supported.
- H5N1 viral replication can be year-round (e.g. backyard settings in Indonesia), but seasonal peaks exist in most/all countries suggesting transmission is lower at some times of year than others.
- May be multiple (nested) reservoirs of virus.
- Transport of live birds spreading the virus.
- Many countries use large-scale poultry vaccination to control the disease which makes monitoring for virus more challenging; endemicity possible in absence of poultry surveillance.
- Limited potential for improving biosecurity in some settings (e.g. free ranging ducks, sector 3 and backyard farms).

Related to these key issues, a range of possible areas for action ("actionables") were identified, including:

- Identifying—through various types of surveillance—where the virus is "hiding" during the low transmission time of the year (e.g. May-October) so that control measures can be temporally targeted.
- Improving surveillance (animal and human) to be more active, comprehensive, and longitudinal and include other flu viruses of public health concern. One important question will be how to do with decreasing donor funding.
- Identifying flock sizes, composition and other factors associated with flocks that are required to maintain the virus year-round.

- Better identifying how the virus might persist in the environment.

Unresolved Issue #2: Evolution of the H5N1 HPAI Virus

Challenge question:

How can countries and the global community most effectively identify key reservoirs of H5N1 HPAI (and their interconnectivity) and what interventions can be applied to reduce disease burden?

Moderator: Ron Waldman, Pandemic Influenza Consultant, USAID Washington

Panel members:

- Dr. Tim Uyeki, Influenza Division, CDC Atlanta
- Dr. Malik Peiris, Chair of Virology, School of Public Health and Scientific Director, HKU-Pasteur Research Centre, University of Hong Kong
- Dr. Sujira Pachariyanon, Head of Virology Section, NIAH, Department of Livestock Development, Ministry of Agriculture and Cooperatives, Thailand
- Dr. Ken Inui, International Laboratory Expert, FAO Viet Nam
- Dr. Jeremy Farrar, Oxford University Clinical Research Unit, HCM City, Viet Nam

Rapporteur: Dan Schar, Emerging Infectious Disease Advisor, USAID RDMA

Summary of the discussion

Dr. Waldman opened the session, emphasizing the need to look forward and to consider whether our current actions will lead us to the future we want to reach.

Dr. Waldman requested the panel members to provide perspectives on the question of whether the current approach to surveillance should continue or if it required significant changes. Following the initial comments of the panel members, discussion was opened up to the whole meeting.

A range of key issues were identified by panel members and other meeting participants during the discussion session, including:

- What are the right things to be doing, and are we doing them correctly?

- What does the human health sector require from animal health sector? Identification of influenza A subtypes with pandemic risk, including but not limited to H5N1.
- Requires real time info on circulating viruses, both genetic and antigenic variation.
- Sequence sharing is increasing dramatically, but it currently may take several years to get this information into databases which hinders human vaccine strain selection
- Will H5N1 ever move toward effective human-human transmissibility? Over 16 years it has not yet done so.
 - However, ferret studies indicate improved transmissibility with around 5-6 mutations.
 - This indicates some key factors we should be looking at; at least 2 of the mutations are already present in circulating viruses.
- In Hong Kong, dead wild bird surveillance has been useful. There is also a need to look in other species, especially swine where there may be shift to human receptor binding specificity.
- In Vietnam, HPAI H5N1 started with clade 1, then moved to clade 2.3.4. Now Vietnam is at clade 2.3.2.1 (2009-10) in the north; in south, the clade 1 virus introduced in 2003-04 has persisted to the present with ongoing evolution.
- Factors in the north affecting which clades are present include incursions of new strains; ~ 20% of viruses have evidence of reassortment, which helps track genetic movement and monitor specific sequences.
- Thailand's experience with stamping out without vaccination; public-private partnerships; active surveillance in domestic poultry, wild birds. swine.
- SIV mostly occurs in young weaner swine, rather than sows, which may help target novel influenza A surveillance.
- Initial focus on poultry and ducks; however, 2009 pdm H1N1 demonstrates the need to be forward thinking.
- Must better understand benefits/risks of vaccinating large number of poultry.
- Need to both improve sample sharing, and the sharing in benefits of research to countries sharing samples
- Need to understand risk of avian and swine influenza virus transmission to humans; in US, have had pdm H1N1 in swine and reassortment generating new strains transmissible to humans (H3N2v); some pig-to-human transmission, but also possibly limited human-to-human transmission

- Serosurveillance: population studies have not been standardized; must standardize methods (e.g. what populations—i.e. poultry workers—what sero assays, definition of sero +, when to sample); need to sample serially around the poultry outbreak and need more data to understand the trends and relevance; need a control population of non-exposed people to limit false +s from cross reactivity (major limitation of current sero surveillance studies)
- Issue of longitudinal surveillance in asymptomatic populations of swine and other spp., and what is required to accomplish this?
 - Receptor binding affinity and how the virus adapts; a2,6 human type receptor in avian gut as well, which we don't fully understand
 - Abattoir surveillance one possible solution
 - Deep sequencing capabilities may help elucidate viral mutations of significance
- What's the objective of surveillance? Can we pick up increases in secondary cases that indicate the virus is changing? What about picking up milder cases via sentinel surveillance?
- Can we be predictive about viral evolution? Should we be looking for BOTH random mutations and "viral chatter"?
- Vaccination: should we producing human vaccines against animal and avian influenza targets to avoid a "too late" scenario?
 - Vaccination likely our best tool, and yet production capabilities still limited
 - Treatment protocols need standardization
 - Improved seasonal influenza vaccination will also yield benefits for a potential pandemic event
 - Raise with the public a "pre-pandemic" use of vaccines
- Must avoid food security threats from misguided or misunderstood surveillance; how can we improve compensation schemes
- Looking at drivers of viral evolution will be locally context dependent
- Is poultry vaccination a major driver of H5N1? No, not the major driver but a contributor if used imperfectly (poor vaccine, mismatched, inappropriate timing); it may, but some poultry acquire immunity by LPAI or natural infection and so vaccination itself may not be of primary significance
- Do we need a regulatory body to enforce standards of matching avian influenza vaccine with circulating strains
 - Monitoring programs for ensuring matches are already in place; China has changed antigen 3x since mass vaccination in 2004-05;

- however, other countries have a void in regulation that enables use of poorly matched vaccines
- Requires stronger veterinary services over a longer time frame to ensure any regulations are enforceable
- Farmer driven programs (e.g. Indonesia) to help select a well matched vaccine by incentivizing use of well matched vaccine for better productivity/fewer losses
- Transgenic poultry—are there some poultry that are more naturally resistant to infection?
- Need to develop more logical way to assess pandemic risk
 - US CDC has a risk framework in development; once risks are assessed, antigen candidates can be appropriately selected for pre-pandemic vaccine candidate and production

Related to these key issues, a range of possible areas for action (“actionables”) were identified, including:

- Can we predict the combination of gene sequences that will predispose influenza A to pandemic potential?
- Need improvement in speed of sequence availability; must be shift to sequencing capability in developing world for more real time capability
- We must have a better understanding of spp barrier; what is preventing circulating viruses from crossing the spp barrier and infecting humans? Will help target surveillance
- Surveillance in primary health care units; must ensure clinicians are readily able to pick up cluster events and flag samples for further study
- We need longitudinal surveillance in animals (swine and poultry) in combination with human influenza surveillance; need population-based sentinel surveillance for milder disease, not just hospitalized case surveillance (as has been done in Bangladesh); cluster surveillance needed, with every H5N1 case investigated, particular involving non-blood relatives as a flag for transmissibility
- Need to look at H7 and low-path H9N2 viruses, which we already know affect humans
- Need improved and coordinated sharing of animal/human data, both geographically and temporally to track viral evolution and assess pandemic risk
- Can we better characterize the animal/human interface to help better assess risk?

- Agro-ecological variables, population density, and other factors that will predispose an introduction event to ongoing transmission and endemicity
- Need more extensive swine surveillance looking for highest risk production systems to identify new influenza A threats
- Do we need to screen for milder cases with earlier viral clearance as an indicator of improved adaptation to humans?
- Delivery of poultry vaccination still a challenge: can we develop a vaccine that provokes a sterile immunity without virus shedding?
 - Unlikely to get sterile immunity
 - Major problem is timing to get two doses in ducks to provoke adequate immunity
- Need to make a list of potential drivers of viral evolution; will likely be a combination of drivers that have most significance

Unresolved Issue #3: Cross-Border Cooperation

Challenge question:

How can countries improve H5N1 HPAI cross-border cooperation and coordination to diminish the likelihood of the virus spreading from country to country?

Moderator: Dr. Santanu Bandyopadhyay, ECTAD Viet Nam Team Leader, FAO

Panel members:

- Dr. Teng Srey, Deputy Director, Communicable Disease Control Department, Ministry of Health, Cambodia
- Dr. Khamphouth Vongxay, Deputy Chief of Animal Disease Diagnostic Laboratory, National Animal Health Center, Lao PDR
- Dr. Than Htun, National Project Manager, FAO Myanmar
- Dr. Pasakorn Akkarasewi, Director, Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health Thailand
- Dr. Mohinder Oberoi, FAO ECTAD Sub-Regional Office, Nepal

Rapporteur: David Payne

Summary of the discussion

Opening the discussion, Dr. Santanu Bandyopadhyay noted that cross-border trade (CBT) is not a new phenomenon. However, as volume has increased, disease transmission risks from formal and informal trade have also increased. Dr. Bandyopadhyay noted that drivers of CBT include price differentials, demand-supply gap (surplus production in one country and demand in a neighboring country) and limited livelihood options in border areas, which are often underdeveloped and not a priority for government investments in industry.

Dr. Bandyopadhyay noted systems in place to reduce risk, including formal trade requirements, SPS certification and bilateral trading agreements. However, when disease occurs, the first response is often to ban trade, often under considerable pressure from the media and the public. However, an unintended result of banning trade may be that CBT becomes more lucrative. Additionally, monitoring and SPS certification will not be taking place and there may be limited capacity of veterinary authorities to enforce a ban.

Dr. Bandyopadhyay requested the panel members to provide perspectives on issues of CBT and cross-border cooperation. Following the initial comments of the panel members, discussion was opened up to the whole meeting.

A range of key issues were identified by panel members and other meeting participants during the discussion session, including:

- Dimensions of CBT demand and risk include seasonal factors, e.g. related to socio-cultural practices such as festivals, trading of live rather than processed poultry due to cultural and other reasons, different consumption patterns (e.g. for spent hens), demand for day-old chicks and young poultry as food for raptors (Middle East, North Africa), and wildlife farming and trade for consumption, ornamental purposes.
- Limited investment by central governments in border areas also may mean that producers and traders in these areas have low awareness of biosecurity and disease and are not reached by risk communication efforts, increasing the likelihood of risky practices for disease transmission.
- Challenges in cross-border cooperation at different levels:
 - Plans on each side of the border may not be harmonious (e.g. different approaches to culling). Actions taken in one country may not be feasible in the other country due to various factors, which may become an issue of contention between technical people.

- The number and capacity of local veterinary authorities and other related sectors may not be matched across borders.
- Formal agreements may be in place, however may not be actively pursued in practice. There may be a tendency to assign blame to other countries for disease events.
- While local governments and veterinary authorities raise the need for direct information-sharing from local cross-border counterparts, normally disease reporting goes up to provincial and central authorities before being shared by central level with cross-border counterparts.
- When suspected infected cases are identified, the local border checkpoints etc. may need to wait for official instructions from central ministry or provincial government. Responses may therefore not be timely.
- Customs, immigration and other authorities may not understand the importance and risks posed by CBT in poultry and poultry products.
- Full enforcement on bans of movement of people, poultry or poultry products may be effectively impossible:
 - Many borders are highly porous, existing only on maps. In some countries there is no or a limited visa regime at the local level, with free and frequent movement of people.
 - In some cases cross-border populations share the same background, socio-cultural traditions, kinship and language.
 - CBT is the core livelihood particularly for traders using established networks.
 - Unregulated movement of people and products is entrenched on some borders, particularly in the context of civil unrest or conflict.
- By banning CBT, we are not effectively stopping trade, but we are effectively stopping ourselves from collaborating with traders to reduce risks.

Related to these key issues, a range of possible areas for action ("actionables") were identified, including:

- Studies to identify and analyze specific dynamics of CBT, including volume of trade, main actors and drivers, as well as key risk points along the chain. Where possible, these would be coordinated cross-border efforts.
- Cross-border cooperation at different levels, including bilateral MOUs between neighboring countries, bilateral trade agreements and related legislation. Trust and commitment of neighboring countries is a key

determinant of effectiveness in cross-border collaboration. Effectiveness of implementation depends on political commitment from central down to local level. Leadership, ownership and support are required from each level, including technical, financial and logistical support.

- Using multilateral forums including ASEAN, SAARC which can give a multilateral and potentially more equal platform for discussions between different countries.
- Implementation of IHR (2005) reporting requirements to WHO.
- Meetings between overall authorities at central and local levels, through established mechanisms for periodic or specific exchange between overall government authorities. The onus is on veterinary authorities to raise issue to relevant government authorities at each level and to raise awareness of key risks.
- Regular cross-border technical working meetings between veterinary authorities at different levels.
- Cross-border telephone contact for sharing information and immediate alerting on suspected disease outbreaks. (Is this feasible/ legal in different countries?).
- Harmonized/joint strategies or plans for disease control and management of CBT at central level and for localities along border areas.
- Review training and support to veterinary authorities, quarantine, customs and other related sectors for enforcement and management in border areas. Where possible, joint training, joint planning, joint risk communications, joint investigation and ongoing cooperation and information sharing in localities along each side of a common border.
- SOPs for cross-border collaboration e.g. sharing information, raising alerts, joint surveillance, joint investigation, dealing with quarantine and customs issues, etc.
- Established formats for sharing information on identified diseases including HPAI as well as emerging diseases.
- Support from international agencies. Joint training and opportunities for networking and exchanges. Regional projects e.g. Mekong Basin Disease Surveillance (MBDS) project.
- Focusing surveillance, communication and other activities on border areas to strengthen early detection and response. Joint surveillance in border areas where possible.
- Focusing poultry vaccination on border areas.
- Harmonizing systems for import/export of livestock and livestock products, including systems for certification and physical checking.

- Strengthening international collaboration with OIE, FAO, WHO, US CDC and sharing information and results with neighboring countries, international and regional organizations
- In relation to banning or regulation of CBT in response to animal disease risks, two main options emerged in the discussion:
 - The first option is to intensify efforts to control and prevent illegal trade. While complete control and prevention may not be possible, further efforts could still be made. This requires additional human resources as well as training, logistical support and other aspects. Improved certification and applying certification directly at border areas could be important.
 - The second option focused on moving our efforts from prevention to regulation and risk-reduction. Regulating and monitoring trade including SPS certification, rather than maintaining an outright ban and trying to prevent illegal trade, may be a more effective approach.
- For regulation, we could apply the same value chain approach we do elsewhere, identifying risks and critical control points where these could be managed and reduced, working with traders. Investments in effective management and regulation may be offset through subsequent returns e.g. from exports.
- Normally, countries are not legally able to allow import of infected animals. Vietnam's recent experience of establishing animal lots and testing for disease, then allowing the animals to be imported if no disease found (rather than confiscating and destroying the animals as illegal imports) was noted as a possible approach.
- Compartmentalization was suggested as one approach to managing risks. It may be possible to apply a clean compartment approach in line with OIE. An alternate option could be a 'dirty compartment' approach, where identified risky products from the compartment are either processed within the compartment prior to CBT, or if this is not possible establishing a designated checkpoint where live poultry could be transported across a border to a processing facility in the second country.

Unresolved Issue #4: Sustaining Essential Components of the H5N1 HPAI Response

Challenge question:

How can countries sustain essential components of H5N1 HPAI prevention, monitoring, and control programs when faced with declining funding?

Moderator: Andrew Clements, Deputy Director of the Pandemic Influenza & Other Emerging Threats Unit, USAID/Washington

Panel members:

- Dr. Hossain Mosharraf, Additional Secretary, Ministry of Fisheries and Livestock, Bangladesh
- Dr. Moussa Soliman, Manager of Avian Viral Diseases, General Organization for Veterinary Services, Egypt
- Dr. Muhammad Azhar, Coordinator of Campaign Management Unit (CMU) for HPAI, Directorate General of Livestock and Animal Health Services, Ministry of Agriculture, Indonesia
- Dr. Orapan Pasavorakul, Senior Veterinary Expert, Department of Livestock Development, Ministry of Agriculture and Cooperatives, Thailand
- Mr. Do Huu Dung, Director of International Cooperation Division, DAH, Ministry of Agriculture and Rural Development, Viet Nam

Rapporteur: Dr. Kendra Chittenden, Infectious Disease & Science and Technology Advisor, USAID Indonesia

Summary of the discussion

Dr. Andrew Clements opened the discussion, noting that HPAI H5N1 program efforts started as emergency efforts to contain and manage HPAI outbreaks. Now, as the threat is diminished, countries that have an ongoing burden struggle to keep funding and focus on H5N1. Mostly these issues have dropped out of the media. Contagion and recent ferret research has raised a bit of attention, however overall donor support is decreasing.

Dr. Clements noted the need to keep a focus on HPAI H5N1 and influenza in general due to the ongoing risk of a human pandemic. He requested the panel members to provide perspectives on three key questions. Firstly, what activities can be supported with existing funds? Secondly, what are the core elements of the AI programs? And thirdly, how can we share costs with other infectious disease programs? Dr. Clements noted that initially it made sense to have a

standalone HPAI H5N1 program focus but now this needs to be incorporated into other programs for sustainability.

The five countries represented in the panel shared perspectives on these questions.

The panel member from Indonesia identified seven essential components of their HPAI H5N1 response, including:

- Participatory Disease Surveillance and Response (PDS-R) is key – implementing in 30/33 provinces & costs initially all donor BUT now 50-50% cost share with local government. Important to assist advocacy to local government.
- PDS-R is an effective tool not just for AI but other diseases- we have proved this with rabies. PDS-R is now a part of a National Veterinary Services (NVS) program to focus on a range of zoonotic and animal health issues.
- Surveillance and strain characterization is very important and strategic to help develop effective vaccines and to improve local laboratory capacity. Local governments will fund lab but the Government of Indonesia still wants partnership and technical assistance with the international community.
- Public-Private partnerships strengthen. Private industry investment is useful for vaccine development and production, biosecurity, and value chain.
- Decrease costs for ILI & SARI systems because PCR testing is very expensive. Need to better define magnitude and frequency of testing.
- Integrate AI case management into a broader Acute Respiratory Infections to strengthen the health care system to better control ARI and AI case management.
- Strengthen early warning systems which can provide rapid information about unusual events in a cost-effective way.

The following aspects were identified in relation to Bangladesh's HPAI H5N1 program:

- Pandemic planning is important and mainly supported by donors. Governments need to advocate at the grassroots level to raise awareness about AI risks—such as markets—and the need for control activities.
- The importance of biosecurity at markets.
- Public-Private partnerships to find new funding.
- Establishing sustainable field level activities.

The panel member from Viet Nam noted that the national program has already been impacted by declining donor and government funding. Key points for the Viet Nam program included:

- Revising the strategy now and making smarter decisions about what activities to sustain. It is necessary to sustain routine control measures. It is also necessary to focus on other emerging infectious diseases without distracting from H5N1.
- The current strategy focuses on surveillance, which is a key component in an endemic country. It is important to clarify the objective of the surveillance—i.e. HPAI H5N1 or influenza more broadly—and this is still under discussion. Another key aspect is targeting live-bird market rather than farms, which can allow for cost-savings.
- Modify the control program to withdraw vaccination but now a more focused targeted, risk-based, and affordable strategy is in place.
- Improve veterinary services.
- Struggle between focus on pandemic and/or H5N1: what is most important, what is affordable?
- Public Private Partnerships: slow, not easy but important and an opportunity to share costs.
- Could do better with proper funding but must make do.

The panel member from Thailand noted some differences from other countries because they export poultry products (\$3m/year until exports stopped). They resumed export of cooked products one year after the last reported outbreak in November 2008, and exports are now back to normal. Key aspects of their ongoing program include:

- AI Emergency Operations Center under MOA which help to improve surveillance monitoring, and response to control for H5 & H7.
- Used compensation policies.
- Still continue to monitor sero-surveillance for export.
- In 2004 the disease spread across the country – spent \$100M – now control costs are \$10M/year (sub-division for poultry health—avian influenza and New Castle)
- AI prevention and monitoring is still robust and will continue for 5 years.

The panel member from Egypt noted that the national response had been occurring in the context of specific recent overall events in the country. Key aspects of the national response identified here include:

- A revised National Strategy, shifting from an emergency basis to a long term approach.
- Good and strong surveillance systems (human and animal)- (passive, active, syndromic, etc.) with samples collected daily. 34 teams (108 well trained doctors) for community for outbreak investigation, BCC, and work under difficult conditions.
- Sustain lab capacity for sustained isolation and sequencing. Discovered variant strain. Use information to guide vaccine.

- Each district has team for outbreak response (3 vets and a doctor)—sampling, culling, disinfecting, and communication & information.
- Enhance 4-way linkage (MOH, MOA, virology and surveillance)
- Public-Private Partnerships are important; there is a real lack of trust now.
- Good vaccines: test for efficacy.
- Monitor environmental contamination: this is important because the virus is wide-spread.
- 8 million back-yard farms (1/2 billion chickens)- Cannot widely vaccination back-yard farms.
- Poor hygienic practices in live-bird markets (12,000 LBMs) & movement is a critical issue.
- Recent social and political changes undermined investment in AI. All 167 cases infected by the same strain except one.
- What we need: surveillance and control to prevent a pandemic.

Following the initial comments of the panel members, discussion was opened up to the whole meeting. Key issues and areas for possible further action identified in the discussion included:

Public–Private partnerships:

- These can be a good source of funding and investments might be large.
- Government needs to facilitate these partnerships:
 - It may make sense for the public sector to provide a small amount of support to get the private sector to invest in the right things and to use resources more widely. An example of this is evidence-based vaccination.
 - The public sector can provide services to the private sector but public veterinarians must have strong skills to offer and assist.
- Poultry Associations play an important role to facilitate public and private partnerships.
- Market restructuring: moving birds outside of communities and away from people's homes into private pens.
- Sector 3 is a high risk and must be engaged
- Compensation is important for back-yard and small commercial farms in particular.
- Publically and globally share vaccine and sequencing information to achieve appropriate and useful vaccines.

Improved biosecurity—need to show that good biosecurity has an economic benefit from improving animal health. This has a much broader impact (beyond AI) whereas vaccination just focused on AI. Work with private sector to support costs of biosecurity – such as physical security.

Contact Investigations: A good investigation should be conducted following human cases and poultry outbreaks for close contacts, including syndromic and lab testing.

Market Monitoring: Not enough funds for routine monitoring—particularly in the markets. To reduce costs, focus on highly populated urban areas AI high risk areas.

Human resource issue—reduced budget for support. An appropriate response system is needed.

Need a **core epidemiology capacity**-- donor assistance has really helped to create this and now we must figure out how to sustain.

Use **modern technology** to expand and update training.

Laboratory costs are expensive and difficult to sustain, so it is important to select the right systems in terms of scale and collection and use non-PCR bases surveillance and early warning syndrome surveillance system to catch unusual events.

Many national budgets have also been reduced (double hit with reduced donor funds).

Broader Zoonosis Efforts:

- Risk of losing focus and with declining funds—now asked to do more things
- It is very important to look at the animal/human health interface
- Important to broaden influenza surveillance – in other species and to look for other types of influenza.
- Some countries—such as Egypt—H5 ranks first and other zoonotic diseases take a back-seat now. H5 is still wide spread and a real threat with human fatality and large loss of livestock.
- University and Government linkages are crucial and very useful (i.e. RESPOND with FETP programs implemented by Government)
- Select focus & decide what you are trying achieve – control, zoonotic; newly emerging diseases, etc.

Strengthen Animal Health Systems: Correlation because weak animal health system and human cases.

Dr. Robert Tanaka, Senior Attaché with the Animal and Plant Health Inspection Service of USDA in Bangkok also shared a donor perspective on these questions, noting that focusing on preventing transboundary animal diseases & emerging and zoonotic diseases continue to be priorities. Sustainability is important. Projects build laboratory capacity, improve regulatory services, and

strengthen animal health systems and epidemiology capacity. Not interested to just support surveillance and outbreak response—the focus is on capacity building and sustainability.

2.4 Closing session

Dr. Dennis Carroll, Director of the Pandemic Influenza & Other Emerging Threats Unit, USAID/Washington summarized the main sections of the meeting. He noted that the first part of the meeting on lessons learned and success stories had focused on elements of the response to HPAI H5N1 which are known from proven experience. He affirmed that USAID and other partners would identify opportunities for exchanges and visits to follow up and build on the country exchanges during the meeting in order to strengthen country responses and international cooperation.

With regard to the second part of the meeting on addressing unresolved issues, Dr. Carroll noted that this had addressed an area where participating countries and international agencies do not necessarily have the same level of experience or certainty. He emphasized the need to deal with the changing dynamics of economics and support on HPAI H5N1 at the international and national levels, and to be smarter and more effective in using the resources that are available. Dr. Carroll noted the challenge of genetically evolving virus, and the need to move the discussion forward to get better insight at an earlier stage into the evolution of threat and how to apply that insight in practical actions. He noted that a core take home lesson for him was that these issues are not ones that are going to be resolved within individual countries, by individual countries, and that they will require a more intensified and coordinated regional and global partnership.

Dr. Carroll expressed his strong appreciation to all participants for their contribution, and in particular to the Government of Viet Nam as host of the meeting. Dr. Carroll provided an opportunity for meeting participants to make any final comments. He then invited Dr. Subhash Morzaria to make final comments on behalf of FAO.

In his final remarks, Dr. Morzaria particularly noted the value of the innovative format of poster presentations developed by USAID and previously used at the Bali meeting in April 2010, as an effective way to promote sharing of experiences in a highly interactive way with a diverse group of participants. He noted that FAO has subsequently applied this approach with good results. Dr. Morzaria noted the good results also of the panel discussion sessions, providing expert feedback and raising important issues and challenges as well as ways to address key unresolved issues. He noted the need for further distillation of these ideas and cooperation between countries, international agencies and donors to move forward.

Dr. Morzaria expressed his appreciation for the pre-meeting preparations of each delegation in preparing their poster presentations. He also thanked international partners for their support. He also thanked the local organizing committee as well as the support team for the meeting including colleagues from PAHI Secretariat and FAO Viet Nam. Finally, Dr. Morzaria thanked USAID for their leadership and

support to the meeting itself and the wider area of HPAI H5N1. He then invited Dr. Hoang Van Nam, Director-General of the Department of Animal Health of the Viet Nam Ministry of Agriculture and Rural Development to provide final remarks and to close the meeting on behalf of the Government of Viet Nam.

Dr. Hoang Van Nam thanked participants for their engagement and active contributions to the meeting, noting that the meeting had provided an important opportunity to learn from the best practices and lessons of each country, to identify and discuss key challenges and unresolved issues related to preventing and controlling H5N1 in poultry and humans as well as monitoring H5N1 viral evolution, and had identified joint next steps and practical, effective options to build strong national responses and effective regional and inter-country cooperation to address H5N1 and other potentially-serious zoonotic diseases.

Dr. Hoang Van Nam also thanked USAID for their support to the meeting, as a part of their highly appreciated wider ongoing technical and financial support on HPAI H5N1.

3. Bilateral Meetings

3.1 Overview

In line with the objectives of the meeting to promote technical and policy exchanges between participating countries and agree on actions to enhance coordination on key issues, a number of bilateral meetings took place on the morning of the first day of the meeting, prior to the official opening session of the meeting. These bilateral meetings provided an opportunity for individual country delegations to exchange specific information and experiences on areas of common interest.

The following meetings were held:

Ministries of Agriculture (MOA) or equivalent:

- Cambodia and Lao PDR
- Cambodia and Viet Nam
- China and Viet Nam
- Lao PDR and Myanmar
- Myanmar and Viet Nam

Ministries of Health (MOH) or equivalent:

- Bangladesh and Myanmar
- Cambodia and Viet Nam
- China and Myanmar

3.2 Bilateral discussions between Ministries of Agriculture (MOA)

3.2.1 Bilateral meeting between the MOA of Cambodia and Lao PDR

The meeting noted that cross-border movements and trade in animals is not very significant. Traditional trade was noted between the bordering provinces of Champassak in Lao PDR and Stung Treng and Rattanakiri in Cambodia. Checkpoints have been established at the two main border points, reporting to provincial offices in Lao PDR and to the central level in Cambodia.

The MOA of both countries plan to establish bilateral meetings, to be followed by the development of an MOU and regular meetings. The value of strengthening collaboration between the MOA of the two countries was agreed.

3.2.2 Bilateral meeting between the MOA of Cambodia Viet Nam

Topics discussed include the movement of livestock between the two countries (focusing on the risk of PRRS posed by pigs from Viet Nam and the risk of FMD

posed cattle from Cambodia); support from Viet Nam for capacity building of Cambodian veterinary services; Viet Nam's passport system for recording the origin and movement of poultry flocks; the organization of joint cross-border trader meetings; and sharing HPAI epidemiological and surveillance information as well as the development of coordinated surveillance between the two countries.

MARD Viet Nam and MOA Cambodia agreed to follow up on a number of actions after the meeting, within the context of the existing MoU and technical working groups, as well as some specific meetings and exchanges that have been identified. FAO ECTAD noted their willingness to provide support through existing ECTAD projects.

3.2.3 Bilateral meeting between the MOA of China and Viet Nam

Topics discussed at the meeting including the epidemiology of HPAI H5N1; the efficacy of available vaccines types with currently circulating clades of HPAI H5N1 and the status of vaccine development, testing and approval; and the possibility of sharing epidemiological information (gene sequence information).

3.2.4 Bilateral meeting between the MOA of Lao PDR and Myanmar

Topics discussed at the meeting included the level of livestock trade across the common border between the two countries; identification of animal diseases of concern including HPAI in poultry, PRRS in pigs and FMD in cattle; and the possibility of initiating bilateral collaboration on animal disease control, which could be extended to zoonotic disease control, including information sharing of disease outbreaks and characteristics of the viruses responsible for HPAI, PRRS and FMD outbreaks, sharing of experience in disease control, and animal movement and trade. It was noted that this area is expected to be a strategic economic corridor within the region in the future, and that bilateral cooperation could later be expanded to multilateral cooperation including China and Thailand.

The two countries will follow up with informal discussions, which could be formalized later through official bilateral and multilateral meetings as well as a formal agreement between the two countries. FAO is requested to facilitate the multilateral discussion.

3.2.5 Bilateral meeting between the MOA of Myanmar and Viet Nam

Topics discussed at the meeting included Viet Nam's experience in applying poultry vaccination; Myanmar's application of culling as a control measure; and the possibility of establishing trade in poultry between the two countries.

3.3 Bilateral discussions between Ministries of Health (MOH)

3.3.1 Bilateral meeting between the MOH of Bangladesh and Myanmar

Topics discussed in the meeting included contact between communities in border areas along their common border; the history of coordination between the two countries on disease issues along the border (e.g. on polio) and ways to improve coordination between local-level actors on both sides (e.g. for outbreak investigation and reporting, and surveillance activities); and applying the IHR (2005) as a structure for focal-points for cross-border agreements on communication, coordination and collaboration.

The two ministries agreed to follow up within the next month to request WHO support to facilitate an initial meeting to discuss arrangements for improved cross-border communication on health issues.

3.3.2 Bilateral meeting between the MOH of Cambodia and Viet Nam

Topics discussed in the meeting included Viet Nam's update on the disease situation during 2011 and 2012, including HFMD, dengue and meningococcal meningitis; Cambodia's update on the current disease situation, including cholera, dengue, chikungunya and influenza A(H5N1); the established bilateral agreement at national and provincial levels; weekly disease data reporting via national level MOHs and the Mekong Basin Disease Surveillance (MBDS) project; the status of HPAI H5N1 outbreaks in the two countries; and the emerging threats posed by chikungunya and artemisinin-resistant malaria.

3.3.3 Bilateral meeting between the MOH of China and Myanmar

Topics discussed at the meeting included the agreement between the two ministries under the Mekong Basin Disease Surveillance (MBDS) project; the status of cross-border cooperation at different levels and under different conditions (ongoing cooperation, outbreak response); and ways to enhance cooperation at the provincial level in provinces along the common border, for example through regular annual meetings, disease information sharing and joint outbreak investigation and management for both communicable and zoonotic diseases.

Annexes

- I. Meeting agenda
- II. List of participants
- III. Guidelines for poster presentations
- IV. Full list of poster presentations

Annex I Meeting Agenda

Technical and Policy Discussion on Improving the Prevention and Control of H5N1 Highly-Pathogenic Avian Influenza in Highly-Affected and Neighboring Countries

**April 23-25, 2012
Ho Chi Minh City, Viet Nam**

Meeting Outline

Venue: New World Saigon Hotel

Audience:

- Representatives from nine countries (Bangladesh, Cambodia, China, Egypt, Indonesia, Laos, Myanmar, Thailand, and Viet Nam) that have had the most experience with H5N1 HPAI in terms of defining high-risk populations and geographic areas and continually fine-tuning prevention and control strategies to achieve results. Participants will include:
 - Senior technical representatives from Ministries of Health and Ministries of Agriculture;
 - Senior policy makers who are empowered to make decisions related to surveillance and containment of H5N1 outbreaks; and
 - International technical partners from the UN Food And Agriculture Organization (FAO), the UN World Health Organization (WHO), the UN System Influenza Coordinator (UNSIC), the US Agency for International Development (USAID), the US Centers for Disease Control and Prevention (US CDC), the US Department of Agriculture (USDA), and Collaborating and Reference Centers.

Purpose:

- To provide an opportunity for a mix of technically oriented senior professionals and policy makers plus international technical partners from nine countries affected by the H5N1 virus to share their successes and discuss unresolved issues.
- The technical discussions will focus on:
 - Sharing key programmatic successes or "best practices" that have led to important outcomes or impacts, sharing how these successes were achieved, and identifying opportunities to replicate these successes in other countries
 - Identifying possible solutions to unresolved issues related to H5N1 HPAI prevention and control.

Objectives: By the end of the 2-day meeting, representatives will have the opportunity to:

- Participate in an exchange among representatives from countries principally affected by the H5N1 virus of lessons learned and best practices that are related to preventing and controlling H5N1 HPAI infections in poultry and humans as well as monitoring H5N1 HPAI viral evolution;
- Discuss the current State-of-the-Art in addressing HPAI
- Identify opportunities for replication of lessons learned and best practices;
- Discuss specific unresolved issues related to preventing and controlling H5N1 HPAI infections in poultry and humans and monitoring H5N1 HPAI viral evolution; and
- Identify steps for addressing these unresolved issues.

Expected deliverables:

- Sharing of specific best practices in Bangladesh, Cambodia, China, Egypt, Indonesia, Laos, Myanmar, Thailand, and Viet Nam that have resulted in important outcomes or impacts;
- Identification of opportunities to replicate specific best practices in other countries and next steps needed to adopt these best practices; and
- Identification of possible solutions to unresolved issues related to H5N1 HPAI prevention and control.

Monday, April 23

Time	Session	Comments
8:00 – 10:00	Bilateral meetings	3 Meeting spaces will be provided for bilateral meetings on 1 st floor.
	Poster set up	Need to provide tape and tacks along with about 500 4"X6" note cards that can be used for comments Need to have signs for each poster session (1-4) prepared ahead of time
10:00 – 10:30	Registration and packet pick up	Secretariat

10:30 – 11:00	<p>Opening Remarks</p> <p>Introductions</p>	<p>Mr. Diep Kinh Tan, Vice-Minister, Ministry of Agriculture and Rural Development, S.R. Viet Nam</p> <p>Mr. Robert W. Ogburn, U.S. Deputy Consul General</p> <p>Master of Ceremonies Dr. Do Huu Dung to ask introductions from country representatives</p>
11:00 – 11:30	Group Photo	Master of Ceremonies to organize everyone
11:30 – 11:45	Summary of Technical Discussion in Bali, March 2010	Pak Emil, Indonesia Zoonotics KOMNAS
11:45 – 12:15	Summary of current H5N1 situation	Andrew Clements
12:15 – 13:15	Lunch (on site)	
13:15 – 13:30	<p>Meeting purpose and objectives</p> <p>Instructions for poster sessions</p>	<p>Meeting Organizers</p> <p>Andrew Clements</p>
13:30 – 14:15	<p>Best Practices/Lessons Learned (1a):</p> <p><i>Improving surveillance for reservoirs of H5N1 HPAI virus and monitoring of “silent” infections in animals (including in vaccinated poultry) and people</i></p> <p>poster walk 1</p> <ul style="list-style-type: none"> at least one member of the country team stays with each of their posters while others on the team visit posters of other countries visitors to posters can ask questions in person or write questions on note cards (provided by organizers) 	<p>See Annex 1 for guidance on poster presentations</p> <p>[A list of all poster titles will be provided to all participant at the beginning of day 1]</p>
14:15 – 15:00	<p>Best Practices/Lessons Learned (1b):</p> <p><i>Improving surveillance for reservoirs of H5N1 HPAI virus and monitoring of “silent” infections in animals (including in vaccinated poultry) and people</i></p> <p>poster walk 2</p> <ul style="list-style-type: none"> people who stayed with posters in 	

	<p>session 1a now visit other country posters while other people on the country team stay with each of their posters</p> <ul style="list-style-type: none"> visitors can ask questions in person or write questions on notes cards (provided by organizers) 	
15:00 – 15:30	Break	
15:30 – 16:15	<p>Best Practices/Lessons Learned (2a):</p> <p><i>Improving surveillance for molecular changes in H5N1 HPAI viruses residing in poultry, wild birds, humans, and other animals (e.g. swine)</i></p> <p>poster walk 1</p> <ul style="list-style-type: none"> at least one member of the country team stays with each of their posters while others on the team visit posters of other countries visitors to posters can ask questions in person or write questions on note cards (provided by organizers) 	
16:15 – 17:00	<p>Best Practices/Lessons Learned (2b):</p> <p><i>Improving surveillance for molecular changes in H5N1 HPAI viruses residing in poultry, wild birds, humans, and other animals (e.g. swine)</i></p> <p>poster walk 2</p> <ul style="list-style-type: none"> people who stayed with posters in session 2a now visit other country posters while other people on the country team stay with each of their posters visitors can ask questions in person or write questions on notes cards (provided by organizers) 	
17:00 – 17:15	Country Team Discussions	Country Teams amongst themselves
18:00 – 20:00	Group banquet dinner	Vice Minister to welcome guests, Dennis Carroll to speak as well.

Tuesday, April 24

Time	Session	Comments
8:30 – 8:45	Introduction to day's activities, unresolved issues and instructions	Dennis Carroll to introduce day's activities and discuss unresolved issues section.
8:45 – 10:10	Unresolved Issues: Challenge question #1 <i>How can countries and the global community most effectively identify key reservoirs of H5N1 HPAI (and their interconnectivity) and what interventions can be applied to reduce disease burden?</i>	Moderator: Subhash Morzaria Bangladesh: Hossain Mosharraf China: Xinyan Zhai Indonesia: Eric Joseph Brum Viet Nam: Phan Quang Minh Other: Les Sims Rapporteur: Andrew Clements
10:10-10:40	Break	
10:40 – 12:05	Unresolved Issues: Challenge question #2 <i>What current practices are likely driving evolution of the H5N1 virus and how can countries and the global community most effectively monitor for the presence and movement of new viral variants (and other influenzas) in key species to ensure efficacy of interventions and assess pandemic risk?</i>	Moderator: Ron Waldman China: Malik Peiris Thailand: Sujira Pachariyanon Viet Nam: Ken Inui Viet Nam: Jeremy Farrar Other: Tim Uyeki Rapporteur: Dan Schar
12:05 – 13:05	Lunch (on site)	
13:05-13:50	Best Practices/Lessons Learned (3a): <i>Improving the efficacy of outbreak surveillance and control in poultry</i> poster walk 1 <ul style="list-style-type: none"> at least one member of the country team stays with each of their posters while others on the team visit posters of other countries visitors to posters can ask questions in person or write questions on note cards (provided by organizers) 	

13:50-14:35	<p>Best Practices/Lessons Learned (3b):</p> <p><i>Improving the efficacy of outbreak surveillance and control in poultry</i></p> <p>poster walk 2</p> <ul style="list-style-type: none"> people who stayed with posters in session 3a now visit other country posters while other people on the country team stay with each of their posters visitors can ask questions in person or write questions on notes cards (provided by organizers) 	
14:35-15:05	Break	
15:05-15:50	<p>Best Practices/Lessons Learned (4a):</p> <p><i>Improving detection and treatment of H5N1 infections in humans using existing systems such as influenza-like illness (ILI) surveillance and early warning/alert systems</i></p> <p>poster walk 1</p> <ul style="list-style-type: none"> at least one member of the country team stays with each of their posters while others on the team visit posters of other countries visitors to posters can ask questions in person or write questions on note cards (provided by organizers) 	
15:50-16:35	<p>Best Practices/Lessons Learned (4b):</p> <p><i>Improving detection and treatment of H5N1 infections in humans using existing systems such as influenza-like illness (ILI) surveillance and early warning/alert systems</i></p> <p>poster walk 2</p>	

	<ul style="list-style-type: none"> people who stayed with posters in session 4a now visit other country posters while other people on the country team stay with each of their posters visitors can ask questions in person or write questions on notes cards (provided by organizers) 	
16:35-17:05	Country team discussions to: <ul style="list-style-type: none"> Discuss what was learned review comments from others on the country team's posters review which lessons learned/best practices from other countries could be adopted by the country team identify any questions/comments for other country teams 	Internal discussions within the country teams.
17:05 – 17:35	Report out by countries on best practices they may be interested in adopting Discussion of common themes	Individuals from country teams will provide read-outs on behalf of their country teams.

Wednesday, April 25

Time	Session	Comments
8:30 – 8:35	Announcements and instructions for day 3	MC to announce instructions for day
8:35 – 10:00	Unresolved Issues: Challenge question #3 <i>How can countries improve H5N1 HPAI cross-border cooperation and coordination to diminish the likelihood of the virus spreading from country to country?</i>	Moderator: Santanu Bandyopadhyay Cambodia: Teng Srey Lao PDR: Khamphouth Vongxay Myanmar: Than Htun Thailand: Pasakorn Akkarasewi FAO ECTAD: Mohinder Oberoi Rapporteur: David Payne
10:00 – 10:30	Break	
10:30-11:55	Unresolved Issues: Challenge question #4 <i>How can countries sustain essential components of H5N1 HPAI prevention, monitoring, and control programs when</i>	Moderator: Andrew Clements Bangladesh: Mosharaf Hossain Egypt: Moussa Soliman Indonesia: Muhammad Azhar Thailand: Orapan Pasavorakul Vietnam: Do Huu Dung

	<i>faced with declining funding?</i>	Rapporteur: Kendra Chittenden
11:55 – 12:55	Lunch (on site) Discussion of possible changes to USG programming based on April 23-25 meeting	US Government agencies only
12:55 – 13:55	Developing a “pathway to action” based on key recommendations from each of the previous sessions	Dennis Carroll will lead the discussion of the pathway to action.
13:55 – 14:55	Instructions for completing meeting evaluation form Closing comments	MC to close events and give closing comments
15:30- 17:00	Discussion of possible changes to FAO and WHO programming based on April 23-25 meeting	US Government agencies plus implementing partners (FAO, WHO)

Thursday, April 26

Time	Session	Comments
8:30 – 10:00	Planning meeting for EPT regional meeting in Bangkok (July 2012)	USAID only

Annex II List of Participants

Bangladesh

Md. Ashraf Ali
Director General
Department of Livestock Services
ashrafdls@yahoo.com

Mr. Mosharraf
Additional Secretary
Ministry of Fisheries and Livestock
mhossain149@yahoo.com

Dr. S.M. Nazrul Islam
Project Director
Department of Livestock Services
drnazrul48@yahoo.com

Prof. Mahmudur Rahman
Director
Institute of Epidemiology
Disease Control & Research & National
Influenza Centre
mrahman57@hotmail.com

Mr. Subhash Chandra Sarker
Joint Secretary
Public Health MoHFW
sarkersubhash@hotmail.com

Dr. Mat Yamage
Senior Technical Coordinator/Country
Team Leader ECTAD
FAO Bangladesh
Mat.Yamage@fao.org

Dr M K Zaman Biswas
National Professional Officer, Disease
Surveillance and Epidemiology
WHO Bangladesh
Biswasm@SEARO.WHO.INT

Dr. Kathy Sturm-Ramirez
Epidemiologist
CDC Bangladesh

ksturm@icddr.org

Cambodia

Dr. Teng Srey
Deputy Director
Communicable Disease Control
Department,
Ministry of Health
tengsrey@gmail.com

Dr. Seng Heng
Chief of Surveillance,
Communicable Disease Control
Department,
Ministry of Health
hengcdc@gmail.com

Dr. Sorn San
Director
National Veterinary Research Institute,
Ministry of Agriculture, Forestry and
Fisheries
sorn.san@gmail.com

Dr. Holl Davun
Deputy Director of NAVRI
Department of Animal Health
Production,
Ministry of Agriculture, Forestry and
Fisheries
vun.navri@gmail.com

Dr. Nima Asgari
ESR Team Leader
WHO Cambodia
asgarin@wpro.who.int

Dr. Lotfi Allal
Chief Technical Advisor
FAO Cambodia
lotfi.allal@fao.org

Dr. Sotheara
Development Assistance Specialist for
Infectious Disease
USAID/Cambodia
snop@usaid.gov

China

Mr. Vincent Martin
Senior Technical Advisor/Team Leader
FAO ECTAD China
Vincent.martin@fao.org

Dr. Song Ying
Senior Program Officer
USCDC China
songying@cn.cdc.gov

Dr. Li Bo Dong
WHO Collaborating Center for Influenza
Reference and Research
& Chinese National Influenza Center,
China CDC
donglibo@cnic.org.cn

Ms. Hou Yuhui
Veterinarian
Division of Animal Disease Prevention
and Control,
Veterinary Bureau
houyuhui@agri.gov.vn

Dr. Zeng
Research Associate
Harbin Veterinary Research Institute,
CAAS
zengxy@hvri.ac.cn

Mrs. Xinyan Zhai
Research fellow
China Animal Disease Prevention
Control Center
zhaixy2002@yahoo.com.cn

Egypt

Mr. Khaled Mohamed
Ali Mansour
Head of the Animal

Production sector
Ministry of Agriculture

Dr. Sherein Galal
Head of Laboratory Information
Management Unit - NLQP
Animal Health Research
Institute
shereengalal@yahoo.com

Dr. Moussa Soliman
Manager of Avian Viral Diseases
General Organization for Veterinary
Services
mosasoliman@hotmail.com

Dr. Yilma J. Makonnen
ECTAD Team Leader
FAO Egypt
yilma.jobre@fao.org

Indonesia

Dr. Emil Agustiono
Deputy Coordinating Minister
Coordinating Ministry for People's
Welfare
emil.agustiono@gmail.com

Dr. Sinurtina Sihombing
Chief of Standarization of
Subdirectoriate for Zoonoses Control
and Environmental Health
Ministry of Health
sisie.md@gmail.com

Mrs. Eka
Staff of Subdirectoriate of Surveillance
and Outbreak Response
Ministry of Health
ekamuhiriyah@yahoo.com

Dr. Ondri Dwi Sampurno
Head of Center for Biomedical and
Technology of Basic Health,
National Institute Health Research and
Development
Ministry of Health
ondri19@gmail.com

Dr. Muhammad Azhar
Coordinator of Campaign Management
Unit (CMU) for HPAI, Directorate
General of Livestock and Animal Health
Services
Ministry of Agriculture
azhar_drh@yahoo.com
upp_ai@yahoo.com

Dr. Syafrison Idris
Surveillance Subdirector of the
Directorate of Animal Health
Ministry of Agriculture
syafrison.idris@yahoo.com

Dr. James McGrane
Team Leader
FAO Indonesia
James.McGrane@fao.org

Mr. Eric Joseph Brum
Chief Technical Advisor
FAO Indonesia
ebrum1@gmail.com

Dr. Graham Tallis
Communicable Diseases Surveillance
and Response Program Manager
WHO Indonesia
TallisG@who.or.id

Ms. Gina Samann
Epidemiologist
USCDC Indonesia
ginasamaan@yahoo.com
wjuv5@cdc.gov

Dr. Kendra Chittenden
Infectious Disease & Science and
Technology Advisor
USAID Indonesia
kchittenden@usaid.gov

Lao PDR

Dr. Mahanakhone Souriya
Deputy Director General
Department of Livestock and Fisheries

m.souriya@yahoo.com

Dr. Khamphouth Vongxay
Deputy Chief of Animal Diseases
Diagnostic Lab
National Animal Health Center
kamputvongxay@yahoo.com

Dr. Tri Satya Putri Naipospos
CTA/ECTAD country team leader
FAO Lao PDR
tri.naipospos@fao.org
Ms. Hannah Lewis
Epidemiologist
WHO Lao PDR
lewish@wpro.who.int

Myanmar

Prof SoeLwinNyein
Director Epidemiology
Department of Health,
Ministry of Health
drslhnyein@gmail.com

Dr. Than Htun
National Project Manager
FAO Animal Health Programme-
Myanmar
than.htun@fao.org
dr.thanhtun007@gmail.com

Dr. Cho Cho Su Mon
National Consultant
FAO Animal Health Programme-
Myanmar
Cho.Mon@fao.org

Dr. Murray Maclean
Chief Technical Advisor and Team
Leader
FAO-ECTAD Myanmar
murray.maclean@fao.org

Thailand

Dr. Pasakorn Akkarasewi
Director,
Bureau of Epidemiology

Department of Disease Control
Ministry of Public Health
pasakorn.sewi@gmail.com

Dr. Orapan Pasavorakul
Senior Veterinary Expert
Department of Livestock Development
Ministry of Agriculture and Cooperatives
Orapanp@dld.go.th

Dr. Sujira Pachariyanon
Head of Virology Section
National Institute of Animal Health
Department of Livestock Development
Ministry of Agriculture and Cooperatives
sujirap@dld.go.th

Dr. Pawin Padungtod
Veterinary Medical Officer
CDC Thailand
PawinP@th.cdc.gov

Viet Nam

Mr. Diep Kinh Tan
Vice Minister
Ministry of Agriculture and
Rural Development

Mr. Luong The Phiet
Director General
International Cooperation Department
Ministry of Agriculture and Rural
Development

Mrs. Pham Thi Hong Hanh
Deputy Director
Bilateral Division
International Cooperation Department
Ministry of Agriculture and Rural
Development

Dr. Hoang Van Nam
Director General
Department of Animal Health
Ministry of Agriculture and Rural
Development
hvnamdah@gmail.com

Mr. Do Huu Dung
Director of International Cooperation
Division
Department of Animal Health
Ministry of Agriculture and Rural
Development
dung.dah@gmail.com

Mr. Phan Quang Minh
Deputy Director of Epidemiology
Division
Department of Animal Health
Ministry of Agriculture and Rural
Development
pqminh@dah.gov.vn

Dr. Nguyen Thanh Son
Deputy Director
Department of Livestock Production
sonnt.cn@mard.gov.vn

Ms. Ha Thuy Hanh
Deputy Director
National Agriculture Extension Center
hanhht.tecb@mard.gov.vn

Mr. Ngo Thanh Long
RAHO 6 - Department of Animal Health
ngothanhlong60@gmail.com

Dr. Tran Thanh Duong
Deputy Director General
General Department of Preventive
Medicine
Ministry of Health
tranthanhduong@hotmail.com

Mrs. Nguyen Thi Huong
Officer
General Department of Preventive
Medicine
Ministry of Health
huong.fetp@gmail.com

Dr. Vu Ngoc Long
General Department of Preventive
Medicine

Dr. Le Thi Quynh Mai

Chief of Laboratory
National Institute of Hygiene and
Epidemiology
lom9@hotmail.com
Dr. Nguyen Thanh Long
Pasteur Institute - Hochiminh city

Ms. Dao Thu Trang
PAHI Secretariat
trang.dt@avianinfluenza.org.vn

Ms. Nguyen Hong Thuy
PAHI Secretariat
thuy.nh@avianinfluenza.org.vn

Ms. Le Phuong Dung
PAHI Secretariat
dung.ltp@avianinfluenza.org.vn

Mr. Robert W. Ogburn
Deputy Consul General
US Embassy

Mr. Jonathan Ross
Office of Health Director
USAID/Vietnam
jross@usaid.gov

Dr. Timothy Meinke
Senior Infectious Diseases Advisor
USAID/Vietnam
tmeinke@usaid.gov

Dr. Kim Thuy Oanh
Infectious Diseases Specialist
USAID/Vietnam
okim@usaid.gov

Ms. Nicole Fox
Economic Officer
US Consulate HCMC
foxnp@state.gov

Dr. James Kile
Chief, Animal Human Interface Initiative
USCDC Vietnam
KileJC@vn.cdc.gov

Dr. Santanu Bandyopadhyay

ECTAD Vietnam Team Leader
FAO Vietnam
santanu.bandyopadhyay@fao.org

Mr. Ken Inui
International Laboratory Expert
Ministry of Agriculture and Rural
Development (MARD) -
Department of Animal Health (DAH)
National Center for Veterinary Diagnosis
(NCVD)
ken.inui@fao.org

Mr. Andrew Bisson
Technical Advisor
FAO Vietnam
andrew.bisson@fao.org

Mr. Ken Shimizu
Operations Coordinator
ECTAD FAO Vietnam
ken.shimizu@fao.org

Dr. Jennifer Siembieda
International Technical Adviser
(Epidemiology)
ECTAD FAO Vietnam
jennifer.siembieda@fao.org

Ms. Ngo Thi Hoang Lam
Programme Assistant
ECTAD FAO Vietnam
lam.ngohoang@fao.org

Ms. Nguyen Phuong Oanh
ECTAD FAO Vietnam

Ms. Nguyen Thi Lan Anh
ECTAD FAO Vietnam

Dr. Babatunde Olowokure
CRS Team leader
WHO Vietnam
Olowokure@wpro.who.int

Dr. Nguyen Thi Phuc
WHO Vietnam
Phucn@wpro.who.int

Dr. Le Van Tuan
Acting Head of WHO HCM office
WHO Vietnam
lev@who.int

Dr. Ngo Thi Hoa
Oxford Univ. Clinical Research Unit
hoannt@oucru.org

Mrs. Vo Ngan Giang
Technical Director of Animal Health
USAID's APII
giang@abtn.com

Mr. David Payne
Consultant
payne.dave@gmail.com

Other participants

Mr. Dennis Carroll
Director, Pandemic Influenza & Other
Emerging Threats Unit
USAID/Washington
dcarroll@usaid.gov

Mr. Andrew Clements
Deputy Director, Pandemic Influenza &
Other Emerging Threats Unit
USAID/Washington
aclements@usaid.gov

Dr. Ronald Waldman
Pandemic Influenza Consultant
USAID/Washington
rw178@columbia.edu

Mr. Carlson Craig
Pandemic Influenza & Other Emerging
Threats Unit
USAID/Washington
ccarlson@usaid.gov

Mr. Julian Brown
Pandemic Influenza & Other Emerging
Threats Unit
USAID/Washington
julbrown@usaid.gov

Dr. Daniel Schar
Emerging Infectious Disease Advisor
USAID/Regional Development Mission
Asia
dschar@usaid.gov

Dr. Sudarat Damrongwatanapokin
Regional Animal Advisor
USAID/Regional Development Mission
Asia
sdamrongwatanapokin@usaid.gov

Ms. Susan Boggess
US State Department
BoggessSM@state.gov

Dr. Tim Uyeki
CDC Atlanta

tuyeki@cdc.gov

Dr. Robert Tanaka
Senior Attaché
Animal and Plant Health Inspection
Service
U.S. Department of Agriculture
Bangkok, Thailand
Robert.T.Tanaka@aphis.usda.gov

Mr. Subhash Morzaria
Regional Manager
FAO ECTAD RAP
subhash.morzaria@fao.org

Ms. Wantanee Kalpravidh
Regional Project Coordinator
FAO ECTAD RAP
wantanee.kalpravidh@fao.org

Dr. Jan Hinrichs
Animal Health Economist
FAO ECTAD-RAP
jan.hinrichs@fao.org

Dr. Mohinder Oberoi
Sub-Regional Manager
ECTAD Unit (SAARC)
FAO Nepal
mohinder.oberoi@fao.org

Dr. Sanipa Suradhat
RSU Laboratory Expert
FAO ECTAD RAP
sanipa.suradhat@fao.org

Dr. Scott Newman
International Wildlife Coordinator
AGAH, C567
FAO Headquarters
scott.newman@fao.org

Ms. Ariella Glinni
Senior Operations Officer
FCC-EMU
TCES-FAO Headquarters
ariella.glinni@fao.org

Dr. Kenji Sakurai

Deputy Regional Representative
OIE
k.sakurai@oie.int

Dr. Gyanendra Gongal
Scientist
South East Asia Regional Office
WHO
gongalg@searo.who.int

Dr. Chadia Wannous
Senior Policy Advisor
UNSIC
chadia.wannous@undp.org

Prof. Malik Peiris
Chair of Virology, School of Public
Health
Scientific Director, HKU-Pasteur
Research Centre
The University of Hong Kong
malik@hkucc.hku.hk

Dr. Les Sims
Veterinarian
vetpath00@yahoo.com.au

Annex III Guidelines for Poster Presentations

Best Practices/Lessons Learned presentations by country team participants will consist of "posters" that highlight best practices, successes and potential applications, and continuing challenges. These presentations will be used to interactively share information among all participants and foster a rich technical dialogue among the affected countries.

Instructions for poster presentations:

- By April 11, country teams should use provided template to submit an abstract to the local USAID mission and FAO or WHO office for each Best Practice or Lesson Learned. USAID, FAO, WHO, and CDC technical staff in-country are available to help country teams with identifying and describing Best Practice or Lesson Learned.
- By April 20, country teams should develop 15 slides (using Word or Powerpoint) for each Best Practice or Lesson Learned to include the following information:

Slide 1: Provide country, title, author(s), and institutional affiliation(s)

Slide 2: Short description of activity

Slide 3-4: Describe what was accomplished (outcome or impact)

Slide 5: Describe why the result was significant

Slides 6-10: Describe the strategy used, how the work was organized, etc.

Slide 11: Describe what partners were involved

Slide 12: Describe any challenges or obstacles that had to be overcome

Slide 13: Describe any key steps that were essential for achieving the result

Slides 14-15: Describe any next steps or continuing challenges (e.g. further validation, scale-up, etc.)

In addition to the 15 slides, maps or diagrams can be included to help the audience understand the activity. A page number should be included on each page. When possible, please use a font between 20-24.

USAID, FAO, WHO, and CDC technical staff are available to help country teams with reviewing posters for Best Practice or Lesson Learned posters.

- By April 23, country teams should print their slides on 8.5" X 11" (or A4) sheets of regular, white paper (1 slide per page) and bring them to the meeting. *(Please do not spend time/money using glossy paper or making a formal poster that includes all of the slides on one big sheet of paper.)*
- At the meeting venue, country teams should assemble their posters during the morning of April 23 (8:00 – 10:00) in the areas designated by the organizers. Tape and thumbtacks will be provided.

Country teams should also bring an electronic copy of each poster presentation to the meeting so that they can be collected by the meeting organizers and distributed with all of the other presentations on a flash drive at the end of the meeting.

Annex IV Full List of Poster Presentations

Poster session 1: Improving the efficacy of outbreak surveillance and control in poultry

No.	Country	Agency	Poster Title
1	Cambodia	DAHP	Strong commitment of Cambodian Government to control H5N1 HPAI and to limit the economic cost of the disease
2	Cambodia	MoA/ MoH	Successful management of H5N1 outbreak success story
3	China	MoA	A sustainable national capacity building program on field epidemiology to deal effectively and efficiently with HPAI - China Field Epidemiology Training Program for Veterinarians (China FETPV)
4	Egypt	MOA/ GOVS	HPAI H5N1 control , challenges and way forward
5	Indonesia	MOA	Best practices and lessons learned for poultry farm cost-effective biosecurity, vaccination, and public-private partnership
6	Indonesia	MOA	Sustainability of AI surveillance and response using broader approach PDSR for other priority animal diseases.
7	Indonesia	MoA	Conducting H5N1 surveillance in vaccinated poultry
8	Indonesia	MoA	Best practices and lessons learned for biosecurity and public-private partnership along poultry market chain.
9	Myanmar	MOA	Active HPAI Surveillance Program
10	Thailand	MOA	Simple Housing Model for Native Chicken
11	Thailand	MOA	Strong Commitment of the Government of Thailand in Combating HPAI H5N1 in Poultry
12	Viet Nam	MARD	Applied Veterinary Epidemiology Training: A Field Training Programme for Veterinarians in Viet Nam

Poster session 2: Improving detection and treatment of H5N1 infections in humans using existing systems such as influenza-like illness (ILI) surveillance and early warning/alert systems

No.	Country	Agency	Poster Title
13	Bangladesh	MoH	Use of ILI and Respiratory Disease Surveillance to detect H5N1 human cases
14	Cambodia	MoH	Best Practice or Lesson Learned on Prevention and Control of Human H5N1 in Cambodia
15	Indonesia	MoH	East Jakarta Enhanced Human Surveillance Project in a High AI burdened Areas
16	Indonesia	MoH	Integrate influenza case management into IMCI and improving oxygen therapies

17	Indonesia	MoH	Using ILI surveillance platform to detect human H5N1 infection.
18	Lao PDR	MoH	ILI and Severe Acute Respiratory Infection (SARI) sentinel laboratory surveillance in Lao PDR
19	Myanmar	MoH	Prevention and Control of H5N1 HPAI and Human Influenza Pandemic Preparedness and Response
20	Viet Nam	MoH	Influenza sentinel surveillance system in Vietnam, Results and Lessons Learned
21	Viet Nam	MoH	Cooperation between Human and Animal Health on response on HPAI
22	Viet Nam	MARD	Community-based surveillance (CBS) model for early detection of disease for effective prevention: Closing the gap at the grassroots level
23	Viet Nam	MoH	Strengthen health system capacity through Field Epidemiology Training Program.

Poster session 3: Improving surveillance for reservoirs of H5N1 HPAI virus and monitoring of “silent” infections in animals (including in vaccinated poultry) and people

No.	Country	Agency	Poster Title
24	Bangladesh	MoA	Identifying gaps for further improvement of biosecurity in live bird markets (LBMs)
25	Bangladesh	MoA	Active Surveillance using SMS gateway system and passive surveillance for HPAI H5N1 in Bangladesh
26	China	MoH	Human Avian Surveillance System in China
27	China	MoA	Progress in increasing biosecurity level in poultry farms and live bird markets in China
28	Indonesia	MoA	Approaches for identifying potential reservoirs, amplifiers and endemic areas in Indonesia.
29	Indonesia	MoA	What is the role of ducks in HPAI endemicity in Indonesia?
30	Lao PDR	MoA	Conducting H5N1 surveillance in healthy ducks in Lao PDR
31	Myanmar	MoA	Commercial Farm GPS database
32	Myanmar	MoA	Duck Cross Sectional Study
33	Myanmar	MoA	Cross Border Risk Assessment Studies and Risk Framework
34	Viet Nam	MARD	Surveillance for sub-clinical infection with H5N1 among ducks in live bird markets of high risk provinces in Viet Nam
35	Viet Nam	MARD	Hatchery Hygiene quality improvement in Vietnam: a model approach for promoting and regulating good poultry production practices

Poster session 4: Improving surveillance for molecular changes in H5N1 HPAI viruses residing in poultry, wild birds, humans, and other animals (e.g. swine)

No.	Country	Agency	Poster Title
36	China	MoA	Monitoring current H5N1 viruses to ensure that poultry vaccines are appropriately matched
37	Egypt	MoA/ NLQP	Diagnosis of HPAI: Best Practices and lessons learned
38	Indonesia	MoA	An animal health laboratory network for H5N1 virus monitoring and vaccine matching.
39	Viet Nam	MARD	Matching vaccine with virus: integrating phylogenetic analysis and challenge trials to ensure vaccine efficacy

Summary
Technical Discussion on
Best Practices for Prevention and Containment of
H5N1 Highly Pathogenic Avian Influenza
Bali Indonesia
March 30-31, 2010



Prepared by:

Kathy Alison & Kira Gnesdiloff
Stop AI
April 2010

**Technical Discussion on
Best Practices for Prevention and Containment of
H5N1 Highly Pathogenic Avian Influenza
Bali Indonesia
March 30-31, 2010**

Introduction

Representatives from five countries (Bangladesh, China, Egypt, Indonesia, and Vietnam) participated in a two-day technical discussion on Best Practices for Prevention and Containment of H5N1 Highly Pathogenic Avian Influenza at the Nicco Bali Hotel in Bali, Indonesia March 30-31, 2010. The five countries were highlighted because of their extensive experience with H5N1 Highly Pathogenic Avian Influenza (HPAI) in terms of defining high-risk populations and geographic areas where H5N1 occurs, and their efforts to continually fine-tune their prevention and containment strategies to manage the virus in both human and avian populations. USAID sponsored the meeting with support from the other international donors who participated.

Seventy-two participants participated in the innovative technical discussions. Delegates included:

- Technical representatives from Ministries of Health and Ministries of Agriculture from all 5 countries
- Senior policy makers who are empowered to make decisions related to surveillance and containment of H5N1 outbreaks from all five countries
- International technical partners from country offices and headquarters of WHO, FAO, UNSIC, US CDC, USDA and USAID

See Attachment 1 for a complete list of attendees

The purpose of the meeting was to provide an opportunity for this mix of technically-oriented professionals and policy makers plus international technical partners to share their successes and discuss their constraints when faced with H5N1 HPAI infections in poultry and/or human populations. The technical discussion focused on:

- Identifying key programmatic successes or “best practices” that have led to important outcomes or impacts
- Identifying how these successes were achieved
- Identifying opportunities to replicate these successes in other countries

See Attachment 2 for the complete description of the meeting and the agenda.

A short summary of the various sessions that were held during the 2 day technical discussions can be found in Attachment 3.

By the end of the 2 day discussions, attendees had been able to participate in an exchange of best practices that are contributing to reduction in H5N1 HPAI viral circulation in poultry & human populations; discuss and plan how some of these best practices could be applied in their country, and identify key points to share with other countries at the Inter-Ministerial Conference on Animal and Pandemic Influenza (IMCAPI) in Vietnam on April 19 - 21, 2010.

Best Practices – Telling the Stories

Prior to the Bali technical discussions, country delegations identified three to five best practices (focusing on both human and avian health) that they wanted to share and discuss during the two-day

session. Rather than present a series of PowerPoint presentations on each of the 22 best practices that were identified, participants prepared poster sessions that allowed all delegates to tell the story of their work and to discuss their learnings in detail with their counterparts from other countries. The result was an interactive, highly participatory conversation about what countries were doing to contain H5N1 in both the human and avian populations in their countries, to discuss the challenges they are facing in implementing these strategies, and to share ideas for overcoming those challenges and possible applications to their own situation.

A list of **best practices highlighted by each country during the technical discussions** is below:

Country		Poultry Best Practices		Human Health Best Practices
Bangladesh	A	Containment of HPAI through Active Surveillance	A	Antiviral prophylaxis / follow-up of high risk people
	B	Containment of HPAI through live bird market cleaning/decontamination program		
China	A	Integrated prevention & control measures combining surveillance, massive vaccination & stamping out policy	B	Early detection / rapid response to human infection w/ avian influenza A (H5N1) virus
			A	Improvement of Lab capability for influenza virus
			B	Clinical Management with H5N1 infection
Egypt	B	Faster time to produce confirmatory A/H5N1 diagnosis & outbreak reporting / effective	A	Nationwide comprehensive surveillance and response
	A	Achievements & successes in strengthening AI detection & response	B	Communication and Social Mobilization
			A	Improved referral, clinical care management and infection control
Indonesia	A	Participatory Disease Surveillance and Response (PDSR)/Livestock Disease Coordinating Centers	B	Epicentre containment

		(LDCC)		
	B	OFFLU	A	Improving case management (includes Riau pilot project)
	A	Market Chain Analysis		
Vietnam	B	Government Committee and Approach	B	Addressing the prevention & control of flu A (H5N1) in humans through strengthening of health systems
	A	Disease surveillance and outbreak response	A	Communications and Awareness-raising
	B	Vaccination as an additional control measure		

Copies of the poster presentations were provided to each participant on a CD at the end of the technical discussion on March 31, and the posters were displayed again during the IMCAPI meeting in Hanoi on April 19-21, 2010.

See Attachment 4 for the technical content contained in country posters

Country Plans for Follow-up

During the two-day event, country and donor representatives had time to discuss the best practices described by each country by rotating through all of the poster presentations. On the final afternoon of the technical discussion, country teams reconvened to discuss what they had learned from other country best practices and identified how they will follow up, using the following three questions:

- Identify 1-2 Priority Best Practices that seem to have potential relevance for your country (Which challenge might this address?)
- Identify Specific Steps needed to explore how this best practice can be applied to meet your specific challenges
- What are the 2-3 most critical challenges related to H5N1 HPAI for which there don't appear to be any lessons learned but that are of concern in your country?

Each country plus the international donor community prepared and presented a brief summary of their discussions on these questions.

Highlights from each presentation can be found on the following pages.

Bangladesh Country Plan

Priority Best Practices that seem to have potential relevance for your country (Which challenge might this address?)	Specific Steps needed to explore how this best practice can be applied to meet your specific challenges
1. Enforcement of compliance of biosecurity through farm registration	<ul style="list-style-type: none"> • Prepare operational plan based on the national plan taking into account the experience of <i>Thailand</i> • Submit the operational plan for approval and endorsement from the authority • Mobilize resources for implementation of the approved plan • Pursue collaboration with Thailand to strengthen farm registration program • Implementation of animal disease control act • Build awareness among farmers through training
2. Market chain analysis to trace back poultry sources	<ul style="list-style-type: none"> • Prepare operational plan based on the national plan taking into account the experience of <i>Indonesia</i> • Submit the operational plan for approval and endorsement from the authority • Establishment of collection yard for live birds • Random sampling from ducks in the market • Keeping records of sources of birds from where they arrive in the market
3. Expansion of lab services with networking for enhanced surveillance (<i>Human health</i>)	<ul style="list-style-type: none"> • Prepare operational plan based on the national plan taking into account the experience of <i>China</i> • Submit the operational plan for approval and endorsement from the authority • Liaise with WHO and other development partners for mobilizing resources for implementation of the approved plan • Pursue collaboration with Ministry of Health, China for strengthening lab service including building capacity of lab personnel • Develop SOP and guidelines for establishing lab network in the country among labs within health and between the health and livestock sector • Identification of the sites, orientation of the personnel involved and develop operational plans for each of the sites • Implementation as per the plan such as procurement of lab equipment and consumables, renovation, training of lab personnel etc. • Set up web page for sharing of information between lab personnel, public health specialist and general public • Wide public relation to make aware of the network

China Country Plan

Presenters: Yu Kangzhen, CVO, Ministry of Agriculture & Li Zhengmao, Ministry of Health

Priority Best Practices that seem to have potential relevance for your country (Which challenge might this address?)	Specific Steps needed to explore how this best practice can be applied to meet your specific challenges
<p>1. Animal health <u>Challenge:</u> P.R. China - Management of LBM & Live birds movement</p> <p><u>Best practice:</u> <i>Indonesia</i> - Market Chain Analysis</p> <p>2. Human Health <u>Challenge:</u> Difficulty in early detection of suspected H5N1 human cases</p> <p><u>Priority Best Practices (Egypt)</u></p> <ol style="list-style-type: none"> 1. National comprehensive surveillance and response 2. Improved referral clinical care management and infection control 	<p>1. Animal health</p> <ul style="list-style-type: none"> • Intensify LBMs surveillance and improve the traceability system of positive birds • Enhance animal health supervision in LBMs • Intensify responsibilities of different agencies and stakeholders <p>2. Human Health</p> <ul style="list-style-type: none"> • Strengthening the surveillance system of pneumonia of unknown origin <ul style="list-style-type: none"> ○ Modifying case definition to improve sensitivity ○ Improving awareness of both the primary HCWs and the public ○ Strengthening surveillance for high risk populations and suspected H5N1 cases ○ Further sharing experience with Egypt colleagues and on-site visit if possible
What are the most critical challenges related to H5N1 HPAI for which there don't appear to be any lessons learned but that are of concern in your country?	
<p>1. Animal health</p> <ul style="list-style-type: none"> ➤ H5N1 HPAI prevention & control in waterfowl <ul style="list-style-type: none"> ○ Reservoir ○ Silence infection ○ Environments disinfection (water body) ○ Weakness of immuno-response 	

Egypt Country Plan

Priority Best Practices that seem to have potential relevance for your country (Which challenge might this address?)	Specific Steps needed to explore how this best practice can be applied to meet your specific challenges
<p><i>Animal Health</i></p> <p>A. Market Chain Management (Indonesia BP)</p> <p><u>Challenges:</u></p> <ul style="list-style-type: none"> • Conducting risk mapping • Live bird market restructuring • Policy dialogue and policy instrument(s) • Advocacy • Financial resources 	<ol style="list-style-type: none"> 1. Study tour to <i>Indonesia</i> 2. Market chain analysis 3. Policy dialogue that will lead to decisions and advocacy 4. Mobilize required resources 5. Develop implementation plan and M&E system
<p>B. Epidemiological surveillance (system for data collection, analysis and use) (Bangladesh BP)</p> <p><u>Challenges:</u></p> <ul style="list-style-type: none"> • Developing a system for data collection, analysis and use • Identifying use of appropriate communication technology: e.g. SMS gateway, digital pen technique 	<ol style="list-style-type: none"> 1. Study tour to <i>Vietnam</i> 2. Design appropriate system (SMS gateway, digital pen, etc) 3. Mobilize required resources 4. Sustainable diagnostic and research capabilities as well as an effective outbreak management system
<p><i>Human Health</i></p> <p>C. Sustain human diagnostic capacity</p>	<ol style="list-style-type: none"> 1. Strategic review and identify needs 2. Mobilize resources (human and financial) 3. M&E and sharing of information
<p>D. <i>Maintain</i> early detection for human H5N1 cases and decrease virus circulation</p>	<ol style="list-style-type: none"> 1. Expand surveillance network 2. Introduction of PDA technology 3. Strengthen infection control program
<p>What are the most critical challenges related to H5N1 HPAI for which there don't appear to be any lessons learned but that are of concern in your country?</p>	
<ul style="list-style-type: none"> ➤ Improve biosecurity in all poultry production sectors ➤ Working within a decentralized governmental system ➤ Dealing with government and community AI fatigue, in particular, maintaining awareness and financial commitment 	

Indonesia Country Plan

Country Team Members:

1. MOA – Ade Siachrena Lubis, Mohammad Azhar, Soedarmono, Agus Wiyono.
2. MOHealth – Rita, Wilfred Purba, Ari, Rosliany

Priority Best Practices that seem to have potential relevance for your country (which challenge might this address?)	Specific Steps needed to explore how this best practice can be applied to meet your specific challenges
1. Strengthening sustainable integrated and community-based surveillance among health and agriculture.	<p><i>Integrated Surveillance</i></p> <ol style="list-style-type: none"> 1. Revision of DG decree into Ministerial decree 2. Revise surveillance guidelines 3. Training of MOH and MOA staff together 4. Strengthening reporting and evaluation 5. Data/information sharing between animal and human health labs 6. Look at <i>Egypt</i> for H1N1 vaccination and H5N1 detection and case management <p><i>Community-based surveillance</i></p> <ol style="list-style-type: none"> 1. Advocacy with local officials to village/neighborhood head 2. Socialization of guidelines to community/religious/health volunteers 3. Improved laboratory testing/improved access to testing for early case detection
2. Reduce viral spread along the poultry production and market chain.	<ol style="list-style-type: none"> 1. Meeting with local government and quarantine services to discuss options to see if feasible. 2. New regulations resulting from workshops 3. Maintaining Sector 4 quick response and encourage Sector 3 reporting. 4. Develop a plan for farm certification 5. Study other countries with farm certification 6. Visit <i>China</i> to learn about risk mgmt in LBM
3. Increase Public Awareness	<ol style="list-style-type: none"> 1. Work with media – for community 2. Health care workers and agriculture staff – training 3. Hold community campaign activities
What are the most critical challenges related to H5N1 HPAI for which there don't appear to be any lessons learned but that are of concern in your country?	
<ol style="list-style-type: none"> 1. Integrating viral dynamics knowledge derived from animal and human sources in order to understand 	

H5N1 epidemiology

2. Poultry movement control
3. Encouraging commercial poultry involvement in implementing biosecurity and case reporting.

Viet Nam Country Plan

Priority Best Practices that seem to have potential relevance for your country (Which challenge might this address?)	Specific Steps needed to explore how this best practice can be applied to meet your specific challenges
<p>Challenge: Decreasing the case fatality ratio (Human health)</p> <p>1. Priority Best Practices</p> <ul style="list-style-type: none"> • Early case detection • Strengthening awareness of primary health care workers to improve screening for, identification of, and referral of suspect cases • Improve quality of case management and infection control 	<ol style="list-style-type: none"> 1. Develop advocacy document highlighting importance of early detection and improved quality of care; establish budget proposal 2. Study tour to <i>Egypt</i> to more fully understand success in identifying cases early 3. Revise surveillance, diagnosis, and treatment guidelines to include standardized case definition for suspect case 4. Improve communication and outreach to the public (request copies of communication materials used in <i>Egypt</i> and assess applicability to Viet Nam) 5. Train primary health care workers (and pharmacists?) to identify and refer suspect cases for testing (request copies of training modules in <i>Egypt</i> and <i>Indonesia</i>; assess applicability to Viet Nam) 6. Train hospital staff on new case definition and importance of testing suspect cases 7. Train ICU staff on case management and infection control (request copies of training programme from <i>Egypt</i> and assess applicability to Viet Nam)
What are the most critical challenges related to H5N1 HPAI for which there don't appear to be any lessons learned but that are of concern in your country?	
<p><u>Viet Nam – Animal health</u></p> <ul style="list-style-type: none"> - 'Fatigue' of stakeholders (donors, producers,...) - Poultry restructuring: free-range ducks - Sustain public awareness - No good vaccine available for ducks - Better understanding of risk factors (exposure, etc.) 	

Partners

On the afternoon of Day 2, while country teams developed their specific country plans, international donor representatives who are not located in a specific country also met to identify the critical / global challenges that have not been addresses and to suggest specific actions that donors could take to address these issues.

What are the most critical regional / global challenges related to H5N1 HPAI for which there don't appear to be any lessons learned?	Specific Actions that can be done to address these gaps / challenges
<ol style="list-style-type: none"> 1. Vaccination: no best practices for exit strategies and/or for application of vaccination. 2. Capacity building: especially technical level education in the animal health sector. Farm/fields schools and other participatory approaches. 3. Restructuring: Rethinking the way we produce food animals; increase biosecurity in small scale commercial sector; 4. Reducing unnecessary human and animal exposure in markets- some examples exists. 5. Ducks, domestic, free range. Improved raising systems? Targeted efficient vaccination schemes? 	<p>For all: mix of research, R&D, thinking, Pilot projects.</p> <p>NB: application of HACCP concepts to design of process solutions</p> <p><i>NOTE: HACCP is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.</i></p>

IMCAPI - Ideas to take to Hanoi meeting

One of the objectives of the Bali Technical Discussion was to identify key points to share with other countries at the Inter-Ministerial Conference on Animal and Pandemic Influenza (IMCAPI) in Vietnam on April 19 - 21, 2010.

Julie Hall, United Nations System Influenza Coordination (UNSIC) representative, presented a brief summary of *Messages for IMCAPI 2010 Hanoi / Sharing lessons from countries with most experience in controlling HPAI H5N1*

Ms. Hall summarized five key messages she hopes would be shared in Hanoi as a result of the Bali technical discussions

1. We must maintain the momentum
 - a. H5N1 is still a threat – to animal, to human and to livelihoods
 - b. The virus still has pandemic potential
 - c. There have been some great successes in a relatively short period of time
 - More geographically clustered than before
 - Many fewer 'exports'
 - d. But challenges remain and the virus is still not eliminated from domestic poultry
 - e. Other priorities are now competing for attention and funding
 - There is a concern that if we allow the 'lid to lift off again' H5N1 is likely to spread again (both domestically and internationally)

- f. Focused attention on the highly impacted countries provides an opportunity to eliminate the virus from domestic poultry – significantly reducing risk of export and ‘global viral load’
2. There are many good practices to share
 - a. Many good practices should be documented and transferred e.g. health care in Egypt, market chain critical intervention point analysis etc
 - b. Equally important to document and share experiences of things that do **not** work
 - c. Number of areas where best practice still to be developed
 - Fully understanding epidemiology
 - Finding better tools to support behaviour change
 - How best to engage with private sector and ensure biosecurity enhanced “farm to fork”
 - Vaccination – most effective strategy(ies), effective vaccine for ducks
 - d. Sharing of experiences is very valuable and should be supported
3. Systems still need to be strengthened
 - a. Capacity issues remain:
 - Poultry sector capacity to implement biosecurity especially in sector 3 (many small scale farms)
 - Grassroots level capacity – need for quality vet services
 - Health care system – reducing access barriers and strengthening clinical capacities and skills
 - b. Supportive systems also need to be strengthened
 - Multi-sector interface – very important but requires ‘nurturing’ and supporting
 - Poultry movement controls – further work to support trade but reduce risks
 - Licensing and registration
4. There is a need to mainstream practices and apply learnings from H5N1 to other diseases
 - a. Mainstreaming H5 activities
 - Healthy poultry production
 - Acute respiratory disease management
 - b. Lessons learnt through H5 experience are immense and applicable to other diseases
 - Multi-sector, trans-disciplinary approach is extremely useful in dealing with other diseases – need to build on this and show how to use the approaches to address other diseases
 - Also a means of strengthening food safety
5. Political Commitment and Funding is **Critical**
 - a. Need to showcase results – ‘see what can be achieved’
 - b. Need to document and showcase co-lateral benefits – ‘see what money can buy’
 - c. Need sustained funding – for programmes
 - d. Need further development of incentives and best practices for compensation

Ms. Hall then identified the following 6 ideas that could be addressed at the IMCAPI meeting in Hanoi based on the Bali technical discussions

1. Mass vaccination for poultry
2. Incorporate food safety and food security (including poverty reduction) and other global issues impacted by zoonotic diseases
1. Discuss H1N1

2. Making zoonotic diseases a priority and set up national committee
3. Strengthening regional coordinating bodies
4. Implementing One World One Health (OWOH) concepts – healthy farmer, healthy livestock – PSTS
5. Sharing genetic material
6. Sharing information, communications and technology

USAID wrap-up and next steps

Dennis Carroll, Director, Avian and Pandemic Influenza Unit (USAID/W) wrapped up the 2 day discussions with a quick summary of what will happen next, based on the results of the poster sessions and country plans. Including:

1. USAID will support site visits to other countries mentioned in each country report
2. USAID will use new resources to begin translating steps discussed in Bali into tangible lines of work
3. Information sharing begun in Bali will continue with support from USAID/W. Andrew Clements AI technical advisor, Avian and Pandemic Influenza Unit, will begin developing a process to move the discussion to the next level, identify what priorities to begin work on and set a timeline. (A draft will be presented in Hanoi)
4. USAID will organize a side meeting in Hanoi with participants from the Bali sessions to discuss next step scenarios.

Attachment 1

Participants
Technical Discussion on Best Practices
for Prevention and Containment of H5N1 Highly Pathogenic Avian Influenza (HPAI)
Nikko Bali Hotel
March 30-31, 2010

Country	Host Government	Other	Salutation	Last Name	First Name	Position	Affiliation
Bangladesh	1			Alam	Md. Shurful	Secretary	Ministry of Fisheries and Livestock
	2			Baqi	Md. Abdul	Director, Animal Health and Administration	Ministry of Fisheries and Livestock, Department of Livestock Services
	3			Khyyam	Syed Umar	Joint Secretary	Ministry of Health and Family Welfare
	4			Ahmed	Be-Nazir	Principle Scientific Officer	Institute of Epidemiology, Disease Control & Research
		1	Mr.	Mikolon	Andrea	Head, Zoonotic Diseases Cluster	CDC
		2	Dr.	Hoque	Mahbubul	National Consultant, Outbreak Response and Training	FAO/Bangladesh
		3	Dr.	Yamage	Mat	Chief Technical Advisor	FAO/Bangladesh
		4	Dr.	Sungkhobol	Duangvadee	WHO Representative	WHO/Bangladesh
China	1		Dr.	Yu	Kangzhen	Chief Veterinary Officer	Ministry of Agriculture
	2		Dr.	Chen	Guosheng	Director	Head, Division of Animal Disease Control, Veterinary Bureau
	3		Dr.	Huang	Baoxu	Director	Head, Epidemiology Unit, China Animal Health and Epidemiology Centre
	4		Mr.	Tian	Xiao	Interpreter	Ministry of Agriculture
	5		Dr.	Li	Zhengmao	Deputy Director in Office of Health Emergency	Ministry of Health (MOH)
	6		Dr.	Gao	Zhancheng	Doctor-in-chief, People's Hospital affiliated to Peking University	Ministry of Health (MOH)

	7		Dr.	Bai	Tian	Research Associate	China CDC
	8		Dr	Liao	Qiaohong	Research Assistant	China CDC
		1	Dr	Song	Ying		USCDC/China
		2	Dr	Martin	Vincent	Chief Technical Advisor	FAO/China
		3	Dr	Guo	Fusheng	AI Technical Advisor	FAO/China
		4	Dr	Ben Embarek	Peter	Food Safety & Nutrition, World Health Organization (WHO), China Office	WHO/China
Egypt	1		Dr	Elgarhy	Mohamed	Chairman, General Organization for Veterinary Services	Ministry of Agriculture and Land Reclamation (MoALR)
	2		Dr.	Amira	Kamal	SAIDR Project Director (GOVS)	MoALR
	3		Dr.	Mona	Mehrez Aly	Director, Animal Health Research Institute	MoALR
	4		Dr.	Refay	Samir	Head of Epidemiology Surveillance Unit	Ministry of Health (MOH)
		1	Dr.	Wannous	Chadia	Regional Coordinator, Avian and Pandemic Influenza	United Nations System Inf luenza Coordination (UNS IC)
		2	Dr.	Yilma	Jobre	ECTAD Team Leader	FAO/Egypt
		3	Mr	Ettel	Toni	Operations Officer	FAO/Egypt
		4	Mr	Thomas	Easley	AI Technical Advisor	USAID/Egypt
		5	Mr	George	Sanad	API Program Management Specialist	USAID/Egypt
Indonesia	1		Mr	Krisnamurthi	Bayu	Vice Minister; & Director	Ministry of Agriculture; and National Committee for Avian Influenza (KOMNAS FBPI);
	2		Dr.	Kusriastuti, M.Sc.	Rita	Director, Vector Borne Disease Control	Ministry of Health (MOH)
	3		Drh.	Purba, M.Kes	Wilfried	Head, Sub. Directorate Zoonosis	MOH
	4		DR.	Mulyoko	Roslany, SKM, MScPH	Sub. Directorate Surveillance and Outbreak Response	MOH
	5		Ms	Bratasena	Arie	Head, Sub. Directorate Acute Respiratory Infection	MOH
	6		Dr.	Soedjana	Tjeppey	Director General Livestock Services	Ministry of Agriculture (MOA)
	7		Dr.	Wiyono	Agus	Director, Department of Animal Health (DAH)	MOA

	8	Dr.	Azhar	Muhammad	Senior Technical Staff, Campaign Management Unit (CMU)	MOA
	9	Dr.		Soedarmono	Head Sub Directorate of Disease Control	MOA
	10	Dr.	Lubis	Ade Sjachrena	National Project Coordinator, CMU	MOA
	1	Dr.	McGrane	James	Team Leader	FAO
	2	Mr	Brum	Eric	Chief Technical Adviser	FAO
	3	Mr	Tallis	Graham	Communicable Diseases Surveillance and Response Team Leader	WHO
	4	Mr	Darmawan	Carolus Baso	Poultry Health Specialist	USDA/APHIS-Indonesia
	5	Mr	Mahoney	Frank	Epidemiologist	USCDC/Indonesia
	6	Ms	Chittenden	Kendra	Senior Infectious Disease advisor	USAID/Indonesia
Vietnam	1	Dr.	Bong	Bui Ba	Vice Minister	Ministry of Agriculture and Rural Development (MARD)
	2	Dr.	Nam	Hoang Van	Acting Director General of the Department of Animal Health	Ministry of Agriculture and Rural Development (MARD)
	3	Dr.	Dung	Do Huu	Deputy Head, Epidemiology Division, Department of Animal Health	Ministry of Agriculture and Rural Development (MARD)
	4	Dr.	Nga	Nguyen Huy	Director General for Preventive Medicine and Environmental Health	Ministry of Health (MOH)
	5	Mrs	Chau	Nguyen Thi Minh	Vice Director, Department of International Cooperation. Deputy Director of PAHI	MOH
	6	Dr.	Hanh	Nguyen Thi Hong	Deputy Director, National Institute of Hygiene and Epidemiology in Hanoi (NIHE)	MOH
	1	Dr.	Smith	Nicole	Epidemiologist and Acting Team Leader, Communicable Disease Surveillance and Response	WHO/Vietnam
	2	Dr.	Bandhyopadhyay	Santanu	Senior Technical Coordinator, HPAI & Team Leader	FAO/Vietnam
	3	Dr.	Henry	Warren	Project Leader, GETS (USAID AI poultry vaccine research project)	FAO/Vietnam

	4	Dr.	Kile	James	Chief, Animal-Human Interface Initiative, Influenza Program	USCDC/Vietnam
	5	Dr.	Kapella	Bryan	Chief, Influenza Program	USCDC/Vietnam
	6	Dr.	Meinke	Tim	Senior Influenza Advisor	USAID/Vietnam
	7	Dr.	Kim Thuy	Oanh	Public Health Specialist	USAID/Vietnam
Other Donors	1	Dr	Carroll	Dennis	Director, Avian and Pandemic Influenza Unit	USAID/Washington
	2	Dr	Clements	Andrew	AI technical advisor, Avian and Pandemic Influenza Unit	USAID/Washington
	3	Mr	Damrongwatanapokin	Sudarat	Regional Animal Advisor	USAID/Regional Development Mission Asia
	4	Mr	Schar	Daniel	Emerging Infectious Disease Advisor	USAID/Regional Development Mission Asia
	5	Mr	Nabarro	David	Senior Coordinator for Avian and Pandemic Influenza	UNSCIC
	6	Ms	Langdon	Brenda	UN Pandemic Influenza Advisor	UNSCIC
	7	Ms	Hall	Julie	Senior Technical Advisor	UNSCIC
	8	Mr	Suryantoro	Ludy	External Relations and Partnership	WHO/Geneva
	9	Dr.	Roth	Cathy		WHO/Geneva
	10	Mr	Lubroth	Juan	Chief Veterinary Officer	FAO/Rome
	11	Mr.	Burgeon	Dominique		FAO/Rome
	12	Mr	Morzaria	Subhash		FAO/RAP
	13	Mr	Kalpravid	Wantanee	Regional AI Coordinator	FAO/RAP
	14	Ms	Alison	Kathy	Meeting facilitator	Training Resources Group, Inc
	15	Ms	Gnesdilloff	Kira	Meeting facilitator	Training Resources Group, Inc
Support Staff	1	Ms	Wahyuningsari	Ika	Meeting Organizer	KOMNAS FBPI
	2	Mr	Yukezain	Habibie	Meeting Organizer	KOMNAS FBPI
	3	Mr	Trapsilo	Andhi	Meeting Organizer	KOMNAS FBPI
	4	Ms	Mahoney	Joan	AI Coordinator	States/Indonesia
	5	Ms	Damayanti	Sahesti	Meeting Organizer	FAO

	6	Ms	Busquets	Maria	Chief of Party	DAI/CBAIC
	7	Ms	Tan	Dianaria	Meeting Organizer	DAI/CBAIC
	8	Ms	Fajarwati	Mayang	Meeting Organizer	DAI/CBAIC

Attachment 2

**Technical Discussion on Best Practices for Prevention and Containment of
H5N1 Highly Pathogenic Avian Influenza (HPAI)
March 30-31, 2010
Bali, Indonesia
Meeting Outline**

Audience:

- Representatives from five countries (Egypt, Vietnam, Indonesia, China and Bangladesh) that have had the most experience with H5N1 HPAI in terms of defining high-risk populations and geographic areas and continually fine-tuning prevention and containment strategies to achieve results. Participants will include:
 - Technical representatives from Ministries of Health and Ministries of Agriculture
 - Senior policy makers who are empowered to make decisions related to surveillance and containment of H5N1 outbreaks
 - International technical partners from WHO, FAO, UNSIC, US CDC, USAID

Purpose:

- To provide an opportunity for a mix of technically oriented professionals and policy makers plus international technical partners from five countries (Egypt, Vietnam, Indonesia, China and Bangladesh) to share their successes and discuss their constraints when faced with H5N1 HPAI infections in poultry and / or human populations.
- The technical discussion will focus on:
 - identifying key programmatic successes or “best practices” that have led to important outcomes or impacts
 - identifying how these successes were achieved
 - identifying opportunities to replicate these successes in other countries

Objectives: By the end of the 2-day session, representatives will have the opportunity to:

- Participate in a South-South exchange of lessons learned and best practices that are contributing to a reduction in H5N1 HPAI viral circulation in poultry and human populations
- Identify how these best practices could be applied in other countries
- Identify key points from this inter-country discussion of best practices that can be shared with other countries at the Inter-Ministerial Conference on Animal and Pandemic Influenza (IMCAPI) in Vietnam from April 19 to April 21, 2010

Expected deliverables:

- Identification of specific best practices in Bangladesh, China, Egypt, Indonesia, and Vietnam that have resulted in important outcomes or impacts
- Identification of opportunities to replicate specific best practices in other countries and next steps needed to adopt these best practices
- Identification of key points/actions from this meeting that will form the basis for a presentation to other countries during IMCAPI

Agenda

March 29 afternoon/evening

4:00 – 6:00 Meeting Preparations

- Planning Meeting of Organizing Committee and International Advisors (Sawangan Room 6)
- Country Teams Prepare Posters (Sawangan Rooms 1-2)

6:00 – 7:30 Informal Reception (in front of Sawangan Room 6)

March 30 morning (Plenary)

8:30 – 9:00 Registration

9:00 – 10:15 Opening (Plenary)

- Welcome: **Dr. Kendra Chittenden**, USAID/Indonesia
- Introduction to the meeting: **Dr. Dennis Carroll**, USAID/Washington
- Remarks by UN representatives:
 - FAO/Rome: **Dr. Juan Lubroth**
 - WHO/Geneva: **Dr. Cathy Ellen Roth**
 - UNSIC: **Dr. David Nabarro**
- Official Opening of the Meeting: **Dr. Ir. Bayu Krisnamurthi**, Vice Minister of Agriculture of the Republic of Indonesia
- Introduction of the participants (all)

10:15 – 10:45 Break (group photo)

10:45 – 1:00 (Plenary)

- Discuss Meeting Objectives and Format: **Dr. Dennis Carroll**

Story Telling

- Description and management of the process for discussing best practices: **Kathy Alison** and **Kira Gnesdiloff**, Training Resources Group
- Summary handout of best practices from the 5 countries

- **PROCESS**

Step 1: Gallery Walk

- Everyone looks at posters and selects 2 best practices that he or she would like more information about. Put your name and country on a post-it note and leave next to each of the 2 posters.

Step 2: Country Team Meeting

- Review list of individuals who want more information on your best practice(s). Agree who will present your best practice(s) – those people will stay with the posters to present and answer questions. If there are more

than 10 people who want to discuss this success story, you will repeat the presentation a second time –select a second presenter for round 2.

- Remaining country team members will divide up and each person will attend the discussion of one of the best practices they selected
- Individuals will be able to participate in discussions on the 2 best practices that are most relevant for them.
- Make sure there is a least 1 representative from your country in each of the best practices discussions.

Step 3: Round 1: Discuss Best Practices

- Move to Round 1 – country presenter will have 15 minutes to present a quick overview of the success story with 20 minutes for discussion – what questions do people have, what do people want to know more about

Step 4: Round 2

- Country presenter will have 15 minutes to present a quick overview of the success story with 20 minutes for discussion

1:00 – 2:00 Buffet Lunch

2:00 – 3:30 Country Team Discussions

- Briefly meet in Plenary – Explain task for afternoon discussion: **Kathy Alison and Kira Gnesdiloff**
- Reconvene in country groups and share key relevant lessons from success stories heard. Specifically share
 - a. What was most relevant to your risk factors (animal /human)?
 - b. What might be adapted to help you with your situation?
 - What would have the most immediate or significant impact?
 - c. What policies might be needed to implement the intervention?
 - d. What questions do you now have for any of the other groups about a specific intervention
- By 3:15, write each question for success stories on a 3x5 card and deliver questions to country teams before the break.
- Country teams review the questions about their best practices and try to match someone with each question - identify who will go to the different country teams to respond to the questions after the break.

3:30 – 4:00 Coffee Break

4:00 – 4:45 Responding to Questions about Best Practices (Country Groups)

- Resource people from other country teams will share more information with the groups requesting assistance.

4:45 – 5:10 Concluding Country Discussions

- Within country groups, discuss the following:
 - What was most useful / interesting about today's discussions?
 - What is one idea you want to follow-up on tomorrow?

- Based on what you heard today, what do you think might be relevant to what you are doing in your country?
- What are the next steps?

5:10 – 5:15 Wrap-up of Day

- Announce plans for organizational meeting and dinner; announce starting time for Day 2: **Kathy Alison** and **Kira Gnesdiloff**

5:30 – 6:00 Planning Meeting of Organizing Committee and International Advisors (main meeting room)

7:00 – 9:00 Group Dinner at Poolside Restaurant

March 31

8:30 – 8:45 Opening of Day 2 (Plenary)

- Summary of Day 1 discussions / Overview of day 2 plan: **Dr. Andrew Clements**, USAID/Washington

8:45 – 10:00 Challenges Facing Countries

- Briefly meet in Plenary – Explain tasks for the morning discussions: **Kathy Alison** and **Kira Gnesdiloff**
- In country groups:
 - Identify and write on notecards (5x8 cards) your 2-3 most significant / current technical, programmatic, policy or other challenges that are keeping you from reducing H5N1 HPAI viral circulation in your country. *Put only 1 challenge on each card*
 - Post your cards on the wall before the break

10:00 – 10:30 Break

10:30 – 12:00 Challenge Discussions (2 rounds)

- Groups will form around the challenges identified above. In these groups, participants will share what they have tried as an intervention to address this set of challenge and what they learned in doing so. What are they trying now?
- After 45 minutes, participants will select a second set of challenges to discuss. Again, those participating will share what they have tried and how it worked and what they have learned.

12:00 – 12:30 Challenge Discussions (Plenary)

- Discussion of specific challenges countries are facing: what is similar in other countries and what they have done to overcome those challenges? **Andrew Clements**

12:30 – 1:30 Buffet Lunch

- 1:30 – 3:00 Country Plans**
- Briefly meet in Plenary – Explain task for afternoon discussion: **Kathy Alison** and **Kira Gnesdiloff**
 - In country teams, develop a plan for implementing best practices in reducing H5N1 HPAI viral circulation in your country. Specifically:
 - Identify 2-3 best practices that could be adopted in your country
 - What specific actions (policy, strategy, technical intervention, other) need to be taken in order to adopt each best practice
 - Who will be the lead in supporting the effort (policy / strategy / technical intervention / other)?
 - What resources will be required to support your plan? Are resources already available?
 - What other kinds of support will you need to implement your ideas (study tours, exchanges, resource people you would like to contact, etc)
 - Who will serve as points of contact for any future interactions with the other countries around this issue?
 - What are 2-3 challenges related to H5N1 HPAI for which there don't appear to be any best practices yet – that may need to be discussed in the future (write these on notecards)
 - Put your plan on flipchart (using provided format) and be prepared to present a 10 minute overview in plenary
- 3:00 – 3:30 Coffee Break**
- 3:30 – 4:30 Country Reports (Plenary)**
- Each country reports which best practices it is interested in adopting and asks any follow-up questions it has related to implementing these best practices
 - Were there any important issues that still need to be addressed (that could be addressed in the future)?
- 4:30 – 5:00 Inter-Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) that will take place in Hanoi, Vietnam April 19-21, 2010**
- Identification of key points / issues that could be presented at IMCAPI: **Julie Hall**, **UNSIC** and **Tim Meinke**, **USAID/Vietnam**
 - Which best practices can be adopted by these 5 countries?
 - Which best practices might be useful to other countries?
 - What are shared challenges related to H5N1 HPAI for which there don't appear to be any best practices yet?
- 5:00 – 5:30 Meeting Conclusion**
- Next Steps: **Dennis Carroll**
 - Evaluation of meeting: **Kathy Alison** and **Kira Gnesdiloff**
 - Closing comments: **Dr. Rita Kusriastuti** and **Kendra Chittenden**
 - Adjourn
- 5:30 – 6:00 Wrap-Up Meeting of Organizing Committee (main meeting room)**

Attachment 3**Summary of Technical Discussion Sessions****Pre-Sessions: Monday, March 29**

International Partners were invited to join the organizing committee in Bali on Monday, March 28 to review the technical agenda's discussion. In addition to introductions, the session included a review of the technical discussion's objectives, review of role assignments (for instance, note-takers and speakers), and participants' expectations for the two days.

An informal reception welcoming participants was held in the evening.

Day 1: Tuesday, March 30***Opening Session***

Dr. Kendra Chittenden of USAID/Indonesia welcomed the assembled plenary on Tuesday, March 29. Dr. Dennis Carroll, USAID/Washington, followed Dr. Chittenden by introducing the agenda for the technical discussions. Dr. Juan Lubroth, FAO/Rome, Dr. Cathy Roth, WHO/Geneva, and Dr. David Nabarro UNSIC gave opening remarks. The meeting was officially opened by Dr. Ir. Bayu Krisnamurthi, Vice Minister of Agriculture of the Republic of Indonesia.

Review of Objectives

After a break and group photograph, Dr. Carroll summarized the agenda and objectives for the two-day discussion as outlined in the objectives section of this summary report.

Gallery Walk and Poster Presentations

Participants were invited to scan the best practices posters that had been assembled by country teams throughout the meeting space. Participants used this "gallery walk" to select lessons and practices they wanted to explore in-depth during two subsequent discussion rounds with country representatives. The purpose of these discussions was to share information on best practices relevant to each attending country.

Country Team Discussions and Further Lesson Sharing

After lunch, country teams reconvened to share lessons learned from the morning's discussions. Teams were invited to discuss:

- What was most relevant to your risk factors (animal /human)?
- What might be adapted to your country situation?
 - o What would have the most immediate / significant impact?
- What policies might be needed to implement intervention?
- What additional questions do you have about specific intervention?

Teams also determined what questions they had for other countries. Those questions formed the basis for further discussion, as each country team identified resource representatives to share more information with the groups requesting assistance.

Country teams again reconvened to discuss the following questions:

- What was most useful / interesting about today's discussions?
- What is one idea you want to follow-up on tomorrow?
- Based on what you heard today, what do you think might be relevant to what you are doing in your country?
- What are the next steps?

Dinner

A group dinner was held by the resort's poolside and in its restaurant.

Day II: Wednesday, March 29***Opening***

Dr. Andrew Clements, USAID/Washington, opened the second day of discussion with an overview of the previous day. He also identified areas for potential further discussion, including vaccinations, collaboration between ministries of health and agriculture, bio-security, private sector involvement, and compensation.

Challenges

Country teams were asked to identify their most significant challenges (technical, programmatic, policy or other) keeping them from reducing H5N1 HPAI viral circulation in their countries. Teams were asked to post their challenges on a wall and organizers clustered these challenges into themes.

Country Plan Discussions

Country teams met to develop a follow-up plan on what they would do with the information they gained when they returned home to implement best practices in reducing H5N1 HPAI viral circulation in their respective countries. Teams were given the following task and asked to prepare a brief summary of their discussion.

- Identify 1-2 Priority Best Practices that seem to have potential relevance for your country (Which challenge might this address?)
- Identify Specific Steps needed to explore how this best practice can be applied to meet your specific challenges
- What are the 2-3 most critical challenges related to H5N1 HPAI for which there don't appear to be any lessons learned but that are of concern in your country?

Country Plan Reports

Country teams made short presentations of their top priority best practices they plan to work on when they get back to their countries

International Advisors' Presentation

The international advisors presented a list of the most critical regional/global challenges related to H5N1 HPAI for which there did not appear to be any lessons learned. These challenges were:

- Vaccinations, including best practices for exit strategies and/or the application of the vaccination
- Capacity building, especially technical level education in the animal health sector; farm/field schools and other participatory approaches.
- Restructuring: Rethinking the way we produce food animals; increase biosecurity in small scale commercial sector
- Reducing unnecessary human and animal exposure in markets - some examples exists.
- Ducks, domestic, free range. Improved raising systems? Targeted efficient vaccination schemes

The international advisors identified a mix of research, R&D, and pilot projects as specific actions to address these challenges.

IMCAPI Presentation

Dr. Julie Hall, United Nations System Influenza Coordination (UNSC) representative, presented key points and issues that were identified during the Bali technical discussions that will be shared at the Inter-Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) discussion in Hanoi, Vietnam between April 19-21, 2010.

Dr. Hall asserted the importance of sustaining momentum, noting that the virus is still a threat with pandemic potential. Although there have been great successes in a relatively short period of time, she also said that other priorities were competing for attention and funding, while the focus on highly impacted countries provided an opportunity to eliminate the virus from domestic poultry. She commented that sharing best practices should be supported and that although there were plenty of lessons that had been shared, gaps remain. Challenges include a better understanding of epidemiology, better tools to support behavior change, understanding how to best engage with the private sector and ensure bio-security is enhanced from "farm to fork", and developing effective strategies for vaccination. Dr. Hall commented on the continuing need to support systems for capacity building and the need to mainstream practices and apply what had been learned to other diseases. Concluding that the political commitment was critical to success, she proposed a draft statement for the Hanoi meeting that would include topics such as:

- Mass vaccination for poultry
- Incorporate food safety and food security (including poverty reduction) and other global issues impacted by zoonotic diseases
- Discuss H1N1
- Making zoonotic diseases a priority and set up national committee
- Strengthening regional coordinating bodies
- Implementing OWOH concepts – healthy farmer, healthy livestock – PSTS
- Sharing genetic material
- Sharing information, communications and technology

Dr. Hall answered questions along with Mr. Tim Meinke, USAID/Vietnam after her presentation.

Closing Comments

After follow-up remarks from Dr. Carroll, Dr. Chittenden and Dr. Rita Kusriastuti, Director of Vector Borne Disease Control for the Indonesia Ministry of Health made closing remarks, and the meeting was officially adjourned.

Attachment 4: Summary of Best Practices presented by each country**Bangladesh Best Practices****Country Summary:**

1. Total human population = 150.4 million
2. Total poultry population = 262.62 million - by bird type: 84.30 % Chickens, 15.70 % ducks, % other (Not Available)

H5N1 HPAI Description:

	2003	2004	2005	2006	2007	2008	2009	2010
Confirmed H5N1 HPAI poultry outbreaks	0	0	0	0	69	226	32	22
Confirmed H5N1 HPAI human cases	0	0	0	0	0	1	0	0

Total suspect H5N1 human cases (2003-2010)	Total suspect H5N1 human cases referred (2003-2010)	Total suspect H5N1 human cases tested (2003-2010)	Total confirmed H5N1 human cases (2003-2010)
17	17	17	1* not referred as a suspect

Bangladesh Best Practice # 1

CONTAINMENT OF HPAI THROUGH LIVE BIRD MARKET (LBM) CLEANING/DECONTAMINATION PROGRAM

Presenters:

- Md. Sharful Alam; Secretary; MoFL; GoB
- Dr. Md. Abdul Baqi; Director; DLS; GoB

Sector: Animal Health

Description of the Best Practice

1. *Problem addressed:*
 - Live Bird Market (LBM) a potential harbor of HPAI virus
2. *Population impacted by this problem*
 - Total poultry population and concerned humans
3. *Specific results achieved*
 - Improved sanitation of selected major Live Bird Markets
4. *Contribution to reducing H5N1 HPAI viral circulation*
 - Potential reduction of viral load in selected major Live bird markets
5. *Specific strategies used*
 - Infrastructure improvement with routine cleaning and disinfection of 18 large live bird markets
6. *Specific tools used*
 - Installed tiles, improved drainage, metal cages, water supply, High power pressure sprayers, detergent, cleaning equipment, and disinfectant
7. *Specific policies needed*
 - MOUs with market committee, Market policy of cleaning during closed hours
8. *Specific information needed*
 - High risk markets chosen based on number of vehicles and birds moved per day.
9. *Specific groups of people involved*
 - Transporters, vendors, cleaners, engineers, veterinarians, public health personnel, market managers
10. *Specific organizations/institutions/sectors involved*
 - Market committees, Municipalities, Department of Livestock Services (DLS), FAO, USAID
11. *Specific intersectoral linkages needed*
 - Local Government, DLS, industry

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*
 - Continuous outside sources of financing for cleaning and disinfection practice is discouraged; markets should be self-sufficient
13. *Other information related to the best practice:*
 - Markets cost-shared with FAO for infrastructure improvements
14. *Challenges faced*
 - Coordination between municipalities and market committees
15. *Challenges overcome*
 - Shifting cleaning schedule to closed hours

FIVE Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans

1. Cleaning and disinfection program for all the LMB
2. Infrastructure development
3. Scheduled closed day for LBM for comprehensive cleaning and disinfection
4. Suitable vehicle washing area
5. Waste management

Bangladesh Best Practice # 2

CONTAINMENT OF HPAI THROUGH ACTIVE SURVEILLANCE NETWORK PROGRAM

Presenters:

- Md. Sharful Alam; Secretary; MoFL; GoB
- Dr. Md. Abdul Baqi; Director; DLS; GoB

Sector: Animal Health

Description of the Best Practice

1. *Problem addressed*
 - Case identification and Early detection were the constraints in responding to HPAI outbreak
2. *Population impacted by this problem*
 - Total poultry population and pertinent humans
3. *Specific results achieved*
 - Average time to detect HPAI outbreaks reduced from 5 days in 2007 to 12 hours in 2010;
Average time between suspicion to response minimized from 6 days in 2007 to 24 hours in 2010
4. *Contribution to reducing H5N1 HPAI viral circulation*
 - Early reporting and detection followed by early response based on rapid laboratory detection resulting in better containment of HPAI
5. *Specific strategies used*
 - Employment of Community Animal Health Worker (CAHW) and additional Vet Surgeons to strengthen DLS activities; Biosecurity improvement in commercial farms
6. *Specific tools used*
 - Reporting of suspected cases through SMS gateway system; Use of Rapid Antigen Detection Technique for quick identification of A virus; Prescribed surveillance form
7. *Specific policies needed*
 - Expansion of Rapid Antigen Detection Technique to district level that facilitate quick identification; Single farm culling in commercial farms based on detection of Influenza type A and 500 meter area culling in case of backyard poultry
8. *Specific information needed*
 - Report of sickness and mortality in poultry; Population, types of farming, geographic data along with housing
9. *Specific groups of people involved*
 - LS Officials, FAO recruited Additional Vet. Surgeons (AVS) and Community Animal Health Workers (CAHW)

10. *Specific organizations/institutions/sectors involved*
 - USAID, Department of Livestock Services (DLS) and FAO
11. *Specific intersectoral linkages needed*
 - Active Surveillance is a collaborative program between DLS and FAO through LoA.
12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do)*
 - Not to be solely dependent on CAHW
13. *Other information related to the best practice*
 - The response might have been more prompt if local veterinary authorities were provided incentives with increased culling expenditure for rapid response
14. *Challenges faced*
 - Almost half (52%) of the country is outside the active surveillance command area results in ineffective virus containment
15. *Challenges overcome*
 - Successful introduction of SMS gateway system

FIVE Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans

1. Making farmers more responsive through increased rate of compensation
2. Need for improved Biosecurity practices and more awareness building
3. Improvement of Live bird market
4. Farming system (backyard poultry and duck rearing)
5. Improve Rapid response from DLS field officials

Bangladesh Best Practice # 3**ANTIVIRAL PROPHYLAXIS AND FOLLOW UP OF HIGH-RISK PEOPLE****Presenters:**

- Dr. Syed Umar Khyyam, Joint Secretary (PH &WHO), Ministry of Health and Family Welfare, Bangladesh
- Dr. Be-Nazir Ahmed, Principal Scientific Officer, Institute of Epidemiology, Disease Control and Research (IEDCR)

Sector: Human Health**Description of the Best Practice**

1. *Problem addressed*
 - Risk of transmission of HPAI H5N1 from poultry to human
2. *Population impacted by this problem*
 - High-risk people including cullers, poultry farmers and workers.
3. *Specific results achieved*
 - Mitigation of transmission of HPAI H5N1 to high-risk people
4. *Contribution to reducing H5N1 HPAI viral circulation*
 - No human case among the high-risk group in Bangladesh
5. *Specific strategies used*
 - Antiviral prophylaxis for people exposed to H5N1 virus and follow up for 14 days to facilitate detection of suspected cases
6. *Specific tools used*
 - Antiviral (Oseltamivir) in prophylactic doses, checklist for reporting, fax, mobile telephone, kits for specimen collection and diagnostics
7. *Specific policies needed*
 - Establishment of surveillance among high-risk groups, coordination among health and livestock departments (DLS) and poultry industry.
8. *Specific information needed*
 - Notification to health services of outbreaks in poultry with H5N1 by DLS , list of people exposed, antivirals taken, follow up performed, reporting of ILI among exposed, collection of specimens, diagnostic tests performed, reporting results.
9. *Specific groups of people involved*
 - District and sub-district level health managers, field health workers, National Rapid Response Team (NRRT) members of IEDCR, Personnel of DLS at the national, district and sub-district level, poultry industry

10. *Specific organizations/institutions/sectors involved*

- IEDCR, DGHS, DLS, ICDDR, CDC-USA, BLRI, WHO, FAO.

11. *Specific intersectoral linkages needed*

- Coordination among health and livestock departments by MoU.

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Difficulty in ensuring antiviral compliance by some high-risk people due to lack of perception of risk and side effects of medication

13. *Other information related to the best practice:*

- Close contacts are given anti-viral tablets once daily for 7 days and followed up for 14 days.
- Other contacts are followed up for 14 days without anti-viral tablets.
- Daily follow up is performed by a health care worker to detect 'Influenza Like Illness'
- From January through December 2008, 4107 people contacts were reported, of whom 3788 were followed up

14. *Challenges faced*

- Timely reporting of outbreaks in poultry
- Unwillingness by some to take antivirals
- Reporting of follow up to the centre (IEDCR)

15. *Challenges overcome*

- Initial lack of coordination between the health and livestock departments was remedied and communication improved.

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans

1. Weakness in biosecurity practices in the poultry industry
2. Outbreaks of HPAI H5N1 among backyard poultry
3. Delay in reporting of outbreaks in poultry
4. Inadequate culling due to under-reporting of die-offs by poultry farmers (financial and social disincentives)
5. Lack of awareness about transmission among the general population

China Best Practices

Country Summary: Total human population =1,321,290,000

Standing poultry population = 5.6 Billion

- by bird type: **82%** chickens, **13%** ducks, **5%** other
- by farm type: **layer 23.1%** (1~499); **76.91%** (≥ 500); **broiler 18.4%** (1~1999); **81.64%** (≥ 2000)
- by function: **2%** breeder, **39%** broiler, **26.5%** layer

H5N1 HPAI Description

	2003	2004	2005	2006	2007	2008	2009	2010
Confirmed H5N1 HPAI poultry outbreaks	0	50	31	10	4	8	2	--
Confirmed H5N1 HPAI human cases	(1)	0	8	13	5	4	7	--

38 confirmed Human cases, 25 dead

China Best Practice # 1

EARLY DETECTION AND RAPID RESPONSE TO HUMAN INFECTION WITH AVIAN INFLUENZA A (H5N1) VIRUS IN CHINA

Presenters:

- Zhengmao Li, HERO, MOH
- Qiaohong Liao, China CDC
- Zhancheng Gao, People's Hospital, Peking University
- Tian Bai, China CDC

Sector: Human Health

Description of the Best Practice

1. *Problem addressed*
 - How to early detect H5N1 patients and limit the potential spread
 - How to early diagnose and treat H5N1 patients to lower the case fatality rate
2. *Specific strategies used:*
 - a. Surveillance for suspected H5N1 cases -- National surveillance system of hospitalized cases with pneumonia of unknown origin; Enhanced one-month surveillance for ILI cases at all health care facilities within a 3km radius, following avian influenza outbreaks in poultry
 - b. Develop technical guidelines -- Guideline for National Surveillance of Hospitalized Cases with Pneumonia of Unknown Origin; The Emergency Preparedness and Response Guideline for Human Infection with Avian Influenza A (H5N1) Virus; Epidemiological Investigation; Specimen Collection and Laboratory Testing;
 - c. Emergency Surveillance Program; Definitions and Medical Observation of Close Contacts; Clinical management; Infection Control
 - d. Training -- Annual routine training workshop since 2005; Rapid Response Team (RRT) training workshop (Sep, 2007); The workshop to strengthen detecting and reporting awareness of cases with pneumonia of unknown origin or suspected H5N1 cases among primary health care workers (from Feb to May in 2008)
 - e. Field investigation -- Joint trained team designated by MOH including epidemiologists, clinicians, virologists for each H5N1 patient; Responsibilities - Interviewing case-patients and their proxies; Visiting patients household and place visited by them; Providing guidance on treatments; Collecting specimens from H5N1 patients and environment; Conducting case-control study and sero-prevalence study
 - f. Enhancing surveillance capacity -- Expansion of influenza surveillance network from year 2005 to 2009--No. of laboratories: from 63 to 44; No. of sentinel hospitals: 197 to 556: Hand in hand training of lab techniques for network laboratories in NIC: H5N1 nucleic acid PCR testing assessment -- CNIC: by WHO twice every year; Network laboratories: by CNIC once every year
 - g. Laboratory investigation -- Specimens from most H5N1 patients were shipped to NIC for diagnosis and virological monitoring; Rapid virus isolation and sequencing was performed for each patient with available specimens; Virological characteristics were studied

- h. Close contacts -- Under daily surveillance by telephone or in person for fever and respiratory symptoms for 7 days after last exposure; sometimes given chemoprophylaxis
 - i. Clinical management -- Clinical management guidelines were developed; Two experts were designated by MOH to give guidance on treatment for most H5N1 patients; A book entitled Human infection with avian influenza A (H5N1) virus" with 18 case reports
 - j. Risk communication -- Disseminating information to senior government officers and people's representatives in national congress
 - k. Public Communications
 - l. Health Education Campaigns -- For general population, provide basic knowledge on AI, advice on food safety and risk avoidance. For risk groups, emphases on personal protection and safety handling of poultry
3. *Specific groups of people involved*
- Public health officials, Health care workers, Epidemiologists, Laboratory workers, Veterinarians, Media workers
4. *Specific organizations/institutions/sectors involved*
- MOH; MOA; CDCs of all levels; Hospitals; Media
5. *Specific results achieved*
- 34(89.5%) H5N1 patients were detected through National Surveillance System of Unknown Origin Pneumonia; One H5N1 patient was detected through medical observation of close contacts; H5N1 virus isolated from 30 cases; Drug susceptibility test (Susceptible to neuraminidase inhibitor antiviral drugs; Some viruses were resistant to adamantine); No reassortment with seasonal influenza virus
6. *Challenges faced:*
- Awareness of detecting and reporting cases with PUO in the primary health care workers needs to be improved
 - Capacity of laboratory network needs to be enhanced

Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans

1. Difficult to change handling practice of poultry among poultry workers
2. H5N1 virus circulating in the environment is a continuous threat

China Best Practice # 2

CLINICAL MANAGEMENT WITH H5 INFECTION IN CHINA

Presenters:

- Dr. Zhancheng Gao, Peking Univ People's Hospital
- Mr. Zhengmao Li, MOH in China
- Dr. Qiaohong Liao, China CDC
- Dr. Tian Bai, China CDC

Sector: Human Health

Description of the Best Practice

1. *Problem addressed:*
 - All patients query clinical consultant in severe stage
 - No standardized clinical management approach exists for H5 infected patients
2. *Population impacted by this problem*
 - People fear to be infected by H5 since the poor prognosis
3. *Specific results achieved*
 - H5 virus can infect multi-system in severe patients
 - H5 vertical transmission route was found
4. *Contribution to reducing H5N1 HPAI viral circulation*
 - H5 patients should be treated in negative pressure or well-ventilated room for hospital infection control
5. *Specific strategies used:*
 - Patients should be treated in tertiary/capable hospitals.
 - Gestation should be terminated for pregnant pts w/ H5 infection.
 - Severe H5 infected pts within 2ws can be treated w/ specific high titrating convalescent plasma or vaccinated plasma.
6. *Specific tools used*
 - Guidelines on clinical management & infection control
 - Clinical management training level by level
7. *Specific policies needed*
 - ICU infrastructure needs to be further invested in tertiary & non-tertiary hospitals.
8. *Specific information needed*
 - Effective clinical info-sharing platform needs to be built up at country-level
9. *Specific groups of people involved:*
 - Doctors in Respiratory Medicine, ICU, infectious disease
 - Epidemiologists in CDC

- Coordinators in Administration of Health Care
 - Specialists from WHO or other international groups
10. *Specific organizations/institutions/sectors involved:* Department of Respiratory Medicine; Intensive Care Unit; Administration of Health Care at different levels; International organizations, such as WHO
11. Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):
- Treating pts in the hospital is not warranted to the demand of monitor clinical status, including oxygenation.
 - 'lung recruitment' strategy should not be used in pts with bronchiectasis or bullae.
12. *Challenges faced:*
- Sensitive triage clinical parameters for early detection
 - Rapid, high sensitive and specific diagnostic assay for H5 infection unavailable.
 - Early effective therapeutic intervention
 - H5 infected pts need to be transferred to warrant hospital
 - Team work needs to be strengthened for caring the critical illness pts.
13. *Challenges overcome*
- H5 pts are to be managed in warranted hospital. Teamwork had be built up at different levels.
 - Early effective therapeutic intervention.

Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans

1. Sensitive triage clinical parameters for early detection in primary level hospitals
2. Rapid, high sensitive and specific diagnostic assay for H5 infection unavailable.

China Best Practice # 3**IMPROVEMENT OF THE LABORATORY CAPABILITY FOR
INFLUENZA VIRUS IN CHINA****Presenter**

- Ms.Bai tian, China CDC

Sector: Human Health**Description of the Best Practice**

1. *Problem addressed*
 - The coverage and capability of existed network laboratories cannot meet the early detection and rapid response to pandemic influenza.
 - The laboratory capability varies between different levels of network laboratories in China
2. *Population impacted by this problem*
 - Population who may infected with seasonal influenza, human H5N1 avian influenza and pandemic influenza
3. *Specific results achieved*
 - Network laboratories expanded from 84 to 411, which almost cover a majority of counties of each province
 - Significant improving in the ability of virus isolation and nucleic acid detection of the network laboratories of Provincial CDCs
4. *Contribution to reducing H5N1 HPAI viral circulation*
 - The ability for early detection and prevention had been improved
5. *Specific strategies used:*
 - Expanding the coverage of network laboratories
 - Improving the laboratory capability of network lab in different levels.
 - Making the network labs at different levels more functional
6. *Specific tools used*
 - Quality Assessment
 - Reference reagent supply support
 - Training
 - Field Investigation
 - Information Platform
 - Financial Support
7. *Specific policies needed*
 - With approvals from the MoH of China , NIC launched the Five-year program of the Development of Influenza Surveillance Network with U.S. CDC.
 - In 2009, in order to improve the response to pandemic H1N1, MoH of China

decided to expand the network laboratories

8. *Specific information needed*

- Provincial CDCs made the application for the name and number of new network laboratory

9. *Specific groups of people involved:*

- Public health officials
- Laboratory personnel
- International experts

10. *Specific organizations/institutions/sectors involved:*

- MoH of China
- China CDC
- NIC
- CDCs of all levels
- USCDC
- WHO

11. *Specific intersectoral linkages needed*

- MoH is in charge of organizing the national or local influenza surveillance, formulating the development plan of NISN.
- NIC from IVDC, China CDC is in charge of the management of NISN and providing the technical support for local CDCs.

12. *Other information related to the best practice*

- Most new joint network laboratories have already carried out sample testing for influenza viruses during the first wave of pandemic H1N1 influenza in China.
- The number of seasonal influenza strains reported to the NIC by the network laboratories showed a significant increase in 2009
- China NIC was accepted as the fifth influenza reference and collaborating center of WHO

13. *Challenges faced:*

- Human resource
- Imbalanced development of economy in different provinces

14. *Challenges overcome*

- Laboratory capability had improved in most Provincial CDCs
- Number of network lab had expanded

Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans

- Poor laboratory capability for rapid detection and sample collection in Prefecture and County CDCs.

China Best Practice # 4

INTEGRATED PREVENTION & CONTROL MEASURES COMBINING SURVEILLANCE, MASSIVE VACCINATION & STAMPING OUT POLICY

Presenter

- Yu Kangzhen, CVO, Ministry of Agriculture

Sector: Animal Health

Description of the Best Practice

1. *Problem addressed*
 - Improve the level of antibody protecting poultry
 - Reduce HPAIV circulation in environment to decrease poultry and human infection
2. *Population impacted by this problem*
 - All poultry flocks include domestic poultry, wild bird
 - Human
3. *Specific results achieved*
 - The government has required 100% vaccine coverage in domestic poultry
 - Billions of doses of the vaccines have been used in the field, and the vaccines are antigenically well matched to the circulating strains
 - The number and frequency of HPAI outbreaks have been significantly reduced. Especially no outbreak has occurred since May of 2009
4. *Contribution to reducing H5N1 HPAI viral circulation*
 - Experimental results show that the qualified immunized poultry doesn't carry and shed the virus and reduce the virus load in the environment
 - Significantly reduce the risk of viral replicating
5. *Specific strategies used:*
 - Integrated prevention and control policy combining compulsive vaccination, surveillance and culling.
 - Active surveillance, especially surveillance for evaluation of vaccination efficacy
6. *Specific tools used*
 - National vaccinating plans and optimization of vaccination procedures
 - Vaccines: 6 kinds of HPAI vaccines
 - Certificate: 9 companies that have Good Manufacture Practices (GMP) & enhanced vaccine quality
 - Vaccination identification system
7. *Specific policies needed*
 - Vaccination subsidy
 - Financial support relevant policies
8. *Specific information needed*
 - Information from the surveillance and report system

- Updating HPAI information and techniques by OIE, WTO, EU etc

9. *Specific groups of people involved:*

- Grassroots veterinary service system

10. *Specific organizations/institutions/sectors involved:*

- Animal disease prevention & control central, Animal health supervisory service from central to local level
- Relevant university and research institutes
- Sub-veterinary at the village level
- National Avian Influenza Reference Laboratory

11. *Specific intersectoral linkages needed*

- The multi-ministries cooperation mechanism, including Ministry of Health, China Inspection & Quarantine Service etc.

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Long distance movement of large quantities of live birds across regions and provinces

13. *Other information related to the best practice*

- Waterfowl vaccination
- Silence infection detection

14. *Challenges faced:*

- Large poultry population, especially large population of waterfowl
- Large proportion of small scale, and backyard farms with low bio-security
- Long distance movement of live birds
- Live bird markets
- Migratory birds

15. *Challenges overcome*

- Establishing Vet. system from central to local level
- Vaccine development for mutated virus strains

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans

1. Aspects that affect vaccination efficacy in field e.g. Poultry health status, Application, store and transport of vaccines; Operation of vaccination (SOP); Feeding and bio-security management
2. Recessive carriers of the virus in waterfowl
3. High proportion of backyard poultry
4. Live bird market
5. Migratory bird

Egypt Best Practices

Total human population = 77,801,987

Total estimated poultry population = 985 million

- 96.5 % chickens, 1.8 % ducks, 1.5% turkey and 0.2% others
- 0.1 % Sector I, 1.7% Sector II, 47.7% Sector III, 50.7 % Sector IV.
- 0.03 % Grandparent stock, 8.6% parent stocks, 88.56% commercial broiler, 2.82% commercial layers

H5N1 HPAI Description

	2006	2007	2008	2009	2010 (24 Mar)
Confirmed H5N1 HPAI poultry outbreaks	1076	282	127	287	232
Confirmed H5N1 HPAI human cases	18	25	8	39	17

Total suspect H5N1 human cases (2003-2010)	Total suspect H5N1 human cases referred (2003-2010)	Total suspect H5N1 human cases tested (2003-2010)	Total confirmed H5N1 human cases (2003-2010)
11549	11549	11549+4899 contacts*	107
*at the start of the outbreak in early 2006 up to September 2007, MOH recommended to test suspected cases, their contacts plus workers in infected poultry farms.			

Egypt Best Practice # 1 (2 parts)**AVIAN INFLUENZA SITUATION IN EGYPT****Presenter:**

- Prof. Dr. Mona Mehrez Aly, DVM, Ph.D., Director of Animal Health Research Institute (AHRI) and Supervisor of National Laboratory for Veterinary Quality Control on Poultry Production (NLQP)

Sector: Animal Health**Description of the Best Practice – Part 1**

1. *Problem addressed:*
 - Faster time to produce confirmatory A/H5N1 diagnosis and outbreak reporting
2. *Population impacted by this problem:*
 - Poultry producers in both household and commercial farms
3. *Specific results achieved*
 - Skilled manpower for HPAI diagnosis made available both centrally and at governorate satellite laboratories.
 - Time of confirmatory diagnosis reduced from several days to less than six hours.
 - Infrastructure for BSL2+ and BSL3 is being (in the process) built.
 - Six satellite laboratories in different governorates established and accredited according to international ISO 17025 following international protocols.
 - NLQP successfully passed series of international proficiency tests
4. *Contribution to reducing H5N1 HPAI viral circulation*
 - Rapid diagnosis and information sharing to enhance response
5. *Specific strategies used:*
 - Rigorous institutional capacity (manpower, facilities and work culture) efforts exerted
 - Internationally accepted standard diagnostic protocols adopted;
 - Improvement of BSL+2 and progress in the establishment of BLS3 laboratories
6. *Specific tools used:*
 - Tailor-made skill enhancement training provided to technical staff ranging from quality sample collection to advanced molecular diagnostic techniques
 - Six fully functioning and accredited governorate satellite laboratories established in strategic locations in the country,
 - Rapid response sampling teams from NLQP and satellite laboratories were established and deployed.
 - Sample collections and disease reporting were done in close collaboration with GOVS.
7. *Specific policies needed*
 - Development, approval and adoption of laboratory accreditation procedures
 - An elaborated protocol and procedures to handle per-slaughter and pre-movement certification services for licensed poultry farms

8. *Specific information needed*

- Continuous update to the standard international protocol of diagnosis

9. *Specific groups of people involved*

- NLQP and Satellite laboratory staff,
- OFFLU backstopping officers,
- SEPRL scientists, and
- Other personnel from partner institutions

10. *Specific organizations/institutions/sectors involved*

- NLQP, CLEVB, GOVS, OFFLU, ECTAD-FAO, USAID, SEPRL, Erasmus, NAMRU – 3, IZSVe, FLI

11. *Specific inter-sectoral linkages needed*

- Coordination with both central and local Veterinary services, as well as continuous interaction with CLEVB and satellite laboratories to harmonize field operations and standardize procedures

12. *What other local conditions were necessary for success?*

- Collaboration with SAIDR Team, Central and local Veterinary services, Coordination of outbreak investigation, sample collection, shipment and reporting.

13. *What challenges were faced, overcome, and still remain?*

- Processing LoAs, MTA and shipment of samples abroad took more time than originally anticipated
- To identify and receive expertise input in the preparation of the design, specifications, contractual arrangements and follow up processes for the establishment of BSL3 laboratory.

14. *Other comments :*

- USAID-funded project and jointly implemented by NLQP and FAO aiming to evaluate the commercial vaccines against HPAI is progressing as planned and has considerable contribution to the existing capacity at NLQP

Description of the Best Practice - Part 21. *Problem addressed:*

- Effective laboratory networking established

2. *Population impacted by this problem:*

- NLQP, Satellite Laboratories, GoE, Partner International laboratories

3. *Specific results achieved:*

- Laboratory data and genetic material shared on time with all relevant national and international partners, published on GENE BANK

4. *Contribution to reducing H5N1 HPAI viral circulation:*

- Through standardization and adoption of acceptable protocols

5. *Specific strategies used*

- Adoption of information and knowledge sharing platform
- Perform international quality control and assurance tests
- International cooperation with reference laboratories;
- Twinning with FLI , OIE to be OIE reference laboratories;
- Establishment of local networks with satellite laboratories

6. *Specific tools used:*

- Material transfer agreement (MTA) and letter of agreements (LoAs) as well as laboratory information management system (LIMS)
- Twinning program with reference international laboratories were used.
- International projects funded by different development partners (USAID, EU, WB) allows adequate interactions between local and international laboratories, and
- Modalities of operations with UN and other agencies (FAO, WHO, OIE)

7. *Specific policies needed*

- Adoption of internationally accepted diagnosis protocols in both central and satellite laboratories.

8. *Specific information needed*

- Information on establishing a system for twinning with international laboratories
- Systems and detailed accounts for international shipment/transferring of hazard materials.

9. *Specific groups of people involved:*

- Staff of NLQP, Satellite and other provincial laboratories, and ministry of communication; OFFLU backstopping officers, experts from international laboratories

10. *Specific organizations/institutions/sectors involved:*

- NLQP, ECTAD, USAID, USDA, ECTAD-FAO, OFFLUE, SEPRL, Erasmus , NAMRU-3, IZSVe , FLI

11. *Specific intersectoral linkages needed:*

- Local networking with satellite and other provincial laboratories, CLEVB

12. *What other local conditions were necessary for success?*

- Cooperation with Ministry of Communication, GOVS and other relevant departments in MoALR

13. *What challenges were faced, overcome, and still remain?*

- Initially lack of experience with LIMS and absence of expertise in local computer companies that would address NLQP's needs

14. *Other comments :*

- GoE provided funds to support local networking between central and satellite laboratories.
- Ministry of Communication played pivotal role in the establishment of the physical

network structures.

Egypt Best Practice # 2 (4 Parts)

ACHIEVEMENTS AND SUCCESSES IN STRENGTHENING AI DETECTION AND RESPONSE

Presenter:

- Prof Dr. Mohamed Elgarhy, Chairman General Organization for Veterinary Services

Sector: Animal Health

Description of Best Practices – Part 1

1. *Problem addressed:*
 - Better detection and response of HPAI outbreaks in poultry
2. *Population impacted by this problem:*
 - Household poultry sector
3. *Specific results achieved:*
 - HPAI detection progressively improved: 6% in 2009 to 18% in 2010. and Passive Surveillance positive detection increase from 25% in 2009 to 43% in 2010.
 - CAHO contributed 49.1% of confirmed HPAI positives (2009-10).
 - Decrease in time lap between notification and action and final containment from 5 days in 2007 to 1 day in household and 3 days in farms in 2010 (more efficient containment interventions)
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Detected cases with good containment and tracing will lead to decrease number of outbreak after a period of time.
5. *Specific strategies used:*
 - Strengthened Surveillance activities and Improved outbreak response capacity at central and governorate levels
6. *Specific tools used:*
 - Rapid Ag field test.
 - Community Animal Health Outreach (CAHO)
 - SOPs for use of rapid field test and action responses.
 - Provision of training on good practices and provision of inputs and logistics support for quick and effective response interventions.
 - Regular consultative meetings between technical and political authorities as well as coordination meetings between central and local veterinary services.
7. *Specific policies needed:*
 - Positive RFT has become the trigger to begin containment operations in household sector.
 - Change in policy from zonal mass culling to only infected premises.

8. *Specific information needed:*

- Previous experience on RFT implementation.
- Information on changes of HPAI clinical signs for accurate case definition.
- Identification of locally suitable culling and disposal procedures.
- The perception of poultry producers to containment measures.

9. *Specific groups of people involved:*

- Central and local veterinary services personnel,
- Laboratory personnel,
- key community informants at the local level

10. *Specific organizations/institutions/sectors involved:*

- Central and local veterinary services, laboratories; FAO, ILRI, USAID

11. *Specific intersectoral linkages needed:*

- Coordination between central and local Veterinary services.
- Coordination with the political authority (Governors).
- Strengthening the links between the veterinary services and all relevant stakeholders.
- Local communities.

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Random active surveillance (high cost without effectiveness)
- Mass culling impacted negatively on case detection.
- Lack of comprehensive compensation scheme
- Ring vaccination during outbreak

13. *Other information related to the best practice:*

- Passive surveillance is a key tool in detection.
- Enhancing trust between public and private partners
- Communication activities should be an integral parts of all detection and response activities

14. *Challenges faced:*

- Lack of trust between public and private sectors.
- Absence of comprehensive compensation scheme.
- Inadequate logistics necessary to implement effective containment interventions
- Absence of clearly defined roles and responsibilities of the players involved in response interventions

15. *Challenges overcome:*

- Increased community involvement
- Logistics chain enhanced
- Veterinary Services enabled to guide and coordinate responses to outbreaks.
- Regular Coordination meeting are held to discuss field level issues as well as roles and responsibilities

Description of Best Practices – Part 2

1. *Problem addressed:*
 - Improved farm biosecurity
2. *Population impacted by this problem:*
 - Commercial Poultry producers in sector II and III
3. *Specific results achieved:*
 - of the 802 farms randomly chosen in seven high risk governorates that received biosecurity training, about 65% showed moderate improvement in biosecurity measures
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Increased socio- economically acceptable biosecurity measures will decrease environmental viral load
5. *Specific strategies used:*
 - Implement cost-effective and sustainable biosecurity measures in commercial farms with focus on sectors II and III
6. *Specific tools used:*
 - Training of farm workers and managers on biosecurity measures including cleaning and disinfection.
 - Regular monitoring of the implementation of suggested biosecurity measures.
 - Provide inputs and technical assistance for the farms.
 - LOAs to financially support local veterinary services in training on, monitoring of biosecurity measures.
7. *Specific policies needed:*
 - Farm registration decrees acceptable to most poultry producers.
8. *Specific information needed:*
 - Location, number, capacity, and biosecurity status of farms,
 - Capturing the views of producers on policy instruments affecting them.
9. *Specific groups of people involved:*
 - Veterinary services personnel,
 - Farm owners,
 - Representatives of poultry producers associations,
 - Private service providers
 - FAO staff
10. *Specific organizations/institutions/sectors involved:*
 - Central and local veterinary services, FAO, USAID
11. *Specific intersectoral linkages needed:*
 - Coordination between producers, local veterinary services and private service - input providers

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Lack of uniformity in implementation of policies between various governorates

13. *Other information related to the best practice:*

- Consolidate achievements obtained through USAID-funded projects in piloted areas and expand to all high risk governorates.

14. *Challenges faced:*

- The new registration/licensing policy exclude majority of poultry farms.

15. *Challenges overcome:*

- Revise strategy and policies.
- Increased involvement of private sector in farm biosecurity improvement

Description of Best Practices – Part 3

1. *Problem addressed:*

- Establish an Epidemio-Surveillance System

2. *Population impacted by this problem:*

- Decision makers, veterinary services

3. *Specific results achieved:*

- Network established in full capacity in all districts in 5 governorates, partial capacity in 10 governorates with projected full coverage in 18 governorates by September 2010

4. *Contribution to reducing H5N1 HPAI viral circulation:*

- Decisions made based on scientific analysis of epidemiological data.

5. *Specific strategies used:*

- Establish an epidemio-surveillance system

6. *Specific tools used:*

- Provision of various level of skills enhancement training provided to both central and governorate Epi-Unit staff (Epidemiology, data analysis, TADinfo, risk analysis, GIS and spatial analysis, Risk based surveillance, statistics).
- Establish networks to district levels and provide required hard and software

7. *Specific policies needed:*

- Epidemiology Unit became an integral part of the organizational structure of GOVS.

8. *Specific information needed:*

- PVS evaluation report by OIE.
- Data justifying that epidemio-surveillance output are needed for planning and decision making for veterinary services

9. *Specific groups of people involved:*
 - Epidemiology Unit personnel,
 - FAO backstopping officers and international consultants
10. *Specific organizations/institutions/sectors involved:*
 - GOVS, CIRAD, RVC, FAO and USAID
11. *Specific intersectoral linkages needed:*
 - Collaboration between central and local veterinary authorities
12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*
 - Lack of basic computer training within the plan.
 - Lack of hard and software regular technical support.
13. *Other information related to the best practice:*
 - Increase awareness on epidemiology at all level of veterinary services.
14. *Challenges faced:*
 - Lack of understanding the concept and value of epidemio-surveillance
15. *Challenges overcome:*
 - Consultative and brain storming sessions with partners and coordination meetings between central and local veterinary services

Description of Best Practices – Part 4

1. *Problem addressed*
 - Policy dialogue and information/knowledge sharing
2. *Population impacted by this problem:*
 - Policy decision makers
 - Various level of veterinary authority
 - Other partners
3. *Specific results achieved:*
 - A comprehensive HPAI compensation scheme designed,
 - Mass AI vaccination policy in the household poultry sector reconsidered,
 - Animal health component of the integrated national AHI plan revised to reflect the endemic HPAI situation in Egypt.
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Longer term risk reduction strategy to address the endemic HPAI situation in Egypt.
5. *Specific strategies used:*
 - Engaging higher level political authorities to influence evidence-based decision-making

6. *Specific tools used:*

- Assessment study reports,
- Consultative workshops,
- Coordination meetings,
- Publications,
- Consultancy reports,
- Guidelines and SOPs.

7. *Specific policies needed:*

- AI vaccination policy with an operational plan and exit strategy,
- Equitable and all inclusive compensation policy
- A revised animal health strategy for control of HPAI.

8. *Specific information needed:*

- Data on AI vaccination coverage and flock immunity levels.
- Effectiveness of the strategy adopted in 2007

9. *Specific groups of people involved:*

- GOVS personnel
- FAO ECTAD staff and consultants

10. *Specific organizations/institutions/sectors involved:*

- GOVS, USAID and FAO

11. *Specific intersectoral linkages needed:*

- Collaboration between technical and political authorities, UN agencies, relevant international organizations, development partners, NGOs and private sector.

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Biases in decision-making due to conflict of interests

13. *Other information related to the best practice:*

- Developing elaborated SOPs, protocols and operational plans consistent with the revised HPAI control strategy.

14. *Challenges faced:*

- Inadequate policy enforcement capacity

15. *Challenges overcome:*

- Coordination between technical and political persons
- Coordination between central and local VS

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Multiple high risk factors favouring sustained circulation of A/H5N1 virus in both the commercial and household poultry production sectors
2. Most poultry farms operate in rental premises, hence reluctant to invest in biosecurity

improvement measures

3. Insufficient logistical capacity in the local VS remains a challenge for field veterinary operations.
4. The HPAI risks perception is weak among producers
5. Human settlement pattern in Egypt makes geographic distinction between administrative unit difficult

Egypt Best Practice # 3**NATIONWIDE COMPREHENSIVE
SURVEILLANCE AND RESPONSE****Sector: Human Health****Description of Best Practice:**

1. *Problem addressed:*
 - Avian influenza and the fear of the future human-human transmission
2. *Population impacted by this problem*
 - Every one deal with poultry
3. *Specific results achieved:*
 - In 2006, the proportion of detected cases in the first two days was from disease onset = 33.3% which increased in 2010 to 43.8%.
 - Suspected cases (11528), confirmed/suspected ~ 1/100
 - Decreased time elapsed to start field investigation, upon suspicion (within 24 hours)
 - Capacity to conduct many important field investigations at the same time.
 - Discovery of cases during field investigations.
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - early suspicion and isolation of exposed cases and receiving Tami flu on time -- decrease the virus shedding
 - prompt decontamination of households of confirmed human cases decrease the spread of the virus in environment
5. *Specific strategies used:*
 - Improving quality and surveillance capacity up to village level by: training local staff to conduct surveillance activities.
 - Expansion of surveillance network
 - Increase level of case suspicion by physicians and other health team.
 - Establishing of multilevel RRTs including all recommended qualifications: (TOT for central RRT, TOT for governmental RRT and training of district RRT)
6. *Specific tools used:*
 - Case definition (clinical symptoms and exposure) to suspect H5N1 HPAI;
 - Standard and Comprehensive investigation form to fulfill epidemiologic and clinical data;
 - Used targeted communication to raise awareness of signs and symptoms of H5N1 HPAI in humans for those who are in contact with poultry.
 - Prompt reporting within 24 hours. (Fax- telephone - etc.)
 - Regular update meetings, distributed guidelines, SOPs and instructions from central to peripheral levels (governmental, district, health care facilities).
 - Training materials on RRT roles and responsibilities
 - Clear guidelines, SOPs and instructions for implementing field activities
 - Assigning 29 RRTs on governmental level and 260 RRTs on district level including 1337

member staff

7. *Specific policies needed:*

- Increase sensitivity of case definition, the item of exposure to poultry -changed from exposure to dead poultry to the exposure to poultry.
- Increase sensitivity of the laboratory detection, re-testing of negative results.

8. *Specific information needed*

- Capacity and staffing of preventive departments at governorate and district levels
- Capacity and staffing of Hospitals PHCs involved in management of AI cases

9. *Specific groups of people involved:*

- Central preventive affairs staff,
- Epidemiologic surveillance team,
- Communicable disease department,
- Infection control department
- Central rapid response team (RRT),
- Central laboratories,
- Governorate and district level RRT
- Health services provider (Chest and fever hospital specialists, PHC staff, nurses) Sanitarians

10. *Specific organizations/institutions/sectors involved:*

- NGOs partnership, private sector involvement, veterinarians, police, Environment staff
- Community leaders and local authorities were essential.

11. *Specific intersectoral linkages needed:*

- Well established surveillance system within the preventive sector contributed to build linkages with other concerned sectors as curative sector, Lab and primary health care and environmental health

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- During 2006 , 2007 testing was done for cases and contacts of human cases and poultry farms personnel, the policy changed in September 2007

13. Other information related to the best practice:

- Egypt was the highest reporting country for AI cases during 2009
- Egypt represent about 22 % from world human AI cases
- Egyptian profile of AI cases had a specific epidemiologic characteristics (increasing numbers of children and females and types of exposures like slaughtering and de-feathering)
- Active surveys targeted HH, markets, farms, check points as a joint integrated surveillance activity.

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. No geographical borders between the Egyptian governorates that affect movement control

2. Egyptian culture regarding the consumption of fresh poultry meat and the practice of slaughtering the birds at home.
3. Over added pandemic H1N1 2009 increasing the burden on surveillance
4. Endemicity of the virus lead to system fatigue
5. Completing the planned – (readiness for pandemic)- equipments for referral hospitals

Egypt Best Practices # 4**IMPROVED REFERRAL, CLINICAL CARE MANAGEMENT AND
INFECTION CONTROL (IC)****Sector: Human Health****Description of the Best Practice:**

1. *Problem addressed:*
 - The high case fatality of the new emerged virus and minimal information about the clinical characteristics of the disease
2. *Population impacted by this problem:*
 - All suspected, probable, confirmed cases and their contacts
3. *Specific results achieved:*
 - Lowest Case Fatality Rate of human cases (30%) which is about half of Global H5N1 HPAI CFR (60%)
 - Establishing 57 ICUs during 2006.
 - From 31 mechanically ventilated AI cases, two cases recovered and one case under treatment.
 - From 45 cases admitted to ICU 17 cases recovered.
 - All hospitals were equipped with trained IC team, PPEs and disinfectants
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Early suspicion and isolation of exposed cases and receiving Tami flu on time decrease the virus shedding
 - Infection control practices
5. *Specific strategies used:*
 - Develop cases management guidelines
 - Assigning hospitals for isolation per each governorate
 - Availability, stockpiling and distribution of antiviral medications which given on suspicion
 - Cases discharged after negative result.
 - Increasing capacity of ICU staff and infrastructures (eg ventilators , monitors , ABGs equipments .. etc)
 - Develop and distribute IC guidelines for isolation wards
 - Availability, stockpiling and distribution of PPEs, disinfects and Posters
 - Infection control guidelines and SOPs
 - Training, supervision and monitoring for hospitals
 - Assigning full time IC staff
 - Develop database for health care facilities (human resources and infrastructures)
6. *Specific tools used:*
 - Distribution of management guidelines to all hospitals deal with AI cases.
 - Algorithm for dealing with suspected cases.
 - Sample collection and testing of each suspected case.

7. *Specific policies needed:*

- Following well defined SOPs, instructions, case management guidelines (which is consistent with WHO guidelines)
- Strengthen supervision for health care providers.
- Stockpiling 5 million doses of Tami Flue from GOE budget to cover 6% of population.

8. *Specific information needed*

- Capacity and staffing of ICUs beds, Ventilators
- Capacity and staffing of IC teams

9. *Specific groups of people involved:*

- Physicians of Fever and Chest Hospitals
- Physicians of general hospitals which serve as referral centre for confirmed or severe clinical AI cases.
- Physicians of primary health care.
- Infection Control teams (physician , nurses , Laboratories and emergency staff)
- administrative management team

10. *Specific organizations/institutions/sectors involved:*

- Involvement of university hospital professors in consultations for protocol management of critical cases.
- Involvement of advisors and consultant from WHO, NAMRU 3
- political commitment at governorate level
- comprehensive communication campaign lead to Increase level of awareness for physician and patients

11. *Specific intersectoral linkages needed:*

- The preventive sector took the lead to integrate all activities related to cases inside the curative establishments in full coordination with central and sub national laboratories

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- MOH use to give Tami flu for the confirmed cases until the throat swabs became –ve results, after consultation with WHO and CDC the management scheme changed to administer Tami flu for ten days

13. *Other information related to the best practice:*

- Average period of hospitalization 9 days

14. *Challenges faced:*

- Establishment and equipping (ICU) of referral hospital in each governorate
- Build up the capacity of high numbers of ICU care providers

15. *Challenges overcome:*

- The previous challenges were resolved

Egypt Best Practice # 5

COMMUNICATION AND SOCIAL MOBILIZATION

Sector: Human Health

Description of Best Practice

1. *Problem addressed:*
 - Lack of awareness of signs and symptoms (animal and human) and where/when to seek care
2. *Population impacted by this problem*
 - Primary: Sector 4, household breeders
 - Secondary: Sector 3, small farms
3. *Specific results achieved:*
 - 30 million home visits in 18 high-risk governorates by 13,000 female community educators thru 2009
 - Up to 6,700 seminars in villages yearly
 - More than 10 million posters/leaflets disseminated
 - 17 TV and radio spots broadcast, high frequency
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Early identification of symptoms and seeking of medical and veterinary services
 - Enforcing and promoting proper breeding practices
5. *Specific strategies and tools used:* Multi-channel approach with audience segmentation
 - Mass media campaigns to general population:
 - TV and radio spots
 - Indoor & outdoor advertising (posters, leaflets, banners)
 - Hotline with standard answers to general public inquiries
 - Community village outreach:
 - Home visits by female community educators
 - Orientation of households to proper poultry handling
 - Seminars, contests at schools, universities, youth centers
 - Theatrical plays; road shows
6. *Specific Policies Needed*
 - To build up trust of community and domestic backyard owners toward government measures:
 - Release all information about poultry outbreaks and human cases to the public
 - Implement activities focused on household through comprehensive outreach program
7. *Specific information needed:*
 - Backyard breeders: Cultural/socioeconomic status/educational level
 - Farms: Number, distribution and bio-security levels
 - Live bird market data

- Monitoring of behavioral change re: AI prevention
8. *Specific groups of people involved:*
- Poultry backyard breeders
 - Small and large farm operators
 - Live bird market vendors
9. *Specific organizations/institutions/sectors involved:*
- Local authorities; community leaders
 - Red Crescent, other NGOs
 - International agencies
 - Ministries of Agriculture, Environment
10. *Specific intersectoral linkages needed:*
- Partnerships with NGOs
 - Private sector/poultry industry and farm owners
 - Community members and local government officials
11. *Lessons learned on efforts that did not end up contributing to this best practice (i.e., what not to do):*
- Focusing on backyard breeders when farms are the real source of the virus
12. *Other information related to the best practice:*
- Data needed:
 - Number of suspected cases
 - Time between onset of disease and diagnosis
 - Link between poultry death and appearance of symptoms
13. *Challenges faced:*
- Difficulty in staging Rapid Response Communication after avian cases to prevent human cases
 - Under-reporting and/or detection in the commercial sector
 - Clear evidence of H5N1 circulating in the commercial sector; but backyards are blamed
 - Bio-security measures needed in commercial sector
 - Poultry farm owners reluctant to report HPAI outbreaks due to imposed penalties and lack of compensation
 - Mass media campaigns need consistency in airing
 - Children & women vulnerable: need greater awareness
14. *Challenges overcome:*
- Raised awareness of symptoms.
 - Increased public willingness to seek medical help early.

Indonesia Best Practices

Country Summary

1. Total poultry population = 1.35 billion (est)¹

	2009 Production ¹	Percentage
Broiler	930,318,000	68.79%
Native	261,398,000	19.33%
Layer	110,106,000	8.14%
Duck	42,090,000	3.11%
Quail	6,945,900	0.51%
Pigeon	1,511,200	0.11%
Total	1,352,369,100	100.00%

2. Total human population = 231,830,000 (est)

H5N1 HPAI Description

	2003	2004	2005	2006	2007	2008	2009	2010
Confirmed H5N1 HPAI poultry outbreaks	60	166	159	611	2751	1802	2202	551
Confirmed H5N1 HPAI human cases	0	0	20	55	42	24	21	1

Total suspect H5N1 human cases (2003-	Total suspect H5N1 human cases referred	Total suspect H5N1 human cases tested	Total confirmed H5N1 human cases (2003-
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2010)	(2003-2010)	(2003-2010)	2010)
2190	?	2190	163

Indonesia Best Practice # 1

HPAI INDONESIA, PART 1 – MARKET CHAIN TARGETED ENGAGEMENT TO REDUCE RISK ALONG THE POULTRY MARKET CHAIN SINCE 2008

Presenters:

- Dr Muhammad Azhar (CMU-DAH)
- Dr Eric Brum (FAO)

Sector: Animal Health

Description of the Best Practice:

1. *Problem addressed:*
 - Spread of HPAI virus to both poultry and humans via a vast, complex, and poorly regulated post-production poultry market chain
 - Limited understanding of H5N1 epidemiology within market systems
2. *Population impacted by this problem:*
 - Human: All, but primarily urban populations
 - Animal: All marketed poultry, especially those sent to urban markets
3. *Specific results achieved:*
 - Movement patterns and value chains elucidated
 - Market chain surveillance system established in greater Jakarta1 (Jabodetabek2)
 - Market restructuring in greater Jakarta accelerated
 - C&D activities increased in collector yards in greater Jakarta
 - C&D infrastructure improvement integrated with market restructuring in greater Jakarta
 - Greater Jakarta is the largest and highest risk urban market system in Indonesia
 - Jabodetabek = Jakarta province, BOgor district, DEpok city, and TAngerang and BEKasi district and city
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Less HPAI virus spread between farms and less virus contamination in collector yards and markets
 - Improved knowledge of virus origin (geographic location of farms and bird type) to target disease control at source
 - Less HPAI virus entering urban home environment (decreased human cases in urban areas)
5. *Specific strategies used:*
 - Strengthening of local government livestock services to conduct surveillance and monitor C&D activities
 - C&D training and technical support to market traders and vendors
 - Strategic infrastructure improvements to facilitate C&D and reduce risk of virus spread from collection points
 - Technical and facilitation assistance to key government agencies responsible for market

restructuring

- Awareness-raising on value of 'safe, healthy, wholesome and halal poultry meat' (*daging ayam ASUH*) targeting vendors, traders, and consumers

6. *Specific tools used:*

- Environmental surveillance to detect virus by PCR in markets + collector yards
- Sentinel bird surveillance to detect HPAI in collector yards
- High-pressure washers
- Permanent C&D stations based in poultry collector yards
- USAID's leftover Virkon
- Lots of soap and water

7. *Specific policies needed:*

- PERDA no 4/2007: Jakarta provincial government order to eliminate sale of live poultry in markets by 2010
- 'Policy' to proactively engage with private sector (poultry market chain and producers)

8. *Specific information needed*

- Value chain analysis of poultry market chains
- Understanding of poultry movements and associated risks in the greater Jakarta market system

9. *Specific groups of people involved:*

- Poultry traders, slaughterers, market vendors, and brokers
- Civil servants from district and provincial livestock services
- Poultry meat consumers

10. *Specific organizations/institutions/sectors involved:*

- Poultry-related associations
- Market, livestock/veterinary, and public health services in district and provincial government

11. *Specific intersectoral linkages needed:*

- Coordination amongst public sector agencies for effective market restructuring (e.g. public health, police, livestock, internal affairs, etc)
- Coordination and cooperation between public and private sector stakeholders in market restructuring and C&D

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Hesitation to engage private sector in planning led to difficulties in implementing market restructuring
- Cost of market restructuring underestimated by both public and private sector
- Stakeholder awareness and public sector understanding of the need for market restructuring was (and still is) weak

13. *Other information related to the best practice:*

- Because poultry travels such long distances within a complex market chain, the location

where risk is produced (e.g. farm origin) and point where risk is observed (e.g. human case) are often not geographically related. Understanding poultry movements and origins are critical to identify high risk production areas and target control measures.

14. *Challenges faced:*

- Lack of cooperation amongst private sector stakeholders (e.g. small-scale vs industrial stakeholders)
- Private sector stakeholders skeptical of risks of HPAI and need for market restructuring
- Difficulty in making sense of Indonesia's poultry market 'chain'
- Low level of understanding of how H5N1 virus moves through market chain
- Limited C&D of poultry transport at poultry collection points

15. *Challenges overcome:*

- Limited success in all of the above, most success in #3-5

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Successfully completing Jakarta's poultry market restructuring program
2. Sustaining effective C&D activities at poultry collection points
3. Ensuring quality poultry products are consistently provided to urban markets
4. Uniting private sector stakeholders to improve the quality of Indonesia's poultry
5. Developing a sustainable market chain surveillance system

Indonesia Best Practice # 2**HPAI INDONESIA, PART 2 – OFFLU
UNDERSTANDING THE VIRUS TO INFORM CONTROL STRATEGY
AND MAKE A BETTER VACCINE SINCE 2007****Presenter:**

- Dr Agus Wiyono (DAH)
- Dr James McGrane (FAO)

Sector: Animal Health**Description of the Best Practice:**

1. *Problem addressed:*
 - Epidemiology of HPAI in Indonesia poorly understood
 - Lack of knowledge of genetic and antigenic characteristics of circulating field strains
 - Widespread use of older vaccines ineffective against circulating field strains
2. *Population impacted by this problem:*
 - All poultry production systems, including commercial poultry producers and small-holder farmers
 - Both human and animal populations are at risk; especially because use of ineffective vaccines and/or inappropriate delivery of vaccine can lead to higher levels of shedding from apparently healthy birds
3. *Specific results achieved:*
 - Cooperation among national and international laboratories for sequencing and antigenic cartography of virus samples
 - Increased sharing of biologic material and information between public and private sectors
 - Strengthened in-country capacity to conduct and validate results from antigenic cartography
 - Improved understanding of virus strains circulating in Indonesia, predominantly in village-based poultry
 - Development of a newly engineered low pathogenicity reverse genetics vaccine strain for Indonesia selected using antigenic cartography to select efficacious seed strains
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Indonesian vaccine producers generating vaccines from more up-to-date and representative field strains, thereby leading to more effective vaccination (theoretically)
 - Farmers choosing vaccines produced with vaccine seed strains recommended by updated government policy
5. *Specific strategies used*
 - International avian influenza laboratory partnership (OFFLU) used to receive virus samples for sequencing and antigenic cartography as a service to the Ministry of Agriculture; virus material ownership and intellectual property rights maintained by

MOA

- OFFLU stakeholder forums to share information and plan next steps
- Focus on capacity building in order to expedite transfer of technology and laboratory techniques to Indonesian laboratories

6. *Specific tools used:*

- Real-time RT-PCR
- Gene sequencing
- Novel virus typing techniques using high resolution hemagglutination inhibition (HI) tests
- Characterization of antigenicity using antigenic cartography

7. *Specific policies needed:*

- Approved vaccine seed strains to be based on antigenic and genetic characteristics of field isolates
- Cooperation with international laboratories for antigenic characterization of field isolates for the short term and transfer of this technology for sustainability and ongoing monitoring of HPAI field viruses and vaccine efficacy
- Development of a reverse genetics vaccine for use in Indonesia

8. *Specific information needed*

- Current capacity of MOA animal health laboratories (Disease Investigation Centers), laboratories responsible for vaccine and reference reagent production, and national reference laboratories
- Contributions from other projects involved with strengthening laboratory capacity

9. *Specific groups of people involved*

- Personnel from MOA animal health laboratories
- Indonesian vaccine producers
- International laboratory personnel specializing in antigenic cartography and vaccine development (e.g. Erasmus Medical Centre, Southeast Poultry Research Laboratory, and Indonesia Dutch Partnership)

10. *Specific organizations/institutions/sectors involved:*

- MOA Disease Investigation Centers (DIC), Indonesia
- Australian Animal Health Laboratory (AAHL), Australia
- Southeast Poultry Research Laboratory (SEPRL), USA
- Erasmus Medical Centre, Netherlands
- Pusvetma, BBPMSOH, and Bbalitvet
- Private sector partners: Vaksindo, Medion, SanBio, Caprifarmindo

11. *Specific intersectoral linkages needed:*

- Development of effective public-private partnerships
- Communication between DICs and among all national laboratories and central government

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Assistance should be provided based on specific requests from host laboratories, not

based solely on decisions from external agencies

- Too much reliance on international laboratory input and getting samples shipped outside Indonesia

13. *Challenges faced:*

- Lack of vaccine efficacious against some virus strains circulating in the field
- Lack of coordinated system of collecting field isolates, analyzing genetic and antigenic characteristics, and managing information
- Use of wide range of vaccine strains by poultry producers
- Difficult to update vaccination policies

14. *Challenges overcome:*

- Genetic and antigenic characterization of field isolates achieved
- New vaccines produced
- Improved cooperation and transparency

Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Transfer of technology for antigenic cartographic capacity to Indonesian laboratories including reagent production
2. Production and distribution of novel reverse genetics vaccines by Indonesian vaccine producers
3. Reduction in the number of registered vaccines to represent only those that are effective against currently circulating field strains
4. Consensus for national strategy on vaccination including transition and exit strategies

Indonesia Best Practice # 3**CONTAINMENT AND RESPONSE OF
INFLUENZA PANDEMIC EPICENTER****Presenter:**

- Dr. Arie Bratasena (Head of ARI Sub-directorate Directorate of DTDC, DG of DC&EH, MoH of Indonesia)

Sector: Human Health**Description of the Best Practice**

1. *Problem addressed:*
 - Preparedness for the emergence of an influenza pandemic cluster in some area in Indonesia through a field simulation
2. *Population impacted by this problem:*
 - Direct impact to the patients and family and all the community around the cluster area
 - Potentially all the Indonesian and global population as an Influenza Pandemic Epicenter is a global Public Health Emergency International Concern that could wide spread globally
3. *Specific results achieved:*
 - National Epicentre Containment Guidelines published
 - Tested in two major field simulations (Bali 2008, Makassar 2008)
 - Over 1000 participants in each simulation
 - Training module for provinces produced
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Potential to stop the virus circulation through increasing the action plan of rapid response and surveillance teams, medical response, risk communication, public health action.
5. *Specific strategies used: Indonesian policy strategy are:*
 - prevention and containment in port of entry
 - procurement and mobilization of medicine and PPE
 - Strengthening and empowerment of hospital and PHC
 - Strengthening and implementation of epidemiologic surveillance
 - Strengthening and implementation of Laboratory
 - Risk Communication
 - Command and Coordination
 - Public Health measure
 - Business Continuity Plan
6. *Specific tools used:*
 - Containment of an Influenza Pandemic Epicenter" Guidelines, which cover the following: Surveillance, Logistics including medicine and PPE, Hospital, PHC and

laboratory equipment, communication tools for the officer and for mass communication

7. *Specific policies needed:*

- National Strategic Plan for AI control and Preparedness for Influenza Pandemic, 2006-2008
- PP No. 7 Year 2006 about National Committee on AI Control and Pandemic Influenza Preparedness
- Presidential Instruction No. 1 Year 2007 about handling and control of Avian Influenza
- August 2007, by National Committee on AI control and Pandemic Influenza: Government of Indonesia National Plan of Pandemic Influenza
- Other policy from MoH and other related government sector etc.

8. *Specific information needed*

- Update information: result from rapid response team, surveillance, laboratory, logistic, medical response, risk communication, command and coordination (IHR), etc

9. *Specific groups of people involved:*

- Involving all existing community group (example: Tagana, cadre, etc) and cooperation from all people, especially community in the containment area and around

10. *Specific organizations/institutions/sectors involved:*

- All organizations/institutions/sectors will be involved to help the containment such as: NGO, religion organization, KOMDA FBPI, APINDO, etc., because it would need huge amount of human resources and cooperation from all sectors

11. *Specific intersectoral linkages needed:*

- Need cooperation from health sector, animal health, security (police, army, etc), transportation, logistic, communication, commerce, industrial and labor

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Expensive to run full field simulation
- Motivation of participants can vary and need to be involved early

13. *Other information related to the best practice:*

- The best practice implementation in Indonesia is not only for H5N1 but also could be implemented for H1N1 and other type of influenza pandemic.

14. *Challenges faced:*

- Intersectoral coordination and communication
- Unskilled human resource
- Insufficiency of logistics, equipment support, vaccine, medicine, etc
- Inadequate health budget and health infrastructure
- low awareness of influenza pandemic in community and local government

15. *Challenges overcome:*

- training for the officer (surveillance, laboratory, health officer) in all level (PHC, district, province)

- procurement of the equipment needed are still on-going process (there are still some gaps)
- inter sectoral coordination meetings

Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Critical gaps among area due to geography, demography, socioeconomic, cultural, and environmental
2. Inadequacy of health budget
3. Indonesia does have H5N1 cases and H1N1 cases, and therefore the possibility of emergence of a new subtype of influenza virus
4. Insufficiency of logistic, equipment support, vaccine, medicine
5. Inadequate of public health infrastructure

Indonesia Best Practice # 4

SOCIALIZATION OF AI AMONG PRIMARY HEALTH CARE WORKERS

Presenter:

- Dr. Rita Kusriastuti, MSc, Director of Vector Borne Disease Control

Sector: HUMAN HEALTH

Description of the Best Practice:

1. *Problem addressed:*
 - Lack of knowledge of AI diagnosis and case management
 - Lack of early detection & prompt treatment of AI among Primary Health Care (PHC) workers
2. *Population impacted by this problem:*
 - Population of Java, Sumatra, Bali and South Sulawesi (181 million)
3. *Specific results achieved:*
 - To provide primer healthcare (PHC) workers with technical and practical information to enable (a) Identification of suspected cases (b) Management of cases (c) Referral to AI hospitals (d) Response (e) Report to District Health Offices
The number of PHC workers trained by this program :
 - Riau provinces : 750 persons
 - West Java : 2800 persons
 - Central Java : 3180 persons
 - In Riau, proportion of suspect cases detected within two days of onset of fever increased from 50 % to 70 % after the intervention
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Greater PHC Workers aware of prevention of the spread of AI and how to detect early and treat promptly
5. *Specific strategies used:* The step of Socialization:
 - Planning meeting
 - TOT for provincial facilitators
 - Roll out in districts (each provinces) by provinces facilitators
 - Monitoring and evaluation
6. *Specific tools used:*
 - Training module
 - Method of socialization: participative lectures, group discussion, case study
7. *Specific policies needed:*

- Provide resources (man, money, local policy, etc) in the central, province and district to replicate the program in another provinces
8. *Specific information needed*
- The number of Puskesmas (PHC) in district
 - The number of Private clinics in district.
 - The number of Hospitals (government and private)
 - The number of private clinician (doctors, midwives)
9. *Specific groups of people involved:*
- PHC workers : Puskesmas (PHC), private clinics,
 - private practitioners, private midwives, nurses, etc
10. *Specific organizations/institutions/sectors involved: Many institutions involved :*
- provincial health offices and district health offices
 - Avian influenza referral hospitals
 - University/Academy
 - District Hospitals
11. *Specific intersectoral linkages needed:*
- Ministry of Agriculture
12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*
- Need more references and resource person with different competency
 - Need more time for discussion especially for case studies
 - Need more time to do the reporting of the activity
13. *Other information related to the best practice:*
- On evaluation : case detection and case management of AI among PHC workers (government and private) were improved
14. *Challenges faced:*
- It was not easy to involve private clinics and practitioners for a long one day socialization
 - Expensive, and replication of this model to other provinces will need to be supported by WHO, National Budget, or another donor agencies
15. *Challenges overcome:*
- Large number of PHC Workers trained
 - Many PHC workers from private hospitals/clinics/clinicians were involved
 - The method of socialization was good (participants were satisfied)

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Better Coordination
2. Better Data sharing
3. Integrated laboratory surveillance (human and animal sectors)
4. Enzootic HPAI, and poultry industry restructuring
5. Geographical factors (large country, many islands)

Indonesia Best Practice # 5

HPAI INDONESIA, PART 1 -- PDSR AND LDCC

STRENGTHENING LOCAL GOVERNMENT VETERINARY SERVICES, EMPOWERING COMMUNITIES, AND COORDINATING NATIONALLY SINCE 2006

Presenters:

- Dr Ade Lubis Sjachrena (CMU-DAH)
- Dr Eric Brum (FAO)

Sector: Animal Health

Description of the Best Practice:

1. *Problem addressed:*

- Weakened veterinary services throughout the country following decentralization
 - a) Human and financial resources¹
 - b) Technical authority and capability¹
 - c) Interaction with stakeholders¹
 - d) Access to markets¹
- Budgeting for HPAI field activities left to autonomous district governments
- Lack of early reporting, detection, and response to outbreaks

2. *Population impacted by this problem:*

- Nationwide

3. *Specific results achieved:*

- 2,253 government personnel trained in PDSR competencies
- 33 Local Disease Control Centers (LDCC) established across 29 provinces, over 220,000 surveillance and investigation reports received
- 8,620 detections of HPAI poultry outbreaks since 2006
- Over 5.6 million community members directly engaged in PDSR activities
- Major improvement in passive surveillance across all HPAI-endemic areas
- Rapid outbreak control followed HPAI detection (< 1 day from detection to response)
- Human health services/District Surveillance Officer (DSO) routinely notified of HPAI poultry outbreaks by PDSR
- SMS gateway established for immediate reporting of HPAI poultry outbreaks

4. *Problem addressed:*

- Weakened veterinary services throughout the country following decentralization
 - a) Human and financial resources¹
 - b) Technical authority and capability¹
 - c) Interaction with stakeholders¹
 - d) Access to markets¹
- Budgeting for HPAI field activities left to autonomous district governments

- Lack of early reporting, detection, and response to outbreaks
5. *Population impacted by this problem:*
- Nationwide
6. *Specific results achieved:*
- 2,253 government personnel trained in PDSR competencies
 - 33 Local Disease Control Centers (LDCC) established across 29 provinces, over 220,000 surveillance and investigation reports received
 - 8,620 detections of HPAI poultry outbreaks since 2006
 - Over 5.6 million community members directly engaged in PDSR activities
 - Major improvement in passive surveillance across all HPAI-endemic areas
 - Rapid outbreak control followed HPAI detection (< 1 day from detection to response)
 - Human health services/District Surveillance Officer (DSO) routinely notified of HPAI poultry outbreaks by PDSR
 - SMS gateway established for immediate reporting of HPAI poultry outbreaks
7. *Contribution to reducing H5N1 HPAI viral circulation:*
- With increases in outbreaks as an immediate positive impact of PDSR (due to weak reporting previously), apparent reductions in HPAI incidence have been observed in provinces with less commercial production (e.g. Bali, East Java, Kalimantan, South Sulawesi), although reduction is difficult to sustain likely due to ongoing live poultry movements from other provinces.
8. *Specific strategies used:*
- Use participatory methods to train local government veterinary and livestock services in essential detection, outbreak response, and prevention competencies for HPAI in backyard poultry – Participatory Disease Surveillance and Response (PDSR)
 - Support use of participatory techniques to build confidence of local government services to engage and respond to the needs of constituent communities, and thereby building trust with communities for better reporting of suspected cases (passive surveillance)
 - Coordinate activities, manage data entry, and provide financial assistance for subsequent field activities via province-based Local Disease Control Centers (LDCCs)
 - Utilize PDSR investigations to assign “village HPAI infection status” in order to better track disease and monitor progress
9. *Specific tools used:*
- Influenza A rapid tests to enable immediate field diagnosis and outbreak control
 - Participatory engagement tools adapted for HPAI in villages in Indonesia
 - Integrated database developed to include PDSR disease surveillance, M&E of activities, and essential administrative functions
10. *Specific policies needed*
- Field diagnosis of HPAI on basis of compatible clinical signs (case definition) and positive influenza A rapid test, without laboratory confirmation

- Ending the policy of 1km culling following HPAI detection in backyard poultry with transition to focal culling of infected flocks only
- Decreased use of “reactionary” vaccination, including ring vaccination following outbreaks
- Presidential Instruction No.1 of 2007 on control of HPAI to all Governors and Ministers involved in HPAI control
- Law No.18/2009 on Animal Health and associated animal health regulations
Amendment to law of local autonomy (Law no. 38/2007)
DGLS Decree on Task Force for National Veterinary Service and integration of PDSR in national animal health system

11. Specific information needed

- provincial human population, number of districts and villages
- poultry population, especially backyard vs commercial poultry
- relative HPAI risk of backyard vs commercial poultry
- structure of veterinary services and number of veterinarians in local government
- movement patterns of poultry in province
- previous stakeholder experience with HPAI compatible events (especially ND)

12. Specific groups of people involved:

- Veterinarians and other civil servants in district and provincial governments
- Community members rearing backyard poultry and community volunteers
- Poultry farmers and traders
- Village leaders
- Human health officers in district and provincial government

13. Specific organizations/institutions/sectors involved:

- District and provincial animal health and livestock services
- Dedicated HPAI team (Campaign Management Unit) in the Directorate of Animal Health in the MOA
- District and provincial government human health services
- Disaster management and prevention section of the Ministry of Internal Affairs
- Multilateral technical organizations (e.g. UN) and donor organizations
- NGOs: e.g. Muhammadiyah and Indonesian Red Cross
- Academic institutions

14. Specific intersectoral linkages needed:

- Link with local government human health services to follow-up on detection of HPAI poultry outbreaks and suspect human cases
- Support from Ministry of Internal Affairs to help mobilize local government financial and political resources

15. Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):

- Mistake to focus only on backyard poultry; engagement with all sectors, commercial producers and marketing system is essential

- Initial use of ring and mass vaccination of backyard poultry inappropriate and not feasible- early focus on H5N1 limited veterinary services ability to be responsive to other needs of constituent communities; broad strengthening veterinary services is fundamental to sustainable HPAI control!
- Limited involvement of district and provincial government heads of livestock services with PDSR and LDCC activities management has slowed integration of HPAI control activities
- The village, not the household, is the more appropriate epidemiological unit for control of HPAI in backyard poultry
- Controlling HPAI is very difficult without an effective compensation system for affected farmers
- Backyard poultry production should not be seen as a 'problem' that needs to be fixed, but rather as an opportunity to improve community nutrition and health
- Large-scale operational research programme did not meet intended goal

16. *Other information related to the best practice:*

- Very useful to enable field diagnosis via rapid test when laboratory diagnosis is unreliable
- Operational support for using trained skills in the field is essential for trainees to build competencies

17. *Challenges faced:*

1. Weakened and decentralized veterinary service.
2. Coordinating hundreds of autonomous district governments
3. Affected communities with previous poor experiences related to animal disease control (e.g. ND)
4. Centralized technical decision-making by major donor and technical disagreements between donor and multilateral technical agency
5. Limited government funding for HPAI control activities in the field
6. HPAI circulating through all poultry production and marketing systems across a large and fragmented geographic area

18. *Challenges overcome:*

- #1-4 have been largely overcome.
- #5 has improved, but is still a major challenge.
- #6 remains a fundamental challenge.

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Adequate technical support not yet provided to ALL stakeholders (e.g. farmers, traders, government) affected by HPAI in Indonesia
2. Lack of trust between government veterinary services and commercial poultry producers
3. Major integrated poultry companies directly and indirectly supporting poultry production practices that are profitable in the short-term, but reduce poultry production quality in the long-term
4. Weak control of poultry movements, especially inter-island and inter-provincial
5. Short funding cycles inhibiting long-term planning for sustainability and timely delivery of activities

Vietnam Best Practices

Country Summary:

1. Total poultry population = 280 million heads (2009)
 - by bird type: 71.4 % chickens, 25.9% ducks, 2.7% other
 - by farm type: in chicken production 30.2% sector 1 and % sector 2; 69.8% sector 3 and % sector 4, whilst in ducks production 92.9% is small scale and industrial rearing system accounts for 7.1%.
 - by function (2006): 12.4 % broiler, 940 million industrial-produced eggs (38.8 %)
2. Total human population = 86 million

H5N1 HPAI Description

	2003	2004	2005	2006	2007	2008	2009	2010
Confirmed H5N1 HPAI poultry outbreaks	----	2587 (Estimate)	1970 (Estimate)	52	269	79	53	----
Confirmed H5N1 HPAI human cases	3 (3)	29(20)	61(19)	0 (0)	8 (5)	6 (5)	5 (5)	5 (2)

Total suspect H5N1 human cases (2003-2010)	Total suspect H5N1 human cases referred (2003-2010)	Total suspect H5N1 human cases tested (2003-2010)	Total confirmed H5N1 human cases (2003-2010)
793 (*)	NA	761 (*)	117 (59 death)
(*) Source: National Influenza Surveillance System for Severe Viral Pneumonia, 2006-2010			

Vietnam Best Practice #1**ADDRESSING THE PREVENTION AND CONTROL OF INFLUENZA A (H5N1)
IN HUMANS THROUGH STRENGTHENING THE HEALTH SYSTEM****Presenter:**

- Prof. Dr. Nguyen Huy Nga, Director, General Department of Preventive Medicine and Environmental Health (GDPMEH), Vietnam Ministry of Health

Sector: Human Health**Description of the Best Practice:**

1. *Problem addressed:*
 - Need to strengthen the health system
2. *Population impacted by this problem:*
 - Directly: Health care workers in preventive medicine and curative sectors
 - Indirectly: General public
3. *Specific results achieved:*
 - Capacity to detect, refer, receive, isolate and treat persons with H5N1 improved.
 - Regular information sharing among key sectors.
 - High level of political commitment to prevent and control H5N1.
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - The likelihood of human-to-human infection of H5N1 is decreased because of proper case management.
5. *Specific strategies used:*
 - Promoted leadership and coordination at all levels of government and in different sectors.
 - Established and supported for rapid response teams at the central, regional and provincial levels.
 - Promoting infection control and Strengthening of communicable disease reporting.
 - Conduct trainings based upon newly developed / revised guidelines.
 - Procured/obtained pharmaceuticals, supplies and equipment, including antivirals, essential materials, disinfectants, ventilators, ambulances, and laboratory equipment.
 - Provided free hospital care for confirmed H5N1 cases.
 - Launched of environmental sanitation and hygiene campaign.
 - Promoted of food safety-related efforts.
6. *Specific tools used:*
 - Distributed IEC to the public on a large scale by using mass media channels, including television, radio, newspaper, and posters

7. *Specific policies needed:*

- An overarching framework to establish national strategy and coordination mechanisms.
- Politburo directives on implementing emergency measures, to mobilize resources from whole society, to contain H5N1 virus in poultry and human populations.
- Guidelines for provincial health departments.

8. *Specific information needed*

- Recommended actions to prevent outbreaks and to respond to outbreaks, including how to test preparedness through exercises.

9. *Specific groups of people involved:*

- Leaders from all levels of the political system.
- Health care staff.
- Other related sectors, mass media organizations...

10. *Specific organizations/institutions/sectors involved:*

- Ministry of Health (GDPMEH, Department of Medical Services Admin).
- Regional Institutes and provincial preventive medicine centers.
- Health care facilities from central to grassroots levels.
- Ministry of Agriculture & Rural Development (MARD).
- Other related sectors (Ministry of Education & Training, Ministry of Foreign Affairs...).
- Mass organizations to promote prompt outbreak reporting and early case detection

11. *Specific intersectoral linkages needed:*

- Central and field level collaboration and coordination between MARD, MOH, other ministries and mass organizations in reporting and responding to outbreaks.

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- The same communication channels do not work equally effectively for all target groups.
- Awareness-raising does not always translate into sustained changes in behaviour.
- Community-based surveillance systems have to be practical and feasible.

13. *Other information related to the best practice:*

- Efforts built upon prior experiences preventing and controlling infectious diseases of pandemic potential, for example, SARS.
- Success was facilitated by sharing information with and mobilizing support from international partners.
- Efforts also expanded capacity for dealing with future outbreaks of other emerging diseases.

14. *Challenges faced:*

- Lack of full knowledge about influenza transmission and host susceptibility, prevention, and treatment
- Limited capacity and resources for surveillance, investigation, and response.

- Gaps in surveillance and delays in laboratory testing led to inadequate and/or inaccurate information for decision making.
- Public fatigue in applying recommendations to protect poultry and to prevent human infections.

15. *Challenges overcome:*

- Poor knowledge of health staff on disease spectrum, treatment, and prevention.
- Limited awareness of the public
- Improved capacity for prevention, detection and control.

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Controlling and/or eliminating H5N1 given the large number of backyard flocks and inability to limit poultry movement, especially across borders.
2. Continuing to enhance linkages between the animal health and human health sectors to implement prevention and control strategies.
3. Strengthening behaviour change communication, particularly when the overall risk of infection is low and poultry can be infected with few or no symptoms
4. Obtaining more detailed information about specific high-risk behaviours associated with human infection
5. Encouraging ill people who may have avian influenza to seek earlier medical attention.

Vietnam Best Practice # 2

IMPROVING AHI AWARENESS AND PRACTICES THROUGH COMMUNICATION EFFORTS

Sector: Human and Animal Health

Description of the Best Practice:

1. *Problem addressed:*
 - Need to improve awareness and practices on AHI prevention and control
2. *Population impacted by this problem:*
 - General public including poultry farmers, supply chain actors and animal and human health workers, political and government officials and children, ethnic minorities and migrants
3. *Specific results achieved:*
 - Increased awareness of AHI and transmission through contact with infected poultry
 - Increase in selected prevention measures:
 - a) Increase in vaccination of poultry (chickens and ducks)
 - b) increased compliance to government prevention and control policies
 - movement control during outbreaks
 - reporting sick and dead poultry to authorities
 - regular farm cleaning and disinfection during outbreaks
 - c) Improved preventive practices
 - washing hands before and after contact with poultry
 - restricting entry to farm
 - d) Improved communication skills among animal and human health workers
 - e) Integration of AHI in school curriculum
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Reduction of virus entry into farm and transmission to humans
5. *Specific strategies used:*
 - Training of animal and human health workers on AHI communication

- Mass media campaigns
 - Social mobilization through multi-sectoral campaigns
 - Interpersonal communication at village level
 - Distribution of IEC materials to various audiences
 - Entertainment education
6. *Specific tools used:*
- Training modules using participatory approaches
 - TV, radio, commune loudspeakers
 - Trained volunteers, community networks, mass organizations (Women's Union, Farmers Union, Youth Union)
 - Group discussions, community meetings, household visits
 - Posters, leaflets, flyers, booklets, billboards, promotional materials
 - AI plays, skits, songs, poetry competitions, market events, roadshows
7. *Specific policies needed:*
- Mass vaccination policy
 - Culling and compensation policy
 - Poultry movement control during outbreaks
 - National Strategic Framework for AHI Communication
 - Coordination mechanisms from National, Provincial, District and Commune levels (e.g. AI Committees)
8. *Specific information needed*
- KAP of various audiences
 - Effective channels of information
 - Evidence to support recommended behaviors
9. *Specific groups of people involved:*
- Animal and human health workers, poultry farmers, teachers, women, school children, government officials at all levels, supply chain actors
10. *Specific organizations/institutions/sectors involved:*
- National : National AHI Steering Committees, MARD, MOH, MOET, mass organizations, poultry associations, local NGOs, local research and communication agencies, private sector
 - International Organizations : UN agencies (FAO, UNDP, Unicef, WHO), INGOs, and others
 - Donors : Multi-lateral and bi-lateral donors (eg. development banks and foreign governments)
11. *Specific intersectoral linkages needed:*
- Coordination mechanisms at all levels

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Coordination mechanisms at all levels
- Promoted behaviors can only succeed if policy is enforced (e.g. reporting and compensation policy)
- Not all communication channels equally effective (mass media effective for raising awareness but not sustained behavior change- need for multi-channel approach)

13. Other information related to the best practice:

- Interpersonal communication is effective in producing behavior change but resource-intensive especially when scaled up
- There is a need to focus on a few key consistent messages
- It is important to monitor progress to gather feedback for further improvements

14. *Challenges faced:*

- Implementing national campaigns with diverse population groups in a large country
- Existence of multiple partners, multiple target groups, and multiple messages for promoting behaviors
- Low risk perception (i.e., people know that AHI are very serious diseases but feel that AHI are unlikely to affect them or their poultry)

15. *Challenges overcome:*

- Established IEC Working Group; tailored messages and channels to various target group
- Developed National Strategic Framework for AHI Communications that prescribed priority behaviors to promote
- Use other "entry points" e.g. personal and economic benefits to encourage practicing recommended behaviors

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Low risk perception (people know AHI very serious but feel AHI will not likely affect them or their poultry)
2. Competing priorities (e.g. FMD, fowl cholera, dengue)
3. Limited appreciation of benefits of communication leading to limited allocation of resources
4. Misperception that vaccination provides complete immunity against influenza; therefore, people tend to not practice other preventive behaviors
5. Increased awareness does not lead to (sustained) behavior change

Vietnam Best Practice #3**STRONG GOVERNMENT COMMITMENT****Sector: Animal Health****Description of the Best Practice:**

1. *Problem addressed*
 - The wide spread nature of the HPAI H5N1 epidemic required a concerted effort
 - Effective disease control needed good coordination
2. *Population impacted by this problem:*
 - General public
 - Poultry farmers.
3. *Specific results achieved:*
 - Transparency in disease reporting, virus sharing
 - Efficient mobilisation of resources both from national and international sources (technical expertise: FAO, OIE; financial: USAID, WB, donors, etc.)
 - Integration of animal and human health in a joint strategy: Green Book.
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Enhanced disease reporting
 - Supported local level rapid outbreak containment
 - Implemented vaccination policy (beginning late 2005).
5. *Specific strategies used:*
 - Legal framework for HPAI control: Regulations on HPAI control and prevention
 - Participation of political systems from Central to grass-root level
 - Enforcement of disease control measures: culling, LBM closure, ban of waterfowl hatching, etc.
 - Vietnam Integrated National Operational Program for Avian and Human Influenza (2006-2010) (OPI, aka Green Book)
 - Vaccination program
6. *Specific tools used:*
 - Chain of command through NSCAI and central level and its mirrors at local levels
 - National Preparedness Plan (Sept 05)
 - Media, website
 - Working groups.
7. *Specific policies needed:*
 - Disease reporting policy
 - Provision of free diagnosis services

- Compensation policy
 - Mechanism on utilisation of social/public organisations in HPAI outbreak response
8. *Specific information needed*
- Emergency funding mechanism
 - Availability of human resources
 - Engagement by community.
9. *Specific groups of people involved:*
- Central and local authorities
 - Other stakeholders: farmers, veterinary practitioners, etc.
 - International organizations
 - Donors
10. *Specific organizations/institutions/sectors involved:*
- National: Politburo, Government Office, MARD, MoH, and Other relevant ministries
 - International organisations: UN agencies (FAO, UNDP, UNICEF, WHO), INGOs etc.
 - Donors: WB, EU, USAID, etc.
11. *Specific intersectoral linkages needed:*
- MARD - MoH – MoF
12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*
- Low rate of actual donors' financial contribution vs. commitment needed
 - 'Response' vs. 'Preparedness'.
13. *Other information related to the best practice:*
- NSCAI is moving toward a steering committee for emerging infectious diseases (mostly zoonosis), thus, putting the concept of OWOH into reality
14. *Challenges faced:*
- Growing demand for meat → more dense poultry production
 - Small household poultry production (poor biosecurity) system dominant
 - Veterinary services capacity not ready for dealing with such a big problem
 - Big load of HPAI H5N1 virus circulation
15. *Challenges overcome:*
- Veterinary services strengthened: laboratory system, surveillance, outbreak response
 - Reduction of viral load via vaccination.

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Slow progress of poultry restructuring.
2. Hard to sustain high level of commitment over time, especially once the disease has been reduced to a certain level of prevalence.

3. Donor 'fatigue'; no funds secured for HPAI after 2010.
4. Compensation policy not up-to-date.
5. Decreasing awareness [or Complacency] of poultry farmers.

Vietnam Best Practice #4**VACCINATION AS AN ADDITIONAL CONTROL MEASURE FOR HPAI H5N1 IN POULTRY****Sector: Animal Health****Description of the Best Practice:**

1. *Problem addressed*
 - In 2005, Vietnam faced a public health crisis. The number of human cases of influenza A (H5N1) was increasing, such that Vietnam became the country with the most reported human cases
 - Existing control measures had not prevented an increase in human cases... and a decision had to be made whether vaccination of poultry had a role to play.
2. *Population impacted by this problem:*
 - Humans
 - Poultry
3. *Specific results achieved:*
 - The ultimate goal of the Vietnamese program against H5N1 HPAI remains the sustained country-wide elimination of the virus
 - Decreased human cases
4. *Contribution to reducing H5N1 HPAI viral circulation*
 - Number of outbreaks reduced significantly
 - Active surveillance activities informed interventions to decrease circulation of virus.
5. *Specific strategies used*
 - Studies of vaccine usage in other parts of the world
 - Selection of vaccines to be used in Viet Nam; Government control of vaccines import and delivery
 - Vaccination subsidized by Central and local governments
 - Mass vaccination for the first phase, then moved to risk-based vaccination
 - Since 2009, a targeted vaccination strategy has been trialed as the GETS project in five provinces.
6. *Specific tools used:*
 - Campaign approach: two rounds per year; Cold-chain system set-up
 - Procurement, distribution and vaccination is totally within the control of the Government and it is using only one particular vaccine throughout the country
 - Vaccine trials and effectiveness monitoring; Tested vaccines regularly against circulating strains to ensure that the vaccines remain effective
 - Post-vaccination monitoring and virus circulation surveillance

7. *Specific policies needed:*

- National vaccination program against HPAI (Phase 1: 2005-06; Phase 2: 2007-08; Phase 3: 2009-10)
- Mechanism on utilisation of social/public organisations in HPAI vaccination.

8. *Specific information needed*

- Chain of command; Availability of human resources
- Accurate poultry population figures were required to determine coverage success and to estimate vaccine inventory requirements
- Knowledge of the antigenic and genetic make-up of the circulating HPAI virus to ensure adequate matching of the vaccine virus.

9. *Specific groups of people involved*

- Poultry industry, veterinary authorities including animal health workers, research and laboratory institutions and public health authorities
- Central and local authorities
- Other stakeholders: farmers, veterinary practitioners, etc.
- International organizations
- Donors

10. *Specific organizations/institutions/sectors involved:*

- National: Politburo, Government Office, MARD, MoH, and other relevant ministries
- International organisations: UN agencies (FAO, UNDP, UNICEF, WHO), INGOs etc.
- Donors: WB, EU, USAID, etc.

11. *Specific intersectoral linkages needed:*

- MARD – MoH – MoF

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Vaccinating migratory or grazing ducks was a challenge, which still remains
- Government-sponsored routine vaccination requires long-term financial and other resource planning; an exit or transition strategy is needed

13. *Other information related to the best practice:*

- Vaccination will remain an important part of the control and preventive program
- Modify vaccination programs: The USAID-supported 'GETS' program is looking at ways to move away from the current vaccination strategy

14. *Challenges faced:*

- The need for better vaccines: Current vaccines require the injection of two doses to every bird in a flock and, although effective in reducing the risk of infection and disease, administration is very labour intensive
- Data management for vaccination
- The problems of surveillance and disease reporting
- Deaths and production loss in vaccinated poultry

- Lack of Private Sector involvement

15. *Challenges overcome:*

- Getting the information to change the system.

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Slow progress of poultry restructuring
2. Hard to sustain high level of commitment over time, especially once the disease has decreased to a certain level of prevalence.
3. Donor 'fatigue'; no funds secured for HPAI after 2010.
4. Compensation policy not up-to-date.
5. Decreasing awareness [or Complacency?] of poultry farmers.

Vietnam Best Practice #5**DISEASE SURVEILLANCE AND OUTBREAK RESPONSE FOR HPAI H5N1 IN POULTRY****Sector: Animal Health****Description of the Best Practice:**

1. *Problem addressed*
 - Wide spread nature of the disease.
 - Weak veterinary services, e.g. surveillance systems, especially community-based surveillance (CBS).
2. *Population impacted by this problem:*
 - Poultry farmers
3. *Specific results achieved*
 - Early detection system established; time lag for disease reporting reduced from 4 to 2.5 days
 - Diagnosis capacity and capability improved: now have 9 labs capable of diagnosing AI; lab confirmation available within 24h from the receipt of samples
 - Effective outbreak response
 - CBS models piloted
4. *Contribution to reducing H5N1 HPAI viral circulation:*
 - Number of outbreaks reduced significantly
 - Active surveillance activities informed interventions to decrease circulation of virus.
5. *Specific strategies used:*
 - Considerable investment in public education and in training of commune-based animal health workers to increase the likelihood of reporting of disease in poultry
 - Passive surveillance to complement active surveillance
 - Implementation of active surveillance programs (actively searching for cases of clinical disease, testing of apparently healthy animals in high risk places (large live poultry markets)
 - Enhance the Lab capacity
 - Support for the national telephone hotline and television spots for reporting suspicion of disease.
6. *Specific tools used:*
 - Rapid diagnostic tests for detection of virus, using real time RT-PCR
 - Reporting system: TADinfo, LabNet;
 - CBS models
 - SMS pilot.

7. *Specific policies needed:*

- Culling of poultry: Poultry culled in an area of approximately 3 km around affected farms. From late 2004, only the infected premises or poultry in the same village are culled. Culled animals are usually burned and buried following international guidelines.
- Movement controls: Movement restrictions imposed for 21 days. Also imposed on poultry flocks routinely going to market.
- Suspension of trading: Trade at live poultry markets within 5 km of the site of an outbreak is suspended
- Compensation: Used to support campaigns on culling and reporting
- Cleaning and disinfection: All infected premises after disposal of Infected poultry.

8. *Specific information needed*

- Chain of command
- Availability of human resources

9. *Specific groups of people involved:*

- Central and local authorities
- Other stakeholders: farmers, veterinary practitioners, traders, etc.
- International organizations
- Donors

10. *Specific organizations/institutions/sectors involved:*

- National: Politburo, Government Office, MARD, MoH, and other relevant ministries
- International organisations: UN agencies (FAO, UNDP, UNICEF, WHO), INGOs etc.
- Donors: World Bank, European Union, USAID, etc.

11. *Specific intersectoral linkages needed:*

- MARD - MoH – MoF

12. *Lessons learned on efforts that did not end up contributing to this best practice (i.e. what not to do):*

- Over-reliance on passive surveillance invariably led to delayed reporting. Active risk-based surveillance in target areas is more appropriate
- All negative cases of poultry mortality were not thoroughly investigated. Testing using RRT-PCR does not distinguish between natural infection and vaccine immune response.

13. Other information related to the best practice:

- n/a

14. *Challenges faced:*

- Weak veterinary system, especially field veterinary services
- Passive surveillance alone does not result in detection of all cases of infection with H5N1 viruses or other infectious agents

- Testing is difficult to do with thousands of mobile duck flocks and the cost of testing all flocks on a regular basis for infection is prohibitively expensive. Testing is also complicated by vaccination.

15. *Challenges overcome:*

- Training for animal health workers
- AVET (Applied Veterinary Epidemiology Training) program
- Training for field staffs on outbreak investigations and response.

5 Remaining Challenges to Decreasing H5N1 HPAI Infections in Poultry and Humans:

1. Slow progress of poultry restructuring.
2. Hard to sustain high level of commitment over time, especially once the disease has decreased to a certain level of prevalence.
3. Donor 'fatigue'; no funds secured for HPAI after 2010.
4. Compensation policy not up-to-date.
5. Decreasing awareness [or Complacency?] of poultry farmers.

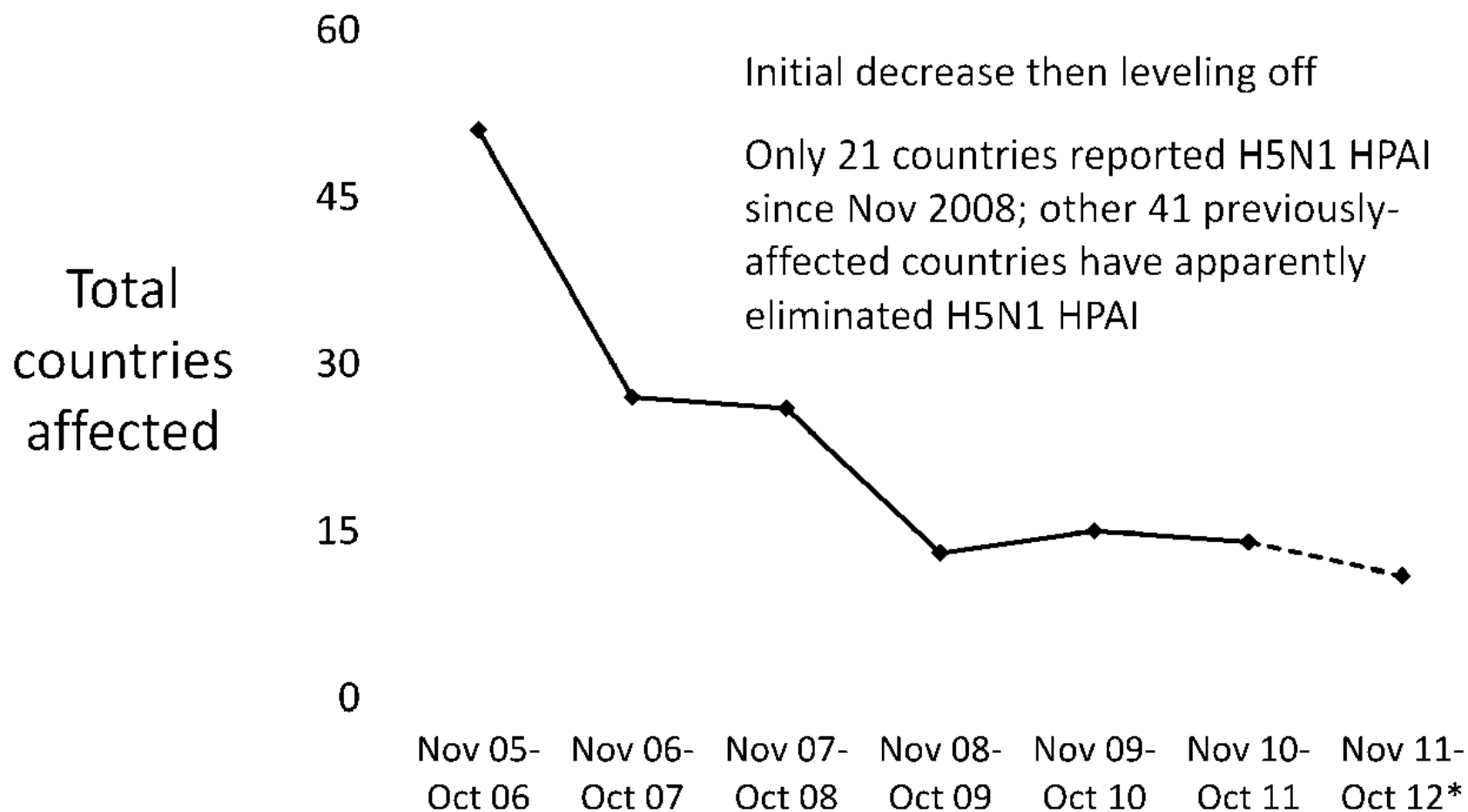
H5N1 HPAI Summary

Andrew Clements, Ph. D.
USAID/Washington

23 April 2012
Ho Chi Minh City, Vietnam

H5N1 HPAI-Affected[^] Countries – Worldwide

1st Interim



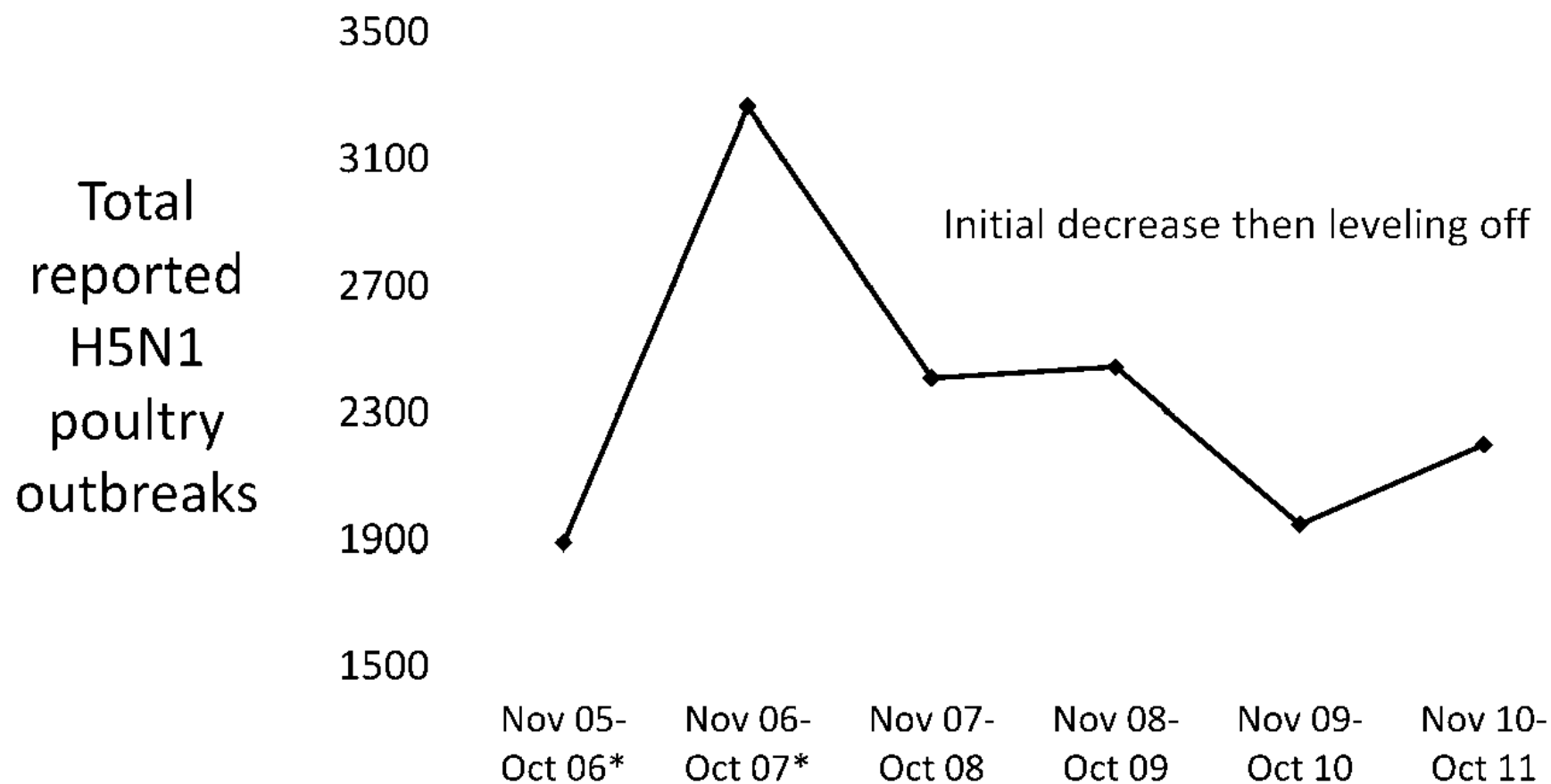
USAID FOIA No. F-00151-16

1680

Sources: FAO, OIE, WHO reports, GenBank; [^] Virus detected at least once in poultry, wild birds, or humans since November 2003.

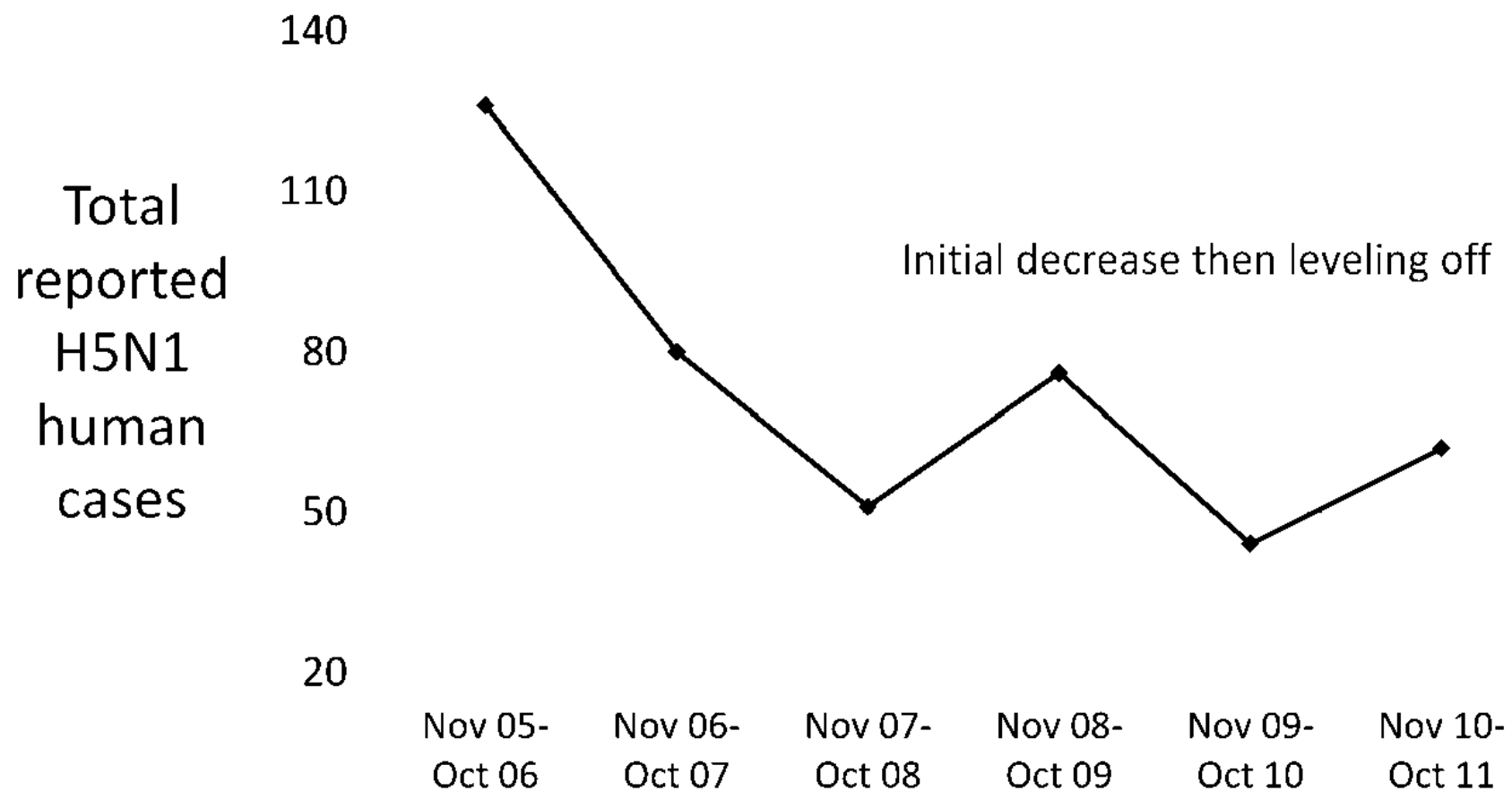
* Only includes Nov 2011-Mar 2012.

Reported H5N1 HPAI Outbreaks in Poultry – All Countries



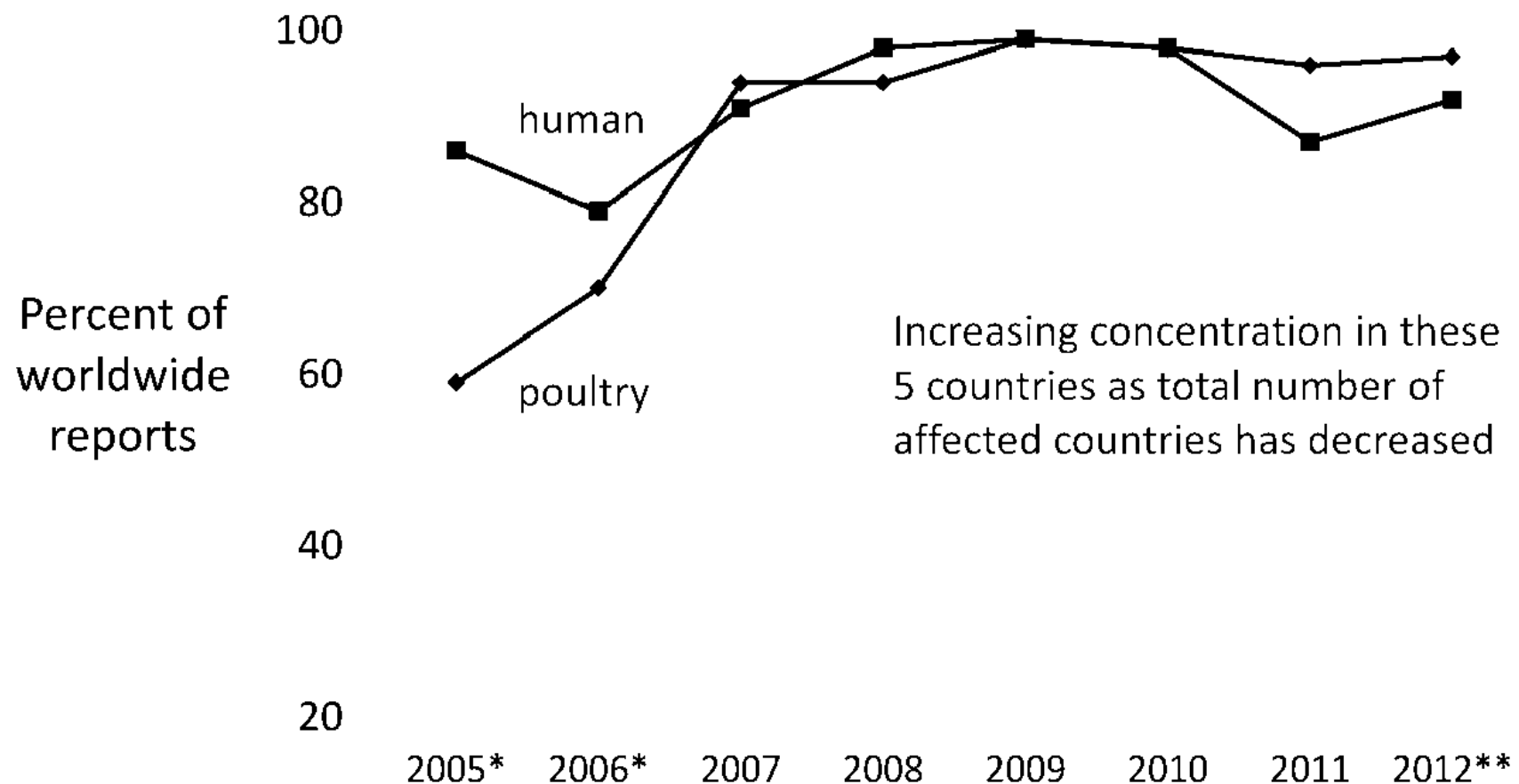
Source: OIE reports and non-OIE reporting (only Egypt and Indonesia). * Surveillance in Indonesia not fully operational

Reported H5N1 HPAI Human Cases – All Countries



Source: WHO reports

Percent of Reported H5N1 HPAI Poultry Outbreaks Worldwide in Bangladesh, China, Egypt, Indonesia, Vietnam



Source: WHO, OIE reports, and non-OIE reporting (Egypt and Indonesia only). * Poultry surveillance in Indonesia not fully operational. ** Jan-Apr 2012 only.

Geographic Concentration of H5N1 HPAI Poultry Outbreaks and Human Cases – Highly-Affected Countries (Nov 2003-Dec 2011)

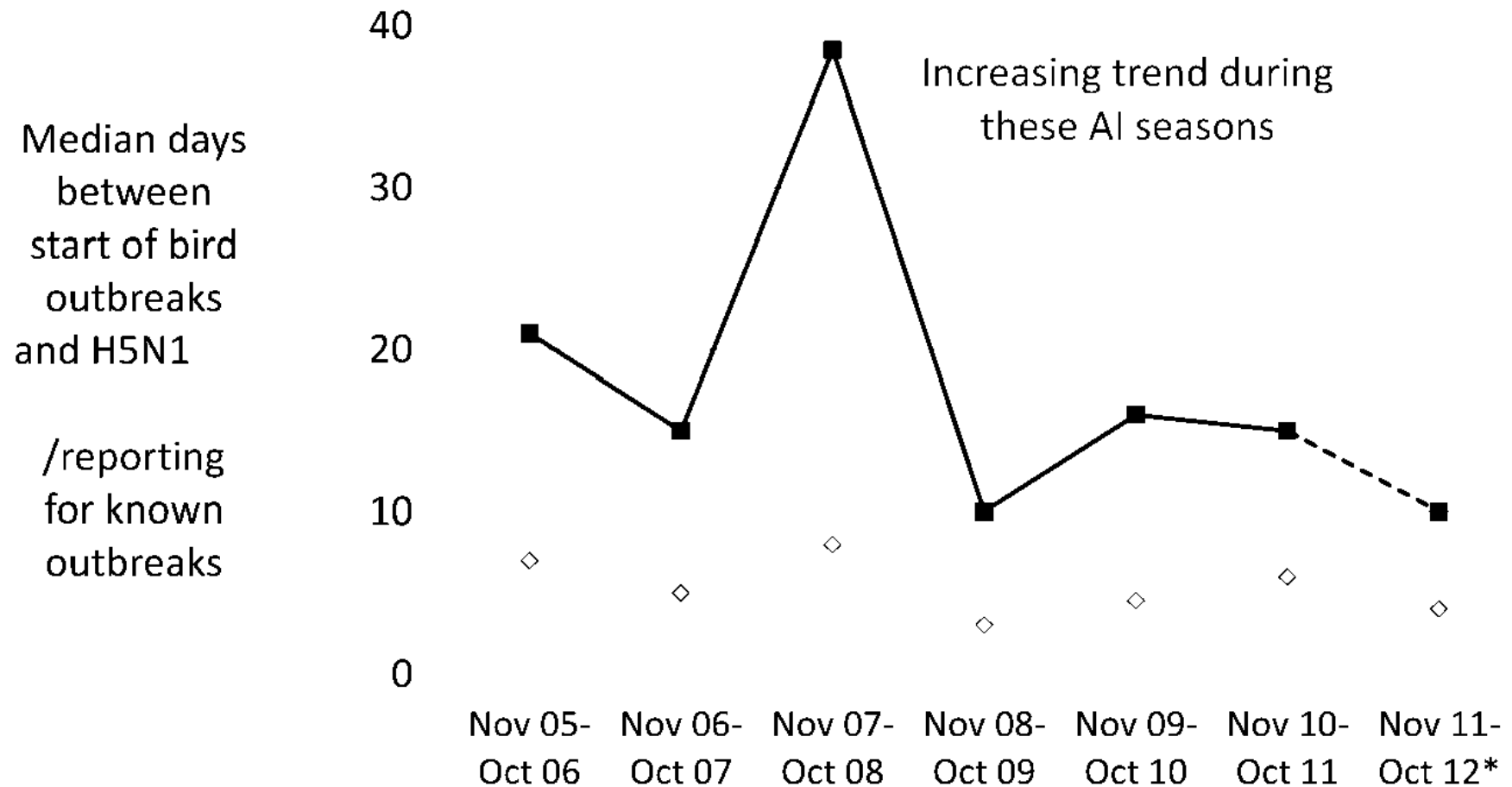


Country	Location	Percent of country's total reported poultry outbreaks	Percent of country's total reported human cases
Bangladesh	5 districts near Dhaka*	35%	100%
China	12 provinces/territories in South/Southeast**	57%	73%
Egypt	8 governorates in Nile Delta***	64%	61%
Indonesia	7 provinces on Java + 1 province on Sumatra ****	80%	73%
Vietnam	11 provinces near Red River + 10 provinces near Mekong River*****	57%	61%

Subsets of these 5 countries account for most of their reported poultry outbreaks and human cases

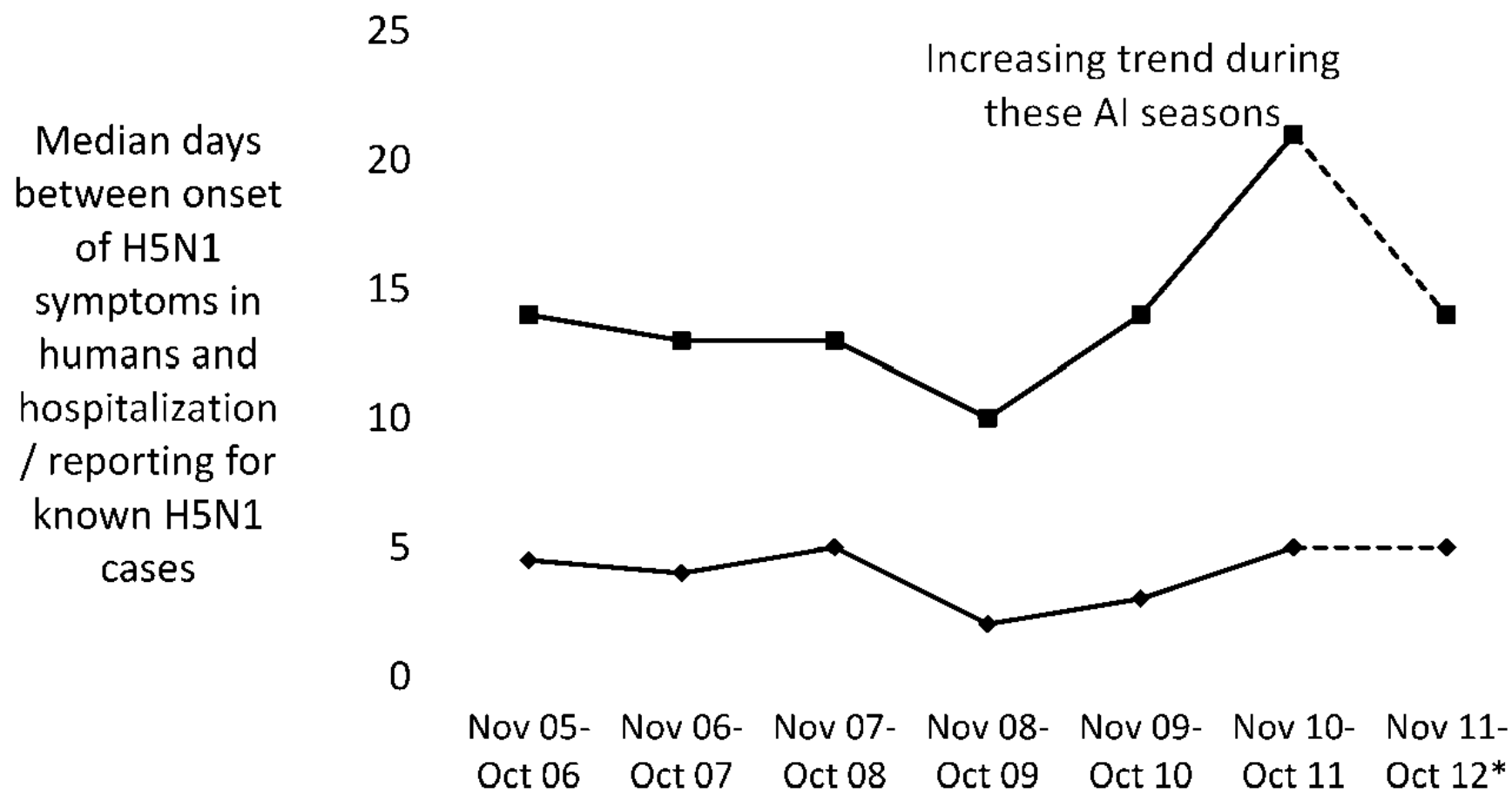
Source: FAO, OIE, WHO reports; includes non-OIE reporting for Egypt and Indonesia. * Dhaka, Gazipur, Manikganj, Narsingdi, Narayanganj; ** Tibet, Sichuan, Yunnan, Guizhou, Guangxi, Hunan, Hubei, Guangdong, Jiangxi, Fujian, Anhui, Hong Kong; *** Buhayrah, Daqahliyah, Dumyat, Gharbiyah, Kafr Ash Shaykh, Minufiyah, Qalyubiyah, Sharqiyah; **** Banten, Jakarta, W. Java, C. Java, Yogyakarta, E. Java, Lampung; ***** Thai Nguyen, Nam Dinh, Quang Ninh, Ninh Binh, Ha Nam, Thai Binh, Hanoi, Phu Tho, Ha Tay, Hai Phong, Thanh Hoa, (Long An, Tieng Giang, Ben Tre, Dong Thap, Tra Vinh, Soc Trang, Hau Giang, Ca Mau, Bac Lieu, Ho Chi Minh City

Detection and Reporting Times for H5N1 HPAI Bird Outbreaks – All Developing Countries



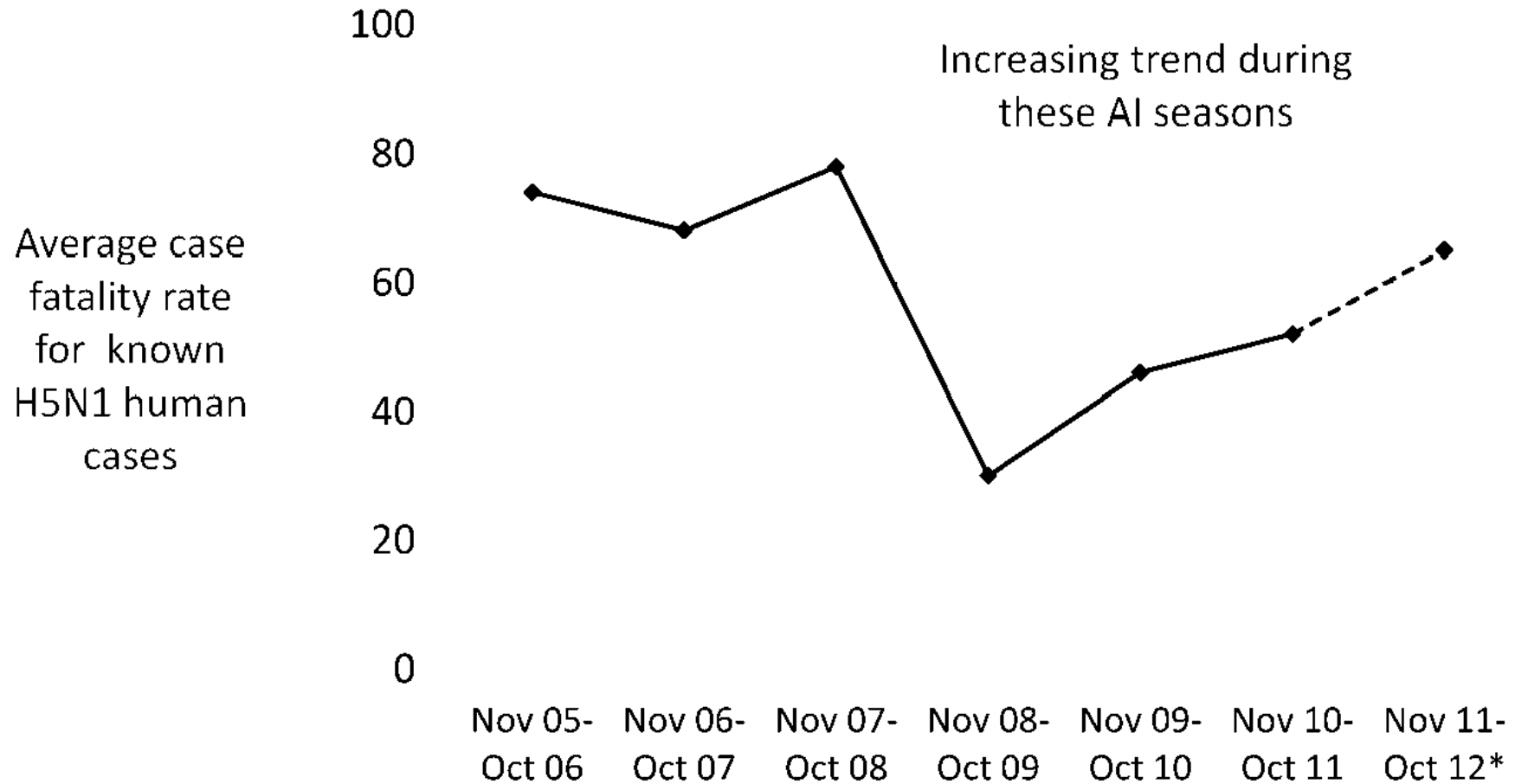
Source: OIE reports (only includes a few outbreaks from Egypt and Indonesia). * Only includes Nov 2011-Apr 2012.

Detection and Reporting Times for H5N1 HPAI Human Cases – All Developing Countries



Source: WHO reports. * Only includes Nov 2011-Apr 2012.

H5N1 HPAI Human Case Fatality Rate – All Developing Countries



Source: WHO reports. * Only includes Nov 2011-Apr 2012.

Since Bali Meeting in March 2010

- No major changes in:
 - number of affected countries
 - number of reported poultry outbreaks
 - number of reported human cases
- Virus continues to mutate and spread, e.g. clade 2.3.2
 - No apparent attenuation of morbidity and mortality in birds or humans
 - Human infections continue to be very rare since virus not well adapted to mammals (yet)
 - Limited surveillance data for other key species (i.e. pigs)
- “AI fatigue” and decreasing donor funding

Challenges for the Future

- Need to make additional gains to reduce H5N1 infections in poultry and humans
 - Identifying and targeting key reservoirs
 - Increasing cross-border coordination and cooperation
 - Sustaining essential surveillance and control elements in the face of decreasing interest and resources
- Need to improve monitoring of H5N1 virus
 - Improve understanding of factors driving viral evolution
 - Improve detection and tracking the spread of new variants
 - Routinely monitor the virus in swine populations



Avian and Pandemic Influenza
Initiative

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Annual Report, Year 3 (October
2011 – September 2012)

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Abt

In association with:

Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross

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Acronyms

Abt	Abt Associates
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015)
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
CBS	Community Based Surveillance
CCHIP	Centre for Community Health and Injury Prevention
CEFACOM	Research Center for Family Health and Community
COP	Chief of Party
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
EPT	Emerging Pandemic Threats
FA	Farmers Association
FAO	Food & Agriculture Organization (of the United Nations)
HPI	Health Policy Initiative
KAP	Knowledge, Attitudes and Practices
LIFSAP	Livestock Competitiveness and Food Safety Project
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MMB	Market Management Board
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning

PSA	Professional Services Agreement
SARI	Severe Acute Respiratory Infection
TOT	Training of Trainers
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VEMEDIM	Veterinary Medicine Import Export Joint-Stock Company
VIPA	Vietnamese Poultry Association
VMSA	Vietnam Medical Services Association
VNA	Vietnam Nursing Association
VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WCS	Wildlife conservation Society
WHO	World Health Organization
WU	Women's Union

Introduction

This report presents the main achievements, challenges and solutions/lessons learned for USAID's Avian and Pandemic Influenza Initiative (APII) during Year 3, October 2011 – September 2012.

Year 3 saw the project reach full level of implementation in all 5-targeted provinces, to include animal health, human health and behavior change and communication. Activities are implemented via subcontracts, as Abt's current license does not accommodate for direct implementation. This carries its own unique challenges as it often is difficult to find subcontractors capable of delivering quality work on time, and strengthening the capacity of subcontractors has therefore become a vital part of APII's work.

The project progressed well in most of the eight main focus areas:

1. Animal Health Worker (AHW) Capacity Building;
2. Agricultural Extension Worker (AEW) Capacity Building;
3. Poultry Supply Chain Strengthening;
4. Community-Based Surveillance (CBS);
5. Infection Control / Case Management (IC/CM);
6. Pandemic Preparedness Planning (PPP);
7. Cross Cutting Issues
8. National Coordination & Policy Dialogue

Year 3 was also the year where the project started orienting itself towards advocating for the wider adoption and sustained implementation of models, beyond the life of the project. Adoption, adaptation, replication and up scaling of APII innovations by public and private partners is considered the real measure of success for the project. This will require a sustained advocacy and promotional effort for which the project has started preparing itself in close consultation with USAID and API partners.

Below follows a description and discussion of the main achievements, challenges of Year 3.

1. Animal Health Worker (AHW) Capacity Building

The goals are to develop an AHW educational program and an AHW networking model that will be adopted by relevant public-private agencies at national and/or local levels, and to develop a standard Terms of Reference for AHWs for adoption by Provincial Peoples Committees (PPCs) and the Ministry of Agriculture and Rural Development (MARD).

1.1 Achievements

The third-year focused on finalization of the AHW training manual including an E-Book, and continued support for wider adoption of AHW

capacity building packages using cost sharing mechanisms. Subcontractors included AFAP, VIPA, and Vietnam Veterinary Association (VVA).

- 1.1.1 *Animal Health Worker Training packages*¹ were developed, tested and published after approved by DAH/MARD. Eighty thousand hardcopies were printed with a letter from DAH Director officially introducing and endorsing the training materials. These books are being distributed to 700 districts veterinary stations throughout Vietnam. The training manual was first introduced during the Dissemination Workshop for AHWs network that was hosted by DAH/VVA/APII on August 30th. This was the first effort to advocate for the educational packages. Leaders of DAH, National Agriculture Extension Center (NAEC) and representatives from 18 provincial sub-departments of animal health (SDAH) from the North attended the workshop. Son La, Vinh Phuc, Quang Ninh and some other provinces shared their plan to strengthen the commune and village network and express their interesting in the Training of Trainers (TOT) diffusion training using the training manual (Son La, Thai Binh), replication of AHW logbook and illustration (Vinh Phuc). APII will continue to look for opportunities to work with these provinces for model replication in Year 4. The first version of an E-book for local trainers with lecture examples, detailed guidance for topic preparation, and more than 400 pictures were completed to facilitate the defusing training and planned to distribute early Year 4.
- 1.1.2 *AHW Terms of Reference (TOR)*: There were two lessons learned from the advocacy workshop on training and TORs for AHWs conducted in November 2011 and August 2012 in Quang Tri and Hanoi respectively. The first workshop included participation of Quang Tri-based AHW agencies, Agricultural Colleges and Vocational Training Centers, SDAHs of Quang Tri's neighboring provinces. Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Thua Thien Hue, Quang Nam provinces participated as well as representatives of DAH and Regional Animal Health Office 3 (RAHO3). The second workshop in Hanoi was hosted by DAH/VVA/APII with participants from 18 provinces in the North. Both workshops focused on sharing provincially developed AHW's TORs, the responsibilities assigned to AHWs and the formalization of AHW training and certification. While most of SDAH participants stressed the need to enhance the AHW network at commune and village level, the following remaining issues were discussed: a lack of government policy to support network development; and address unsustainable funding resources for recruitment and training of AHWs.
- 1.1.3 *AHW Networks*: The Australian Foundation for the Peoples of Asia and the Pacific (AFAP) continue to promote development of provincial strategies to maintain and expand monthly AHW

¹ AHW training package including an AHW training manual, AH log book and veterinary illustration and model of information desk and mailbox for AHW at district veterinary station is aim for increase knowledge and skills of AHW as well as their ability to assess information at grassroots level.

meetings and refresher trainings. Ninety-two training sections have monthly AHW meetings taking place in 19 districts of Quang Tri, Ha Nam, Can Tho and Kien Giang. A total of 1,955 AHWs have attended various district level events, covering nearly 40 topics. Ninety-five percent of these events were facilitated by local trainers between October 2011 and June 2012. New cost sharing mechanisms were tested as part of AHW network improvement plan: AHWs paid for lunch and travel themselves, while SDAH trainers delivered the courses with or without funding support from APII. This phase out process is preparing SDAHs to be ready and familiar with refresher training and monthly meetings with limited or no project funding support. (till June 2012, reduced more than 80% of cost funded to those provinces to < 20%).

- 1.1.4 *AHW Training:* A second 30-day course for new AHWs was successfully tested in Quang Tri with cost-sharing between APII and local authorities. The Quang Tri PPC has allocated 1 billion VND (~USD 50,000) in the provincial budget for 2012 AHW training as a result of APII project collaboration efforts and advocacy. The Excellent Animal Health Worker Competition also took place in May 2012 in Quang Tri. This was initiated by SDAH and was the first event of its type in both the province and the country. The competition sought to increase service quality, enhance recognition and promote the reputation of AHWs within the community. Quang Tri's SDAH, Department of Labor – Invalids and Social Affairs, and Agriculture College worked closely with the AHW network to implement training activities. As a result of this activity SDAH plays the leading role in this improvements, the Agriculture College has been appointed as the resource agency to adopt, adapt and replicate AHW training models with local funds. Those results provide solid evidence of the adaptation and replication by locality within project focus provinces.
- 1.1.5 *Adoption of AHW training package in non-pilot provinces:* Cost shared AHW TOT courses for local trainers were held in May and June respectively in Moc Chau and Ninh Binh. These TOTs, which reached 50 local trainers (20% are female), took place in provinces in collaboration with Moc Chau Dairy Cattle Joint Stock Company and Ninh Binh SDAH. In both cases, APII covered the cost of the training materials and national trainers; other costs were covered by the respective counterparts. Trained trainers implemented a training plan for AHWs in their local area. This successful form of replication will be explored further for Year 4.
- 1.1.6 *Vietnam Veterinary Association Development Strategy:* VVA finalized and disseminated their 2011-2015 Strategy in October 2011 as part of the national network. The strategy highlights a new direction in supporting AHWs from grassroots levels to civil society organizations and provincial networks. The Bac Giang Veterinary and Animal Husbandry Association hosted a replication event with 422 members and more than 100 public and private guests. The event highlighted the success of APII's support to VVA and Mr.

Dang Huu Hung, a representative from Vietnam Union of Science and Technology Association (VUSTA) noted in his speech that *"This is considered as a shining pearl in the development of various associations and it is very practical. Your lessons learned should be documented and shared with other associations to help strengthening our capacity."* The VVA has begun the process of extending the networks into the Mekong region using learning experiences from Quang Tri and Bac Giang through study tours to Quang Tri for representatives from Long An, Quang Binh and Son La. This resulted in establishment of VVA networks in Quang Binh in June and Long An in September. In addition, with support from APII, a new website has been developed and managed by VVA, providing a new channel for information sharing.² VVA also provided support to AHW at the field level by testing and delivering a training courses on *Skills to access internet information and farmer consultancy and service providing* for 90 AHWs in Bac Giang (24th May), Quang Binh (8th June) and Long An (19th June).

1.2 Challenges and Solutions

- 1.2.1 Allocation of local funds for training of AHWs remains an issue. While Quang Tri DARD has allocated provincial funds for AHW training in 2012 and is developing an implementation plan, other provinces have not yet done so. Can Tho, Hung Yen and Ha Nam's SDAHs have expressed commitment to maintaining refresher trainings and monthly meetings, but more funding for AHW training in the 2013 financial plan is needed. A policy from Department of Animal Health (DAH) supported TOT training courses and suggested a long - term strategy to introducing the training package nationally.

2. Agricultural Extension Worker (AEW) Capacity Building

The goal is to develop an AEW bio-security training program for small commercial poultry producers, which will be adopted by the national-provincial extension system, as well as by the private sector.

2.1 Achievements

The first six months of Year 3 focused on package completion and dissemination to introduce the AEW Biossecurity training package as widely as possible. The remainder of the year focused on coordinating with the BCC team, Vietnam Poultry Association (VIPA) and others to roll out the training courses to provinces as well as advocacy and replication the training in new provinces.

² The website address is www.hoithuyvietnam.org.vn.

- 2.1.1 *AEW Biosecurity Training packages* were developed, tested, and published in early 2012. Forty-five high-risk provinces³ received training materials.

- 2.1.2 *TOMT and TOFT training courses:* Following on a training of Master Trainers (TOMT) course conducted in Hanoi in 2010, two more TOMTs were organized in collaboration with the NAEC in Ho Chi Minh City (HCMC) for Mekong region provinces in early October 2011 and Da Nang regional provinces in April 2012.

The HCMC TOMT included 13 Provincial Agricultural and Fishery Extension Center (PAFEC) representatives from the Mekong region and the HCMC NAEC representative office. Immediately following this, APII received official requests for further support and training from PAFECs in Soc Trang, An Giang, Bac Lieu, Vinh Long, and Dong Thap.

The Da Nang TOMT included 29 participants from 13 central provinces, World Vision Da Nang, Quang Tri and Hue, IED/Da Nang and AFAP's Hoa Binh office. The goal of this training was to continue building the training capacity of agriculture extension workers and NGO staff expected to roll out biosecurity training for poultry farmers in their own provinces. Following this training, an advocacy event was held on April 6 for the MARD representatives, provincial leaders and agricultural extension experts from Vietnam's central region as well as representatives of international development partners and other local and international organizations. A joint workshop was hosted by USAID/APII and NAEC. In collaboration with the PAFECs, four Training of Farmer Trainer (TOFTs) on biosecurity for small commercial farmers were organized in the five focus provinces in the first quarter with a total of 100 participants from district and provincial extension centers, preparing the provinces for further roll out/replication.

- 2.1.3 *Replication of TOFTs in non-project focus provinces.* Responding to provincial requests, one TOFT for 25 local farmer trainers in An Giang was held in October 2011, one in Hoa Binh was held in July, and one was held in Son La in August. As a result of the An Giang TOFT, 35 replication biosecurity courses took place in 2011 reaching more than 1,000 small and medium commercial poultry farmers from 11 districts of An Giang and 11 courses for 329 poultry cooperative members. In 2012, An Giang PAFEC planned another 44 biosecurity training courses for 1,320 households under the "Developing biosecurity poultry production in An Giang period 2011-2013." The PAFEC also plans to set up 66 poultry raising cooperative groups by the end of 2012, and has requested additional assistance from USAID/APII, including additional training packages for both trainers and farmers. The 2012 results will be provided at a later date. Data indicates that for poultry farmers trained, there has been a 5-10% decrease in the number of morbid poultry. Similarly,

³ Following Department of Animal Health's List of Provinces for vaccination end of 2010.

poultry production productivity increased by 19% thanks to applying biosecurity measurements⁴

A TOT course was cost shared 20:30:50 between APII, AFAP (separate funding) and the Hoa Binh PAFEC and is serving as a model for possible wider replication. A local NGO called “Trung tam giao duc thuong xuyen Hoa Binh” has contacted APII and consequently implemented two more TOFTs in Hoa Binh and Moc Chau in July and Sep 2012 respectively. These trainings increased the total number of local trained trainers to 306 (96 female and 210 males.)

2.1.4 *Farmer training on biosecurity practices:*

Following the TOFTs, farmers’ small group discussions were conducted to measure knowledge and costs associated with implementation. More than 500 farmers attended 52 courses in the five focus provinces for these first training seminars. Following the discussions, APII encouraged PAFECs to replicate these trainings in other provinces. Through replication trainings between May and September, Can Tho has reached 1,213 farmers through 134 courses conducted completely by trainers trained in APII TOFTs.

APII promoted integrating biosecurity training for farmers into provincial communication plans during Year 3 for in all pilot provinces as a part of the hand over strategy. Biosecurity training packages have been used for small commercial farmer training in Hung Yen, Ha Nam and Quang Tri since late March 2012 with local “in kind” contributions of meeting space and banners. In total, 450 farmers in selected communes in Hung Yen and 600 farmers in selected communes in Ha Nam and 240 farmers in Quang Tri had opportunities to exchange knowledge and learn more about good farming practices in poultry production as well as how to improve their biosecurity measures. The provinces are expected to expand this training to the remaining sector three farmers through their annual training plans.

VIPA entered a new contract with APII for livestock sector workshops and strengthening of the association in order to promote biosecurity practices within their farmer club networks. This resulted in biosecurity trainings for 600 farmers (142 females - 23%) from 20 farmer clubs established by USAID’s AIBCC in Thai Binh province. In July 2012, VIPA strengthened its associations network and helped Thai Binh province develop a model of four-level-networks including farmer clubs at commune levels to district, province and national level poultry associations. At the same time, farmer’s clubs activities have been reviewed and enriched for lessons learned sharing among VIPA’s members as well as introducing into *the new Vietnam Poultry Association Strategy for Development period 2012 – 2020* which was developed taking in to consideration APII findings.

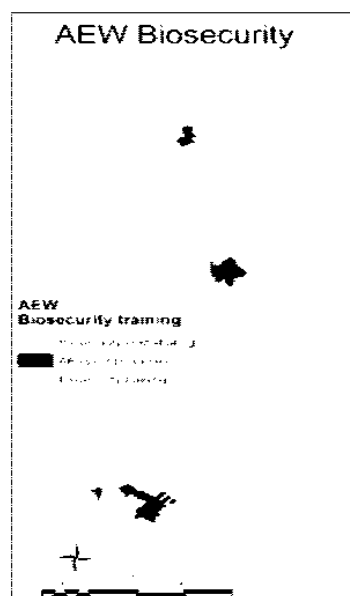
2.2 Challenges and Solutions

⁴ AEW/Biosecurity Cost Study Report

2.2.1 It is important to the sustainability and institutionalization of training/extension packages to work closely with NAEC and the PAFECS. . This is a time-consuming process, which requires diplomacy, patience and perseverance in order to forge and sustain close relationships. Continuing to obtain official approval from government was a suggestion from deputy Director of NAEC and introducing the AEW/ Biosecurity training through NAEC/PAFEC system and national/provincial project remains a good option for replication of this training package widely and efficiently.

2.2.2 VIPA has demonstrated their ability to coordinate with MARD institutions such as DLP, DAH and NAEC. However, the association is still in need of substantial and sustained capacity strengthening. APII will continue to support this process through the next subcontract, if any.

Mapping to describe the replication to new provinces



3. Poultry Supply Chain Strengthening

The goals are to develop biosecurity/biosafety demonstration models in key (high risk) nodes along poultry supply chain, together with related documents (protocols, guidelines, training materials) which are adopted, adapted and replicated by public agencies, private partners and/or other development projects and programs elsewhere.

Achievements

The key activities and achievements of Year 3 supply chain work focused on the following activities and nodes:

- 3.1.1 *Risk reduction models established for slaughterhouse, slaughter points and LBM:* upgrades were made to Dong Ha live bird and poultry meat market in Quang Tri and two home-based slaughter points around the Dong Ha market; Upgrades to Ngoc Xuan centralized poultry slaughterhouse, Can Tho City and Phu Nong in Kien Giang; Upgrades to a district market and small slaughter point in Ha Nam.
- 3.1.2 *Technical Protocols and training documents were developed and shared with local authorities, SDAHs and DAH/RAHOs; Conducted*

a Technical Dissemination workshop for RAHO 3 to share experiences and lesson learned;

- 3.1.3 *Shared lessons learned and experiences for national level proposal and helped draft VIPA Official Letter to Prime Minister, Ministries and Provincial People Committees;*
- 3.1.4 *Assisted in developing legislation and local strategy development: Ha Nam province developed the provincial proposal for slaughter and inspection improvement 2012 – 2020; tested in one district of Duy Tien and has starting to implement it in another district;*
- 3.1.5 *Risk reduction models developed in Dong Ha City, Quang Tri: The local construction company completed upgrades to the poultry sections in Dong Ha Market co-funded by APII, the Market Management Board (MMB) and other vendors in November 2011. The project held a launch event in September 2011 with representatives of Quang Tri province, neighboring provinces, DAH, VIPA, DLP, LIFSAP, FAO, and USAID. A success story was published on USAID's website. Before the re-opening of the market, the project trained vendors and MMB representatives in risk reduction and good practices. Follow-up trainings on biosecurity, biosafety and business development was provided at monthly meetings through June 2012. Continued 'hand-holding' is absolutely necessary (and a positive thing) in order to see sustained behavior changes materialize. A follow up meeting is needed with MMB, Dong Ha Veterinary Station and SDAH to maintain this valid following up in Dong Ha and open the opportunity to certify the Dong Ha slaughter and market products as well as replicate the model in province in coming time.*

Two slaughter points in Dong Ha, both supplying the live bird market, were selected for upgrades and demonstration model development. Technical proposals and stakeholder agreements were prepared. Renovations, which were co-financed by slaughter point owners, started in late May 2012. Owners were responsible for site clearance and auxiliary structure construction costs (including kitchen and toilets), while APII covered the remaining upgrade costs to improve veterinary hygiene conditions and provide essential equipment for good slaughtering. Renovations were completed in July 2012, and a hand over ceremony was organized in August. Lessons learned in both infrastructure and operations improvement while developing these physical models have been shared to promote a new and good home-based slaughtering process for customers in Dong Ha and encourage replication to other slaughter points in Quang Tri province. More than 40 participants from Quang Tri Provincial People's Committee, local authorities and province function agencies including Sub-department of Food Safety and Hygiene and Sub-department of Agricultural, Forestry and Fishery Products Quality participated the event. Restaurants, Hotels, market vendors and slaughter point owners were also invited. Video of the event has been uploaded to websites for your information:

<http://danviet.vn/102302p1c34/chong-dich-cungia-cam-tu-lo-mo.htm>

<http://nhandan.com.vn/cmmlink/nhandandientu/thoisu/doi-song/i-s-ng-tin-chung/l-v-ng-b-ng-song-c-u-long-s-m-1.364876>

- 3.1.6 *Risk reduction models developed in Can Tho City:* After signing the Stakeholders Agreement with the Ngoc Xuan? Can Tho upgrades began in April 2012 as scheduled and were completed in July 2012. Operational testing, reviewing of good practices and technical coaching was conducted between July and August, when the re-opening ceremony was held. In collaboration with the Can Tho SDAH APII organized a number of training courses on risk reduction measures and good slaughtering practices. About one-third of the slaughterers have only completed primary school so their capacity to absorb technical knowledge is limited and will require more follow-up and pictorial illustrations to promote behavior changes.
- 3.1.7 *Risk reduction models developed in Kien Giang City:* The slaughterhouse project in Kien Giang looks less promising, partly due to lack of buy-in and commitment from provincial counterparts, there will not be any more effort to make the renovation for this facility. However, Phu Nong will be the subject for a study tour and training on risk reduction as planned later.
- 3.1.8 *Risk reduction models for district market and small slaughter point in Ha Nam:* A similar approach to that applied at Dong Ha was applied in Ha Nam with plans for upgrading a district market and one home based slaughter point. All technical documents and proposals were completed in July 2012. Renovations and upgraded took place in September. Training for vendors, MMBs and slaughterers, operations testing and technical coaching is planned for October 2012 in Year 4.
- 3.1.9 *Technical Protocols:* APII developed technical protocols related to each risk reduction model, training documents for vendors, slaughterers, inspectors, and pamphlets and posters, etc. and shared them with local authorities, SDAHs and DAH/ RAHOs. APII also actively shared these materials, risk assessment reports, supply chain node prototype designs, small group discussion flipcharts etc. with other international projects including LIFSAP and VAHIP and invited their representatives to relevant events for closer collaboration and experience sharing.
- 3.1.10 *Technical Dissemination Workshop for Region 3:* In collaboration with Quang Tri Provincial Coordination Unit, and RAHO3 and RAHO6 the project organized a technical dissemination workshop in September on HPAI and EID risk reduction at Dong Ha live bird market and slaughter points. About 50 representatives from DAH, DLP, DARD, VAHIP, VIPA and six other neighboring provinces met and shared experiences and discussed risk reduction interventions. Participants also discussed how these interventions could be applied widely with regional approach to disease control and food safety. News on the workshop posted on websites:

<http://www.vietnamplus.vn/Home/Chia-se-kinh-nghiem-giam-lay-nhiem-cum-gia-cam/20129/160850.vnplus;>
<http://www.baoquangtri.vn/default.aspx?TabID=56&modid=377&ItemID=60703>
<http://nhandan.org.vn/cmlink/nhandandientu/thoisu/doi-song/i-s-ng-tin-chung/cac-t-nh-ng-b-ng-song-c-u-long-ch-ng-i-pho-v-i-l-u-ngu-n-1.369485>

- 3.1.11 *Inspector training:* In December 2011, in collaboration with the HCM Veterinary Hygiene Center No. 1, APII implemented a Risk Reduction for HPAI and EID in Slaughterhouse training for Mekong region provincial inspectors. The course covered inspection policies and legislation for animal and human health hazards in slaughtered poultry. Additionally, participants were given an opportunity to visit and conduct observation exercises in a number of slaughterhouses in Tien Giang, Long An and HCM, including USAID's STOP AI model at Go Cong.

This inspector's training was replicated through a request from Ba Ria Vung Tau province, in September, when APII supported a local inspectors training course conducted by SDAH with local trainers and materials. The veterinary inspectors were trained in necessary knowledge and are expected to become 'change agents' who share their knowledge with relevant stakeholders. This training brought the total number of inspectors that have been trained by APII to 117 (19% female).

- 3.1.12 *Other national workshops:* Under the technical and financial support of APII and in collaboration with DLP, VIPA successfully conducted a national workshop on Sustainable Development of Garden Chickens with 57 officials from various national level ministries, provinces, local and international agencies and the private sector (research firms, feed and equipment companies) and media in June. The workshop reviewed successful models, shared experiences in garden chicken production and included a field visit. Participants agreed on a list of proposed options to create an enabling policy environment on safe and sustainable development of garden chicken production. News on this workshop was aired through national television channel VTV2 and Workshop Proceedings were distributed widely through the DLP network.

Additionally, APII supported a National Workshop to review the current situation of poultry slaughter and marketing and to propose solutions to improve veterinary hygiene and food safety hosted by DAH and DLP. There were 80 participants from national and provincial levels of animal health and livestock sectors, international agencies and institutions including research firms and media agencies. During the last quarter of Y-3 FAO was brought up to date on all of these events as well as presenting their results of their LBM surveillance. Eighteen individual reports from management and production sites were presented. Participants also discussed appropriate models, policies and guidelines to be developed and

adapted by local provinces. News on this workshop was aired through national television channel VTV2.

Based on the findings from above two national workshops, VIPA has sent a letter to the Prime Minister, related Ministers, and all Provincial People's Committee Chairpersons with recommendations to improve the poultry slaughtering management and garden chicken development. The letter is bringing to bear attention from high ranking government officers and a response by Government office arrived recently for a further following up cross ministries' meeting in near future.

- 3.1.13 *National Legislation*: Under the VIPA contract, APII supported DAH and their local consultants to develop the 1st draft of *National Proposal on Ensuring Food Safety* in livestock slaughter and transportation. APII will continue to work with FAO and other international projects such as VAHIP and LIFSAP to provide further comments to enrich this version before finalization and submission to MARD for approval:

3.2 Challenges and Solutions

- 3.2.1 At the moment, the central government has requested that provinces develop proposals for livestock slaughter improvement. However, DAH and MARD do not have a national strategy for addressing poultry supply chain risk management. Some of provinces have developed their own 'master plan for slaughter' and some are on the way to implementing in this coming year. The developing National Proposal on Ensuring Food Safety for 2012 – 2020 and Vision 2030 are essential food safety strategic documents that can provide overall direction for the whole the country. The drafts have been developed by local consultants appointed by DAH, thus far. APII will work closely with FAO to provide comments and consolidate the regional disease control strategy initiated by FAO and DAH especially for RAHO 3 and 6 into the National Proposal as feasible.
- 3.2.2 While provincial counterparts clearly are very interested in the demonstration models, many provinces don't have a 'master plan' that demarcates future locations e.g. for centralized poultry slaughterhouses and markets, which makes it difficult for them to commit resources in this area. In addition, the processes for local authorities to approve construction are very complex, involving multiple stakeholders and complex regulatory framework, which are not always well understood by all or straightforward to implement.
- 3.2.3 Profit margins from poultry slaughtering are especially small, and even more so in small scale slaughtering operations. It is understandably hard to persuade the small private entrepreneurs to invest in facility upgrades without some form of 'subsidy' (financial support). Micro-finance options in the commercial financial sector

(banks, MFIs) are rare. Many small entrepreneurs appear to be comfortable where they are without plans to expand. Cost-cutting measures seem a more appealing way forward to improve business and increase profits. This also implies cutting private costs on environmental safeguarding and food safety related measures. Sustained awareness is necessary, combining sticks and carrots for more attention to public goods issues. APII continues to reach out to and invite partners such as LIFSAP and VAHIP. Partners rarely reciprocate however. USAID may need to step in and help promote the dialogue at donor level.

4. Community-based Surveillance (CBS)

The goal is to develop an events-based grassroots surveillance package, including training materials/tools and job descriptions for grassroots ‘collaborators’, which is adopted, adapted and scaled-up in the provincial-regional-national surveillance system with local resources.

The first six months of Year 3 focused on phasing out CBS implementation at the field level, preparing and initiating the CBS evaluation, and advocacy activities through out Vietnam.

4.1 Achievements

- 4.1.1 From October to December 2011, the local sub-contractor Quang Tri Livestock Production and Veterinary Association (QTLVA) continued to monitor, supervise, maintain and support the CBS collaborator networks in Quang Tri. When APII halted financial support in January 2012, animal health collaborators started receiving monthly allowances from the provincial budget, in accordance with Quang Tri PPC’s Decision 25. In Ha Nam, Hung Yen, Can Tho and Kien Giang APII has also ceased providing financial support to CBS networks. The CBS collaborators continue to do surveillance despite a lack of provincial support.
- 4.1.2 In December 2011, QTLVA organized a CBS workshop in Quang Tri to share experiences with non-pilot districts and communes within Quang Tri. Fifty-two participants from communes, districts and provinces exchanged experiences and lessons learned and witnessed the CBS model in action via field visits. The participants discussed plans and feasibility of expanding the model to all communes and districts in Quang Tri with the hopes of local support.
- 4.1.3 In January 2012, an economist from Abt’s Home Office updated the previous costing of the CBS model costing, including a cost-benefit analysis. This study will complement the final evaluation of the CBS model program.
- 4.1.4 A final CBS evaluation was conducted with technical lead by an international consultant and field implementation by a local sub-

contractor (AMDI) in three provinces (Hung Yen, Quang Tri and Can Tho). The evaluation team reviewed epidemiological data, KAP survey on CBS collaborators, and in-depth interviews to AHWs, HHWs at commune, district and provincial levels and also with households having had an outbreak. In July 2012, debrief was held at USAID Vietnam Office, followed by completion of the final report. The evaluation identifies that CBS is effective in enabling early detection and response of HPAI outbreaks in the province where there is a supportive policy environment, a high prevalence of outbreaks, willingness to reveal epidemiological data; furthermore CBS is linked with network development of AHWs at grass root level. This finding has a reference for developing a relevant plan for CBS replication in Year 4.

- 4.1.5 In April, USAID/APII hosted an official workshop to share experiences and lessons learned from Community-Based Surveillance work in Hue, Vietnam. News clips on the CBS workshop from Hue is posted on the website <http://danviet.vn/83138p34c109/du-an-sang-kien-gia-cam-phat-hien-hon-30000-gia-cam-mac-benh.htm>. The video clip on the event aired by VTC16 was available with English subtitles.

- 4.1.6 APII developed two posters on the CBS work and presented at the American Public Health Association (APHA) conference in Washington DC Oct 29 – Nov 2, 2011:

<http://apha.confex.com/apha/139am/webprogram/Paper242716.html>

<http://apha.confex.com/apha/139am/webprogram/Paper242729.html>

- 4.1.7 The CBS model was introduced to visiting undergraduate students from the University of North Carolina at Chapel Hill, USA. The students visited Ha Nam to see the CBS model at work.

4.2 Challenges and Solutions

- 4.2.1 The firm initially identified to implement the subcontract for the CBS evaluation withdrew and another company (AMDI) was identified as a suitable replacement. The change in subcontractor caused a delay in implementation but the evaluation is progressing well. APII staff spent considerable amount of time reviewing the subcontractor's work to insure quality.

5. Infection Control/Case Management (IC/CM)

The goal is to develop an IC training model for implementation of guidance outlined in Circular 18. This is targeted at the grassroots level, meaning at the commune and village level. The IC training model will be scaled up and advocated to the national and provincial levels. This has been approved by MOH for implementation throughout Vietnamese healthcare facilities.

5.1 Achievements

- 5.1.1 APII conducted training visits and technical assistance to Gio Linh district hospital in October 2011 in collaboration with Hue Infection Control Society (ICS) experts. The results of this work are posted on Hue ICS' website: http://www.husic.org.vn/vn_tin-tuc/thoi-su/hoat-dong-ksnk-tai-bv-gio-linh-tinh-quang-tri-91-husic.aspx
- 5.1.2 Can Tho provincial Department of Health (DOH) adapted APII's model to conduct IC assessments for all other hospitals in Can Tho. The results of the assessment will not only help them understand the current challenges of IC practices but also develop individualized action plans for IC improvement.
- 5.1.3 Eight-focus district hospitals were ranked above other similar hospitals in the annual DOH evaluations at the end of 2011.
- 5.1.4 USAID delegation visited Gio Linh district hospital on December 5, 2011. During the visit, the delegation had opportunities to observe IC activities and interact with the hospital board of directors and IC specialists.
- 5.1.5 APII invited WHO and MOH IC experts to Kien Giang province to visit Thot Not district hospital supported under USAID's AI Mekong Initiative and Go Quao district hospital supported by APII. The team also had chance to visit a non-intervention district hospital in Hon Dat district. During the visit, the experts were able to observe and discuss with the hospital board of directors and IC specialist's achievements and lessons learned, success stories from IC interventions supported by APII and to compare intervention with non-intervention hospitals.
- 5.1.6 APII conducted a training needs assessment and situation review for IC situation in the eight focus hospitals. Findings were shared in three regional workshops and contributed to the IC training model developing.
- 5.1.7 A IC program cost-benefit analysis was conducted by an international consultant from Abt Associates, in concert with a Vietnamese consultant. The findings indicate an increase in hand washing quality and frequency in persons attending the three regional workshops. The evaluation was completed in April and its' results contributed to convincing MOH to adopt the APII IC model.
- 5.1.8 Between March and April the Vietnam Ministry of Health, Vietnam Nurses Association, regional Infection Control Societies, leaders from provincial Health Departments and district hospitals in seventeen provinces organized a series of workshops in Hanoi, Hue and Ho Chi Minh City. Participants described the significant infection control challenges that they face: low appreciation among hospital and staff of the importance of IC, shortage of human resources including dedicated IC staff, shortage of suitable equipment and facilities for adequate IC. News on this workshop

was aired on O2TV and uploaded to website of T5G at <http://www.t5g.org.vn/Default.aspx?u=dt&id=3706>.

- 5.1.9 The MOH chaired a meeting to review the IC training materials in April with participants from the Department of Science and Training, the Administration on Medical Service (AMS), VNA and IC experts from the IC Societies. The target of IC training model was expanded and will be applied to the district hospitals but also for all health facilities at grassroots level, including commune health centers and public/private clinics.
- 5.1.10 In May, APII staff attended the Launching Ceremony for Hand Hygiene organized by Ha Noi DOH and chaired by MOH with participants from district and provincial hospitals. In the meeting, MOH emphasized the importance of strengthening IC in hospitals. The MOH National Plan on IC for the period 2012-2015 which was approved by MOH on March 30, 2012 was officially introduced.
- 5.1.11 In June, APII, through a subcontract with VNA, hosted a review meeting chaired by Mr. Muc, the Deputy Director of AMS and Prof. Quy, chairman of HANSIC. This meeting allowed national IC experts to review the IC practical handbook that contains recommendations and guidelines on IC practices for all health workers at grassroots levels (commune and district levels).
- 5.1.12 In June, MOH's Scientific Review Board met and reviewed the IC training materials. As a result the seven board members recognized the training materials as the first official IC training material, noting that it is comprehensive and very useful tool. The approved training material will be applied to all health facilities at grassroots level throughout the country, in order to comply with the "National action plan on IC strengthening in health facilities in the period 2012-2015" and decision number 014/QĐ-BYT, which specifies that by 2015 at least 80% health care workers at health facilities will be trained on IC.
- 5.1.13 In collaboration with VNA, APII hosted three TOT courses on IC in June and July. These courses were based on the final version of IC training materials (as mentioned above). These six-day training courses were for 83 participants from 5 focus provinces as well as an additional seven other provinces. Lessons learned and final comments from these training were incorporated into the final version of the training materials.
- 5.1.14 In August, representatives from USAID and APII staff made a visit to Thot Not district hospital, Can Tho to see IC improvements. With initial support from APII in 2009, the IC situation in hospital has changed significantly including having one full time staff to be in charge of IC, having more basins in exam rooms to promote hand-washing, having more hand soap and IC supplies. Thot Not hospital is good example of sustaining IC changes without project support since 2010.

- 5.1.15 In August, the MOH officially approved the APII supported IC training materials for in-service training courses for all health staff at 645 district hospitals, 10,748 commune health centers and several public/private clinics with the release of official letter No 5771/BYT-K2BT dated August 30, 2012. The Deputy Director of AMS agreed to issue a letter to accompany this training material to send to all 63 provinces. APII will explore opportunities to apply these training materials to other relevant sectors and pre-service training institutions.
- 5.1.16 In September, MOH's Scientific Review Board met and reviewed the IC practical handbook. As a result the seven board members recognized the IC practical handbook as an update and useful material for practice at grassroots levels. The approved material will be applied for all health facilities at grassroots level throughout the country.
- 5.1.17 In September, APII representatives attended MOH's review workshop on the new IC guidelines. Final comments from this workshop will be incorporated into a finalized version.

5.2 Challenges and Solutions

- 5.2.1 All hospitals and DOHs were busy at the end of the year with little time for IC activities. To support the hospitals and DOHs, the APII team undertook field evaluation visits to help integrate IC activities into DOH annual evaluations.
- 5.2.2 Convincing key MOH personnel to participate was very time consuming and required a lot of staff effort (VNA and APII), but the end result justified this strategy, as finally participation by MOH was beneficial in the regional IC workshops.
- 5.2.3 The process of approval by MOH takes a long time with the involvement of some departments and policy makers in MOH. It's out of the control of APII and our subcontract. With the extra effort of APII and VNA, IC training material approved by MOH's Scientific Review Board and we expect the decision from MOH's Science and Training Department in near future.
- 5.2.4 There are still very few qualified trainers available at the provincial level. In the near future we will need to implement more training of master trainers (TOMT) on IC to train grassroots level staff once the MOH approves the IC training materials.

1. Pandemic Preparedness Planning (PPP)

The goal is to develop PPPs policies and programs into the selected pilot province(s) in Year 3 and then introduce the policies and programs into other provinces, and advocate for its wider adoption through out Vietnam.

1.1 Achievements

- 1.1.1 In November 2011, a PPP workshop was held with participants from Kien Giang. Authorities had opportunity to discuss the new concepts of “whole-of-society” approach and develop a multi-sector framework for the design and implementation of their PPP.
- 1.1.2 In January 2012, the framework of Kien Giang PPP was completed with inputs and comments from technical experts, national consultants and API partners.
- 1.1.3 In February and March, VNRC organized two provincial review workshops on PPP for participants from government management offices, provincial Military Agency, provincial Police Department, mass organizations, local staff and experts from national level to review the draft of provincial PPP. The draft had also get more in-depth comments and inputs from national experts and API partners such as FAO, WHO.
- 1.1.4 In April, the revision of training materials for community leaders with WHO inputs was finalized. The training materials focus on three main topics: concepts of influenza and pandemic response; community planning for pandemic preparedness; and business continuity planning and livelihood maintenance plans during the difference phases of a pandemic.
- 1.1.5 Ten PPP training courses with approximately 250 community leaders were organized by VNRC in Ha Nam, Hung Yen, Quang Tri, Kien Giang and Can Tho provinces. The training provided basic knowledge for community leaders on pandemic influenza and community preparedness for pandemics (such as preparedness for health, livelihood, essential services provision, business continuity planning, etc.).
- 1.1.6 In March and April, three preparation meetings were held in Kien Giang province. The VNRC and provincial counterparts met and provided more in-depth comments, getting inputs from participants to the draft a “table top exercise” plan. Participants from different agencies also discussed the roles and responsibilities within and between sectors involved. The “table top exercise” plan will be approved by Kien Giang People Committee for execution on a wider basis in early May.
- 1.1.7 In May the Kien Giang PPC chaired a tabletop exercise with participation of more than 60 representatives from MOH, VNRC, USAID, other provinces and agencies including provincial departments, military agencies, police, media agencies and mass organizations from Kien Giang. Comments from table exercise will be incorporated into the PPP before submitting for Provincial People’s Committee’s approval. News of this event was aired by Kien Giang TV channel on May 17 and on VTC16 in May 18, and uploaded onto YouTube, <http://youtu.be/vYQkDkMrWMA>.

- 1.1.8 VNRC organized a review meeting in Hanoi to finalize PPP training materials based on comments gathered from the training course for community leaders, with participants from GDPM (MOH), National Center for Health Communication and Education (TSG), APII experts, and local master trainers of VNRC on PPP.
- 1.1.9 A PPP dissemination workshop was organized by People's Committee in Kien Giang province for 35 staff members from provincial agencies, mass organizations and local authorities. The participants learned about the pandemic preparedness programs and practiced making a mock plan for their organization. They also discussed on multi-sector cooperation and shared their experiences dealing with outbreaks.
- 1.1.10 Kien Giang PPC approved the PPP in late June. This PPP compiles the lessons learned from previous PPPs, inputs and comments from almost government sectors, mass organizations in Kien Giang, MOH, FAO, WHO and follows a One Health and "whole society" approach. It is the first time that a Business Continuity Plan has been included. This PPP is also in line with the Vietnam Integrated National Operational Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases 2011-2015 (AIPED).
- 1.1.11 In September, APII representatives attended a training workshop conducted by MOH on Business Continuity Plan (BCP) in Ha Noi. The workshop concluded that knowledge and skill on BCP should be applied to the pandemic preparedness plans of ministries, branches, and provinces.

1.2 Challenges and Solutions

- 1.2.1 It took a time to obtain feedback and comments on the PPP outline from API partners and local experts. This, and other delays (including flooding in Kien Giang), led to the late of submission of VNRC deliverables and were followed by a subcontract modification (time-wise extension).
- 1.2.2 The "whole-of-society" approach and the business continuity planning concepts adopted in Kien Giang's PPP are new to the province and to VNRC. APII technical staff, with inputs from WHO, worked very closely with VNRC and provincial counterparts to provide technical support in the development of the PPP
- 1.2.3 Final approval was delayed because Mr. Huan – the Vice Chairman of Kien Giang PPC assigned to sign PPP, was away on business until the end of June. This in turn required a modification to our PSA with VNRC. It caused the late of deliverable submissions, especially for last deliverable so the PSA have modified the timeline with the approval from USAID.

6. Cross-Cutting Issues

6.1 Behavior Change Communication (BCC)

The BCC program identifies appropriate behaviors changing messages, integrates these into the work of the animal and human health programs,

strengthening the BCC capacity of national and provincial stakeholders, enabling them to carry on BCC activities beyond the life-time of the project.

6.2 Achievements

- 6.2.1 Continue subcontracts with Women's Union of Ha Nam, Kien Giang, Quang Tri, Hung Yen Provincial Humanity Center under Provincial Red Cross and CEFACOM (Research Center for Family Health and Community Development) to implement Y3 BCC activities in five provinces. These subcontractors closely collaborated with their related PCU and BCC trainer teams in dealing with administrative and technical tasks respectively while conducting BCC activities.
- 6.2.2 Completed BCC campaigns in five provinces. Based on experiences, knowledge and skills gained, provinces like Quang Tri designed innovative activities such as Excellent Farmers Competition based on experiences of successful conducting Community Events. Three Clean Movement Launching Ceremonies, a part of a National Program on Building New Rural Areas, which utilized BCC trainer team's efforts, applied BC interactive approaches and integrated desired behaviors for AI/EIDs prevention in the WU network. These successful and innovative campaigns were conducted thanks to prior preparative works such as:
 - Organized a Consultation Workshop on the Year 3 BCC Strategy in Da Nang with participation of key leaders and officers from Ha Nam, Kien Giang and Quang Tri. The outcomes of workshop helped call for new and innovative BCC activities (e.g. excellent poultry farmer competitions) and local contributions. This workshop was a first step in the BCC transition strategy to position provincial partners to carry out their own BCC work post-APII.
 - Conducted Year 3 implementation planning workshops in December in the five focus provinces. The workshops helped provinces to think through the Year 3 transition strategy and prepare their BCC plans including campaigns, follow-up at farm level on biosecurity practices in poultry production, new activities such as farmer competition, and to identify provincial funding contribution in implementing Year 3 BCC activities.
 - Provided technical guidance and support on provincial proposals for Year 3 BCC activities in all five-focus provinces. These proposals served as the basis for developing Year 3 BCC SOWs for each province that subsequently were turned into subcontracts for local BCC subcontractors of Ha Nam, Hung Yen, Kien Giang and Quang Tri.
- 6.2.3 Conducted Year 3 BCC Review Workshops in all five provinces. These workshops were to review activities implemented, lessons learned withdrawn and what to report to the PPC to receive further provincial support. Below are key BCC achievements which were recognized by local authorities during these workshops:

- Developed five sets of BCC materials including discussion guides with small and medium poultry producers, community event drama scripts on three selected behaviors defined by provincial BCC trainer teams. These materials have been documented and will be disseminated in the final BCC Transition Strategy Review Workshop in Q1 Year 4. This is the result of the multi sector BCC trainer teams, which showed our effort on provincial BCC trainers' improved capacity.
- Established, trained and built capacity for a team of about 25 strong BCC trainers in all five provinces. Provinces of Can Tho, Ha Nam, Kien Giang and Quang Tri highly appreciated this capacity building effort. In particular, Ha Nam PPC, Can Tho, Kien Giang, and Quang Tri's DARD gave official appreciation/compliment to their BCC trainers' team for their contribution to design and implement provincial BCC campaigns. These provincial BCC trainers also trained and mentored 110 facilitators and organizers of Community Events, 115 communicators of small group discussion from commune Animal Health, Health, Women's Union and Culture Sectors to lead 32 community events and more than 200 small group discussions which reach about 8,000 and 2,500 poultry producers respectively in this Year 3.
- Unlike other years, in this Year 3, before participating in small group discussion, around 1,800 poultry producers (except those in Kien Giang) benefited from two-day training courses led and organized by provincial and district trained agriculture extension trainers in collaboration between Provincial Agricultural Extension Center and Women Union to improve their knowledge on risk reduction and biosecurity measures in poultry production.
- Eighty (80) people from four provinces of Can Tho, Ha Nam, Hung Yen and Kien Giang including village head, the head of commune Women Union Association, a leader of commune people's committee were trained on general monitoring, how and what to do in a household visit: communication skills, steps of household visit and how to use the observational checklists.
- Local partners conducted household visits to about 10% of poultry producers who participated in small group discussions to observe/discuss motivators and barriers for change of these audiences. More detailed results can be shared in a separate report, upon request.
- Seven USAID's APII TV spots on hand-washing and proper cleaning and hygiene practices at market, slaughterhouse and at home when contacting with poultry, were aired on all five provincial television channels. These spots were also used in other events such as trainings courses, small group discussions, community events.

6.2.4 Finalized and produced the seven-step discussion guides for live bird and plucked poultry vendors in Dong Ha market and for collectors

and slaughterers with technical inputs from MOH, MARD, WHO and FAO. These guides are being used by provincial BCC trainer teams in Quang Tri, Ha Nam in-group discussions to promote desired behaviors among poultry vendors and slaughterers. The guide also serve as reference for all focus provinces to develop their own discussion guides on new bio-security behaviors and will be used by trained communicators to facilitate small group discussions with farmers in this Year 3.

- 6.2.5 Continued to build capacity for provinces through training courses on proposal development and writing skills for 20 key staff and BCC trainers from Animal, Human Health Sectors, Health Communication, Education, Agriculture Extension and Women Union from five focus provinces. Up to now, two provinces of Ha Nam and Quang Tri submitted their proposals for their future BCC activities. More technical assistance will be provided to provinces upon request in Year 4.
- 6.2.6 A qualitative Knowledge, Attitudes and Practice (KAP) study of poultry customers in 4 provinces of Can Tho, Ha Nam, Kien Giang and Quang Tri was completed. USAID/APII extracted results from this qualitative study to design Y3 activities targeting consumers. Three forums conducted in Quang Tri and Can Tho educated consumers on how to select safer food products, especially poultry products and to inform other stakeholders of poultry supply chain on consumer's expectations. The Can Tho forum was filmed and will be broadcasted through Can Tho's television to reach a wider number of the local population.
- 6.2.7 Small group discussions (SGD) were conducted with all poultry vendors and slaughterers of Dong Ha and Hoa Mac markets. These discussions were facilitated by their own BCC trainer teams, promoting good hygiene practices in these targeted audiences. In collaboration with Animal Health team, we conducted monthly meetings with poultry vendors and slaughterers to provide technical update and review their practices and behaviors changed compared with what was discussed during small group discussions, what were difficulties faced and what were solutions to fix these difficulties/problems.
- 6.2.8 Designed and produced BCC promotional materials for stakeholders of poultry supply chain including plastic aprons for slaughterers, hair bandeau, and aprons for vendors and posters of all these audiences. BCC messages, logo and slogan on "*Food safety, we all care*" was used on these materials as well as used for different events of poultry supply chain stakeholders to promote the application of good selling, slaughtering and consumption practices.
- 6.2.9 Different than two previous years, 4 provinces having local subcontractors (Women's Union for Ha Nam, Kien Giang and Quang Tri, Humanity Center for Hung Yen) contributed from 10-15% mainly in kind (locations, prizes for events) to BCC activities implemented in their provinces.

- 6.2.10 Published and/or broadcasted information on all key events conducted in provinces like trainings, workshops, small group discussions, and community events, farmers' competitions...through local newspapers or provincial TV by their journalists. Increasing media dissemination of information/ messages on our project to reach a larger number of audiences than the number of direct participants in the event.
- 6.2.11 KAP quantitative and qualitative reports -- More work has been done with support from Abt home office into data analysis. Final report will be submitted to USAID in the next quarter.
- 6.2.12 Shared APII's BCC approach and its materials with MOH/VAHIP project for reference and replication. APII's materials, tools kits, briefs will be shared and disseminate widely through other channel including the One Health Communications Network.
- 6.2.13 Ongoing development of Communication Strategy Development Guide and Training Manual for BCC trainers. Outlines in English will be shared with API partners before the full document are written in Vietnamese
- 6.2.14 Supported Center Committee for Popularization and Education (CCPE) to provide training on AI and EIDs prevention for more than 500 participants from 63 provinces. The diffusion training courses in CCPE network in 63 provinces/cities were included in provincial monthly plans submitted to CCPE. The monitoring visits made by CCPE to 13 provinces found that nearly 100 articles and 60,300 internal news on AI/EIDs prevention were disseminated and 59 times aired on provincial TVs and 48 times broadcasted through local radio systems.
- 6.2.15 With Ha Nam people's Committee organized a dissemination workshop disseminate their provincial Integrated Communication Plan. The plan was approved with a decision from the vice chairman of PPC that request related agencies to development their communication plan under the leadership of the Provincial Steering Committee for Disease Prevention
- 6.2.16 Attended and had a booth exhibition highlighting Food safety and HIV prevention at the US Embassy to feature information about the two projects' interventions as well as interactive quizzes about hand hygiene and HIV and materials promoting APII's food safety/ avian influenza risk reduction which were all very popular. The quizzes, while entertaining, served as a great opportunity to remind visitors about the importance of hand washing, and to provide education on some general misconceptions about HIV infection.

6.3 Challenges and Solutions

- 6.3.1 Officially certify and utilize BCC trainer teams by related provinces are really an issue as they are from different agencies. There is no clear responsibility for any provincial agency/organization member

of PCU to recognize/ provide a certificate to a BCC trainer. Thus, provincial authorities can just recognize their great contributions to design BCC activities, materials, and implement and monitor BCC activities in their provinces.

- 6.3.2 Knowledge and skills of BCC trainers cannot be gradually improved without opportunities for practicing their job as a BCC trainer. USAID/ APII is trying to connect these BCC trainers to events they can value their BCC knowledge and skill.
- 6.3.3 Local contributions to implement Year 3 BCC activities represented about 10-15% of the total budget. The required discussions and negotiations delayed provincial implementation of activities. Intensive technical assistance from APII staff and strict schedule management helped manage the delays.
- 6.3.4 The development of Strategy Communication Guide and Trainers' Training Manual could not finish at the end of Year 3 the approval process of consultant took more time than planned. It takes more time to review and comments when these were moved to the second half of the year when people are busy with other things.
- 6.3.5 CEFACOM was nominated again by Can Tho PCU as the quality of their previous work is appreciated. The disadvantage is that CEFACOM was not a local subcontractor who is likely to take the ownership and leadership for subsequent communication program on BCC works in Can Tho and they may not have strong connections with other agencies in the province than a local subcontractor. This shortfall did not facilitate several works such as getting the Provincial Integrated Communication Guide developed by Can Tho's BCC trainers to be approved by People's Committee. However, for BCC campaigns, CEFACOM successfully completed their activities and completed them on time even Year 3 BCC campaign in Can Tho started later than in others provinces.
- 6.3.6 Limitations in writing skills and analytical thinking among provincial subcontractors were reconfirmed through their participation as members of the writing team developing Can Tho's Multi-sector Communications Guide and also through their progress reports and activity proposals. This partly explains the delay in some activities.
- 6.3.7 In this Year 3, it was the first time for all provincial BCC trainers developed behavior change materials based on what they had been taught. This includes identifying determinants for changes. They really had opportunities to learn through doing and develop a mutual understanding from their multi-sectoral teams. Their team working manner also requires a lot of coordination that relied on the project's former PC/ PCUs Technical assistance from USAID's APII and their ownership of having their own BCC materials are key motivators for these local BCC trainers to overcome these obstacles.
- 6.3.8 The process of supporting provinces to maintain and sustain their communication activities to prevent AI and EIDs, more technical

support and partial financial one (including other financial mechanism) should be considered. In provinces where they develop their own communication proposals/plans they are seeking local resources.

- 6.3.9 Planned small group discussion and monthly meetings with poultry vendors and slaughterers of Hoa Mac market, Ha Nam province were delayed because of delay in infrastructure and special characteristics of target audience – vendors and slaughterers. Working with the poultry audiences is harder, say compared to farmers, as they always work during the day. Their concerns are driven by cost benefit and daily income compared. This requires a variety of approaches to encourage them to begin making changes for risk reduction and biosecurity. Lessons learned from implementing BCC activities in Dong Ha market, Quang Tri province would also be taken into account when designing the BCC activities with stakeholders of Hoa Mac market, in Ha Nam.
- 6.3.10 With the delay of approval for the consultant to work on the Development of Communication Strategy Development Guide and Training Manual for BCC trainers, there will a delay in the final training workshop for provinces on these materials and the final BCC transitional strategy review workshop.

6.4 Provincial Coordination and Implementation

APII's provincial implementation (PI) team works closely with the animal health, human health and BCC technical teams to coordinate field activities implemented by subcontractors, develop/test successful models at provincial and grassroots level, and advocate for their wider adoption with local public and private partners. The PI team operates out of the main office in Hanoi covering activities in northern Vietnam and through two satellite offices, one in Quang Tri for activities in central Vietnam and one in Can Tho for activities in southern Vietnam.

Provincial Coordination Units (PCUs), representing the body of key provincial counterparts and civil society, were established in Year 1 in the five focus provinces. Each province has a Provincial Coordinator (PC) appointed jointly with FAO and funded by APII. The PCs are typically seconded from a provincial agricultural/livestock agency. The PCs work closely with the PI team, coordinate their efforts with FAO's focal points, and report to the PCUs.

As scheduled in Y3 work plan, the implementation of API models should complete by June 2012 in the focus provinces, so from April 2012 PI team worked closely with PCU and PC to help site down and complete the implementation of models.

6.4.1 Achievements

- 6.4.1.1 Signed MOU addendums for the implementation of Y3 plan with all five-focus provinces.
- 6.4.1.2 In closed cooperation with provincial subcontractors, have prepared work plans in 5 focus provinces with emphasis on dissemination and advocacy activities.
- 6.4.1.3 Cooperated with FAO and provinces to conduct provincial planning workshops in five focus provinces in December, January and February.
- 6.4.1.4 Worked with PCUs to enhance their commitment to strategy of Y3 that shift focus from implementation to advocacy and replication with local resources and get provincial buy-in.
- 6.4.1.5 Organized stakeholder consultation workshops in five provinces to get inputs from provincial stakeholders to CBS review workshop in Hue in April and involved participation from other provinces in regions that to leverage the impact of the workshop.
- 6.4.1.6 Work closely with provincial partners in five focus provinces to organize review meeting /workshops to highlight the success and lessons learned from the models implemented. Beside reviewing the accomplishments, highlighted successes and lessons learned from three years of APII implementation in the province, participants also discussed and recommended suggestions to maintain and replicate the successful models within their province for the time to come.

- 6.4.1.7 The Provincial Implementation Team meets in Hanoi every quarter to review progress on the implementation in five provinces. The meeting went through three main themes with all APII teams: (1) Feedback from five provinces and outline for provincial implementation in the next quarter; (2) Programmatic update and directions/changes for Year 3 and for every period; and (3) cross-sector discussion between PI/BCC/AH/HH staff to define plans and multi-sector cooperation in target provinces.
- 6.4.1.8 In early May the PI Team met in Hanoi to prepare plan for provincial implementation slowdown and complete by the end of June 2012. Meantime, PI staff work proactively with PCU and provincial partners to get they agreed to close contracts with PCs in 5 focuses provinces by the end of June.
- 6.4.1.9 Worked closely with PCU and PC in each focus province to Identify transition moves to maintain provincial coordination for the phasing out period from July to September 2012.
- 6.4.1.10 Worked closely with PCU and provincial partners to organize “Year 3 final review workshops” in five focus provinces by the end of the project (September 2012). The workshops reviewed accomplishment and highlighted success and lessons learned from three years implementation of APII in the provinces, participants also discussed and recommended to maintain and replicate the successful models within their province for the time to come, also to inform policy makers at national level.
- 6.4.1.11 Gathered inputs from PCUs in five focus provinces for draft agenda of a “provincial coordination – lessons learned workshop” that will be organized by the project in October 2012 aiming to share experience from PCU and recommendation for effective coordination at province to ensure participation and uptake with local resources.

6.4.2 Challenges and Solutions

- 6.4.2.1 Shift from implementation to advocacy led to significant reduced implementation/investment to province and might reduce support and commitment from provinces. To prevent this potential thread, the PI staff worked closely with PCUs to explain on strategic changes and maintain provincial interest and constructive.
- 6.4.2.2 Maintaining provincial interest and commitment when APII has no more implementation and support to province activities.
- 6.4.2.3 Keep provincial coordination in the last three months from July to September 2012 when APII stopped payment for PC but there are huge need to review three years’ cumulated results and lessons learned, advocacy for adoption and uptake by local partners.

7. National Coordination & Policy Dialogue

The goal in Year 3 is to increase the focus on ways and mechanisms to transfer packages/models/approaches to public and private partners for adoption, adaptation, and replication and up scaling. The project consults and coordinates closely with API partners in this effort.

7.1 Achievements

- 7.1.1 With PAHI supported NAEC to chair series of quarterly meetings of the form BCC Working Group, current One Health Communication Network. A draft Plan of Action to revitalize the network was developed to maintain the routine meeting and to identify common interests in AI and EIDs prevention. More support will be provided to NAEC so that they can take the full leadership of this network by the end of 2012.
- 7.1.2 Communicated about project's results more to the wider audience through media advisories and press releases. Tracked aired clips and news and shared with partners and USAID.
- 7.1.3 Developed APII living advocacy matrix and communication strategy for Year 3 and will be updated with Year 4 to share with USAID.
- 7.1.4 Engaged an international expert as Advocacy/Policy Dialogue Advisor. This input is already bearing fruits and boosting APII's communications work

7.2 Challenges and Solutions

- 7.2.1 Compared to other priorities, local resources allocated for prevention work is always limited including for BCC to prevent AI and EIDs. In order to get more budgets from local government, good work should be turned in good proposals. More advocacy opportunities should be fleshed out to advocate replication of established models supported by the USAID's APII. Provinces should need to know how to advocate for themselves.

8. Monitoring & Evaluation

APII's M&E work aims to strengthen existing systems in the provinces, and help close existing gaps between grassroots level M&E and provincial-national levels M&E and reporting. In addition, APII acts as the repository for PMP indicators collected under USAID's API initiatives, providing analysis and reporting on this data.

8.1 Achievements

- 8.1.1 Collected PMP data of Year 2 and first six months Year 3 from API partners. Contributed to revising indicators and reporting template with MEASURE's lead. Collaborated continuously with API partners to review and supplement PMP data to prepare for future

data analysis. Compiled USAID PMP data in Year 1 and 2 and presented it at the API Partners' Meeting as an input for Year 4 planning process; Together with M&E specialists from MEASURE and FAO, reviewed the proposed activities in Year 4 of all partners and suggested necessary revisions of the USAID VN API's result framework and PMP.

- 8.1.2 Continued to update and fine-tune the project Log-frame. Revised Log-frame to fit with Year 4 work-plan.
- 8.1.3 Continued to provide oversight of ongoing monitoring, evaluation and quality assurance of activities on the APII project. Monitoring checklists were analyzed in Excel for a systematic review of quality of activities. Immediate sharing and feedbacks on activity monitoring results have become a regular practice. M&E Manager routinely review and provide feedbacks on deliverables, particularly when issues are detected.
- 8.1.4 Worked closely with AMDI (subcontractor) conducting the post-training assessment in November 2011. The assessment applied self-administered questionnaires on knowledge, attitudes and practices combined with focus group discussions and in-depth interviews to 1316 trainees, 220 trainers, and 59 local animal and human health officers. Overall, it identified a high level of knowledge, positive attitudes in all groups eight months to a year after the training courses. Higher percentages of trainees self-reported applying almost all gained skills with a high level of confidence. The assessment also acknowledged the working mechanism for AI prevention through hand-in-hand cooperation between AH, HH and communication sectors as a promising way to create long-term impact in HPAI and EIDs prevention and control.
- 8.1.5 Obtained acceptance from American Public Health Association (APHA) for an abstract on post-training assessment for 140th Annual APHA Meeting to be held in October 27-31, 2012 in San Francisco, USA.

The abstract can be found at here:
<https://apha.confex.com/apha/140am/webprogram/Paper264584.html>
- 8.1.6 Provided inputs to SOW and deliverables on the KAP survey and other assessments in order to help ensure technical soundness in APII's work.
- 8.1.7 Met with local partners in Ha Nam, Quang Tri and Can Tho to explore local plans for inspection of slaughter house/points and live bird market; then to identify possibility for involvement of local partners in the project's monitoring activities to the demonstration sites in these provinces. In September 2012, the project team worked with BCC trainers, AH officers and inspectors of Sub-DAH, and the owner of Ngoc Xuan slaughter-house in Can Tho to update monitoring checklist and develop a work-plan for multi-sector supportive monitoring activities for behavior change at this

Slaughterhouse in Year 4. The plan synergizes efforts and resources from both project and Can Tho Sub-DAH as it includes continuous monitoring and inspection activities and an official assessment in November 2012 to grade the SH by Can Tho Sub-DAH. A similar plan was developed for demonstration sites in Quang Tri and Ha Nam provinces.

- 8.1.8 Conducted a final CBS evaluation with technical lead by an international consultant and field implementation by a local sub-contractor (AMDI) in three provinces (Hung Yen, Quang Tri and Can Tho). The evaluation team carried out epidemiological data review, KAP survey on CBS collaborators, and in-depth interviews to AHWs, HHWs at commune, district and provincial levels and households having outbreaks. In July 2012, a debrief meeting was held at USAID Vietnam Office, followed by finalization of the final report. The evaluation identifies that CBS is effective in enabling early detection and response of HPAI outbreaks in the province where there is a supportive policy environment, a high prevalence of outbreaks, willingness to reveal epidemiological data; plus CBS is linked with network development of AHWs at grass root level. This finding has oriented for developing a relevant plan for CBS replication in Year 4.
- 8.1.9 In March 2012, the M&E Manager attended a training course on participatory planning and M&E and Management for Impact (PPME and M4I) in Netherlands.

8.2 Challenges and Solutions

- 8.2.1 We work in the context of “One PMP indicator set fits all” while interventions by each API partner are diversified and coordination mechanisms among partners are not always clear. It is a complicated process to harmonize/standardize indicator definitions and reporting requirements. To improve the situation, it is necessary to develop a clear timeline and define clear roles of each partner. To speed up the process, APII took initiative to meet with FAO and WHO to review the past data and identify the needs in supplementing “missed to report” data in Year 1 and Year 2 and updating reporting templates.
- 8.2.2 To manage and ensure quality of deliverables from subcontractors is often a ‘painstaking’ process with much time and effort spent by APII staff from the beginning to the end and final deliverables. It requires frequent communication, close monitoring, careful checking, guidance and mentoring to help ensure that we receive products of acceptable quality throughout. Very often we end up spending far more time than expected on assuring quality of work by subcontractors. An important lesson learned is the need to have clear elaborated deliverables from the outset. APII needs to document this effort and highlight any related ‘capacity building success stories’.
- 8.2.3 Challenges are faced for both of measuring and sustaining changes in trainees’ competencies and performance as identified through the

post-training assessment. The challenges for measurement include lack of baseline/need assessment at the beginning of training programs; unavailability of lifetime records of every trainee for tracking changes and requirement of significant resources. Key barriers for sustainability at institutional and individual levels include a lack of regular incentives (e.g. salary or allowances) or formalization of surveillance roles for AHWs; shortage of resources, standardized tools and frameworks for follow-up, continued on-site training and learning. The assessment recommends involving local partners in all stages of project's interventions as well as advocating for policy development to create an enabling environment for a higher sustainability.

- 8.2.4 To measure social, economic, environmental and biological impacts at the demonstration sites also face challenges in resources (time, money and human resources). The project has explored opportunities for collaboration with API partners to make the best use of the available efforts where possible. To remedy this shortage, the project is documenting carefully monitoring data to keep track the behavioral and operational improvements as much as possible.

9. Administration & Finance

9.1 Achievements

- 9.2 Managed all aspects of the finance and administration and all subcontracts and consultant agreements effectively. The procedures were streamlined during the course of the year.

- 9.3 Shorter turnaround time with the Regional Contracting Officer also helped improve the Consultant recruitment process during the course of the year.

- 9.4 APII continues to submit routine deliverables to USAID, including quarterly progress reports, quarterly financial reports, semi-annual and annual reports etc. The F&A team support the technical teams in managing all subcontracts and consultants.

- 9.5 Managed multiple Subcontracts and Consultant Agreements for all components. All subcontracts and consultants are now tracked better by the F&A team helping to prepare contract modifications in advance (and reduce need for retroactive approvals). Technical teams are regularly updated and reminded of due dates for upcoming deliverables.

- 9.6 Smooth coordination and communication with USAID and quicker approvals/turnaround times help reduce delays.

- 9.7 Internal communications in APII on recruitment of consultants and preparations of subcontracts have improved.

9.8 Challenges and Solutions:

9.9 Retroactive approval for AFAP Year 4 pending with USAID. Will follow-up.

9.10 Application for registration with Paccom (to open up for direct implementation) has been pursuit for a long time but cannot succeed because our status does not meet their requirement. We have officially requested them to refund to the project the advance amount that we paid them in order to process the application

9.11 The available sub-contracting mechanisms remain a challenge to partners particularly those with little working capital or capital reserves and little experience in contracting with international development partners/donors. No immediate alternatives or solutions have been identified other than to continue to work closely with the subcontractors to prepare contracts and fulfill their obligations under contract.

10. Success Stories

11. USAID/APII programs strive to improve veterinary hygiene at poultry slaughtering points in Hoa Mac town, Duy Tien district, Ha Nam

In July of 2011, the USAID's Avian and Pandemic Influenza Initiative Project (USAID/APII) supported Ha Nam's Department of Agricultural and Rural Development provincial proposal to provide additional education and training for veterinarians working in cattle and poultry slaughtering. This effort is in alignment with recently published national Circular 14 promulgated by Department of Animal Health and the Ministry of Agricultural and Rural Development. This project provides a training platform for other small-scale poultry slaughterer's to emulate. Additionally this project was done in concert with local businessmen and USAID/APII both providing portions of the financial support.

The USAID's Avian and Pandemic Influenza Initiative Project (USAID/APII), in close collaboration with Hoa Mac town People's Committee upgraded a small-scale slaughter point in the town of Hoa Mac, Duy Tien district, Ha Nam. Realizing the benefits gained from the upgrades and improvements to the slaughtering hygiene, the owner of the slaughtering point contributed 30% of the total cost. He agreed to separate the slaughtering area from his family living area, create a one-way slaughtering line, install new and higher roofs and tile the floors and walls. These upgrades allowed for better cleaning and sanitizing; improved hygiene facilities and provided standard equipment for the processing line.

The project also renovated the animal meat section of Hoa Mac Market where now plucked poultry, beef, and pork are all sold in separate areas from the fruits, readymade rolls and other non-meat products. In the past tables and floors were constantly wet, dirty and difficult to clean and disinfect. Upgrading the tables and floors and improving the waste water



systems and electricity have significantly improved hygiene practices at this market.

In addition to the facility renovation projects, USAID/APII has provided a series of training courses for slaughterers, vendors and veterinary inspectors on proper veterinary inspection processes, HPAI risk reduction, food safety and sanitation. Follow-up discussions on key behaviors to include hand washing; and proper disinfection techniques continue. Monthly meetings were also provided for provincial food preparers on behavior change and the need for continued education and promotion of safe food practices. Special educational posters are hung at slaughter points and animal meat areas throughout the market to remind consumers of the need for these behaviors. These same posters remind meat handlers on the importance to reduce risk and ensure that food safety practices continue in this small-scaled slaughter point and animal meat market model.

In late October there was a handover and market reopening ceremony. It was noted that this small-scaled poultry slaughter point renovation has helped the province realize the proposal of local authorities. Replication of this demonstration model has been started with local resources and community contributions. In an annual project review workshop, Mr. Nguyen Manh Hung, Deputy Director of the Department of Agricultural and Rural Development shared that to expand the efforts to improve veterinary hygiene and food safety, the provinces will need to map out their plan to replicate this upgraded slaughter point and market model to other districts. Reference was made to ongoing replication in Ly Nhan market with upgrades to the fresh fish area with vendor's contribution and pathways in Hoa Mac market.

Quang Tri province adopts Community-Based Surveillance (CBS)

In April 2012 the final CBS evaluation was conducted by USAID/APII, and proved that the CBS model in Quang Tri province was being used. It helped to identify multiple events of H5N1, Blue Ear and Foot and Mouth Disease (FMD) resulting in timely disease control actions. Review of epidemiological data showed that among the twenty H5N1 events CBS collaborators detected eleven events (55%) and commune animal health workers (CAHWs) detected the remaining nine (45%). The mean time



calculated from disease onset to system's detection for the collaborator events was 1.8 days and 2.9 days for the CAHW level events ($p=0.16$). The CBS data also identified ninety-four confirmed blue ear events and twenty-eight confirmed foot and mouth events.

The collaborator surveys and in-depth interviews with stakeholders revealed that the CBS system was simple in structure and operation and enabled collaborators

to sustain its implementation. Collaborators from all sites performed well in terms of knowing their roles and responsibilities within the system, finding sources of disease information in their community and the disease reporting structure. In general, the system was acceptable to the local key stakeholders. Households initiated contact with the CBS system in the context of seeking treatment for sick animals from village animal health workers (VAHWs). Collaborators demonstrated high willingness to implement their roles under CBS during project implementation. Provincial, district and commune stakeholders confirmed that CBS system operating procedures were generally compatible with those of the National Disease Surveillance System.

In January 2012, the CBS system was officially adopted with the Decision 25 of Quang Tri People's Committee. All village AHWs have been provided a monthly allowance to participate in AH activities, to include disease surveillance.

The evaluation has identified that contextual factors may impact the effectiveness of the system. It is effective in Quang Tri where poultry farming is predominantly small-scale and managed at a household level. Stakeholders described a high level of political intervention will be needed to detect and control outbreaks and to minimize the adverse effects on the livelihood of households. CBS is linked with the formal establishment of a VAHW network at a grass roots level. Based on these findings, the last year of the project will focus on replicating CBS in those central provinces who share similar conditions of those in Quang Tri.



USAID
FROM THE AMERICAN PEOPLE

**AVIAN AND PANDEMIC
INFLUENZA INITIATIVE**

Avian and Pandemic Influenza
Initiative

GHS-I-08-07-00003-00

1st Quarterly Report, Year 4
(October 2012 – January 2013)

Submitted on January 30, 2013

Abt

In association with:

Australian Foundation for the Peoples of Asia and the Pacific

Vietnamese Red Cross

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Annex 1 – Updated International Consultancy & Travel Schedule

Annex 2 – Updated Subcontractor and Local Consultants Schedule

Annex 3 – Updated Annual Work Plan/Gantt Chart

Annex 4 – Updated Log-frame/PMP

Acronyms

Abt	Abt Associates
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015)
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
CBS	Community Based Surveillance
CCHIP	Centre for Community Health and Injury Prevention
CEFACOM	Research Center for Family Health and Community
COP	Chief of Party
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
EPT	Emerging Pandemic Threats
FA	Farmers Association
FAO	Food & Agriculture Organization (of the United Nations)
HPI	Health Policy Initiative
KAP	Knowledge, Attitudes and Practices
LIFSAP	Livestock Competitiveness and Food Safety Project
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MMB	Market Management Board
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCHEC	National Center for Health Education and Communication
NGO	Non-government Organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning

PSA	Professional Services Agreement
SARI	Severe Acute Respiratory Infection
TOT	Training of Trainers
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VEMEDIM	Veterinary Medicine Import Export Joint-Stock Company
VIPA	Vietnamese Poultry Association
VMSA	Vietnam Medical Services Association
VNA	Vietnam Nursing Association
VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WCS	Wildlife Conservation Society
WHO	World Health Organization
WU	Women's Union

Introduction

This report presents the main achievements, challenges and solutions/lessons learned for USAID's Avian and Pandemic Influenza Initiative (APII) during Quarter 1 of Year 4, October 2012 – December 2013.

Quarter 1 of Year 4 saw the project reach the full level of implementation not only in the five-targeted provinces but also across Vietnam. We continued with the three major focus areas: animal health, human health and behavior change and communication. Activities are implemented via subcontracts, as Abt's current license does not accommodate for direct implementation. This carries its own unique challenges as it often is difficult to find subcontractors capable of delivering quality work on time, and strengthening the capacity of subcontractors has therefore become a vital part of APII's work. This is especially true in Year 4, as we have very limited time to complete our projects and close out the programs. We are working with our partners to provide them with our models and training programs for future use.

The project progressed well in most of the eight main focus areas:

1. Coordination & Policy Dialogue
2. Human Health Surveillance
3. Case Management and Infection Control (IC) Capacity Building
4. Pandemic Preparedness
5. Animal Health Surveillance
6. Animal Health Worker (AHW) Capacity Building and Agricultural Extension Worker (AEW) Capacity Building
7. Supply Chain (Poultry Supply Network) Strengthening:
8. Behavior Change Communication (BCC)

Year 4 is also the year where the project is in full swing to orient itself towards advocating for the wider adoption and sustained implementation of models beyond the life of the project. Adoption, adaptation, replication and scaling up of APII innovations by public and private partners are considered the real measure of success for the project. This will require a sustained advocacy and promotional effort for which the project is carrying out in Year 4 in close consultation with USAID and API partners.

Below follows a description and discussion of the main achievements, challenges during Quarter 1 of Year 4.

1. National Coordination & Policy Dialogue

Under coordination and policy dialogue we have three goals to achieve by the end of Year 4:

- Improved HPAI prevention and control based on improved coordination
- Sustained dialogue, coordination and lessons sharing on communications in Vietnam at a national level

- National communication framework revised in line with AIPED and officially approved by National Steering Committee for Avian Influenza (NSCAI) and applied by all members in planning and implementation.

1.1 Achievements

- 1.1.1 With PAHI, APII supported NAEC to chair the quarterly meetings of the One Health Communication Network (formerly known as the Avian Influenza BCC Working Group). A draft Plan of Action to revitalize the network was developed to maintain the routine meetings and to identify common interests in prevention and preparedness for AI and EIDs. APII is continuing to support NAEC to take the full leadership of this network during 2013.
- 1.1.2 Communicated about project's results more to the wider audience through media advisories and press releases. Tracked aired clips and news and shared with partners and USAID.
- 1.1.3 Developed the APII living advocacy plan and matrix as well as the communication strategy for Year 4.
- 1.1.4 Engaged an international expert, David Payne, as Advocacy/Policy Dialogue Advisor. This input is already bearing fruits and boosting APII's advocacy and communications work.

1.2 Challenges and Solutions

- 1.2.1 Compared to other priorities, local resources allocated for prevention work is always limited including for BCC to prevent AI and EIDs. In order to get more budget resources from local government, good work should be turned in good proposals. More advocacy opportunities should be fleshed out to advocate replication of established models supported by the USAID's APII. Provinces require ongoing technical assistance in advocating for themselves.

2. Human Health Surveillance

The human health surveillance model was developed over the first three years of the project as part of an integrated approach to community-based surveillance (CBS) in the five APII focus provinces: Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri. Based on the results of the external evaluation of the CBS activity conducted during FY12, the human health surveillance model has been separated from the animal health surveillance model to promote its adoption, adaptation, replication and scale up during the final year of the project. The goal of APII activities in Year 4 is to support national/provincial policies that facilitate community level surveillance and to replicate the relevant model in exiting provinces and in new provinces.

2.1 Achievements

- 2.1.1 The SOW of the subcontractor for human health surveillance activities in Year 4 was developed, submitted and approved by USAID.

- 2.1.2 The National Institute of Hygiene and Epidemiology (NIHE) was identified as subcontractor through a competitive bidding process. NIHE will work closely with APII technical staff, WHO, MOH and VAHIP to: a) conduct a regional workshop during Q2 to review the implementation of MOH's Circular 48 as it relates to local surveillance at the commune and village levels, in order to share APII's models, the experiences from the APII pilot provinces and the results of the CBS evaluation; b) organize a regional Training of Trainers (TOT) course for new provinces; and c) provide technical assistance to provincial Preventive Medicine Centers on developing/revising provincial plans on implementation of Circular 48 and replication of the relevant model on human health surveillance with a focus on EIDs and zoonotic diseases in their respective locations.

2.2 Challenges and Solutions

- 2.2.1 The process of selecting an appropriated subcontractor took longer than anticipated. We typically expect delays for required paper work, budget negotiations, preparations of CVs, Bio data, and leave without pay letters but we have also had a decrease in FnA staff during this time... The firm initially identified to implement the subcontract for the CBS evaluation withdrew and another company (AMDI) was identified as a suitable replacement. The change in subcontractor caused a delay in implementation but the evaluation is progressing well. APII staff spent considerable amount of time reviewing the subcontractor's work to insure quality.

3. Case Management and Infection Control (IC) Capacity Building

The Year 4 goal is to assist the GVN in rolling out a training model developed to assist health facilities in operationalizing Circular 18."

3.1 Achievements

- 3.1.1 The SOW for the Viet Nam Nursing Association (VNA) on APII infection control activities in Year 4 was developed, submitted and approved by USAID. VNA will work closely with APII technical staff, national IC experts and WHO in collaboration with MOH and three IC Societies (Hanoi, Hue, and Ho Chi Minh) to replicate the IC training model for in-service and pre-service systems. During Q2 and Q3 VNA will: a) conduct three regional TOT courses for IC specialists from health facilities in 15 new provinces and for teachers from 15 institutions, b) coordinate with MOH to support Departments of Health to implement the national action plan on strengthening IC at health facilities including dissemination training on IC, and c) support some medical/ nursing schools to revise, test and finalize their IC lesson plans and introduce and review them in a one-day workshop for medical institutions.

- 3.1.2 October 2, 2012: Senior APII staff participated in the *Workshop on the National Action Plan on IC Strengthening at Health Facilities: now to 2015* chaired by the MOH Vice Minister in Hanoi. USAID/APII's IC training model was introduced and the training document was distributed to all participants in the workshop. Further discussion on realizing IC training through the local training program is still in progress.
- 3.1.3 October 3, 2012: Senior APII staff participated in the *IC Scientific Conference* hosted by MOH's Administration on Medical Service in Hanoi. The participants had the opportunity to share research and new IC guidelines. After the meeting, these guidelines were distributed and implemented in all health facilities.
- 3.1.4 October 25 and 26, 2012: Senior APII Staff participated in the *National Workshop on Nursing Science and National Review Workshop of Vietnam Nursing Association* led by the MOH and VNA. During the meeting the hosts discussed cooperation for implementing the nationwide IC training program in the future.
- 3.1.5 Resulting from a meeting in September 2012 (Q4, Year 3) between the USAID/APII and the Board of Directors, Au Lac Private Nursing School in Hue announced that they are moving forward with adopting the APII/MOH IC training materials for their 2012/2013 school years. A full credit IC course of 60 sessions will be used to train 220 nurses and 150 physicians this year.

3.2 Challenges and Solutions

- 3.2.1 The process for finalizing the VNA contract took longer than anticipated because of year-end time commitments and the large number of meetings and workshops during the early fall on IC and nursing that required the attention of both APII and VNA staff. While these meetings caused delayed they also presented USAID/APII staff with opportunities to share the IC training model with in-service and pre-service systems, resulting in several conversations with provincial Departments of Health and training institutions who have indicated their interest in the IC curriculum and IC materials.

4. Pandemic Preparedness Planning (PPP)

The Year 4 goal is to introduce PPP packages in other provinces, and advocate for its wider adoption in Vietnam.

4.1 Achievements

- 4.1.1 On October 31, 2012, APII organized a national workshop for sharing experiences preparing pandemic preparedness and response plans in Hanoi. The workshop aimed to: a) introduce northern and central region provinces and central level stakeholders to a new approach for developing and revising PPPs according to the current situation, b) share experiences from the process of developing and

improving Kien Giang's provincial plan, and c) identify recommendations for improving provincial plans, applying the new approach to whole-of-society planning and maintaining the continuity of essential services. Participants in the workshop included the VNRC, DAHs, GDPM, the Central Propaganda Department/Committee, the HCM Institute of Hygiene and Public Health, VAHIP, FAO, WHO, PAHI, APII and USAID; as well as representatives from 13 provinces including Hung Yen, Ninh Binh, Bac Ninh, Bac Giang, Hai Phong, Hoa Binh, Ha Tinh, Nam Dinh, Bac Kan, Thanh Hoa, Ha Nam, Quang Tri and Kien Giang.

- 4.1.2 The SOW for Humanitarian Center, Hung Yen Red Cross Association for Pandemic Preparedness Plan (PPP) activities in Year 4 was developed, submitted and approved by USAID. During Q2 and Q3, the Humanitarian Center will: a) Organize a PPP workshop for Hung Yen authorities, multi-sectors and mass organizations to introduce the new concepts of "whole society" approach, business continuity plan (BCP) and present the multi-sector framework of PPP, b) revise the PPPs in Hung Yen province to include the whole society approaches, BCP, and c) conduct one two-day dissemination training workshop for about 35 designated staffs on PPP at provincial and district levels in Hung Yen.

4.2 Challenges and Solutions

- 4.2.1 The process of selecting an appropriated subcontractor took longer than anticipated due to requirements as well as a decrease in FNA staff during this time.

5. Animal Health Surveillance

The animal health surveillance model was developed over the first three years of the project as part of an integrated approach to community-based surveillance (CBS) in the five APII focus provinces/cities: Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri. Based on the results of the external evaluation of the CBS activity, which was conducted during FY12, the animal health surveillance model has been separated from the human health surveillance model for promotion of adoption, adaptation, replication and scaling up during the final year of the project. The goal of APII activities in Year 4 is to support national/provincial policies that would facilitate community level surveillance and to replicate the relevant model in exiting provinces and in new provinces.

5.1 Achievements

- 5.1.1 In year 4, Animal Health surveillance activities intend to concentrate in Central region in collaboration with RAHO3 and a local counterpart in Quang Tri. The SOW was developed for integrating AH surveillance with Animal Health Worker Capacity Building and Supply Chain Model Replication and will be send to USAID for approve in the beginning of Q2 (Mike, it has been sent to USAID?). With the APII's technical assistance. The potential subcontractor will review the USAID/APII animal health surveillance model and

animal health worker (AHW) network model in Quang Tri province and conduct regional courses for replication.

5.2 Challenges and Solutions

5.2.1 Nothing to report at this time.

6. AHW Capacity Building and AEW Biosecurity Training

The goals of the AHW Capacity Building and AEW Biosecurity Training activities are:

- Introduce the AHW training package to new provinces and seek other educational training opportunities
- Introduce the AHW networking model that will be adopted by relevant public-private agencies at national and local levels.
- Introduce the AEW training materials to NAEC, new PAPEC and private sector to applying them throughout AEW system

6.1 Achievements

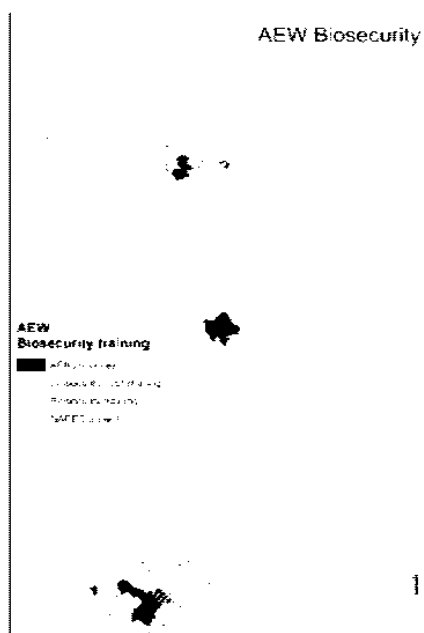
AHW Capacity Building

The AEW capacity building activities in the first quarter of year 4 focused on identifying the local counterparts and provinces and dissemination activities to introduce the AEW Biosecurity training package to other provinces.

- 6.1.1 Supported the National Agricultural Extension Center (NAEC) to officially adopt AEW training manual and training materials and to promote their use within the national agricultural system. APII has met with NAEC to determine the best method for official review and approval. We have introduced the training system to NAEC and outlined the current projects and agreed on the activities for the coming months. These activities were incorporated into a draft SOW for the Vietnam Poultry Association (VIPA) will be submitted for USAID approval in Q2.

- 6.1.2 Continue replication of AEW/ Biosecurity training programs for poultry farmers in additional provinces.

During Q1, the biosecurity training package was successfully transferred to



NAEC's *National Waterfowl Development Project* (2011-2013). This project, chaired by Mr. Nguyen Van Bac, covers 14 provinces: five provinces in the Hong River Delta including Bac Ninh, Ha Noi, Hai Duong, Hung Yen and Hai Phong and nine provinces in the Mekong Delta including Kien Giang, An Giang, Bac Lieu, Ca Mau, Dong Thap, Long An, Soc Trang, Tra Vinh and Tien Giang. We identified 452 farmer-developed demonstration farms with 1,320 duck farmers who were all trained by NAEC with materials adapted from the training package. At this time, 4,680 trainees who are raising ducks for meat and eggs have visited demonstration sites and received training materials. In addition, using local funds and integrating activities into the local vocational training centers program, there were 95 training courses conducted in Bac Lieu (10 courses), Vinh Long (five courses), Tra Vinh (20 courses) and An Giang (60 courses) with total of more than 1,000 people attending (Source: NAEC, *National Waterfowl Development Project 1*, 2012).

- 6.1.3 Following a TOFT for 25 local farmer trainers in October 2011, An Giang officially adopted the training package into their provincial project "*Developing biosecurity poultry production in An Giang during the period 2011-2013.*" This project is being implemented in 11 districts and towns of An Giang from July 2011 to December 2013. Since December 2011, these farmer trainers have organized 79 courses on biosecurity for poultry production with 2,319 trainees who are raising chicken and ducks for meat and eggs. They also offered 22 courses for 649 members of 66 poultry cooperative groups, providing training on upgrading biosecurity for poultry production. The training materials were also used by trainers for another 55 training courses on animal husbandry organized by the Provincial Agriculture Extension Center in 2011 and 2012 under the national *New Countryside (Nong Thon moi)* development program. (Source: *An Giang PAFEC 1*, 2012)

AEW Biosecurity Training:

The AHW Training Package consists of a hardcopy training manual, which provides a reference for AHWs (an enhanced manual based on the existing DAH Manual) as well as an E-Book version on CD with additional content for trainers and a sample toolkit with standard equipment for AHW service provision.

- 6.1.4 Negotiations with AFAP on a work plan, schedule and budget for Year 4 were completed in Q1 and submitted to USAID for approval of the contract modification. A final revised contract was signed with AFAP in January 2013
- 6.1.5 After the AHW Training package was approved by DAH/MARD, eight thousand hardcopies were printed with a letter from the DAH Director officially introducing and endorsing these training materials. These books have been distributed to 700 district veterinary stations throughout Vietnam during September – October

2012. This was followed up with an offer of limited support to Sub-DAHs to co-finance AHW training during Year 4.

- 6.1.6 Preparations for an AHW and Biosecurity Training Dissemination Workshop, *which* took place in January 2013 in An Giang during Q1.
- 6.1.7 As a result of cost-shared AHW TOT courses in Moc Chau and Ninh Binh, the Moc Chau Dairy Cattle Company has decided to use the Diffusion Training Program for new AH technicians in the Moc Chau area using their own funds. APII and AFAP are working with Moc Chau Dairy to develop the training curriculum and suggestions for a follow-up coaching. This public-private partnership model was initiated with an MOU (Memorandum of Understanding), which indicates that Moc Chau Dairy Cattle Company will contribute to training on animal surveillance, biosecurity and veterinary skills.

6.2 Challenges and Solutions

AHW Capacity Building

- 6.2.1 The lengthy AFAP approval process has had a bit of an effect to the time schedule of AHW and AEW/Biosecurity Training activities in overall but hopefully AFAP and the local counterparts can speed up right after TET.

AEW Biosecurity Training:

- 6.2.2 It is important for the sustainability and institutionalization of training/extension packages to work closely with NAEC and the PAFECS. This is a time-consuming process, which may not always be the top priority for these organizations and thus requires diplomacy, patience and perseverance in order to forge and maintain close relationships. Obtaining official approval from government authorities was a suggestion from the Deputy Director of NAEC and introducing the AEW/ Biosecurity training through NAEC/PAFEC system and national/provincial projects remains a good option for replication of this training package widely and efficiently.
- 6.2.3 Figures on replication training conducted in additional provinces may not be available in a timely manner where these activities are being funded from local, national or other resources not sourced by APII. APII will continue to build relationships with these counterparts and will seek appropriate ways to obtain useful information and data on the replication of APII models.

7. Supply Chain (Poultry Supply Network) Strengthening

The goals are to develop biosecurity/biosafety demonstration models in key (high risk) nodes along poultry supply chain, together with related documents (protocols, guidelines, training materials) which are adopted, adapted and replicated by public agencies, private partners and/or other development projects and programs elsewhere.

7.1 Achievements

The key activities and achievements of the supply chain work during the first quarter of Year 4 focused on the following activities and nodes:

- 7.1.1 On October 26, 2012, representatives from the People's Committees of Ha Nam province, Duy Tien district and Hoa Mac town, the Department of Agricultural and Rural Development, the DAH, mass organizations, the PAFEC, the Provincial Center for Health Communication and Education, the Sub-DAH, the provincial Preventive Medicine Center, the People's Committees of neighboring districts and communes and USAID/APII as well as market vendors and other slaughter point owners attended the *Completion and Handover Ceremony of the Upgraded Meat Section in Hoa Mac Market and Poultry Slaughter Point in Hoa Mac town, Duy Tien district, Ha Nam province*. In the coming months we will use these project activities as training platforms for other provinces.

During Year 3, the USAID/APII team collaborated with FAO, WHO, local partners and other USAID personnel to identify market and slaughter points in Ha Nam province that are key supply chain nodes for risk reduction interventions and the development of demonstration models that can be replicated in other provinces. Upgrading the meat Section in Hoa Mac Market reduces disease transmission by ensuring appropriate meat-handling procedures are performed in compliance with government regulations. Mr. Hue's small-scale slaughter point is providing the majority of plucked birds for Hoa Mac and surrounding communities. This market was selected for an upgrade and now serves as a model for the province and is being used as a training model. It is also a key stepping stone in the long-term restructuring of the livestock slaughtering network including transition to centralized slaughtering, providing a smaller-scale option that adheres to standard risk reduction measures.

The small-scale slaughter points near the Hoa Mac Market are typical to other small-scale slaughter points throughout Vietnam. The particular small-scale slaughter point chosen by the project for upgrading and process improvement was selected based on location and the willingness of the owner to share the cost. Before renovation the slaughtering area was a shared space in the living area of the family. Slaughtering was performed on the floor with inadequate tools, water and electricity systems. There was little evidence of hygiene and food safety practices. The renovation of this small-scale slaughter point has produced a one-way slaughtering system with products moving from "dirty to clean areas" and has eliminated the habit of slaughtering on the floor. Standardized support equipment also helped to improve the hygiene/sanitation operation and to ensure food safety. There are 45 stalls scattered throughout Hoa Mac market that sell meat products. Poultry occupies 8 stalls that sell approximately 400 birds per day. The stalls selling meat and poultry are now centrally located and divided according to product, i.e. pork, poultry, beef, etc. Water, electricity and hygiene supplies

have been provided separately to facilitate adherence to good veterinary hygiene practices.

Key Activities and Milestones for the Hoa Mac Market and Poultry Slaughter Point:

- Mapping and risk assessment of poultry supply chains;
- Provincial Strategic Planning for HPAI Risk Reduction, Prevention and Control along the Poultry Supply Network;
- Assessment, design and upgrading/renovation of infrastructure;
- Training of slaughterers and meat vendors;
- Communications activities.

This upgraded model has included training on good slaughtering practices and veterinary hygiene assurance for slaughterers, vendors and veterinarians. It has also helped to reduce the potential spread of disease during the slaughtering, selling and transportation processes. A training was conducted by local Sub-DAH, District Veterinary Station and APII on market cleaning, the requirements for infrastructure improvements and market rules for 54 participants including market vendors as well as the market management board, commune animal health workers and personnel from the People's Committee of Hoa Mac Township. The purpose of the training was to brief the vendors before they moved into to the newly upgraded facility.

7.1.2 Further technical coaching and monitoring of risk reduction demonstration models of the slaughterhouse, slaughter points and live bird markets (LBM) to make those demonstration sites become a better training platform for further training, study tours and consideration for replication:

**Hoa Mac market and slaughter point:* After the opening ceremony, a multi-sectorial team including the Hoa Mac Market Management Board (MMB), the provincial Sub-DAH, the District Veterinary Station and APII staff from the animal health and behavior change teams has undertaken regular bi-monthly technical coaching and monitoring trips. Action plans were developed for continuous monitoring by inspectors and the slaughterhouse owner right after each trip and shared among the stakeholders. In the market dramatic improvements regarding safer food handling practices have been observed and personnel hygiene has improved, for example, cleaning of tables and floors after closing and cleaning hands after using the toilet. Observation showed that not only in the meat section, but also in the whole vegetable and fishery areas there was upgrading with the contribution of other vendors and the market management board.

In addition, the observation showed that the Hue-Thanh slaughter point in Hoa Mac had secured a new contract to supply poultry meat

to three kindergartens, totaling 26-27 kilograms per day two days per week. This doubled the volume of poultry he was processing. However, while many slaughtering practices have been improved (good one-way slaughtering, cleaning and safer poultry handling practices) some behaviors remained unchanged between monitoring visits. Brand development has been identified as an additional project activity to increase the motivation for the owner in the long run and to help him to reach potential customers in the area, contributing to the long-term sustainability of the improvements.

**Dong Ha live bird and poultry meat market in Quang Tri and two home-based slaughter points:* On November 26, 2012, APII together with the Dong Ha Market Management Board, the Sub-DAH and the provincial Women's Union (WU) met with about 25 live and plucked poultry vendors to review issues related to cleaning, the live bird section arrangement and promotion of good slaughtering practices. Meeting minutes were shared with the Sub-DAH for enforcement of good, consistent slaughtering practices. The technical team provided operational coaching and mentoring for slaughterers and slaughterhouse owners, focused on behaviors during slaughtering, processing and sanitation and developing detailed action plans for meeting their responsibilities for biosecurity and biosafety.

**Monitoring Ngoc Xuan Centralized Poultry Slaughterhouse, Can Tho City:* APII staff conducted regular follow-up/monitoring visits and held a specific meeting to examine slaughtering processes and problem solving at Ngoc Xuan. To date most of the infrastructure is in place and operational procedures are established and being followed. During these visits observations identified most difficult-to-change practices as: a) poultry separation, b) off-floor slaughtering, and c) sanitation during the slaughtering process. APII organized a feedback meeting to discuss barriers preventing slaughterers from adopting improved practices and an action plan was developed with commitment from the slaughterers, slaughtering line managers and the Ngoc Xuan Slaughterhouse owner, and the inspectors and Sub-DAH were asked to assist in the monitoring and enforcement efforts. More than 60% of slaughter lines have applied the one-way slaughtering practices and off-floor slaughtering as a result of these monitoring and follow up efforts.

- 7.1.3 Sharing lessons learned and experiences for national and regional levels. In order to approach RAHO 3 and RAHO 7, field trips and meetings were held between the APII project directors and key staff of the new regional counterparts on November 7, 2012 in Vinh and November 27, 2012 in Can Tho.

In the meeting with RAHO 3 in Vinh, the Quang Tri Sub-DAH presented their results from the last three years with regard to disease surveillance, AHW capacity strengthening and network development, supply chain improvements and the integrated BCC program to the RAHO 3 directors and garnered interest in

identifying opportunities to replicate USAID/APII developed models in central Vietnam. The team also met with Sub-DAHs in Ha Tinh and Quang Binh to explore the potential for replication of project models.

The meeting in Can Tho with RAHO 7 also confirmed their interest to support replication of the AHW training and improvements to slaughtering facilities models.

On November 27, 2012 in Can Tho, in cooperation with DLP and FAO, 43 participants from RAHO 7, RAHO 6, DLP, FAO and USAID/APII attended *The 21st Biosecurity Working Group meeting*, funded by APII and FAO. The meeting focused on a) the current situation of poultry slaughtering in regions 6&7; b) dissemination of USAID/APII's risk reduction, veterinary hygiene and sanitation model at Ngoc Xuan Slaughter House; and c) recommendations and suggestions to reduce risks in slaughtering facilities by improving bio-security measures. USAID/APII recommended that training for selected slaughterhouse and slaughter point owners in these regions on risk reduction and food safety improvements in slaughtering environments should be considered as a follow-up activity of this meeting.

Mekong Regional training courses for slaughterhouse owners: On December 19-21 and 24-26, 2012, in collaboration with RAHO 7, APII organized two training courses on Veterinary Sanitation and Food Safety for 58 slaughterhouse owners and selected staff of Sub-DAHs from 13 provinces in RAHOs 6 and 7. These participants had the opportunity to join study tours to slaughtering facilities in Can Tho, Long An and Tien Giang including the USAID/APII supported Ngoc Xuan slaughterhouse model, and the USAID STOP AI supported Go Cong slaughterhouse model. Slaughterhouse owners in Ba Ria-Vung Tau and Dong Nai provinces showed their interest in replicating the USAID models through official letters calling for support that have been reviewed and incorporated in the plan for provision of technical assistance in the coming months.

In Quang Tri on December 20 and 21, 2012 in collaboration with Quang Tri WU, APII organized a two-day *dissemination workshop* in the Northern Central region to promote the use of a multi-sectorial approach to improving food safety of poultry and poultry products through BCC. More than 60 participants from the central Vietnam WU, FAO and the Ha Tinh, Hai Phong, Thanh Hoa, Quang Binh, Quang Ninh and Thua Thien-Hue province WUs participated in this workshop and visited the upgraded Dong Ha market and slaughter points.

- 7.1.4 On November 15, 2012, USAID/APII and Sub-DAH and other local counterparts of Ha Nam province hosted a *Supply Chain Models Technical Review Meeting*. This is a good chance for all sites to review the road map of the past two-years of collaboration and to identify achievements. The meeting agreed that most of the

identified and agreed indicators have been achieved, such as: successfully upgrading a district model market and a slaughter point that can be used for replication in the other districts and possible deploy to new province; increasing the effectiveness of state management on slaughtering and veterinary hygiene inspection activities for slaughter points and the sale of meat products. Following this, positive news has been received regarding a new provincial decision number 32/2012/QĐ-UBND on the management of animal and animal product slaughtering, transportation and inspection in Ha Nam province had been issued on December 13, 2012. After the provincial proposal for 2012-2020 to improve the animal slaughter inspection and the Duy Tien district proposal of slaughter inspection 2011-2012, this was a very positive outcome of the past three years of collaboration between APII and Ha Nam local authorities.

7.1.5. November 20-23, 2012: In collaboration with and with co-facilitation from the Ha Nam Sub-DAH, an advanced training course for Inspection for Food Safety and Sanitation for Poultry and Poultry Products was conducted for 40 inspectors from the veterinary stations of Thanh Liem and Duy Tien districts and Phu Ly City. The training provided updated knowledge on avian influenza, emerging infectious diseases and food borne diseases; the supply chain and how disease transmission occurs at key nodes; and the design and operation of poultry slaughtering facilities to enhance sanitation and food safety. Evaluation results from the training showed that most of the trainees achieved knowledge on inspection of good practices on food processing, safe slaughtering and waste management as well as being capable in providing effective supervision to slaughter points for better food hygiene and safety.

In addition, in collaboration with the Quang Binh Sub-DAH and RAHO 3 Veterinary Hygiene Division, APII provided technical support and co-financed a training course for Veterinary Inspectors on slaughtering practices, sanitation and food safety in Quang Binh on December 10-17, 2011. The training also included a visit to the Dong Ha Slaughter Point model to expose the trainees to risk reduction measures and to build their understanding on basic design and operation requirements for good slaughtering practices.

7.2 Challenges and Solutions

- 7.2.1 Profit margins from poultry slaughtering are especially small, and even more so in small-scale slaughtering operations. It is understandably hard to persuade these small private entrepreneurs to invest in facility upgrades without some form of 'subsidy' (financial support). Micro-finance options in the commercial financial sector (banks, MFIs) are rare. Many small entrepreneurs appear to be comfortable with their status quo business (size). Cost-cutting measures seem a more appealing way forward to improve business and increase profits. This also implies cutting private costs on environmental safeguarding and food safety-related measures. APII

continues to reach out to and invite partners such as LIFSAP and VAHIP to participate in project activities. Partners rarely reciprocate however.

8. Behavior Change Communication (BCC)

During the reporting period, we continued to work with Can Tho, Ha Nam and Quang Tri provinces, where the project has been providing support on the establish of poultry supply chain demonstration models at markets and slaughtering facilities (both centralized and small scale), to improve the behaviors of vendors and slaughterers working in plucked meat markets and the centralized slaughterhouse. We refined a set of BCC materials ready to share widely and during the two dissemination workshops. We have organized national and regional dissemination workshops in Ha Noi and Quang Tri respectively to roll out the BCC training model and advocate for multi-sectorial use and funding of communication programs with the participation of central-level agencies and 19 provinces throughout the country. We are working with Quang Tri WU and Farmer's Union to replicate BCC training model into the WU network and vocational training schools belonging to the Farmer's Union.

8.1 Achievements

- 8.1.1 Refined and produced BCC materials including five sets of discussion guides with small and medium poultry producers, vendors and slaughterers, community event drama scripts and other BCC documents developed over these three last years. This package of electronic and printed BCC materials was shared to participants from 24 provinces and the national level attending the National and Regional BCC Dissemination Workshops on BCC training model in December 2012.
- 8.1.2 Developed the second draft of the Communication Strategy Development Guide and BCC Training Manual. These documents are being translated into English for sharing with API partners for comments before finalization and dissemination to all provinces.
- 8.1.3 Designed and produced posters on BCC Training Model and BCC 3-year pathway. The two posters aim to visualize the BCC Training model and the BCC three-year transitional pathway of USAID/APII. These two posters were shared in the Ha Noi and Quang Tri BCC training model Dissemination Meetings in December 2012, and were highly appreciated by meeting participants for their thoughtful visualization and easy understanding.
- 8.1.4 APII hosted two Dissemination Workshops in Ha Noi and in Quang Tri in December 2012 gathering more than 130 participants coming from 19 provinces across Vietnam. This was an opportunity for the USAID/APII and its local partners to share lessons learned on its BCC Training Model to interested institutions and individuals for further adoption and replication. It was also an opportunity for provincial trainer/specialist teams to illustrate what they have gained

and are capable of doing as a result of their participation in the Model. Participants discussed and prepared plans on partial or full adoption of the model with essential support from the USAID/APII and its five focus provinces. The first replication of this model will be done by the Vietnam Farmer's Union through the development and official introduction of a BCC module for teachers through their Vocational Training School system.

- 8.1.5 Based on their interest in the USAID/APII BCC Training Model, the Vietnam Farmer's Union asked USAID/APII BCC for support to develop and officially introduce the BCC module for their trainers at their Vocational Training Schools. This scope of work was approved and other preparation tasks for signing the subcontract are ongoing.
- 8.1.6 Explored different opportunities to replicate BCC Training Model including a meeting with the Hai Phong WU and with the president of Women Consumer Club of Ha Noi under the Vietnam Association of Retailers.
- 8.1.7 Developed BCC materials for Hoa Mac market, Hue-Thanh slaughtering point and Ngoc Xuan Centralized Slaughterhouse. In combination with other inter-personal communication activities, posters promoting the application of good slaughtering and selling practices were developed, produced and hung. Posters promoting good consumption practices targeting consumers frequenting these places are under consideration for development.
- 8.1.8 **Continue behavior change activities at nodes** (Hoa Mac market, Hue-Thanh slaughtering point in Ha Nam; Ngoc Xuan Centralized Slaughterhouse in Can Tho):
 - In collaboration with AH and PI teams, APII conducted a meeting with relevant stakeholders including Ha Nam and Can Tho Sub-DAH, leaders of Hoa Mac People's Committee and MMB and target audiences to plan behavior change monitoring and follow up activities.
 - At each node, conducted small group discussions (SGD) with poultry vendors and slaughterers. These small group discussions were organized and facilitated by a multi-sectorial team of provincial BCC trainers. Action planning on solutions for change were collated and shared with related stakeholders for follows up.
 - Conducted monitoring trips including observation of actual practices from target audiences, identification of areas to be improved and discussion with audiences to help them find out optimal solutions for their own problems.
- 8.1.9 Broadcasted a 20-minute video of the Stakeholder's Forum on Safer Poultry Production and Food Safety in Can Tho on Can Tho City Television in December 2012. Key issues addressed in the forum including current regulations related to the responsibility of

stakeholders to contribute to the safety of poultry products, consumer's experiences while choosing and preparing poultry and practices and efforts of poultry slaughterers, vendors and Ngoc Xuan slaughterhouse owner to contribute to safer poultry products were broadcasted to reach a larger public audience.

- 8.1.10 Followed-up with individual provincial BCC trainers on their utilization of BCC knowledge and skills in their daily work. The follow-up results were used as inputs to design the agenda of the BCC Model Dissemination Workshop and to provide suggestions for trainers to prepare presentations for this Workshop. Continuous follow-up will be recorded to enhance sustainability of the impact of the BCC training model in provinces.
- 8.1.11 Met and discussed with VAHIP project to map out potential collaboration and experience sharing on USAID/APII's BCC model.
- 8.1.12 Published and/ or broadcasted information on USAID/ APII's results and key events through media advisories and press releases on local newspapers and television. Written articles and posted news were tracked and shared as follows:

http://tintuc.vnn.vn/video/xa_hoi/637041/thay-doi-hanh-vi-nham-cai-thien-an-toan-thuc-pham.htm

<http://www.vietnamplus.vn/Home/Thay-doi-hanh-vi-nham-cai-thien-an-toan-thuc-pham/201212/172641.vnplus>

<http://m.vovgiaothong.vn/chinh-tri-xa-hoi/xa-hoi/2012/12/phong-chong-benh-truyen-nhiem-bat-dau-tu-thay-doi-hanh-vi/>

<http://hanoimoi.com.vn/Tin-tuc/Doi-song/568738/11-trieu-usd-giup-giam-nguy-co-dich-benh-cum-gia-cam>

<http://www.nguoinhaque.com/vi/news/Thoi-su/Cai-thien-an-toan-thuc-pham-gia-cam-va-san-pham-gia-cam-thong-qua-truyen-thong-thay-doi-hanh-vi-2566/>

<http://www.baoquangtri.vn/default.aspx?TabID=56&modid=377&ItemID=63696>

8.2 Challenges and Solutions

- 8.2.1 Follow-up on the utilization of provincial multi-sectorial BCC trainers' teams may face difficulties on an individual basis because there is no formal reporting line of responsibility from the provinces to the project. There is no coordination mechanism in these provinces during Year 4. Concrete/strategic follow-up activities should be planned with the overall APII team as whole.
- 8.2.2 Slow development of the Communication Strategy Development Guide and BCC Training Manual, which document in detail the transitional pathway of the APII's BCC approach. The BCC team needs time to provide input and to review different drafts. Then it takes time to get good translation and editing in English. By the time the materials are ready to update, it will be the TET period when it is difficult to have full attendance from provinces. However, these

materials will be completed within February and all the dissemination work will be done by the end of March. These materials will be used as a reference for subsequent work with the Farmers' Union.

9. Monitoring & Evaluation

USAID/APII's M&E work aims to strengthen existing systems in the provinces, and help close existing gaps between grassroots level M&E and provincial-national levels M&E and reporting. It also aims to facilitate and guide project implementation towards achievement of impacts to contribute to achieving the stated objectives articulated in the USAID's API Performance Management Plan. In addition, APII acts as the repository for PMP indicators collected under USAID's API initiatives, taking the lead in providing analysis and reporting on this data.

9.1 Achievements

- 9.1.1 Prepared and shared a brief on progress of the USAID PMP, challenges and next steps with USAID and API partners following the API partnership meeting in November 2012.
- 9.1.2 Continued working with MEASURE and API partners on the data analysis plan and necessary preparation for a "good shape" PMP database for upcoming evaluation. Based on PMP data knowledge and discussions with FAO and WHO, USAID/APII provided comments on the draft MEASURE-developed data analysis template and discussed with MEASURE about program's data analysis needs and data reporting requirements in this year, making a connection with the scope of upcoming USAID's final evaluation. MEASURE is now working on necessary improvements of the analysis plan, based on USAID/APII's comments and the evaluation plan.
- 9.1.3 Finalized the project's Logframe through refining indicators to reflect selected approaches and interventions in realization of the annual work plans and defining targets for every indicator.
- 9.1.4 Prepared and submitted to USAID data quality assurance (DQA) documents for a number of the project's indicators in the Logframe of the first three project years upon USAID's request, using USAID's templates.
- 9.1.5 Reviewed and provided comments on project's advocacy plan as well as assigned indicators for monitoring realization of the advocacy plan, linking with the project's performance management plan/logframe.
- 9.1.6 Reviewed and provided comments and inputs to the SOWs of subcontractors to ensure the planned approaches, interventions and deliverables are aligned with the set targets and pathways articulated in the Work plan and the Logframe.

- 9.1.7 Continued providing quality assurance inputs to assessment and survey reports.
- 9.1.8 Worked with technical teams to implement supportive monitoring plans from September to December 2012 at biosecurity demonstration sites in Can Tho and Ha Nam. Developed, tested and implemented a monitoring checklist on biosecurity practices at local meat market in Ha Nam, which will be used for advocacy to DAH for adoption at national level.
- 9.1.9 Compiled monitoring results at Ngoc Xuan from September to December 2012 that were used in the review meeting on monitoring activities between the project and Can Tho Sub-DAH to define next steps. The summary of the assessment checklists from the four monitoring sessions shows that there has been an improvement of this Slaughterhouse. The percentage of the checklist items meeting biosecurity standards has increased from 48% in September to 65% in November. The design related issues have been resolved.
- 9.1.10 Joined with animal health team to train inspectors in Ha Nam in November 2012. Concepts and principles on supportive supervision activities were introduced to the trainees. After this, trainees practiced role-plays to acquire necessary skills such as two-way communication, active listening and providing constructive feedback to slaughterers.
- 9.1.11 Collaborated with technical teams, conducted a mini-survey on the situation of access to finance of the owners or investors of slaughter points/houses who were attending two training courses on biosecurity. The survey identified that 84.6% of 26 participants who filled in questionnaires faced difficulty in getting finance at the start-up of their business. 65.4% have used their own fund (with or without other sources); 38.5% of all never sought for bank' loans and other 50% sought and granted with loan at least once with annual rate of 12-18%. A number of them mentioned that they would not be able to upgrade the slaughtering facility and improve the working environment without easier access to finance. The findings of this survey are useful as an input for upcoming project support to this target group through providing education and information on the ways to access possible financial sources. The project is going to repeat the survey with the participants of the next similar training course.
- 9.1.12 The M&E Manager shared the major concepts and framework of participatory planning, monitoring and evaluation and management for impact (PPME/M4I) to USAID/APII's staffs. The audience found the session interesting and helpful. Details of the approach will be provided in the following technical update sessions.

9.2 Challenges and Solutions

- 9.2.1 To engage all relevant sides in the process of USAID PMP review and development of analysis template is time consuming since each

side has multiple tasks to coordinate and harmonize. The lack of a macro program data analysis plan for assessing program performance according to USAID's expectations has hindered the API partners in determining necessary supplementary data to fill the gaps in the current PMP data. It also has postponed decisions on necessary adaptations in the PMP reporting requirements to reflect the change from a provincial focus to a regional/zonal approach and expansion of the focus of intervention from five focus provinces to nationwide. Based on USAID's latest evaluation plan, it is possible that revisions to the MEASURE-drafted analysis template and current reporting templates will be necessary, which will take more time. Data collection in the second semi-annual period of the last fiscal year has been delayed in this context (USAID agreed with this delay so as to wait until the analysis template is finalized in order to be more efficient). Going through the whole process requires a lot of patience. Meanwhile, USAID/APII took initiative to consult with USAID and discuss and work actively with MEASURE and other partners to make progress in order to align with the program's timeframe.

- 9.2.2 In contrast to the hardware items, it is painstaking and challenging to improve 'software' related items at the biosecurity demonstration sites. For examples, in Ngoc Xuan Centralized Slaughterhouse, there is room for further improvement in many areas such as disinfection of poultry transportation vehicles, off-floor evisceration, regular water testing, use of toilets and shower room, regular health check-ups for workers, wearing of PPEs, personal hygiene practices, waste water processing and activities on management of by-products in the slaughterhouse according to Standard Regulation QCVN 01-25:2009/BNNPTNT. To address these issues requires multiple approaches including continuous education, technical coaching, supportive monitoring and enforcement. The project continues working with local partners to address these issues while gradually reinforcing their ownership in managing the sites.

10. Administration & Finance

10.1 Achievements

- 10.1.1 Managed all aspects of the finance and administration and all subcontracts and consultant agreements effectively. The procedures were streamlined during the course of the year.
- 10.1.2 Shorter turnaround time with the Regional Contracting Officer also helped improve the Consultant recruitment process during the course of the year.
- 10.1.3 APII continues to submit routine deliverables to USAID, including quarterly progress reports, quarterly financial reports, semi-annual and annual reports etc. The F&A team support the technical teams in managing all subcontracts and consultants.

10.1.4 Managed multiple Subcontracts and Consultant Agreements for all components. All subcontracts and consultants are now tracked better by the F&A team helping to prepare contract modifications in advance (and reduce need for retroactive approvals). Technical teams are regularly updated and reminded of due dates for upcoming deliverables.

10.1.5 .

10.2 Challenges and Solutions:

10.2.1 High staff turnover for the F&A team in the final months of the project increases the workload for remaining staff. It takes time to recruit and train new staff (who will only join the project for seven months).

10.2.2 The available sub-contracting mechanisms remain a challenge to partners particularly those with little working capital or capital reserves and little experience in contracting with international development partners/donors. No immediate alternatives or solutions have been identified other than to continue to work closely with the subcontractors to prepare contracts and fulfill their obligations under contract.

10.2.3 Delayed submission of Animal Health team for Consultants and Subcontracts SOWs may experience a delay in July 2013 close out for Consultants and Subcontracts.

10.2.4 Overlapping scheduling of large events this fall has particularly burdened the smaller F&A team. Likewise, lengthy approval processes cause pressure for F&A when technical staff made last minute logistic arrangement requests. Smooth coordination and communication with USAID and quicker approvals/turnaround times are helping reduce delays, and internal communications in APII on recruitment of consultants and preparations of subcontracts has improved.

11. Success Stories

Improving food safety and reducing disease risks in Ha Nam

In late October 2012, a handover and market reopening ceremony was organized in Hoa Mac township of Ha Nam province to formally mark the improvements in poultry slaughtering and marketing in the Hoa Mac market and a nearby small-scale poultry slaughtering facility.



The USAID's Avian and Pandemic Influenza Initiative Project (USAID/APII), in close collaboration with Hoa Mac Township People's Committee renovated

the animal meat section of Hoa Mac Market in Duy Tien district, Ha Nam. In the newly reopened market, poultry meat, beef, and pork are all sold in separate areas away from fruit, vegetables, prepared foods and other non-meat products. In the past, tables and floors in the sections where meat was sold were constantly wet, dirty and difficult to clean and disinfect. Upgrading the tables and floors and improving the waste water systems and electricity have significantly improved hygiene practices at this market.

The project also supported the upgrading of a nearby small-scale poultry slaughtering facility. Realizing the benefits to be gained from the upgraded facility and improvements in slaughtering hygiene, the owner of the facility contributed 30% of the total cost. He agreed to separate the slaughtering area from his family's living area, to create a one-way slaughtering line to move poultry from dirty and clean areas through the slaughtering process, and to install new and higher roofs and tile the floors and walls. These upgrades allowed for better cleaning and sanitizing, improving the hygiene of the facility. Standard equipment for the processing line has also been installed. Replication of the slaughtering demonstration model by other slaughterers in Ha Nam has commenced, relying on local resources and community contributions.

In addition to the facility renovation projects, USAID/APII has provided a series of training courses for slaughterers, vendors and veterinary inspectors on proper veterinary inspection processes, HPAI risk reduction, food safety and sanitation. Follow-up discussions on key behaviors to include hand washing; and proper disinfection techniques continue. Monthly meetings were also provided for provincial food preparers on behavior change and the need for continued education and promotion of safe food practices. Special educational posters are hung at slaughter points and animal meat areas throughout the market to remind consumers of the need for these behaviors. These same posters remind meat handlers on the importance to reduce risk and ensure that food safety practices continue in this small-scaled slaughter point and animal meat market model.

In July of 2011, the USAID's Avian and Pandemic Influenza Initiative Project (USAID/APII) supported Ha Nam's Department of Agricultural and Rural Development provincial proposal to provide additional education and training for veterinarians working in cattle and poultry slaughtering. This effort is in alignment with recently published national Circular 14 promulgated by Department of Animal Health and the Ministry of Agricultural and Rural Development. This project provides a training platform for other small-scale poultry slaughterer's to emulate. Additionally this project was done in concert with local businessmen and USAID/APII both providing portions of the financial support.

In the annual project review workshop in the province, Mr. Nguyen Manh Hung, Deputy-Director of the provincial Department of Agricultural and Rural Development emphasized that to expand the efforts to improve veterinary hygiene and food safety, the province needs to map out their plan to replicate the upgraded slaughtering facility and market model in other districts. Reference was made to ongoing replication in Ly Nhan market through upgrading of the fresh fish area with the vendors' contribution, and to upgrading of pathways in Hoa Mac market.

Quang Tri province adopts Community-Based Surveillance (CBS)

In April 2012 the final CBS evaluation was conducted by USAID/APII, and proved that the CBS model in Quang Tri province was being used. It helped to identify multiple events of H5N1, Blue Ear and Foot and Mouth Disease (FMD) resulting in timely disease control actions. Review of epidemiological data showed that among the twenty H5N1 events recorded in the province during the reporting period, CBS collaborators detected eleven events (55%) and commune animal health workers (CAHWs) detected the remaining nine (45%). The mean time calculated from disease onset to system's detection was 1.8 days for the CBS collaborator events and 2.9 days for the CAHW level events ($p=0.16$). The CBS data also identified ninety-four confirmed blue ear events and twenty-eight confirmed foot and mouth events.



The collaborator surveys and in-depth interviews with stakeholders revealed that the CBS system was simple in structure and operation and enabled collaborators to sustain its implementation. Collaborators from all sites performed well in terms of knowing their roles and responsibilities within the system, finding sources of disease information in their community and the disease reporting structure. In general, the system was acceptable to the local key stakeholders. Households initiated contact with the CBS system in the context of seeking treatment for sick animals from village animal health workers (VAHWs). Collaborators demonstrated high willingness to implement their roles under CBS during project implementation. Provincial, district

and commune stakeholders confirmed that CBS system operating procedures were generally compatible with those of the National Disease Surveillance System.

In January 2012, the animal health surveillance system developed through USAID/APII's CBS activities was officially adopted with the Decision 25 of Quang Tri People's Committee. All village AHWs have been provided a monthly allowance to participate in AH activities, to include disease surveillance.

The evaluation has identified that contextual factors may impact the effectiveness of the system. It is effective in Quang Tri where poultry farming is predominantly small-scale and managed at a household level. Stakeholders noted that a high level of political intervention is needed to detect and control outbreaks and to minimize the adverse effects on the livelihood of households. Improving animal health surveillance at the community level is linked with the formal establishment of a VAHW network at a grass roots level. Based on these findings, the last year of the project will focus on replicating human health and animal health surveillance activities in those central provinces that share similar conditions of those in Quang Tri.



Avian and Pandemic Influenza
Initiative

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Report for Year 3, Quarter 3

Submitted on July 31, 2012

Abt

In association with:

Australian Foundation for the Peoples of Asia and the Pacific

Vietnamese Red Cross

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Annex 1 – Updated International Consultancy & Travel Schedule

Annex 2 – Updated Subcontractor and Local Consultants Schedule

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Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015)
APHA	American Public Health Association
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
AVSF	Agronomes et Vétérinaires Sans Frontières
BC	Behavior Change
BCC	Behavior Change Communication
BCP	Business Continuity Planning
CBS	Community Based Surveillance
CCHIP	Centre for Community Health and Injury Prevention
CDC	Center for Disease Control
CEFACOM	Research Center for Family Health and Community
COP	Chief of Party
CPE	Committee for Popularization and Education
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DDM	Data based decision making
DFP	Department of Forest Protection
DLP	Department of Livestock Production
DOH	Department of Health
EPT	Emerging Pandemic Threats
FA	Farmers Association
FAO	Food & Agriculture Organization (of the United Nations)
FAPQDC	Food and Agricultural Products Quality Development and Control Project (supported by CIDA through MARD)
FP	Focal Point (appointed by FAO in focus provinces)
HPI	Health Policy Initiative
ICS	Infection Control Society
IPC	Infection Prevention and Control
KAP	Knowledge, Attitudes and Practices
LIFSAP	Livestock Competitiveness and Food Safety Project
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MMB	Market Management Board
MFI	Micro-Finance Institution
MOD	Ministry of Defense
MOH	Ministry of Health
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCERWASS	National Center for Rural Water Supply and Environmental

	Sanitation (in MARD)
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PEPFAR	President's Emergency Plan for AIDS Relief
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PSA	Professional Services Agreement
QTLVA	Quang Tri Livestock Production and Veterinary Association
RAHO	Regional Animal Health Office
RC	Regional Coordinator
SARI	Severe Acute Respiratory Infection
SDAH	Sub-Department of Animal Health
SOW	Scope of Work
TOT	Training of Trainers
TOFT	Training of Farmer Trainers
TOMT	Training of Master Trainers
UNJP	United Nations Joint Program
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VEMEDIM	Veterinary Medicine Import Export Joint-Stock Company
VIPA	Vietnamese Poultry Association
VMSA	Vietnam Medical Services Association
VNA	Vietnam Nursing Association
VNFU	Viet Nam Farmers Union
VNRC	Vietnamese Red Cross
VUSTA	Vietnam Union of Science and Technology Associations
VVA	Vietnamese Veterinary Association
WCS	Wildlife conservation Society
WHO	World Health Organization
WU	Women's Union

Introduction

This report presents the main achievements, challenges and solutions/lessons learned for USAID's Avian and Pandemic Influenza Initiative (APII) during Year 3, Quarter 3 (October - December 2011).

The report is divided into the following thematic sections:

1. Animal Health Worker (AHW) Capacity Building
2. Agricultural Extension Worker (AEW) Capacity Building
3. Poultry Supply Chain Strengthening
4. Community-Based Surveillance (CBS)
5. Infection Control / Case Management (IC/CM)
6. Pandemic Preparedness Planning (PPP)
7. Cross-Cutting Issues
8. Success Stories.

1. Animal Health Worker (AHW) Capacity Building

The goals are to develop an AHW capacity building package and an AHW network model that is adopted by relevant public-private agencies at national and/or local levels, and to develop a standard Terms of Reference for AHWs for adoption by Provincial Peoples Committees (PPCs) and the Ministry of Agriculture and Rural Development (MARD).

The third quarter of Year-Three focused on finalization of the AHW training manual to include training manual in an E-Book format, we continue to support a wider adoption of AHW capacity building package by cost sharing with subcontractors to include AFAP and Vietnam Veterinary Association (VVA).

1.1 Achievements

- 1.1.1 Australian foundation for Peoples of Asia and the Pacific continue to promote development of provincial strategies to maintain and expand monthly AHW meetings and refresher trainings. Fifty-six training and monthly meetings for AHWs took place in Quang Tri, Ha Nam, Can Tho and Kien Giang in nineteen of the districts. Costs were shared with the AHW networks: AHWs paid for lunch and travel themselves and local trainers from SDAH delivered topic specific presentations.
- 1.1.2 Quang Tri PPC has allocated 1 billion VND (~USD 50,000) in the provincial budget for a training of AHWs program in 2012. The facilitators from AFAP/APII, Quang Tri's SDAH, Department of Labor – Invalids and Social Affairs, and Agriculture College met in May 2012 to plan for implementing an AHW training to cover 500 additional AHWs throughout the province. The Agriculture College has been appointed as the resource agency to help SDAH adopt and replicate the AHW training model with local funds.
- 1.1.3 The Quang Tri DARD and SDAH organized three excellent Animal Health Worker Competitions at district level culminating in a final

competition at provincial level. This competition recognized and promoted the reputation of AHWs. A first for both the province and the country, and co-founded by the province, seventy-percent of the presentations were informative, including community events, monthly technical seminars and training courses, while the remaining were entertaining. The first prize was granted to the Trieu Tai team, who incidentally also conducted a great community event in May 2012.

- 1.1.6. A local consultant was recruited to assist AFAP national trainers to complete the AHW training manual.
- 1.1.7. To introduce and promote the adoption of AHW training package in non-pilot provinces, TOT courses for local trainers were held. From May 21-25 and June 5-9, two cost-shared AHW TOT courses were offered for more than 50 local trainers. This training took place in Moc Chau and Ninh Binh in collaboration with Moc Chau Dairy Cattle Joint Stock Company and Ninh Binh SDAH respectively. In both cases, APII covered the cost of the training materials and national trainers, while the rest were covered by their counterparts. Those local trainers will be used to implement training plan for AHWs in the local area. This form of replication will be explored for year-four.

1.2. Challenges and Solutions

- 1.2.1 Allocation of local funds for training of AHWs remains an issue. While Quang Tri DARD has allocated 1 billion VND to fund for the provincial budget for AHW training in 2012 (for implementation of the provincial decision no. 25 of 2009 to implement and strengthen AHW networks) many other provinces have not developed or funded a clear plan. Sub Department of Animal Health DAHs, SDAHs in Can Tho, Hung Yen and Ha Nam have expressed commitment to maintaining the refresher training and monthly meetings, but more commitment was expected to including allocation of funds for AHW training in the year 2013 financial plan. This has yet to be allocated in the provincial budget to APII's knowledge. Currently, as in the previous quarter, most of the local contributions have been provision from the free meeting venues by District Veterinary Stations (DVS) and the voluntary participation of AHW without any compensation. Train of Trainer courses have been conducted in Ninh Binh province and Moc Chau as part of plan to reaching out to other new provinces but APII will need to follow-up and advocate in this area. We will also consider reaching out to other new provinces and consider cost-sharing TOTs (subject to USAID approval).
- 1.2.2 APII and SDAHs will need to continue to work with DARDs and PPCs and advocate for inclusion of AHW support within the 2013 annual budget cycle. Technical assistance and support from APII may well be needed (not to lose momentum) in the coming months to help position the AHW model for wider adoption with provincial resource allocations.

2. Agricultural Extension Worker (AEW) Capacity Building

The goal is to develop an AEW bio-security training package for small commercial poultry producers, which is adopted by the national-provincial extension system, and by other partners.

The activities in the third quarter focused on integration with BCC rolling out the training in some pilot provinces.

2.1.1. Training for Master Trainers (TOMT) was conducted in Da Nang during April 3-5 for 29 participants from 13 central provinces, World Vision Da Nang, Quang Tri and Hue, IED/Da Nang and AFAP's Hoa Binh participated in the project. The course's major goal was to continue building training capacity on biosecurity measures in poultry production for agriculture extension workers and NGO staff that are expected to roll out biosecurity training for poultry farmers in their own provinces. Following this training, an advocacy event was held on April 6. The new biosecurity training package targeting Vietnam's more than seven-million small holder poultry farmers was unveiled in Da Nang at a workshop for the MARD representatives, provincial leaders and agricultural extension experts from Vietnam's central region as well as representatives of international development partners and other local and international organizations. The workshop was jointly hosted by USAID/APII and the National Agriculture Extension Center (NAEC) in MARD.

2.1.2. Cost-sharing for a TOT course for Hoa Binh PAFEC was accepted and conducted in Hoa Binh with a contribution of 20:30:50 by APII, AFAP and local fund respectively. This method of replication will be continued in hopes of identifying novel ways for replication with funding resources that may identified from other NGOs and private sector.

2.1.3. Farmer training on Biosecurity good practices:

Integration of biosecurity training for farmers in provincial communication plans was promoted by the AH and BCC teams for adoption in Year-Three for BCC PSAs in all pilot provinces, as a part of hand over, the BCC strategy is to development these kills within the local populace. Biosecurity training packages have been used for small commercial farmer training in Hung Yen, Ha Nam and Quang Tri starting in late March 2012 with local "in kind" contribution of meeting venue and banner. In total, 450 farmers in selected communes in Hung Yen and 600 farmers in selected communes in Ha Nam and 240 farmers in Quang Tri had the opportunity for knowledge exchange and learn more about good farming practices in poultry production as well as how to improve their biosecurity measures. The provinces are expected to expand this training to the remaining sector three farmers through their annual training plans.

Vietnam Poultry Association (VIPA) entered a new contract with APII for livestock sector workshops and strengthening of the association in order to promote biosecurity practices within their farmer club networks. Similar approaches under this contract, provided training for 600 farmers from 20

farmer clubs established by USAID's AI BCC in Thai Binh provinces. The workshops train poultry producers in poultry farming biosecurity practices. In early July, VIPA planned to review farmer's Club activities and the development of poultry association Networks through a recognition workshop held in Hanoi.

- 2.1.4. Experiences of Thai Binh activities will be shared among other VIPA members and lesson learned will be introduced into the Vietnam Poultry Association Strategy for Development planning documents for 2012 – 2020. Together with guidance for network development draft, the first draft of this strategy has been written and we are gathering comments from partners to include DLP. Final draft is expected to be completed and printed in July 2012.
- 2.1.5. Under the technical and financial support of APII of USAID, and in collaboration with DLP, Vietnam Poultry Association (VIPA) has worked with DLP to successfully conduct a national workshop on Sustainable Development of Garden chicken with 57 officials from various national level Ministries, provinces, local and international agencies and institutions including research firms and companies on feed equipment and breeding, and media agencies in 28-29th June 2012. The workshop was to review successful models plus field visit and experience sharing on garden chicken production. Participants got consensus on a list of proposed options including enabling policy environment on safe and sustainable development of garden chicken production. News on this workshop was aired through national television channel VTV2 on the following day and June 8, 2012 and Workshop Proceedings distributed widely through DLP network.

2.1 Challenges and Solutions

- 2.1.1 Working closely with NAEC/PAFECs is necessary to help institutionalize the training/extension package. This is a time-consuming process which requires diplomacy, patience and perseverance in order to forge and sustain close relationships. Meetings have been conducted to discuss these issues with NAEC and PAHI and we continue to look for more opportunities. MARD's recent strategy of opening up to competitive bidding the allocation/awarding of extension funds to not only to NAEC and PAFECs but also private enterprises will have implications for our work and will influence our strategy to promote replication of our AEW package. We have been willing to include NGOs, Civil Society Organizations and private entities as well in our advocacy strategy and partnership efforts. This may provide opportunities for some novel and unconventional public-private-partnerships.
- 2.1.2 VIPA has demonstrated their ability to coordinate with MARD institutions such as DLP, DAH and NAEC. However, the association is still in need of substantial and sustained capacity strengthening. APII will continue to support this process through the subcontracts.

3. Poultry Supply Chain Strengthening

The goal is to develop biosecurity/biosafety demonstration models in key (high risk) nodes along supply chains, together with related documents (protocols, guidelines, training materials) which are adopted, adapted and replicated by public agencies, private partners and/or other development projects and programs elsewhere.

The key activities in Year-Three focused on the following nodes:

- Supporting upgrades to Dong Ha live bird and poultry meat market in Quang Tri;
- Beginning processes for upgrades to District market in Ha Nam, and Ngoc Xuan centralized poultry slaughterhouse, Can Tho City;
- District market in Ha Nam;
- Ngoc Xuan centralized poultry slaughterhouse, Can Tho City;
- Home-based slaughter points around Dong Ha market, Quang Tri;
- Small slaughter points around Duy Tien district market, Ha Nam

3.1.1 The upgrade of the poultry sections in Dong Ha Market by a local construction company were completed in November of 2011, co-funded by APII, the Market Management Board (MMB) and other vendors. A launch event was conducted on December the 5th as reported in semiannual report. A training session on risk reduction and good practices was conducted before and after the re-opening market for vendors, MMB representatives, district veterinary staff and cleaning staff. Follow-up trainings on bio-security, bio-safety and business development are provided at regular (usually monthly) intervals. Continued 'hand-holding' was absolutely necessary (and a positive thing) in order to see sustained behavior changes materialize. A hand over plan will be made to introduce for MMB and Dong Ha Veterinary Station of SDAH to maintain this valid following up in Dong Ha in coming time.

3.1.2 Technical drawings, protocols, and needed quantities of supplies were completed/identified for the upgrades of Phu Nong centralized slaughterhouses in Kien Giang, Can Tho, and Ngoc Xuan. After the Stakeholders Agreement was signed the Ngoc Xuan (Can Tho) upgrade was started in April as scheduled and renovation will be completed in July 2012. Operational testing, reviewing good practices and the re-opening is planned to launch around the middle of August, 2012.

3.1.3 In collaboration with the Can Tho Sub DAH, and APII organized two training courses on risk reduction measures and good slaughtering practices for 30 slaughterers in Ngoc Xuan. About one-third of these slaughterers had only completed primary school so their capacity to absorb technical knowledge was limited and will require more follow up and pictorial illustrations to insure behavior changes.

3.1 The slaughterhouse project in Kien Giang looks less promising, partly due to lack of buy-in and commitment from provincial counterparts, there will not be anymore effort to make the renovation for this facility. However,

Phu Nong will be the subject for a study tour and training on risk reduction as planned.

- 3.2 Two slaughter points in Dong Ha, both supplying the live bird market, were selected for upgrades and demonstration model development. Technical proposals and stakeholder agreement were prepared. Renovation started in late May of 2012 at both of these home-based slaughter points. This renovation work is co-financed by the slaughter point owner and USAID/APII. The owner is in charge of site clearance and auxiliary structure including kitchen and toilets. The USAID/APII up-grade the remaining part to improve veterinary hygiene conditions and essential equipment for good slaughtering practices. Renovation in Dong Ha will be completed by the middle of July.

- 3.2.1 A similar approach is underway in Ha Nam with plans for upgrading a district market and one home based slaughter point.

APII actively shared materials including risk assessment reports, supply chain node prototype designs, small group discussion flipcharts etc. with LIFSAP and continued throughout the reporting period to invite LIFSAP and VAHIP representatives along to relevant events for closer collaboration and experience/lessons learned sharing. In addition to review current situation of Poultry Slaughter and Marketing and to propose solutions to improve veterinary hygiene and food safety, a National WS have been hold in 7-8th June 2012 at Vietnam Center for Commercial and Industry hosted by Department of Animal Health and Department of Livestock Production. There were 80 participants from national and provincial levels of animal health and livestock sectors, international agencies and institutions including research firms and media agencies. FAO has been brought up to date on all of these events as well as present the results of their LBM surveillance at the WS. Total of 18 reports from management and production sites have been presented at the WS. Participants also discussed appropriate models, policies and guidelines to be developed and adapted by local provinces. News on this workshop was aired through national television channel VTV2 on June 9-10, 2012. A summary of recommendation will be submitted to MARD on workshop results. A local consultant's team will work more details with DAH public health division and VIPA to develop and submit a proposal on Slaughter and transportation Management to MARD and related agencies in coming quarter. APII will work closely with FAO to introduce the market and slaughterhouse model approaches into the regional disease control strategy what initiate by FAO and DAH especially for RAHO 3 and 6.

3.3 Challenges and Solutions

- 3.3.1 While provincial counterparts clearly are very interested in the demonstration models, DAH does not have a national strategy for poultry supply chain risk reduction and most provinces do not have a 'master plan' that demarcate future locations, e.g. for centralized poultry slaughterhouses and markets, which makes it difficult for them to commit resources to this area.

- 3.3.2 Profit margins from poultry slaughtering are small, especially in small scale slaughtering operations. It is understandably hard to persuade the small private entrepreneurs to invest in facility upgrades without some form of 'subsidy' (financial support). Micro-finance options in the commercial financial sector (banks, MFIs) are rare. Many small entrepreneurs appear to be comfortable without plans to expand. Cost-cutting measures seem a more appealing way forward to improve business and increase profits. This also implies cutting private costs on environmental safeguarding and food safety related measures. Sustained awareness is necessary with possibly combining stick-and-carrot for more attention to public health issues.
- 3.3.3 APII continues to reach out to and invite partners such as LIFSAP and VAHIP. Partners rarely reciprocate however. USAID may need to step in and help promote the dialogue at the donor level.

4. Community-based Surveillance (CBS)

The goal is to develop an events-based grassroots surveillance package, including training materials/tools and job descriptions for grassroots 'collaborators', which is adopted, adapted and scaled-up in the provincial-regional-national surveillance system with local resources.

4.1 Achievements

- 4.1.1 USAID/APII hosted an official workshop to share experiences and lessons learned from Community-Based Surveillance work in Vietnam on Apr. 5 in Hue. Media Advisory and Press release were available and shared. The news on the CBS workshop in Hue posted on the website <http://danviet.vn/83138p34c109/du-an-sang-kien-gia-cam-phat-hien-hon-30000-gia-cam-mac-benh.htm> on April 6. The video clip, on the event aired by VTC16 are available with English subtitles.
- 4.1.2 Conducted data collection in three provinces (Hung Yen, Quang Tri and Can Tho), data entry and analysis on CBS evaluation by AMDI with technical guidance by the international consultant and oversight by the project's M&E Manager. APII staff has commented on draft technical report that is expected to be released in Year-Four.

5. Infection Control/Case Management (IC/CM)

The goal is to develop a model (with training tools, guidelines etc.) for implementation of Circular 18 at the local level, which we hope will be adopted more widely throughout Vietnam.

5.1 Achievements

- 5.1.1 From March 27 to April 7, a series of workshops in Hanoi, Hue and Ho Chi Minh City, organized by the Vietnam Ministry of Health (MOH), together with Vietnam Nurses Association, regional Infection Control Societies and health officials and leaders from provincial Health

Departments and district hospitals in seventeen provinces to describe the significant infection control challenges that they face. The major obstacle identified by these agencies were poor appreciation among hospital staff for the importance of infection control. It was noted that there is a shortage of human resources including dedicated infection control staff and a shortage of suitable equipment and facilities for adequate infection control. News on this workshop was aired on O2TV and uploaded to website of T5G at <http://www.t5g.org.vn/Default.aspx?u=dt&id=3706>. Media advisory and Press release were made available and shared.

- 5.1.2 The desk review on cost effectiveness of IC interventions in district hospitals was completed in April. Preliminary findings were presented in the IC workshops in Ha Noi Hue and HCM City. The final reports are available.
- 5.1.3 Based on the previous documents developed by APII in year 2 and MOH/WHO recommendation, VNA revised the IC training curriculum and IC training material for grassroots level, combined the results and discussions in 3 IC regional workshops conducted on March and April.
- 5.1.4 A meeting to review the IC training material was chaired by MOH with participants from the Dept. of Science, Training and Education, the Dept. of Treatment, VNA and IC experts from 3 IC Societies on 26 April.
- 5.1.5 The IC training material were submitted to MoH for approval on May 11 to become an approved document for all health facilities at grassroots level, include district hospitals, commune health centers and public/private clinics to use in their diffusion training for their own staff.
- 5.1.6 In June a review meeting hosted by VNA and chaired by Mr. Muc – Deputy Director of Administration on Health Service and Prof. Quy, chairman of HANSIC. This meeting allowed national IC experts to review the IC practical handbook which contains recommendations and guidelines on IC practices for all health workers at grassroots levels (commune and district levels).
- 5.1.7 The next day, MOH's Scientific Review Board met and reviewed the IC training material. As a result the seven board members recognized the training materials as the first official IC training material, noting that it is comprehensive and useful. The approved training material will be applied for training of all health facilities at grassroots level throughout the country, in order to comply with the "National action plan on IC strengthening in health facilities in the period 2012- 2015" and decision number 014/QĐ-BYT, which specifies that by 2015 at least 80% health care workers at health facilities will be trained on IC.
- 5.1.8 In collaboration with VNA, APII hosted the first TOT course on IC in June at the grassroots level. This was based on the final version of IC training material (as mentioned above). This six-day training course was for 25 participants from Quang Tri, Huc and Lam Dong. Lessons learned and final comments from this training will be incorporated into the final version of the training materials to be approved by MOH for national-wide use including 645 district hospitals, 10,748 commune health centers and

several public/private clinics. After attending this course, Lam Dong – a new province had plans to rollout this training in their provinces.

- 5.1.9 In May APII Staff attended the Launching Ceremony for Hand Hygiene organized by Ha Noi DOH and chaired by MOH with participants from district and provincial hospitals. In the meeting, MOH emphasized the importance of strengthening IC in hospitals. The MOH National Plan on IC for the period 2012-2015 which was approved by MOH on March 30, 2012 was officially introduced.

5.2 Challenges and Solutions

- 5.2.1 Convincing key MOH personnel to participate was very time consuming and required a lot of staff effort (VNA and APII), but the end result justified this strategy, as finally participation by MOH was beneficial in the regional IC workshops.
- 5.2.2 The process of approval by MOH takes a long time with the involvement of some Departments and policy makers in MOH. It's out of the control of APII and our subcontract. With the extra effort of APII and VNA, IC training material approved by MOH's Scientific Review Board and we expect the decision from MOH's Science and Training Department in near future.
- 5.2.3 There are still very few qualified trainers available at the provincial level. In the near future we will need to implement more training of master trainers (TOMT) on IC to train grassroots level staff once the MOH approves the IC training materials. While waiting for MOH approval the local authorities have requested a group of master trainers in the provinces to rollout IC training courses to all health care workers at the grassroots level with local funding. APII will provide technical assistance, material replication, and TOTs according to the MOHs IC training dissemination plan as it is developed

6. Pandemic Preparedness Planning (PPP)

The goal is to develop PPPs in selected pilot province(s), introduce the package in other provinces, and advocate for its wider adoption throughout Vietnam.

6.1 Achievements

- 6.1.1 In April, VNRC began discussions and drafting the Kien Giang tabletop exercise. Once the draft was completed and a second round of comments incorporated meetings commenced to plan for the event in May.
- 6.1.2 In May the Kien Giang People's Committee chaired a table top exercise with participation of more than 60 representatives from MOH, VNRC, USAID, other provinces and agencies including provincial departments, military agencies, police, media agencies and mass organizations from Kien Giang. Comments from table exercise will be incorporated into the PPP before submitting for Provincial People's Committee's approval. News of this event was aired by Kien Giang TV channel on May 17 and on VTC16 in May 18, and uploaded onto youtube. <http://youtu.be/vYQkDkMrWMA>.

- 6.1.3 VNRC organized a review meeting in Hanoi to finalize PPP training materials based on comments gathered from the training course for community leaders, with participants from GDPM (MOH), National Center for Health Communication and Education (T5G), APII expert, and local master trainers of VNRC on PPP.
- 6.1.4 A PPP dissemination workshop was organized by People's Committee in Kien Giang for 35 designated staff from provincial agencies, mass organizations and local authorities. The participants had opportunities to learn about the pandemic preparedness and practice to make the plan for their organization. They also discussed on multi-sector cooperation and shared their experiences dealing with outbreaks.
- 6.1.5 The Pandemic Preparedness Plan (PPP) in Kien Giang was approved by Kien Giang Provincial People's Committee, in late June. This PPP compiles the lessons learned from previous PPPs, inputs and comments from almost government sectors, mass organizations in Kien Giang, MOH, FAO, WHO and follows a One Health and "whole society" approach. It is the first time that a Business Continuity Plan has been included. This PPP is also in line with the Vietnam Integrated National Operational Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases 2011-2015 (AIPED).

6.2 Challenges and Solutions

- 6.2.1 Final approval was delayed because Mr. Huan – the Vice Chairman of Kien Giang Provincial People's Committee assigned to sign PPP, was away on business until the end of June. This in turn required a modification to our PSA with VNRC. It caused the late of deliverable submissions, especially for last deliverable so the PSA have modified the timeline with the approval from USAID.

7. BCC and Cross-Cutting Issues

Behavior Change Communication (BCC)

The BCC work aims to identify appropriate behaviors and messages, integrate these into the work of the animal and human health components, and strengthen the BCC capacity of national and provincial stakeholders, enabling them to carry on BCC activities beyond the life-time of the project.

7.1 Achievements

- 7.1.1 Provided technical assistance to provincial BCC trainer teams to develop BCC materials including discussion guides, drama scripts for community events. In this year three, provincial BCC trainers were responsible to select three biosecurity behaviors based on priorities of Ministries of Health and of Agriculture and Rural Development and their own provinces. Then they were to develop discussion guides for small group discussion with small and medium commercial poultry farmers and drama scripts to be acted in community events in their province.
- 7.1.2 Continued to build capacity for provinces through a training course on proposal development and writing skills for 20 key staff and BCC trainers from Animal, Human Health Sectors, Health Communication and

Education, Agriculture Extension and Women Union from five focus provinces. These trained participants are responsible for proposal development in their related provincial agencies/organizations. During and after the training course, all these trainees were followed up and coached to develop proposals on BCC activities to seek for local resources. Follow-up results of these proposals will be updated in the next quarter.

7.1.3 Nearly completed BCC campaigns in all five provinces of Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri with the following achievements:

- 110 facilitators and organizers of Community Events (CE) were trained and mentored by provincial BCC trainers on facilitation and organization skills to lead and organize community events in their provinces. These CE's facilitators and organizers mobilized their community to play in the drama scripts and organized CEs to promote the application of biosecurity and food safety practices.
- 32 community events (CE) were organized and led by above-mentioned trained facilitators and organizers. Each CE reaches around 200-300 participants who are community people and key stakeholders of the poultry supply chain such as poultry producers, traders and local authorities. In Can Tho, all CEs were recorded and aired through local commune loudspeakers three times after the CEs.
- 115 communicators of small group discussions coming from Commune Animal Health, Human Health Sectors and from Commune Women Union were trained by their related provincial BCC trainers on refresh communication skills, use of small group discussion guides and on how to organize small group discussions with small and medium commercial poultry producers.
- These trained communicators were then mentored by their provincial BCC trainers to lead small group discussions with about 2500 small and medium poultry commercial producers to promote the application of priority biosecurity behaviors.
- Before participating in these small group discussions, around 1,800 poultry producers (except the ones from Kien Giang province) benefited of two-day training courses on led and organized by provincial and district trained agriculture extension trainers in collaboration between Provincial Agricultural Extension Center and Women Union to improve their knowledge on risk reduction and biosecurity measures in poultry production.
- Household visits were made to about 10% of small and medium commercial poultry producers who participated in small group discussions. These home visits were done by provincial trainers, trained communicators and local authority such as head of village to observe changes, and discussed motivators and barriers for change. Results of these observations will be shared in their review workshop and updated in the next quarter.
- Eighty people from four provinces of Can Tho, Ha Nam, Hung Yen and Kien Giang including village head, the head of commune Women

Union Association, a leader of commune people's committee were trained on how and what to do in a household visit: communication skills, steps of household visit and how to use the observational checklists.

- Seven USAID's APII TV spots were aired on all five provincial television channels. These spots were also used in other events such as trainings courses, small group discussions, community events.
- 7.1.4 Designed integrated BCC activities (video, poster, observation, group discussion, stakeholder forum) for Ngoc Xuan slaughterhouse in Can Tho that will be implemented during the next quarter of Y3 BCC activities.
- 7.1.5 KAP reports -- More work has been done with support from Abt home office into data analysis. Final report will be submitted to USAID in the next quarter.
- 7.1.6 Attended MOH/VAHIP project planning workshop in Da Nang and shared APII's BCC approach and its materials for reference and replication. Discussion guides and CBS handbook for human health providers are especially interested. Further collaboration on BCC training for their three new provinces and risk communication will be explored in coordination with One Health Communications Network.
- 7.1.7 Under the ongoing development of Communication Strategy Development Guide and Training Manual for BCC trainers. Outlines in English will be shared with API partners before the full document are written in Vietnamese

7.2 Challenges and Solutions

- 7.2.1 This is the first time for all provincial BCC trainers developed behavior change materials based on what they had been taught. This includes determinants for change of the target audiences. They are using programs outlined in the training guilds "Learning by Doing," and to develop a mutual understanding from multi-sectoral BCC trainers. Technical assistance from USAID's APII and their ownership of having their own BCC materials are key motivators for these local BCC trainers to overcome training obstacles.
- 7.2.2 Gathering the whole multi-sector team of BCC trainers to develop BCC materials or to prepare for a training course requires a lot of coordination that relied on the project's former PC/ PCUs. Official recognition represents a key challenge for the sustainability of this team of provincial BCC trainers.
- 7.2.3 The process of supporting provinces to maintain and sustain their communication activities to prevent AI and EIDs, more technical support and partial financial one (including other financial mechanism) should be considered. In provinces where they develop their own communication proposals/plans they are seeking local resources.
- 7.2.4 Planned small group discussion and monthly meetings with poultry vendors and slaughterers of Hoa Mac market, Ha Nam province were

delayed because of delay in infrastructure and special characteristics of target audience – vendors and slaughterers. Working with the poultry audiences is harder, say compared to farmers, as they always work during the day. Their concerns are driven by cost benefit and daily income compared. This requires a variety of approaches to encourage them to begin making changes for risk reduction and biosecurity. Lessons learned from implementing BCC activities in Dong Ha market, Quang Tri province will also be taken into account when designing the BCC activities with stakeholders of Hoa Mac market, in Ha Nam.

- 7.2.5 With the delay of approval for the consultant to work on the Development of Communication Strategy Development Guide and Training Manual for BCC trainers, there will a delay in the final training workshop for provinces on these materials.
- 7.2.6 Once we received the final several hundred page final KAP document from Nielsen, we began work on condensing it into a more reader friendly document. This has taken more HQ researcher support on analysis, and time from staff to complete than hoped. We will complete this revision by the end of Year 3.

Provincial Coordination and Implementation

APII's provincial implementation (PI) team works closely with the animal health, human health and BCC technical teams to coordinate field activities implemented by subcontractors, develop/test successful models at provincial and grassroots level, and advocate for their wider adoption with local public and private partners. The PI team operates out of the main office in Hanoi covering activities in northern Vietnam and through two satellite offices, one in Quang Tri for activities in central Vietnam and one in Can Tho for activities in southern Vietnam.

Provincial Coordination Units (PCUs), representing the body of key provincial counterparts and civil society, were established in Year 1 in the five focus provinces. Each province has a Provincial Coordinator (PC) appointed jointly with FAO and funded by APII. The PCs are typically seconded from a provincial agricultural/livestock agency. The PCs work closely with the PI team, coordinate their efforts with FAO's focal points, and report to the PCUs.

As scheduled in Y3 work plan, the implementation of API models should complete by June 2012 in the focus provinces, so the PI team worked closely with the PCUs and PCs to address this change.

7.3 Achievements

- 7.3.1 The PI team met in Hanoi in early May to prepare plan for provincial implementation slowdown and complete in this quarter.
- 7.3.2 Proactive preparation with PCU and provincial partners to get agreed and closed contracts with PCs in five focuses provinces by the end of June.
- 7.3.3 Worked closely with PCU and PC in each focus province to identify transition moves to maintain provincial coordination for the phasing out period from July to Sept. 2012.

- 7.3.4 Worked closely with PCU and provincial partners in five focus provinces to prepare for “Three year final review workshops” which will be organized in each province by the end of the project (September 2012). Overall objective is to identify the successes and withdraw lessons learned from the models that can inform policy makers at national level.
- 7.3.5 Gathered inputs from PCUs in five focus provinces for draft agenda of a “provincial coordination – lessons learned workshop” that will be organized by the project in August 2012 aiming to share experience from PCU and recommendation for effective coordination at province to ensure participation and uptake with local resources.

7.4 Challenges and Solutions

- 7.4.1 Maintaining provincial interest and commitment when APII has no more implementation and support to province activities.
- 7.4.2 Keep provincial coordination in the last three months from Jul to Sep 2012 when APII stopped payment for PC but there is a need for review three year cumulated results and lessons learned, advocacy for adoption and uptake by local partners.

National Coordination & Policy Dialogue

The goal in year-three is to increase the focus on ways and mechanisms to transfer packages/models/approaches to public and private partners for adoption, adaptation, replication and up-scaling. The project consults and coordinates closely with API partners in this effort.

7.5 Achievements

- 7.5.1 Facilitated the BCC working group meeting in June 2012 where BCC working group members got updated on BCC theory and application in changing behaviors of supply chain actors and potential collaboration and mapping for risk reduction, especially on Behavior Change Promotion through Education Action. The orientation of communication for foreseeable future will be the linkage between AI BCC WG and Biosecurity WG: Strengthening Hatchery Biosecurity Standard and Piloting Certification approach. The meeting concluded with new name: One health communication network.
- 7.5.2 Prepared media advisories and press releases for advocacy events on APII’s IC, CBS, PPP and AEW work. All news of those on websites were translated into English and sent to AI partners through weekly updates. The PPP and CBS workshop were aired on VTC 16. The TV clips are being subtitled in English and will be shared with USAID for wider dissemination.
- 7.5.3 Prepared APII Advocacy strategy from June-September 2012 and Y4 and shared with USAID for feedback.

7.6 Challenges and Solutions

- 7.6.1 Although APII BCC had organized training on proposal writing for provincial partners to encourage them to call for funding on their own, so they could implement their BCC activities in Y4, technical support from

APII would be maintained at least in fully developed proposal for provincial approval.

Monitoring and Evaluation

APII's M&E work as a critical component linked with all other program's components in the project's strategic plan and framework to strengthen existing systems for AI/EIDs detection, prevention and management in the focus provinces. In addition, APII acts as the repository for PMP indicators collected under USAID's API initiatives, providing analysis and reporting on this data.

In Year 3, M&E focuses on gathering data and evidence for showing the results of project implementation, especially the project's outcomes and effectiveness of the models. Documentation on monitoring results is paid attention to keep track on the improvements made after project's interventions.

The Project will continue to work closely with USAID's API partners to revise/update the result framework and PMP as well as to compile and analyze PMP data.

7.7 Achievements

- 7.7.1 Compiled USAID PMP data in Year 1 and 2; reviewed the compiled data, worked with MEASURE and FAO and provided feedbacks on the issues and suggestions for revision of the PMP indicators and reporting templates to MEASURE Evaluation.
- 7.7.2 Continued to provide oversight of ongoing monitoring, evaluation and quality assurance of activities on the APII project. Immediate sharing and feedbacks on activity monitoring results by project area managers are regularly practiced nowadays. M&E Manager reviewed deliverables of every component and provided feedbacks as necessary.
- 7.7.3 Continued to update and fine-tune the project Log-frame.
- 7.7.4 Met with local partners in Ha Nam, Quang Tri and Can Tho to explore local plans for inspection of slaughter house/points and live bird market; then to identify possibility for involvement of local partners in the project's monitoring activities to the demonstration sites in these provinces or integration of the project's monitoring activities with the local plan. The Can Tho Sub-DAH had conducted an assessment of all centralized slaughterhouses in May 2012 using the national checklist 1k-2. Ngoc Xuan was graded at B level (eligible to continuous operation as having only minor/major problems and not having any serious problem). A follow-up assessment of this slaughterhouse will be conducted in November 2012. In Ha Nam, a province-wide assessment of all slaughter points will be conducted in August or September 2012, under the provincial program for improving slaughtering activities according to the Circular 14. While the project can use local assessment results as an official data, it will co-implement more frequent monitoring visits to the demonstration sites with local partners to facilitate continuous improvement in operation at these sites.

7.8 Challenges and Solutions

- 7.8.1 We work in the context of “One PMP indicator set fits all” while interventions by each API partner are diversified and coordination mechanisms among partners are not always clear. It is a complicated process to harmonize/standardize indicator definitions and reporting requirements. To improve the situation and speed up the process, APII and MEASURE met to discuss the issues and defined a clear timeline with role of each partner clarified.
- 7.8.2 In order to measure the changes at outcome and impact level, particularly the competencies and behaviors of individuals, the capacity of a system and institutions, and social, economic, environmental and biological impacts, we will require significant resources (time, money and HR). The project is exploring opportunity for collaboration with other partners to make the best use of the available efforts. For example, we are discussing with FAO option for covering Dong Ha LBM through their active market surveillance activities. At the same time, the project is using monitoring data to keep track the behavioral and operational improvements as much as possible.

Administration & Finance

APII continues to submit routine deliverables to USAID, including quarterly progress reports, quarterly financial reports, semi-annual and annual reports etc. The F&A team support the technical teams in managing all subcontracts and consultants.

7.9 Achievements

- 7.9.1 Smooth coordination and communication with USAID Hanoi and quick approval turnaround time from USAID that helps to facilitate the process better
- 7.9.2 Senior team acknowledges they have seen no communication issue in the office so the coordination among the team is quite productive.
- 7.9.3 The office is still fully staffed and they show their strong commitment when there are only 02 months before Year 3 is finished and there is no clear picture for Year 4 and all the activities are in progress, including program and finance and administrative staff.

7.10 Challenges and Solutions:

- 7.10.1 Heavy workload and high pressure when it comes to close to the end of Year-Three of the Project including filling, reporting, workshops, printing, procurements of subcontracts and consultants, and closing out of consultants and subcontracts before the fiscal year is finish.

8. Success Stories

District Competitions in Quang Tri recognize the Skills and Knowledge of Local Animal Health Workers

A new initiative introduced in Quang Tri province during the summer increased awareness of the important role played by local Animal Health Workers (AHWs), and gave them an opportunity to display their abilities. During June, three district-level Excellent Animal Health Worker competitions were held, followed by a provincial-level competition to identify outstanding AHW teams.



AHW Competition in Quang Tri, June 2012

In each of the competitions, competing AHW teams had to introduce themselves, answer a number of questions within a set period of time to prove their knowledge on animal health, and then show their drama and communication talents by designing an innovative way to communicate an animal health message.

The provincial competition was organized on June 22, 2012, with 30 AHWs in six teams from communes in Gio Linh, Hai Lang and Trieu Phong districts competing. Representatives from the provincial Department of Animal Health (DARD), the provincial Sub-Department of Animal Health (SDAH) and other provincial departments and mass organizations attended the competition, along with leaders from district animal health stations, the media and 200 local supporters of the AHW teams.

In his opening speech, Mr. Tran Duc Nhu, Deputy Director of Quang Tri DARD said: "This is the first time that Quang Tri has organized a competition for the animal health workers at the local level. This is not only for those excellent veterinarians from the commune level to get official recognition for their contribution to the animal health sector but it also promotes the knowledge and skills needed for the effective performance of the overall animal health system. The event has received significant attention from provincial leaders and other sectors and it highlights the importance of the animal health system in our society."

The event, which aimed to promote competitiveness and passion for their work, as well as to strengthen capacity of animal health workers, raised the image of local veterinarians. After the event, Ms. Nguyen Thi Thanh, a member of the winning team from Trieu Tai commune in Trieu Phong district said: "We are very happy! The competition helped us to love our work more and we will try our best to provide better services. We hope that these kind of competitions will become popular so that we and our colleagues will have more opportunities to participate in the future."

The competition also piqued the interest of community members and social organizations working on animal production, environmental protection and community health, and increased their understanding of the knowledge and talent of local AHWs. Mrs. Quang Son, the event's MC, said: "I learned a lot from the organization of this event, especially about the competing teams and their technical knowledge and their talent. The event was more successful than I could imagine." Local Government officials were also impressed: "The success of the competition is very encouraging to the provincial animal health system and will echo throughout the province," said Mrs. Lê Thị Nga, Head of the provincial SDAH.

Quang Tri province's Department of Agriculture and Rural Development (DARD) and the Quang Tri Sub-Department of Animal Health (SDAH) cooperated to organize the competitions. The province contributed 70% of the total cost, with the remaining 30% coming from the USAID/APII. This is the first time that such competitions have been organized in Quang Tri or—as far as we know—in the whole country.

USAID/APII training materials for strengthening infection control at district and community levels near formal adoption by Vietnam's Ministry of Health

Poor infection control in hospitals, medical centers and clinics creates risks for patients and their families as well as healthcare workers. Studies conducted outside Vietnam indicate that as many as 1 in 20 hospital patients may acquire an infection whilst admitted to hospital¹, which may result in medical complications, prolonged recovery time and increased cost of treatment. Recent studies suggest that hospital infection rates in Vietnam may be even higher². Vietnam's 645 district hospitals face particular challenges due to a lack of basic facilities and equipment combined with low awareness and poor practices by healthcare staff.

Since 2010, USAID's Avian and Pandemic Influenza Initiative (USAID/APII) has piloted a model approach to infection control in eight district hospitals in Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri provinces, and has worked with the Vietnam Nurses Association to develop a training curriculum adapted to the particular situation at the district level. The pilot activities and the training curriculum have been designed to offer practical support for enhancing the implementation of the Ministry's national circular on infection control³. The Vietnam Ministry of Health is now reviewing the USAID/APII training curriculum as a precursor to national adoption for training doctors and nurses from district hospitals as well as medical centers and clinics at district and commune levels.



Group presentation on their comments on the outline of IC training material – IC workshop in HCMC, April 7, 2012

A series of three workshops⁴ organized in Hanoi, Hue and Ho Chi Minh City in late March and early April by the Ministry of Health and the Vietnam Nurses Association (VNA) brought together health officials and leaders from provincial Health Departments and district hospitals in seventeen provinces as

¹ Source: <http://www.cdc.gov/HAI/burden.html>

² E.g. Truong Anh Thu et al. "A Point-Prevalence Study on Healthcare-Associated Infections in Vietnam: Public Health Implications". *Infection Control and Hospital Epidemiology*, Vol. 32, No. 10 (October 2011), pp. 1039-1041

³ Ministry of Health Circular No. 18/2009/TT-BYT dated October 14, 2009: *Guidelines on the Implementation of Infection Control in Health Care Facilities*

⁴ News on the Hanoi workshop was aired on O2TV and uploaded to website of T5G at: <http://www.t5g.org.vn/Default.aspx?u=dt&id=3706>

well as representatives of regional infection control societies to review the results of the USAID/APII pilot activities, including the draft national training curriculum which has been trialed with approximately 560 doctors and nurses working in these hospitals.

“Between May and December 2011, with support in improving knowledge, methods and facilities from USAID/APII and with the hospital strengthening monitoring and hand washing communications, the figures on hand washing practices increased from 40% to 80%,” Mr. Le Minh Tam, Head of the Infection Control Department of Hai Lang district hospital, Quang Tri, shared at the workshop in Hue.

Assessments carried out before and after the interventions in the pilot hospitals indicate that the training and other activities supported by the USAID/APII project have improved infection control systems and procedures, enhanced knowledge and practices of district health staff, improved medical instrument and linen processing and hospital waste management, increased the use of personal protective equipment, and contributed to establishing standardized facility disinfection and cleaning practices to prevent the spread of infectious diseases within these hospitals.



Following the three workshops, comments on the USAID/APII training materials were incorporated. On 26 April the Ministry of Health convened a meeting of a scientific committee to review the training materials, with the participation of representatives from the Ministry's Department of Science, Department of Training and Education and Department of Treatment, together with representatives of the VNA and infection control experts from the Hanoi, Ho Chi Minh

City and Hue infection control societies. This scientific committee has now endorsed the training materials, and formal Ministry approval is expected to follow shortly

Once the training materials are approved, they will be applied for training staff in 645 district hospitals and 10,748 commune health centers throughout the country in line with the Ministry of Health's "National action plan on infection control strengthening in health facilities in the period 2012- 2015". This will assist the Ministry to meet their national target that by 2015 at least 80% of health care workers at health facilities will have been trained on infection control. Trainees

will receive professional certificates and the training will also count towards their professional development requirements established by the Ministry⁵.

⁵ Ministry of Health Circular 07/2008/BYT dated May 28, 2008: *Guidance on In-service Training for Health Care Workers*

Kien Giang becomes the first province in Vietnam to include both Business Continuity Planning and a Whole-of-Society approach in their Pandemic Preparedness Plan

As part of the national response to highly pathogenic avian influenza (HPAI) and other potential pandemic threats, Vietnam's 63 provinces and major cities have been required by the central government to develop provincial pandemic preparedness plans (PPP). In general, however, these plans have mainly focused on planning for the human health system to a pandemic. They have not yet applied a whole-of-society approach that involves civil society, the business sector and local communities in responding to and mitigating the effects of a pandemic. They have also not yet included plans for operational continuity of essential services like food, water and power supplies during and after a pandemic, taking into account the likelihood of high levels of absenteeism.

Developed with support from the USAID/APII working through the Vietnam Red Cross (VNRC), the recently approved Kien Giang PPP is the first provincial PPP in the country to include business continuity planning for maintaining essential services in the province during a pandemic, including power, water, food supplies, telecommunications, banking, public transport and sanitation. It also applies a whole-of-society approach, including measures to mobilize civil society organizations and local communities to support the health response and maintain essential services and livelihoods during and after a pandemic. This draws on the experience of USAID's previous Humanitarian Pandemic Preparedness (H2P) project in Vietnam with the VNRC.

The planning process for the PPP brought together a wide range of relevant departments, agencies and organizations within the province. On May 17, 2012, the Kien Giang People's Committee tested the draft plan through a table top exercise in the province with the participation of more than 60 representatives from provincial departments, military agencies, the police, the media and civil society organizations. The Ministry of Health, VNRC, USAID and representatives of other provinces also attended. During the table top exercise, a pandemic scenario was presented, with different related agencies identifying how they would apply the plan in response. Participants gave comments and suggestions, which were then incorporated into the final version of the plan. The draft plan also received inputs from key national and international agencies including Vietnamese ministries, FAO and WHO.

Following the table top exercise, a PPP dissemination workshop was organized by Kien Giang



Training course for community leaders on community's preparedness in each of 4 stages of PPP, Kien Giang, June 2012.

authorities on June 11-12, 2012 for 35 designated staff from provincial agencies, mass organizations and local authorities to discuss multi-sector cooperation and shared experiences dealing with outbreaks.

The development of the PPP also served as an opportunity to train key people responsible for planning and implementing the plan and to strengthen inter-departmental, interagency and inter-sectoral links between the organizations that would need to respond in the event of a pandemic. From late May 2012, diffusion training courses have been organized for community leaders. Initial training courses included the participation of experts from the Ministry of Health's Department of Preventive Medicine and the National Center for Health Communication and Education (T5G), from the USAID /APII project team and from VNRC's group of master trainers. Comments gathered from the training courses helped to finalize PPP training materials for rolling out diffusion training on the PPP within the province.

"We believe that with diffusion training to all communities, if a pandemic occurs in Kien Giang, with our available network we will be able to respond," said Mr. Le Hoang Nam, Vice Chairman of Kien Giang Provincial Steering Committee for Infectious Diseases Prevention and Control, in an interview with VTC 16.

The Kien Giang Provincial People's Committee approved the new provincial PPP on June 26. The plan now serves as a model for other provinces that is in line with the *Vietnam Integrated National Operational Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases (AIPED)*, 2011-2015.

The Quang Tri Provincial Multi-Sector BCC Training Team demonstrates its capacity and ownership through specific provincial activities

Building on the experiences and lessons from two previous USAID-funded projects—AI Mekong and AI BCC (2006-2009), the USAID/APII has been continuing to build the capacity of Vietnam's public and private sectors to prevent, control and enhance surveillance of avian influenza and emerging infectious diseases, particularly at the local level. The USAID/APII behavior change communications work aims to identify appropriate behaviors and messages, integrate these into the work of the animal and human health components, and strengthen the BCC capacity of national and provincial stakeholders, enabling them to carry on BCC activities beyond the lifetime of the project.

In Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri provinces, a team of key BCC trainers (5-8 people) drawn from animal health, human health and communications agencies as well as mass organizations, have been established, trained and provided intensive coaching. The ultimate goal by the end of the project is to leave behind a team of BCC trainers/specialists in each province who are able to design, implement and evaluate their own communication programs.



Excellent Farmer Competition in Quang Tri, June 2012

During this reporting period, the Quang Tri BCC trainer team has made great efforts in applying their BCC capacity to conduct specific activities that demonstrate their increasing ownership, mobilizing cost sharing from local resources with technical coaching from the USAID/APII BCC team. Innovative activities in Quang Tri during this period include the “Three Clean” Movement Launching ceremony, the Excellent Farmer Competition and the Poultry Stakeholder Forum.

Through these activities, the multi-sectoral trainer team has not only been able to adopt and apply modify its own behavior change approach to new activities but has also sharpen its team work spirit, promoting collaboration and coordination between animal health, human health and communication bodies, and more importantly receiving the support and buy-in from provincial, district and commune authorities for the application of good poultry production and food safety practices by all actors within local poultry supply chains.

In addition, in common with the other provincial BCC trainer teams, the Quang Tri team has identified, trained and mentored 30 facilitators and 30 communicators from commune animal health, human health, culture and information and women's sectors to lead community events and conduct group discussions on desired behaviors with small and medium commercial farmers

(sector 3 farmers). The provincial team has supervised communicators and involved local authorities including commune people's committees in monitoring changes at household level. The team has also ensured technical soundness through attending rehearsals for community events. Through these events, local communities can enjoy an edu-entertainment approach to behavior change. The events also strengthen multi-sectoral participation at the grass-root level.



Communicator/AHW during home visits with coaching from a BCC trainer, Quang Tri, June 2012.

With USAID/APII support, the five pilot provinces now have multi-sectoral BCC trainer teams. During the final year of the project, further support and routine updating on behavior change communications and risk communications are planned, focusing on both avian influenza and other emerging infectious diseases in humans and animals. At the same time, the project will follow up to promote the utilization of these teams in developing and executing activities on avian influenza and emerging infectious diseases in line with provincial priorities, with a particular focus on activities utilizing local resources.



USAID
FROM THE AMERICAN PEOPLE

**AVIAN AND PANDEMIC
INFLUENZA INITIATIVE**

**Avian and Pandemic Influenza
Initiative**

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**2nd Quarterly Report, Year Four
(January – March 2013)**

Submitted on May 9, 2013

Abt

In association with:

**Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross**

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Annex 1 – Updated International Consultancy and Travel Schedule

Annex 2 – Updated Subcontractor and Local Consultants Schedule

Annex 3 – Updated Annual Work Plan/Gantt Chart

Annex 4 – Updated Log-frame/PMP

Acronyms

Abt	Abt Associates
ADB	Asian Development Bank
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AH	Animal Health
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015)
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
BCP	Business Continuity Plan
CBS	Community-based Surveillance
CEFACOM	Research Center for Family Health and Community
COP	Chief of Party
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
EID	Emerging Infectious Disease
FA	Farmers Association
FAO	Food and Agriculture Organization (of the United Nations)
FMD	Foot and Mouth Disease
GVN	Government of Vietnam
GDPM	General Department of Preventive Medicine
HAI	Hospital-acquired Infection
HCMC	Ho Chi Minh City
HPAI	Highly Pathogenic Avian Influenza
JICA	Japan International Cooperation Agency
LIFSAP	Livestock Competitiveness and Food Safety Project
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MMB	Market Management Board
MOH	Ministry of Health
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCHEC	National Center for Health Education and Communication
NGO	Non-government Organization

NSCAI	National Steering Committee on Avian Influenza
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PRRS	Porcine Reproductive and Respiratory Syndrome
PSA	Professional Services Agreement
RAHO	Regional Animal Health Office
SDAH	Sub-Department of Animal Health
SH	Slaughterhouse
SOP	Standard Operating Procedure
SOW	Scope of Work
TOT	Training of Trainers
TOFT	Training of Farmer Trainers
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VIPA	Vietnamese Poultry Association
VNA	Vietnam Nursing Association
VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WB	World Bank
VFU	Vietnam Farmers' Union
WHO	World Health Organization
WU	Women's Union

Introduction

This report presents the main achievements, challenges and solutions/lessons learned for USAID's Avian and Pandemic Influenza Initiative (USAID/APII) during Quarter two of Year four, covering the period from January to March 2013.

Quarter two of Year four saw the project reach the full level of implementation, not only in the five-targeted provinces but also across Vietnam. We continued with the three major focus areas: animal health (AH), human health, and behavior change communication (BCC). Activities are implemented via subcontracts, as Abi's current license does not accommodate direct implementation. This carries its own unique challenges as often it is difficult to find subcontractors capable of delivering quality work on time, and strengthening the capacity of subcontractors has therefore become a vital part of USAID/APII's work. This is especially true in Year four, as we have very limited time to complete our projects and close out the programs. In addition, are working to handover our models and training programs to our partners for long-term sustainability and future use.

The project progressed well in most of the eight main focus activities:

1. Coordination and Policy Dialogue
2. Human Health Surveillance
3. Case Management and Infection Control (IC) Capacity Building
4. Pandemic Preparedness
5. Animal Health Surveillance
6. Animal Health Worker (AHW) Capacity Building and Agricultural Extension Worker (AEW) Capacity Building
7. Supply Chain (Poultry Supply Network) Strengthening
8. Behavior Change Communication (BCC).

In Year four the project is also making a final push for the wider adoption and sustained implementation of models beyond the life of the project. Adoption, adaptation, replication and scaling up of USAID/APII innovations by public and private partners are considered the real measure of success for the project. This will require a sustained advocacy and promotional campaign, which the project is carrying out in Year four in close consultation with USAID and API partners.

What follows is a description and discussion of the main achievements and challenges of Quarter two of Year four.

1. National Coordination and Policy Dialogue

Under Coordination and Policy Dialogue we have three goals to achieve by the end of Year four:

- Improved coordination in order to improve highly pathogenic Avian Influenza HPAI prevention and control

- Sustained dialogue, coordination and lesson sharing on communications in Vietnam at a national level
- National communication framework revised in line with Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015) (AIPED), officially approved by National Steering Committee for Avian Influenza (NSCAI), and applied by all members in planning and implementation.

1.1 Achievements

- 1.1.1 With other members of One Health Communications Network (OHCN), we attended and provided technical inputs to the National Communications Strategic Framework on Emerging Infectious Diseases (2013-2015) which was hosted by the Partnership on Avian and Human Influenza (PAHI) on February 28, 2013.
- 1.1.2 Four video clips on the upgrade of the poultry sections in Dong Ha Central Market, Quang Tri, were cleared by USAID to share with journalists in the training of government departments in Ha Noi. These clips will be widely disseminated not only through advocacy workshops but also with other Avian and Pandemic Influenza (API) projects and local provincial partners who plan to replicate market and slaughter point models.
- 1.1.3 The advocacy plan and matrix are being updated quarterly with close support from an Advocacy/Policy Dialogue Consultant. This quarter, the USAID/APII also developed and sent to USAID one-page briefs on Infection Control and BCC training, which specify approaches and desired achievements for replication.

1.2 Challenges and Solutions

- 1.2.1 There are some recent and pending changes in a few of the key personnel within technical agencies of the Government and other key stakeholders for our advocacy activities, for example due to people reaching retirement age. This requires us to engage with new personnel, who depending on their previous position and responsibilities may not in all cases be strongly aware of our activities. We are monitoring these changes and actively reaching out to the new personnel, with introductions and briefings from the outgoing personnel where possible. We also have the advantage in some cases from promotions of our former counterparts at different levels, meaning that officials who are very familiar with our work are now in more senior positions and can leverage the experience and capacity they gained in working with USAID/APII and support the wider application and replication of our models.
- 1.2.2 As we have moved from direct implementation in the original target provinces and reduced support to Provincial Coordination Units (PCU), we have had to consider effective ways to continue engaging with key counterparts in these target provinces in order to track the replication and scaling up of our models within these provinces, to have their cooperation in hosting visiting delegations to view the

model and sharing their experiences, and also to mobilize them to share the models with other parties. We have done this by building on the relationships and results of our work over the past three years and, in a few cases, providing limited support for follow up activities. So far, this approach has proved very successful, and counterparts in the original target provinces are strongly involved in replication and sharing our models across the different components as outlined below.

2. Human Health Surveillance

The human health surveillance model was developed over the first three years of the project as part of an integrated approach to community-based surveillance (CBS) in the five USAID/APII focus provinces: Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri. Following the findings of the external evaluation of CBS activity conducted during Year three of the project, the human health surveillance model has been separated from the AH surveillance model to promote its adoption, adaptation, replication and scale up during the final year of the project.

The goal of USAID/APII activities in Year four is to support national/provincial policies that facilitate community level surveillance and to replicate the relevant model in both current focus provinces and new provinces.

2.1 Achievements

- 2.1.1 The Statement of Work (SOW) of the National Institute of Hygiene and Epidemiology (NIHE) to implement human health surveillance activities in Year four was developed, submitted and approved by USAID, following a competitive bidding process. The SOW included 1) conducting an assessment and a regional workshop to review the implementation of the Ministry of Health's (MOH) Circular 48; 2) implementing a regional Training of Trainers (TOT) course for new provinces; 3) providing technical assistance to provincial Preventive Medicine Centers on developing/revising provincial plans on implementation of Circular 48 and replicating the relevant model on human health surveillance with a focus on emerging infectious diseases (EIDs) and zoonotic diseases in their respective locations. However, after finalizing the contract, we were informed that General Department of Preventive Medicine and MOH had planned assess Circular 48 themselves and asked that USAID/APII not conduct activities related to Circular 48 for the time being because of certain sensitive internal issues. In March USAID/APII cancelled the intended activities with NIHE and shifted those designated monies elsewhere.

2.2 Challenges and Solutions

- 2.2.1 The predictability and reliability of information from MOH is out of USAID/APII's and NIHE's control. We therefore decided to end the contract with NIHE, but we will continue discussions with NIHE in

order to explore other opportunities to cooperate in human health surveillance.

3. Case Management and Infection Control (IC) Capacity Building

The Year four goal is to assist the Government of Vietnam (GVN) in rolling out a training model developed to assist health facilities in implementing Circular 18.

3.1 Achievements

- 3.1.1 The SOW for the Vietnam Nursing Association (VNA) on USAID/APII infection control activities in Year four was developed, submitted and approved by USAID. VNA will work closely with USAID/APII technical staff, national IC experts and WHO in collaboration with MOH and three IC Societies (Ha Noi, Hue, and Ho Chi Minh City (HCMC)) to replicate the IC training model for in-service and pre-service systems. During Quarter two and Quarter three VNA will: a) conduct three regional training of trainer (TOT) courses for IC specialists from health facilities in 15 new provinces and for teachers from 15 institutions; b) coordinate with MOH to support Departments of Health (DOH) to implement the national action plan on strengthening IC at health facilities including dissemination training on IC; and, c) support selected medical/nursing schools to revise, test and finalize their IC lesson plans and introduce and review them in a one-day workshop for medical institutions.
- 3.1.2 As follow up to meetings held in September 2012 between USAID/APII and the Board of Directors of Au Lac Private Nursing School in Hue, on October 22, 2012 the school issued a decision adapting the USAID/APII-MOH IC training materials to their program beginning in the 2012/2013 school year. Two full credits for IC theory and practice with 60 sessions were used to train 220 nurses and 150 physicians.
- 3.1.3 Following a meeting in September 2012 between USAID/APII and directors of Phu Yen Nursing School on adapting the USAID/APII-MOH IC training materials, the Phu Yen Nursing School decided to integrate the training materials into their program in the second semester of the 2012/2013 school year. Phu Yen Nursing School will be the second medical/nursing school to apply the training model.
- 3.1.4 Based on the report from Can Tho DOH received by USAID/APII in Quarter two of Year four, during the period October through November 2012, Can Tho DOH conducted four training courses on infection control for 140 participants from all 21 hospitals in Can Tho including two private hospitals in Can Tho and one private hospital in Bac Lieu, a neighboring province. These hospitals contributed to the costs from their local budgets. The trainers of these four training courses were those trained by the USAID/APII in July 2012 in collaboration with VNA.

- 3.1.5 In late February, the MOH's Medical Services Administration issued an official requirement to all 63 DOHs and 34 national hospitals under the management of MOH to develop and implement provincial/hospital action plans on strengthening IC activities in healthcare facilities, including IC training for health care workers.
- 3.1.6 On March 1, the MOH's Medical Services Administration issued a plan for supportive monitoring trips to 13 hospitals in eight provinces where key staff were trained with support from USAID/APII in 2012 to assess post-training achievements and support provincial DOHs and hospitals to strengthen their IC practices.
- 3.1.7 In March two IC regional TOTs were held for participants from 10 provinces and 11 medical/nursing schools. The first, for health care workers from northern Viet Nam took place in Ha Noi and included 30 participants from Thai Binh, Thanh Hoa, Hai Duong, Ha Noi, and Dien Bien provinces and Thanh Hoa Medical College, Hai Duong Medical Technical University, Nam Dinh University of Nursing, Thanh Tay University, and Ha Noi Medical College. The second for Central and Highland Region healthcare workers was held in Hue with 30 participants from Binh Dinh, Quang Nam, Khanh Hoa, Nghe An, and Dak Lak provinces and Hue Medical College, Binh Dinh Medical College, Vinh Medical University, Duy Tan University, Quang Nam Nursing School, and Au Lac Private Nursing School. In both trainings the participants were received training adult learning methods, and IC skills and practices. A 1-day field study at the National Pediatric Hospital and Hue National General Hospital helped participants observe the actual IC and respectively demonstrated how to conduct Hospital-Acquired Infection (HAI) surveillance and how to monitor compliance with IC practices in health facilities. They also had opportunities to practice teaching with their own lesson plans, and they will apply these in IC diffusion training courses in their provinces and medical and nursing schools.
- 3.1.8 In March, USAID/APII staff met and worked with Thua Thien-Hue DOH to plan their IC diffusion training. Thua Thien-Hue DOH plans to provide IC training for three provincial hospitals, nine district hospitals and five specialty hospitals, covering about 510 medical workers in Quarter three. Thua Thien-Hue DOH is financing all of the 17 training courses (approximately 172 million VND) and USAID/APII will support printing costs of the required training materials.
- 3.1.9 In March USAID/APII supported the Vietnam Ministry of Defense's Military Medical Sub-Department's 5-day training course on "IC in hospital settings" in Ha Noi with IC training materials for participants from military hospitals. This training updated participants on international, US and National Hospital-focused IC practices and hospital pandemic preparedness.
- 3.1.10 In March USAID/APII staff attended the "Infection Control Training Program for Vietnam's Healthcare Workforce" workshop conducted

by MOH and VNA in Ha Noi for 17 military hospitals and eight medical/nursing schools. In this workshop, the MOH introduced existing IC training materials and introduced the draft IC training curriculum for the schools. Participants, who included directors of medical and nursing schools, were very interested in USAID/APII's IC training materials and are planning to adapt this material for use in their schools. The IC materials were distributed for integration into their schools' curriculums.

- 3.1.11 Between February and March, about 5,800 copies of IC training materials and 2,400 IC training curricula were distributed to 63 provincial DOHs and about 40 medical and nursing schools to support and encourage them in self-replication of the USAID/APII-supported IC training model within the healthcare system and in institutions.

3.2 Challenges and Solutions

- 3.2.1 The process of finalizing the VNA contract took longer than anticipated because of year-end time commitments and the large number of meetings and workshops on IC and nursing that took place during the early fall requiring the attention of both USAID/APII and VNA staff. While these meetings caused delays, they also presented USAID/APII staff with opportunities to share the IC training model with in-service and pre-service systems, leading to several fruitful conversations with provincial DOHs and training institutions, some of whom have expressed great interest in the IC curriculum and materials.
- 3.2.2 A number of projects are currently working on IC training materials to support implementation of the MOH's Circular 18, aimed at different levels of the national healthcare system. Japan International Cooperation Agency (JICA) developed a model for national and provincial level hospitals, based on and complementing the USAID/APII developed package, as well as a World Bank and Asian Development Bank model focused on strengthening healthcare worker capacity in healthcare facilities in specific focus provinces. To avoid overlap, USAID/APII has held discussions with these other projects on how best to use the materials approved by MOH in IC training and opportunities for collaboration.
- 3.2.3 The Ministry of Training and Education has issued an outline of IC training curriculums for nurses, but as yet there is still no IC training curriculum for medical students. To help fill this gap, USAID/APII's human health team worked closely with MOH, VNA, IC Societies and other partners to introduce and integrate the IC training model into nursing training programs. For medical students, we advised medical schools to develop an optional IC course and to use the training materials for reference in IC lessons in other subjects.

4. Pandemic Preparedness Planning (PPP)

The Year four goals were to introduce PPP packages to other provinces, and to advocate for wider adoption of PPP throughout Vietnam.

4.1 Achievements

- 4.1.1 The SOW for Pandemic Preparedness Plan (PPP) activities of the Humanitarian Center, Hung Yen Red Cross Association was developed, submitted and approved by USAID. The SOW includes: a) organization of a PPP workshop for Hung Yen authorities as well as representatives of related sectors and civic organizations to introduce the new concepts of “whole society” approach and business continuity plan (BCP), and present the multi-sector framework of PPP; b) revision of the PPP in Hung Yen province to incorporate the whole society approach and BCP concepts; and, c) conducting a two-day PPP dissemination training workshop for about 35 staff at provincial and district levels in Hung Yen.
- 4.1.2 In March, the Hung Yen Provincial People’s Committee (PPC) issued a letter assigning Hung Yen Red Cross to take the lead in coordination with other relevant departments in the province to revise the provincial PPP with support from USAID/APII. This document facilitates the activities of Hung Yen Red Cross in implementing the SOW.
- 4.1.3 In March the Hung Yen PPC hosted a PPP introduction workshop for participants from Hung Yen PPC, the Provincial Steering Committee on AI Control, Hung Yen DOH, and AH, Red Cross, and local media agencies. The workshop developed a plan for revising the Hung Yen PPP with the new “whole society” approach and multi-sectoral participation. The revised PPP is expected to be approved by Hung Yen PPC in mid-2013.
- 4.1.4 The Hung Yen PPC approved an editorial team in March design and write the PPP. The team consists of representatives from DOH, Department of Agriculture and Rural Development (DARD), Department of Communication and Information, and Hung Yen Red Cross. This editorial team developed an outline for the provincial PPP. Various department members will develop their specific plans with the intention of contributing to the first PPP draft. The first draft will be available in mid-April for comments.

4.2 Challenges and Solutions

- 4.2.1 The process of selecting an appropriate subcontractor took longer than anticipated but things are moving forward now.

5. Animal Health (AH) Surveillance

The AH surveillance model was developed over the first three years of the project as part of an integrated approach to community-based surveillance (CBS) in the five USAID/APII focus provinces/cities: Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri. Based on the results of the external evaluation of the

CBS activity, which was conducted during Year three of the project, the AH surveillance model has been separated from the human health surveillance model for promotion of adoption, adaptation, replication and scaling up during the final year of the project. The goal of USAID/APII activities in Year four is to support national/provincial policies that would facilitate community-level surveillance and to replicate the relevant models in both current focus provinces and new provinces.

5.1 Achievements

- 5.1.1 In Year four, animal health surveillance activities intend to concentrate in Vietnam's Central Region in collaboration with Regional Animal Health Office (RAHO) 3 and a local counterpart in Quang Tri. Quang Tri Livestock and Veterinary Association was identified to review the USAID/APII AH surveillance model and AHW network model in Quang Tri province beginning in March, based on a SOW approved in Quarter one. A local consultant, with a strong background in national AH surveillance systems, was also recruited in late March to provide technical assistance to the subcontractor in this area and develop a curriculum for AH surveillance for a regional course planned for April 2013.

5.2 Challenges and Solutions

- 5.2.1 Early desk review of national regulations showed that while a standard operating procedure (SOP) for HPAI has been developed there are a number of variations of surveillance guides available, for example guidance on specific diseases such as porcine reproductive and respiratory syndrome (PRRS), foot and mouth disease (FMD) and separate guidance for TAD-info (Trans-border animal disease information). However, except for the SOP for HPAI, these guides have gaps especially at community level where CBS can play a vital role in improving detection and reporting of new cases.

Similarly, despite the regulations issued in 2005 specifying 15 animal diseases to be included in the mandatory reporting list, only some are regularly reported. The varying SOPs and lack of consistent reporting practices complicates our ability to develop harmonized official guidance or a manual for AH surveillance, which does not conflict with current regulations and guidance but does cover all the reportable diseases. The local consultant is expected to make recommendations to address these issues.

6. AHW Capacity Building and AEW Biosecurity Training

The goals of the Animal Health Worker (AHW) Capacity Building and Agricultural Extension Worker (AEW) Biosecurity Training activities are:

- Introduce the AHW training package to new provinces and seek other educational training opportunities

- Introduce the AHW networking model that will be adopted by relevant public-private agencies at national and local levels.
- Introduce the AEW training materials to the National Agriculture Extension Center (NAEC), new Provincial Agriculture and Fishery Extension Centers (PAFEC) and private sector to applying them throughout AEW system.

6.1 Achievements

AHW Capacity Building

The AHW Training Package consists of a hardcopy training manual, which provides a reference for AHWs (an enhanced manual based on the existing DAH Manual) as well as an E-Book version on CD with additional content for trainers and a sample toolkit with standard equipment for provision of animal health services in the field.

- 6.1.1 The first AHW Training Package and AEW Biosecurity Training Dissemination Workshop for Year four took place on January 11, 2013 in An Giang with the participation of 51 from 13 Mekong provincial SDAH and PAFECs as well as representatives of RAHO 6, RAHO 7 and NAEC.
- 6.1.2 Following the An Giang dissemination workshop, USAID/APII received requests from 12 provinces in RAHO 6 and RAHO 7 for further assistance on TOT for AHWs, as outlined in Table 1.

Table 1. List of requests from SDAHs and PAFECs in RAHO6 and RAHO7 for support during Quarter one and Quarter two

	SDAH	Slaughterhouse technical supports (Unit)	Training requested (No. of participants)		
			Inspectors	TOT on AHWs	TOFT for AEWs
	<i>RAHO6</i>				
1	Ba Ria-Vung Tau	20 +1 market	-	7	-
2	Long An	-	-	5	2
3	Tien Giang	3	-	28	5
4	Ben Tre	2	15	10	11
5	Dong Thap	1	30	14	28
	<i>RAHO7</i>				
1	Can Tho	2	-	5	5
2	Vinh Long	6	-	14	-
3	An Giang	3	30	4	66
4	Soc Trang	1	30	5	5
5	Hau Giang	4+1 market	40	5	5
6	Ca Mau	4		5	30

7	Bac Lieu	3	30	5	5
8	Kien Giang	1	-	-	2
	Total	50 SHs +2 markets	175	107	164

- 6.1.3 Responding to these requests, USAID/APII has followed up with our subcontractor AFAP to organize two TOT courses on AHW capacity building for those provinces with some coaching and technical support. These courses will be organized in Ba Ria-Vung Tau and Tien Giang during April 2013.
- 6.1.4 On March 5, a second AHW dissemination Workshop was conducted in Ha Noi in collaboration with the VFU targeting VFU vocational training centers as well as the private sector. More than 50 participants joined the training, coming from regional and provincial vocational training centers under VFU as well as NGOs and the private sector. One more TOT course is planned in order to follow up this target group in May.
- 6.1.5 In an effort to replicate the AHW training package more widely, USAID/APII and AFAP worked with RAHO1 and RAHO2 and also directly with Phu Tho and Bac Giang provinces to conduct two regional TOT courses in Phu Tho and Bac Giang in March with total of 53 participants from 12 provinces. This brought the total number of provinces with local trainers trained by USAID/APII to 16 provinces as of the end of March 2013.
- 6.1.6 Following the cost-shared AHW TOT course in Moc Chau in Year three, the Moc Chau Dairy Cattle Joint Stock Company has decided to use the Diffusion Training Program for new AH technicians in the Moc Chau area using their own funds. In late January and early February, USAID/APII worked with the company through our subcontractor AFAP to develop the training curriculum as well as to provide technical coaching for this course. USAID/APII suggested a Memorandum of Understanding (MOU) to formalize a public-private partnership with the company, indicating that Moc Chau Dairy Cattle Company would contribute to training on animal surveillance, biosecurity and veterinary skills. However, to simplify the paperwork and align more closely with the interests of Moc Chau Dairy Cattle Joint Stock Company, in February it was agreed to just implement the training on veterinary skills and knowledge rather than to sign a formal MOU.

AEW Biosecurity Training

The AEW biosecurity training activities in the first two quarters of Year four focused on identifying the local counterparts and provinces and dissemination activities to introduce the AEW Biosecurity training package to other provinces. At the same time, a SOW was developed for official introduction and integration of the Biosecurity Training package into the programs of NAEC.

- 6.1.7 The project is supporting NAEC to officially adopt the AEW training manual and training materials and to promote their use within the national agricultural system. USAID/APII has met with NAEC to determine the best method for official review and approval. We have introduced the training system to NAEC and outlined the current projects and agreed on the activities for the coming months. These activities were incorporated into a SOW for the Vietnam Poultry Association (VIPA), which was approved by USAID in March.
- 6.1.8 As noted above, a combined dissemination workshop for the AHW Training Package and AEW Biosecurity Training Dissemination Workshop for Year four took place on January 11, 2013 in An Giang. Responding to requests following this workshop as outlined in Table 1, USAID/APII has worked with our subcontractor AFAP to prepare two more regional TOT courses in Soc Trang and Tien Giang that will be held in April 2013 to train local trainers who then will conduct diffusion training for their own provinces. Reproduction of the Biosecurity Training Package is planned utilizing a limited amount of funding from USAID/APII to ensure there are enough packages available to meet the training demand within this fiscal year.
- 6.1.9 In addition to this, the Project Management Unit within MARD of the World Bank-supported Vietnam Avian and Human Influenza Prevention and Control Project (VAHIP) has officially requested to reproduce 50,000 copies of the “Bac Mau nuoi ga” (Mr. Mau Raises Chickens) comic book developed as part of USAID/APII’s biosecurity training package for poultry farmers to use in their HPAI awareness raising program in schools during 2013.

6.2 Challenges and Solutions

- 6.2.1 Some delays in the subcontract approval process with AFAP initially slowed the time schedule of AHW Training Package and AEW Biosecurity Training activities. However, following Tet, AFAP and our local counterparts have quickly implemented activities, and all activities are currently on track to be completed before July as originally planned.
- 6.2.2 It is important for the sustainability and institutionalization of training/extension packages to work closely with NAEC and the PAFECs. This is a time-consuming process, which may not always be the top priority for these organizations and thus requires diplomacy, patience and perseverance in order to forge and maintain close relationships. Obtaining official approval from government authorities was a suggestion from the Deputy Director of NAEC and introducing the AEW/Biosecurity training through NAEC/PAFEC system and national/provincial projects remains a good option for replication of this training package widely and efficiently.
- 6.2.3 Figures on replication training conducted in additional provinces may not be available in a timely manner where these activities are

being funded from local, national or other resources not sourced by USAID/APII. USAID/APII will continue to build relationships with these counterparts and will seek appropriate ways to obtain useful information and data on the replication of USAID/APII models.

7. Supply Chain (Poultry Supply Network) Strengthening

The goals in Year four are to advocate and encourage adoption, adaption and replication by public agencies, private partners and/or other development projects and programs elsewhere of USAID/APII developed biosecurity/biosafety demonstration models in key (high risk) nodes along the poultry supply chain, together with related documents (such as protocols, guidelines and training materials).

7.1 Achievements

The key activities and achievements of the supply chain work during the second quarter of Year four focused on the following activities and nodes:

- 7.1.1. Further technical coaching and monitoring sessions of risk reduction demonstration models of the slaughterhouse, slaughter points and live bird markets (LBM) have been organized to make those demonstration sites become a better training platform for further training, study tours and consideration for replication:

**Dong Ha live bird and poultry meat market in Quang Tri and Hoa Mac, Duy Tien:* During routine monitoring visits in the quarter, USAID/APII together with the Market Management Board, SDAH and the provincial Women's Union (WU) as well as market vendors to review issues related to cleaning, the section arrangement and promotion of good trading practices. Meeting minutes were shared with the SDAH for enforcement of good, consistent practices.

In January, USAID/APII conducted monitoring visits and held an action-planning meeting with Hoa Mac meat vendors. Achievements and limitations of both the Hoa Mac market and the slaughter point were presented and discussed as a basis for reaching agreement between the stakeholders on follow up activities. The outcome of the three monitoring and supporting behavior change sessions in Hoa Mac was documented and shared with Ha Nam provincial partners including market management board.

Achievements and limitations of the Hoa Mac model were presented and discussed again with Ha Nam local partners including the DARD, SDAH, Hoa Mac People's Committee and Hoa Mac Market Management Board on March 15, 2013. The participants in this meeting gave a very positive assessment of the model, and outlined two areas where there is now a plan to carry out further related activities using local resources. Firstly, the USAID/APII-supported upgrade to the poultry and pork meat section of Hoa Mac market has also now been replicated for the vegetable and fish sections utilizing contributions from local authorities as well as the market vendors

themselves. Secondly, there is a proposal to replicate the Hoa Mac market model in Ly Nhan district market. This proposal is currently waiting on the next cycle of annual funding.

**Three upgraded small-scale slaughterhouses in Quang Tri and Ha Nam:* during routine visits, the technical team together with local inspectors, a BCC trainer and USAID/APII staff provided operational coaching and mentoring for slaughterers and slaughterhouse owners, focused on behaviors during slaughtering, processing and sanitation and developing detailed action plans for meeting their responsibilities for biosecurity and biosafety.

**Ngoc Xuan Centralized Poultry Slaughterhouse, Can Tho City:* USAID/APII staff conducted regular follow-up/monitoring visits and held a specific meeting to examine slaughtering processes and to identify solutions. To date most of the infrastructure is in place and operational procedures are established and being followed. During these visits, observation identified the most difficult-to-change practices, such as: a) poultry separation, b) off-floor slaughtering, and c) sanitation during the slaughtering process. USAID/APII organized a feedback meeting to discuss barriers preventing slaughterers from adopting improved practices and an action plan was developed with commitment from the slaughterers, slaughtering line managers and the Ngoc Xuan Slaughterhouse owner, and the inspectors and SDAH were asked to assist in the monitoring and enforcement efforts. More than 60% of slaughtering lines have applied the one-way slaughtering practices and off-floor slaughtering as a result of these monitoring and follow up efforts.

- 7.1.2. Sharing lessons learned and experiences for national and regional levels: in order to approach RAHO 3 and RAHO 6 and RAHO 7, field trips and meetings were held between the USAID/APII project directors and key staff of the new regional counterparts. Overall, the meetings confirmed their interest to support replication of the AHW training and improvements to slaughtering facilities models. Specially, the RAHOs expressed their interest to train inspectors in HPAI risk reduction at slaughterhouses and how to help the slaughterhouse owners to be more compliant with the Government's new regulations under Decree 61 and 14.
- 7.1.3. Following the Mekong Regional training courses for slaughterhouse owners on December 19-21 and December 24-26, 2012 on Veterinary Sanitation and Food Safety for 58 slaughterhouse owners and selected staff of SDAHs from 13 provinces in RAHO 6 and RAHO 7, slaughterhouse owners in Ba Ria-Vung Tau and Dong Nai provinces showed their interest in replicating the USAID models through official letters calling for support that have been reviewed and incorporated in the plan for provision of technical assistance in the coming months.

- 7.1.4. Responding to these requests, USAID/APII developed a small follow up plan for late March and early April for joint trips by RAHO, SDAHs and USAID/APII technical staff to visit selected slaughterhouses and provide direct technical advice for risk reduction and upgrades.

7.1.5. *Inspector training courses:*

Through the process of implementing three training courses on poultry inspection, USAID/APII has developed a curriculum for Advanced Training on Inspection of Poultry and Poultry Products for Food Safety and Sanitation. This training complements the existing RAHO inspector certification trainings. The USAID/APII advanced training include the following additional topics: updated information on AI, EIDs and food borne diseases; the supply chain and how disease transmission occurs at key nodes; and the design and operation of poultry slaughtering facilities to enhance sanitation and food safety. The RAHO and USAID/APII training courses have been combined, and costs were shared to replicate the USAID/APII model.

Each province SDAH contributed approximately 50 percent of the total training costs for administration and participants while USAID/APII covered the remaining 50%, mostly related to the costs of the trainers and the training materials.

Evaluation results from the training showed that most of the trainees achieved sufficient knowledge on good practices for food processing, safe slaughtering and waste management in order to carry out inspection, as well as being capable of providing effective supervision to slaughter points for better food hygiene and safety. After 3 more courses in Ha Nam and Quang Binh in the first quarter of Year four, USAID/APII continued to work with RAHO 3, 6 and 7 during the second quarter to prepare a plan for five more replication courses in quarter three 2013.

7.2 Challenges and Solutions

- 7.1.6. Profit margins from poultry slaughtering are especially small, and even more so in small-scale slaughtering operations. It is understandably hard to persuade these small private entrepreneurs to invest in facility upgrades without some form of 'subsidy' (financial support). Micro-finance options in the commercial financial sector (banks, MFIs) are rare. Many small entrepreneurs appear to be comfortable with their status quo business (size). The relevant cost savings, which in turn improve business and increase profits through environmental safeguarding and food safety measures, seem to be a more persuasive argument for small-scale slaughterers to make changes to their businesses.
- 7.1.7. USAID/APII continues to reach out to and invite partners such as LIFSAP and VAHIP to participate in project activities. Partners rarely reciprocate however.

8. Behavior Change Communication (BCC)

In line with Year four goal, in this reporting quarter we utilized BCC trainer teams established in Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri, to not only continue communication programs in their provinces including strengthening their supply chain models but also to roll out the BCC trainers' capacity building model to new provinces of Ha Tinh, Quang Binh and Thua Thien Hue for promotion of new desired behaviors. We also worked with selected BCC trainers from Ha Nam and Quang Tri and from the national level on the development of a BCC module for Viet Nam Farmer's Union to integrate BCC theory and methodology into the training curricula for their vocational training system.

8.1 Achievements

- 8.1.1 In late January, USAID/APII initiated a subcontract with the Vietnam Farmer's Union (VFU) to develop a BCC module for teachers at their Vocational Training Schools and then to introduce this BCC module to their training system in 63 provinces and cities of Vietnam with official approval and guidance from leaders of the VFU.
- 8.1.2 In early February, the VFU established a team of writers to develop the BCC module for teachers of Vocational Training School. The team included VFU trainers with experience in BCC, BCC specialists of the Ministry of Health (MOH) and selected BCC trainers from Ha Nam and Quang Tri. This writing team will benefit from technical support from other BCC specialists (MARD as well as professors from the fields of journalism and communications) who are part of the Advisory Team.
- 8.1.3 The VFU with technical inputs from the BCC team of USAID/APII developed the outline of the BCC module for teachers of Vocational Training School of Farmer's Union. The Scientific Committee of the VFU has approved this outline. Prior to submission to the Scientific Committee of the VFU, this BCC module was vetted by behavior change specialists from MOH, MARD, Professors from the Journalism and Communication Academy, teachers from Vocational Training Schools as well as selected BCC trainers from USAID/APII's focus provinces in March.
- 8.1.4 An APII consultant developed the first draft of BCC module. This first draft will be pre-tested with future users before getting final feedback from BCC specialists and finalization in early April.
- 8.1.5 The second draft of the BCC Training Manual and the Communication Strategy Development Guide were translated into English in order to seek comments not only from Vietnamese readers but also from Abt home office and API partners. These two materials will be field tested with provincial BCC trainers and communication experts from MOH and MARD in April before finalization.
- 8.1.6 On February 21, the Can Tho Communication Framework was officially endorsed by Can Tho DARD (as assigned by Can Tho

PPC) for wide use throughout the province. This Framework was printed and distributed to different agencies from provincial to district levels together with an official letter.

- 8.1.7 APII staff visited Ha Vi Poultry Market in January to understand actual practices of target audiences and conducted several meetings with the VAHIP project to plan potential support from USAID/APII on behavior change. USAID/APII developed the training needs assessment form to understand the BCC training needs of AH officers of Ha Noi SDAH and of Ha Vi market management board. The results of this self-assessment will serve the design of the training on BCC for these audiences that VAHIP project has requested USAID/APII staff to lead.
- 8.1.8 In mid-February, we signed a contract with Quang Tri WU to replicate the BCC training model to three new provinces (Ha Tinh, Quang Binh and Thua Thien-Hue) and to expand the model to promote food safety using the same approach of behavior change determinants and incentives.
- 8.1.9 In March, three TOT courses on BCC theory and application in promotion of human health behaviors were conducted by the Quang Tri BCC trainer team for the WU network of Ha Tinh, Quang Binh and Thua Thien-Hue provinces. The participants also included provincial human health and animal health workers from VAHIP projects in Ha Tinh and Thua Thien-Hue. These trained participants from VAHIP/WB were expected to lead their own communication activities to improve biosecurity practices in markets and slaughter points in their provinces.
- 8.1.10 Right after the completion of the TOT courses, Quang Tri BCC trainers worked closely with the newly trained WU staff in the three new provinces to prepare training materials and BCC tools for communicators. These diffusion training courses for communicators will be co-funded with the WU in April, focusing on behaviors selected by each province. This will be followed by interpersonal communication and community-based activities on the prioritized behaviors on food safety, life skills, and reproductive health care and other specific provincial topics in the next quarter. The Quang Tri BCC trainers will provide coaching and training on monitoring in the new provinces as well.
- 8.1.11 With technical assistance from an Abt headquarters economist, we conducted a BCC costing survey to review expenditures and activities implemented in target provinces with trainers and communication activities in March. We calculated local partners' contributions including both in-kind and cash contributions. The final report will include a road map with a costing for consideration for further funding and execution by interested individual projects and/or provinces for scale up and replication, and will be available in Quarter three.

8.1.12 Behavior change activities at supply chain nodes (Hoa Mac market and Hue-Thanh slaughtering point in Ha Nam; Ngoc Xuan Centralized Slaughterhouse in Can Tho) included:

- Conducted the 3rd supportive monitoring activity at Hoa Mac market and Hue-Thanh slaughter point by a multi-disciplinary team of local partners including Veterinary officers and BCC trainers as well as USAID/APII staff.
- Shared a summary report on the results of three supportive monitoring trips for behavior change at Hoa Mac market and Hue-Thanh slaughter point. Substantial changes in behavior have been observed in these two models such as cleaning the selling place, tables and tools as well as off-floor slaughtering. However, problems still remain, such as management of water and waste or wearing gloves while slaughtering and selling poultry. Continued supportive monitoring by local partners is required.
- Continued to develop posters for Hoa Mac market to promote the application of other desired behaviors among poultry vendors. A new set of posters promoting three more behaviors on hygiene and food safety will be field tested and manufactured in April.
- Met with Can Tho SDAH to review project achievements and their enforcement role in sustaining behavior changes at Ngoc Xuan so that it can serve as a training platform for replication of the USAID/APII model.
- Observed the slaughtering process in Ngoc Xuan on March 19 to identify problems and met with slaughterers on the next days to discuss and prepare action plan for improvements. Pending problems were promoting off-floor de-feathering and not leaving blood on the floor. Slaughterers committed that they would rearrange the slaughtering area in a way to facilitate off-floor practices.

8.2 Challenges and Solutions

8.2.1 The development of a module for teachers of Vocational Training Schools of Farmer's Union is a challenging task because the module has to satisfy both the technical requirements of an effective BCC methodology and the requirements of the VFU in order for them to officially introduce the module into their training system. This has caused some delays compared with initial planning but the BCC module will be available for approval by June 2013.

8.2.2 Building capacity needs time and practice. The BCC training model replication was well received by the WUs in the three new provinces of Ha Tinh, Quang Binh and Thua Thien-Hue. They need a lot of technical support and coaching from the Quang Tri BCC trainer team and USAID/APII's BCC team. These three provincial WUs are

also under time pressure to implement their annual communication activities in line with the guidance and targets from the national WU.

9. Monitoring and Evaluation (M&E)

USAID/APII's M&E work aims to strengthen existing systems in the provinces, and help close existing gaps between grassroots level M&E and provincial-national levels M&E and reporting. It also aims to facilitate and guide project implementation towards achievement of impacts to contribute to achieving the objectives articulated in USAID's Avian and Pandemic Influenza (API) Performance Management Plan (PMP). In addition, USAID/APII acts as the repository for PMP indicators collected under USAID's API initiatives, taking the lead in providing analysis and reporting on this data.

9.1. Achievements

- 9.1.1. To document in-province sustainability and replication of the achievements supported by USAID/APII including following-up with demonstration models, USAID/APII developed a quarterly report template and requested partners in our five focus provinces to report on the project's achievements in their province and share this report with the project.
- 9.1.2. Met with Ha Nam DARD in March to review Year four activities, collaboration and coordination in collecting, updating and sharing sustainability and replication of project's achievement.
- 9.1.3. A similar meeting was implemented with a former leader of the USAID/APII Provincial Coordination Unit (PCU) in Hung Yen in March. Both sides agreed to continue USAID/APII activities scheduled for Year four of the project and to carry out the activity of collecting, updating and sharing the project information.

9.2. Challenges and Solutions

- 9.2.1. It's foreseen that the process of updating and sharing the sustainability and replication of project's information in Ha Nam would not be done smoothly because of the absence of coordination between sectors in Ha Nam province after the phasing out of the Ha Nam PCU from October 2012.

10. Finance and Administration

10.1 Achievements

- 10.1.1 Managed all aspects of the finance and administration and all subcontracts and consultant agreements effectively. The procedures were streamlined during the course of the year.
- 10.1.2 USAID/APII continues to submit routine deliverables to USAID, including quarterly progress reports, quarterly financial reports,

semi-annual and annual reports etc. The F&A team support the technical teams in managing all subcontracts and consultants.

10.1.3 A better tracking system has been set up for the last year of Project including expenditures, travel, supplies, inventory, procurement, staff leave, subcontracts and consultants was developed.

10.1.4 Throughout Quarter three the project has been in the process of recruiting new F&A staff to replace the ones who have left.

10.2 Challenges and Solutions:

10.2.1 Year four brings a unique set of challenges; implementing our contractual requirements and preparing for close out in September. We will continue to work to disseminate APII programs and activities to new provinces and districts until July, at which time our focus will shift to close out activities. This indicates a compressed timeline in which to complete all program activities (approximately nine total, four remaining after Quarter two)

10.2.2 F&A and the Technical team work closely to submit SOW for approval and to negotiate with Subcontractors/Consultants for them to start at the earliest possible time so that we can achieve close out for programmatic activities in July 2013.

10.2.3 When new staff are on board, the Project will need to spend a lot of time to train them and get them up to speed as soon as possible.

10.2.4 To mitigate delays, the COP meets with all subcontractors prior to signing to insure they understand our limitations and that we will not be able to extend them under any circumstance.

11. Success Stories

11.1 Replication of Infection Prevention and Control for health care facilities in Can Tho City

Can Tho is stepping up efforts to improve medical care for the city's population of more than 1.2 million as well as people from neighboring provinces through a training program aimed at reducing hospital acquired infections, one of the leading causes of death in Vietnam. Using local funds, Can Tho has deployed a team of infection control trainers developed by the USAID/APII project and utilized the USAID/APII infection control training curriculum to replicate the USAID/APII training for an additional 139 healthcare staff from 21 different general and specialized healthcare facilities. Through the training, these healthcare staff have significantly enhanced their knowledge and skills on infection control, empowering them to protect their own health as well as the health of in- and out-patients and their family members who are using healthcare facilities in Can Tho.

Under USAID's AI Mekong and APII activities, selected staff from hospital facilities belonging to the Can Tho Department of Health (DOH) were trained as infection prevention and control trainers and supported to carry out initial training activities in pilot locations within Can Tho. The USAID/APII infection prevention and control activities in Can Tho also contributed to the

development of a new training curriculum on infection prevention and control focused on healthcare workers in district and commune healthcare facilities, which has now been adopted by the Ministry of Health (MOH) for nationwide application.



A healthcare worker in Can Tho demonstrating hand hygiene
Photo: Oanh Tran, USAID/APII

Building on the training and other activities on infection prevention and control that were previously supported by USAID/APII in Can Tho, the city's health authorities have been continuing to utilize the trainers and the USAID/APII training curriculum to strengthen infection prevention and control in other healthcare facilities using local funding resources.

As outlined in an official report dated January 2013 from Can Tho DOH, since October 2012 four training courses on infection prevention and control have been organized for infection control staff from health care facilities. These training courses were organized in different general and specialized city and district healthcare facilities of Can Tho,

including Thot Not District Hospital, O Mon District Hospital, Can Tho City General Hospital and Can Tho City Traditional Medicine Hospital.

A total of 139 participants have completed the training courses, coming from 21 different healthcare facilities, as follows:

- Nine district hospitals and health centers
- Nine specialized provincial hospitals and health centers, including the following specialized facilities: pediatrics; ear, nose and throat; dentomaxillofacial; TB and lung disease; mental health; blood transfusion and hematology; cancer; dermatology; traditional medicine).
- Two private general hospitals from Can Tho City and one private general hospital from the neighboring province of Bac Lieu.

For each training course, the actual situation of the host institution in relation to infection prevention and control was used as a practical example for the training. The training aimed to address the real needs of infection control officers in these healthcare facilities, both in relation to patient care and also protecting healthcare workers from daily infection risks.

The results of pre- and post-testing of the participants in the training courses reported by DOH indicated significant improvements in knowledge about infection prevention and control in healthcare facilities.



Monitoring the infection control activities in Can Tho in April 2013

Photo: Oanh Tran/USAID

11.2 Peer-to-Peer Education Replicates USAID/APII's BCC training model in new provinces

During February and March 2013, the provincial BCC Trainer Team from Quang Tri conducted three training of trainer (TOT) courses on BCC theory and techniques in Ha Tinh, Quang Binh and Thua Thien-Hue provinces, introducing USAID/APII's model outside of the projects original five focus provinces. These TOT courses reached 63 key staff from the provincial Women's Unions (WU), Sub-Departments of Animal Health (SDAH) and Centers for Health Education and Communication in these provinces.

The Quang Tri BCC Trainer Team overcame two significant challenges to implement these trainings. First, the team quickly moved from being training recipients over the past three years, to a training role in which they had to confidently pass on their knowledge of BCC theory and practices. Secondly, and perhaps more importantly, as provincial officials they were required to assume the role of teacher with their peers as opposed to more junior staff.

Preparation and facilitation of the training and learning activities required a lot of energy from the Quang Tri team, who quickly learned that the trainees could ask difficult questions. The Quang Tri team applied a peer education approach, and after the TOT courses they supported the trainees from each

province to develop small group discussion guides based on the specific desired behaviors identified by the participants. The topic areas varied significantly between each province, ranging from food safety to life skills and women and children's health.

Overall, participants were pleased with the training and noted that it had been a good fit for their communication objectives. The TOT course not only provided knowledge but also created an active learning atmosphere. The training method required and created opportunities for participants to practice their communication skills and to analyze social issues, which they found quite different from other training courses they had attended. The trainers' facilitation skills kept the interest of the participants, who even stayed longer than the program in order to prepare their practical demonstration exercises. "The success of this training was that it could change our behavior toward in-service training and that it really stimulated our learning attitude. This training will be followed by diffusion training for communicators at the local level and we strongly believe that we will bring the same spirit to the local level, to our members and our community," said Mrs. Nguyen Thi Tuyet Minh, Vice-Chairperson of Quang Binh WU at the closing ceremony of the training. Using the WU's communication programs as case studies also helped the participants to know how to apply the training in their future work as communicators and trainers.



Group work presentation in BCC TOT
in Ha Tinh, March 10-14, 2013
Photo: Ha Tinh Women's Union

The TOT courses provided a very good demonstration of the value of a peer-to-peer education approach, and successfully built the competency of the trainees. Based on the TOT courses and the small group discussion guides for each province, the three newly established provincial trainer teams are conducting diffusion training for communicators who will lead small group discussions with women on the desired behaviors prioritized by each WU's network.

Through helping other provinces to learn about BCC theory and methodology and to build new BCC trainer teams, Quang Tri WU and its BCC trainer team have strengthened their training capacity and widened their knowledge on prevention and control of AI and EIDs as well as on promotion of other health behaviors related to environmental hygiene, life skills and women and children's health. The success of this cooperation will certainly enhance Quang Tri WU's expertise, reputation and coaching role within the national WU network in future.



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AVIAN AND PANDEMIC
INFLUENZA INITIATIVE

Avian and Pandemic Influenza
Initiative

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Annual Report
Oct. 2009 – Sep. 2010 (Year 1)

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Abt Associates Inc.

In association with:

Australian Foundation for the Peoples of Asia and the Pacific
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Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AEW	Agricultural Extension Workers
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
API	Avian & Pandemic Influenza
APII	Avian & Pandemic Influenza Initiative
AVSF	Agronomists and Veterinarians Without Borders (Agronomes et Veterinaires Sans Frontieres)
BCC	Behavior Change Communication
CA	Consultant Agreement
CBS	Community Based Surveillance
CDC	Centers for Diseases Control
COP	Chief of Party
DARD	Department of Agriculture and Rural Development
DEEFS	Department of Economics, Environment and Farming Systems
DLP	Department of Livestock Production
FAO	Food & Agriculture Organization (of the United Nations)
FGD	Focus Group Discussion
GETS	Generating Evidence for a Transitional Strategy
GMS	Greater Mekong Sub-region
GVN	Government of Vietnam
H2P	Humanitarian Pandemic Preparedness
IDI	In-depth Interview
IFRC	International Federation of the Red Cross
INGO	International Non-Government Organisation
MARD	Ministry of Agriculture and Rural Development
MoH	Ministry of Health
MOU	Memorandum of Understanding
NAFEC	National Agriculture and Fishery Extension Centre
NCHEC	National Center for Health Education and Communication
NIHE	National Institute of Hygiene and Epidemiology
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PIP	Provincial Implementation Plan

PMP	Performance Monitoring/Management Plan
PPC	Provincial Peoples Committee
PSA	Professional Services Agreement
PTP	Project Training Profile
RUDEC	Rural Development Center
SDAH	Sub-department of Animal Health
TAG	Technical Advisory Group
TNA	Training Needs Assessment
TOT	Training of Trainers
USAID	United States Agency for International Development
VA	Veterinary Association
VNRC	Vietnam Red Cross
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
WHO	World Health Organization

1. Achievements

USAID's Avian and Pandemic Influenza Initiative (APII) commenced activities on October 1, 2009. The first twelve months of implementation focused on: getting the project up and running, mobilizing key staff; identifying, engaging and guiding sub-contractors; and developing relationships with multiple partners in the five focus provinces (Can Tho, Kien Giang, Quang Tri, Ha Nam and Hung Yen) and at central level (e.g. MARD, MOH, FAO, WHO, AFAP, VNRC, PAHI, STOP AI, Infection Control Societies,). Below is an overview of activities and achievements during Year 1, outlined by management and technical areas.

1.1 Coordination and Collaboration

Provincial level

- 1) Signed MOUs with the five focus provinces between Nov. 10 and Dec. 4, 2009. Based on experiences and lessons learned during the AI Mekong Initiative, the team followed a clear step-by-step process with the provinces to develop the MOUs. There was a general feeling in the APII project of good teamwork and that the relationships with the provincial authorities generally got off to a good start. The process involved a broad range of stakeholders and interactive dialogue to help lay the foundation for future commitment and local ownership, which is key for future sustainability and scaling-up efforts.
- 2) Developed Provincial Implementation Plans (PIPs) with the provincial counterparts in January 2010, approved by the Provincial People Committees. A PIP is considered an official project document attached to the MOU outlining a framework for project implementation.
- 3) Established Provincial Coordination Units (PCUs) in each province. The PCUs are chaired by provincial leaders, typically the Vice Chairman of the Provincial Peoples Committee or the Director or Vice Director of the Provincial Department for Agriculture and Rural Development (DARD). Member representatives are appointed from related organizations responsible for implementing and guiding project activities in the province. The PCU assumes the highest level of ownership and decision-making on project implementation in the province. The PCUs typically meet every month to get update on the progress implementation and do planning and monitoring of field activities.
- 4) Developed provincial guidelines for field implementation and monitoring together with the provincial counterparts. The guidelines outline the steps and procedures for sub-contractors to execute their work in cooperation with the PCUs and provincial partners. At the same time, the guidelines provide PCUs with tools to coordinate and supervise all activities.
- 5) Engaged full-time Provincial Coordinators funded by either FAO (Kien Giang, Quang Tri, Ha Nam) or APII (Can Tho, Hung Yen) to assist the PCUs.
- 6) Opened Project Offices within Can Tho and Quang Tri DARDs, each staffed with an APII Project Manager. Together with the Head Office in Hanoi these satellite offices provided logistical and financial management support to provincial activities.

- 7) Organized joint meetings with FAO, USAID and PCUs in some of the focus provinces (when busy schedules permitted) on provincial implementation, coordination and lessons learnt.

Central level

- 8) The initial idea of establishing a Technical Advisory Group under MARD was replaced by a more pragmatic approach of operating via/with strategically located partners such as PAHI, FAO and WHO with more immediate access to central level planners and decision-makers, and the development of a detailed advocacy strategy was initiated.
- 9) The technical teams participated actively in and contributed to relevant national workshops and technical working groups under PAHI (including the BCC Working Group and the Bio-security Working Group).
- 10) Established close working relationships with key international partners such as FAO and WHO resulting in better coordination and communication. Agreed with FAO on clearer divisions of work e.g. in surveillance where FAO focuses its inputs at upper (national, provincial, district, commune) levels, whereas APII targets grassroots/village levels, the two thus complementing one another and working to strengthen the overall national system. Similarly established close working relationships with a wide range of national and local partners through subcontracts.

1.2 Avian Influenza Preparedness and Response Plans

- 1) Attended H2P's Table-top exercises in Ha Nam to gain experience for future activities and to see where and how to integrate behavior change communication into provincial pandemic response plans.
- 2) Attended IOM's table-top exercise on Preparedness and Response Plans in Tay Ninh, to gain experience for future activities.
- 3) Met with USAID and representatives of the International Federation of the Red Cross on how to subcontract Vietnam Red Cross (VNRC) for optimum use of USAID-funding and minimal overlap between APII and the Humanitarian Pandemic Preparedness (H2P) project implemented by VNRC and ending in August 2010. Initiated talks on the next steps for partnering with VNRC early in Year 2.

1.3 Early Warning Systems & Surveillance

Key achievements are presented in terms of preparation, capacity building, network establishment and maintenance, and advocacy and policy dialogue.

Preparation:

- 1) Conducted a rapid assessment on the status of surveillance systems in the three new focus provinces (Kien Giang, Quang Tri, Ha Nam) and proposed the Community-Based Surveillance (CBS) approach for the five focus provinces.

- 2) Reviewed the CBS model developed under AI Mekong Initiative and the provincial surveillance processes in Quang Tri, Ha Nam and Kien Giang's to inform the development of APII's CBS approach and plan.
- 3) Provided technical assistance to the Centre for Community Health and Injury Prevention to implement CBS approaches in Thai Binh and Long An Provinces funded by the VAHIP project of MoH.
- 4) Had discussions with FAO to work towards aligning surveillance approaches and develop joint plans for implementation in animal health surveillance. It was agreed that: APII and FAO would work together to finalize district and commune selection processes based on the risk-based approaches; APII and FAO would jointly organize a national workshop to introduce the CBS model; FAO would train commune chief AHWs and APII would train both village AHWs and human health workers, key informants and private sector partners in 123 communes; APII and FAO would jointly launch and implement the CBS model in 5 focus provinces.
- 5) Finalized the APII CBS approach taking into consideration the sustainability of the program. The approach is using and strengthening existing animal and human health networks at commune and village level and link the disease information from the CBS into the existing surveillance in national human and animal health systems.
- 6) Finalized the list of districts and communes (in collaboration with FAO) for CBS implementation using the risk based approaches. The total of selected communes is 123 in which Hung Yen is selected 24 communes in 4 districts, Ha Nam 16 communes in 2 districts, Quang Tri 26 communes in 4 districts, Can Tho 24 communes in 5 districts, and Kien Giang 33 communes in 4 districts.

Capacity building:

- 1) Held a 5-day TOT course for provincial health and animal health counterparts in APII CBS model implementation for 20 provincial human and animal health staffs (four per focus province).
- 2) Made detailed plans for CBS training of collaborators, key informants, and private sector agents in all five provinces.
- 3) Completed the roll-out of training for CBS networks in 123 communes in the five focus provinces, for around 1850 collaborators.

Network establishment and maintenance:

- 1) Prepared CBS materials/toolkits for distribution to collaborators during model launches.
- 2) Maintained CBS collaborator networks in 123 communes through monthly network meetings (from May in Quang Tri and Hung Yen; from July in Can Tho and Kien Giang; and from August in Ha Nam), rapid reporting on suspected cases and monthly reporting. The very latest information suggests that 2118 sick and dead poultry and 1132 SARI cases were reported by collaborators during July – September!

- 3) Supported regular monitoring visits by provincial and district level human and animal health staff.
- 4) Organized a national workshop with FAO to introduce the CBS model to national and provincial counterparts with 78 participants from the national level (MoH, MARD, NIHE, Public Health and Agriculture Universities, VA), the five focus provinces, and representatives of international organizations including CDC, WHO, CDC/GMS, CARE, and USAID.
- 5) Organized 18 CBS launch ceremonies in 18 districts with participation of more than 1800 collaborators from 123 communes, commune and district human and animal health authorities, media, and local government representatives. During the launches, the local authorities showed their recognition and approval of the network by giving their own (written) recognition of the networks in the form of a decision. The launches also made the collaborators proud to be members of the networks helping the community detect and report suspected cases of AI. During the launches fact sheet and provincial press releases were distributed to journalists and communication workers at national, provincial and district levels.
- 6) Commune loud-speaker broadcasts aired scripts introduced the collaborator network to communities. In addition, CBS toolkits including handbooks, reporting forms, bags, and T-shirts were provided for collaborators to assist them with their work.

Advocacy and policy dialogue:

- 1) Engaged a senior national surveillance expert to visit the field, attend launches and meet with provincial health and animal health staff and officials to show the importance of CBS in bridging the gap between community and central levels.
- 2) Upon request, APII provided technical assistance to the Centre for Community Health and Injury Prevention and shared the CBS approach with the VAHIP project of MoH to implement the CBS model in Thai Binh and Long An Provinces (for more details see success stories at the end of this report).
- 3) Conducted a costing/sustainability study in order to document and provide information on the cost (financial and human resources) of reproducing the model.
- 4) Conducted a series of individual meetings with FAO, WHO and national experts in both animal and human health sectors to discuss how the model can move beyond the AI towards events-based surveillance and how to simplify the model for easier adoption and replication in year 2.

1.4 Infection Control and Case Management

- 1) Organized and conducted a national workshop to share the lessons learned in infection control (IC) and case management (CM) under the AI Mekong Initiative and prepared plans for future case management and infection control activities.
- 2) Subcontracted Ho Chi Minh Infection Control Society for implementation of activities in this technical area.

- 3) Rapid assessments were conducted in 12 district hospitals in five provinces to inform the intervention.
- 4) IC activities in four districts of the AI Mekong Initiative were maintained.
- 5) Finalized CM training materials and guidelines and conducted TOT for provincial health staff on case management.
- 6) Introduced the National Infection Control Circular to health workers in target districts. Two workshops were organized in Can Tho and Kien Giang for IC staff in all district hospitals with some staff from provincial hospitals also attending. Partnered with Johnson and Johnson Medical in this effort with Johnson and Johnson supporting travel and accommodation for national trainers and training materials.
- 7) Prepared IC training curriculum and guidelines based on recommendations for IC implementation at district hospitals.

Advocacy and policy dialogue:

- 1) Met regularly with WHO to discuss how best to coordinate and collaborate on IC and CM support.
- 2) Met with national experts of MoH to show the APII approach on IC activities – with its focus on districts and commune levels which most other IC intervention programs have not yet targeted.
- 3) Met with USAID and IC programs of PEPFAR to explore scope for collaboration and exchanges of experiences and lessons learnt on general versus more disease specific IC interventions and programs.

1.5 Animal Response Efforts

This work focused on AHW capacity building under subcontracts with AFAP and VVA in collaboration with provincial S-DAHs.

- 1) During the last quarter of 2009 a review of the data collected in 2009 under the AI Mekong Initiative (and by AED in focus provinces) was conducted in order to provide baseline information on poultry production, AI virus outbreaks, and AHW and Animal Extension Worker (AEW) networks. This data helped inform subsequent work-planning in the five focus provinces.
- 2) AFAP completed an extensive Training Needs Assessment (TNA) for AHWs and AEWs in the five focus provinces during March-June in consultation with SDAHs and PAHECs in the five focus provinces.
- 3) AFAP rolled out support to AHW networks with monthly meetings and refresher trainings in 15 districts of the five focus provinces from June 2010, reaching a total of more than 1200 AHWs (800 male and 400 female). Aside from AI the trainings covered a wide range of common diseases including Porcine Reproductive and Respiratory Syndrome (PRRS) which recently swept through Vietnam with severe

impact on pig/poultry farmers and of major concern to authorities. Relevant training modules were adapted from DAH's most recent training curriculum.

- 4) AFAP conducted five TOT courses for local trainers (114 trainees from SDAHs and PAFECs; 42 female and 72 male) to help prepare SDAHs to take over and extend the training into other districts.
- 5) APII distributed 2000 AHW Logbooks to 05 provinces and initiated distribution of 1200 Vet tool kits to AHWs in 15 districts. The AHW Logbook and Vet Tool kit designs were adopted by VAHIP project for replication in 11 provinces.
- 6) Subcontracted with the Veterinary Association (VA) in February 2010 to strengthen its existing national association network, support AHW networks in selected pilot districts and explore ways to involve the private sector by tapping into networks of private AHWs ('para-vets') through public private partnership activities with companies such as GreenVet, Tien Thanh, Nam Thai, Merial, Hung Nguyen, NAVETCO and HANVET.
- 7) VA implemented 36 joint training courses for AHWs in 6 districts of Can Tho and Hung Yen from April 2010 ('old' districts from Ai Mekong, different from the districts covered by AFAP);
- 8) Distributed nearly 6500 technical magazines (Vietnam Veterinary Magazine, Poultry Magazine, Poultry Newsletter) through VA to 315 AHW commune boards in 21 districts in the five provinces. Set up 15 information desks to help AHWs access new technology and technical information. Analysis of data on their performance is forthcoming.
- 9) The work implemented through AFAP and VA was shared with local, national and international counterparts and partners during two national workshops for sustainable development of AHW networks in July and September, one organized under APII and one organized by DAH. The capacity building support to AHWs and AEWs comes at a time of increased national focus on the critical role of AHWs, both public and private, in providing better services to the livestock sector in future. This presents opportunities for APII to influence relevant upcoming legislation such as the new Veterinary Law expected in 2012.

1.6 Biosecurity

- 1) In conjunction with the TNA for AHWs a TNA for AEWs was completed in consultation with NAFEC/PAFEC yielding useful recommendations for enhancing bio-security skills and knowledge. AEWs are recognized as a good resource for training of farmers on bio-security and bio-safety through good farming practices.
- 2) The Rural Development Center (RUDEC) of MARD was subcontracted to conduct a 'Supply Chain Risk Assessment' in the five focus provinces. The findings were disseminated to representatives of key regulatory authorities at the national and provincial levels and international partners through dissemination workshops in July.
- 3) The risk assessment further informed/guided the 'Provincial Strategic Planning Workshops on HPAI Risk Reduction along Poultry Supply Chains' held towards the

end of Year 1 with FAO and local public and private stakeholders. These workshops resulted in lists of priority (high risk) nodes and risk reduction measures for supply chain interventions and demonstration model development.

- 4) A desk review of the regulatory framework was conducted by a national consultant.
- 5) A rapid risk assessment was conducted in the five focus provinces (and in Ha Tay province where the largest live bird market of Ha Vy and several hatcheries are located). Findings were shared with the DLP and through the Biosecurity Working Group co-managed by FAO-DLP.
- 6) In collaboration with FAO, the Poultry Association, and VA, current bio-security training materials were collected for review. A plan to develop training materials for smallholder commercial (sector 3) farmers was prepared in collaboration with NAFEC and DLP. Representatives from the two organizations were engaged as consultants for bio-security training material development.
- 7) Two proposals for bio-security and certification model development for sector 3 farmers were drafted together with RUDEC and the Department for Economics Environment and Farming systems (DEEFS) of the National Institute of Animal Husbandry together with the Poultry Association. This work is expected to be contracted to these organizations in Year 2.
- 8) Drafted a Project Strategy and Implementation Framework 2010-12 and an integration matrix to guide an integrated animal health/human health/BCC supply chain approach.
- 9) Under the VA subcontract, and assisted by national consultants, reviewed the AED curriculum on AI prevention for hatcheries, slaughterers, market vendors, cooked food vendor was and developed an updated version to train around 400 supply chain vendors what focus on bio-security and bio-safety.
- 10) Participated actively in Biosecurity Working Group and other technical meetings.

1.7 Behavior Change Communication

Central level

- 1) Organized a one-day training course on the theory and application of behavior change communication (BCC) in December in Hanoi with 20 participants from AFAP, VNRC, NAFEC, NCHEC, VVA, and all APII technical staff.
- 2) Attended BCC working group meetings and acted as the focal point for BCC material cataloguing. A list of collected materials, including legislative documents and strategies from all agencies in the working group, including MARD, was developed for uploading to PAHI's website. Hard and soft copies were collected for filing in APII's library.
- 3) Completed BCC activities assessment, the findings will orient the planning of Year 2 BCC activities.

- 4) Conducted a one-day training for 30 people including journalists from national agencies (who previously attended FAO's training and IMCAPI's orientation) and communications staff from NAFEC, NCHEC and provincial CHEC's on BCC and messaging. The course also provided technical information for API stories. The training concluded with a planning session on next steps for journalists to provide better coverage on API prevention and related APII activities. Follow-up with the journalists in September showed that they have started to write articles, and prepare video clips about the CBS model.
- 5) Conducted a three-day BCC training for 30 people representing the project's main national stakeholders including VNRC, WU, VVA, Poultry Association, Farmer's Association, NAFEC, NCHEC, AFAP, RUDEC, DEEFS, and PCs.
- 6) Conducted a five-day training course for master trainers on BCC for 30 key staff from the five focus provinces, representing human and animal health, provincial communication bodies (such as PAFEC and PCHEC), mass organizations (WU and RC). The master trainers subsequently organized TOT courses for district level trainers. The province and district trainers will participate in the design and implementation of BCC related activities in Year 2.
- 7) Following the provincial reduction strategy workshops to identify key (high risk) nodes and intervention points in selected poultry supply chains, the BCC team organized planning workshops with key leaders of health, animal health sectors, Red Cross, Women Union, etc. during Sep in Can Tho. The outcomes were lists of agreed priority behaviors for priority supply chain nodes and lists of proposed BCC activities/target audiences and timing. The workshops will be followed by FGD and IDI with target audiences to identify barriers and motivators for target audiences to apply desired behaviors.
- 8) Prepared video clips introducing the CBS model, the role of CBS collaborators and the five steps of hand washing for CBS provincial launching ceremonies.
- 9) Together with the AH component, worked with VAHIP to transfer and replicate AI Mekong and APII successes in VAHIP's provinces. The bio-security booklet on Mr. Mau raising chicken to was distributed in VAHIP provinces and USAID provided authorization for VAHIP to reprint the AHW logbook.
- 10) Began exploring the development of an APII website with Abt HQ.

Provincial level

- 1) To continue BCC activities supported under the AI Mekong Initiative and AI BCC projects during the pre-Tet period (Dec. 2009 -- March 2010), the following activities were undertaken:
 - o Reviewed all BCC activities and documents under the AI Mekong Initiative and the AI BCC project through meetings with AED, AED's partners, and local counterparts from the five focus provinces. Conducted a rapid needs assessment of AI BCC gaps in the five focus provinces through a desk review of KAP surveys of local authorities. Agreed with the five focus provinces on AI BCC pre-

Tet Campaigns and organized BCC planning workshops at provincial and district levels. Implemented pre-Tet BCC campaigns in the five focus provinces (including TOT refresher courses, refresher trainings for commune and village communicators, community events, display of 300 sets of outdoor posters distribution of 1,100 bags and 750 T-shirts at market kiosks, small group discussions with around 800 sector three farmers, radio spots on district radio and commune, communication kiosks at main markets, distribution of 3300 wall poster calendars). Calendars focused on the three key messages and provided the provincial hotline numbers from the GETS project. Organized BCC review meetings/workshops in four focus provinces (except Kien Giang) for sharing of experiences and lessons learnt.

- 2) Promoted an integrated approach to Human and Animal Health BCC through post-testing of CBS toolkits with village collaborators in Can Tho and Hung Yen.
- 3) Aired radio spots and commune loudspeaker system announcements (Sep.-Oct. 2010), promoting CBS collaborator networks (prepared with the HH team) to reinforce the recognition and roles of CBS collaborators.
- 4) Organized API training for key local authorities (e.g. village heads) in communes (Aug-Oct 2010), aiming to equip local authorities with basic knowledge on API.
- 5) Completed the assessment of provincial communication activities in all five provinces. The findings were presented at provincial BCC planning workshops to guide Year 2 activities. The assessments also provided useful information to the provinces on the current status of their API communications status while highlighting the need for one integrated communication plan for the whole province in future.

1.8 Other Cross-Cutting Issues

- 1) Conducted a desk survey on TOT skills followed by data analysis to provide an overview of potential local trainers, their capacity in TOT for the various components and likely roles in upcoming training courses across APII.
- 2) Prepared and shared a Project Training Profile (PTP) internally between components, which outlines training course process, standard forms for course planning and notification, monitoring and evaluation, checklists, participant's lists, and so forth. This PTP will be updated regularly based on training experiences and M&E outputs.
- 3) With short-term technical assistance from Abt's HQ, prepared a gender strategy and plan, and trained APII and counterpart staff in gender awareness.
- 4) With short-term technical assistance from Abt's HQ (incl. their Environmental Compliance Advisor) prepared and Environmental Mitigation & Monitoring Plan (EMMP).

M&E activities

- 5) Submitted the APII PMP to USAID in November. A first update (of this 'living' document) was made in April with short-term technical assistance from Abt's M&E

specialist and a second update is attached to this annual report, reflecting recent in changes in project scope and direction (e.g. more emphasis on an integrated multi-sector approach along poultry supply chains).

- 6) Implemented a joint training workshop with FAO to introduce the USAID PMP and APII PMP frameworks to provincial and national counterparts.
- 7) Provided inputs for USAID PMP developments led by MEASURE e.g. on data collection tools.
- 8) Finalized the selection of districts and communes for implementation of project activities in five provinces. Collected basic information in targeted communes and districts
- 9) Developed monitoring forms for provincial counterparts/PCU members for monitoring visits of APII activities.
- 10) Drafted an initial outline for a web-based M&E database system for the APII project and for M&E data from other USAID-supported AI initiatives.

2. Challenges and Solutions

The project faced various challenges during the Year 1, such as: establishment of close working relationships and coordination of activities with a wide range of key partners and counterparts; implementation through subcontracts and consultant agreements; and filling staff gaps. Below is an overview of specific challenges and solutions, outlined by management and technical areas.

2.1 Coordination and Collaboration

- 1) APII was without a resident Project Director from Dec. 2009 till April 2010. This partly explains the relatively slow start-up and some of the early deficiencies in coordinating with key international partners (e.g. FAO). The situation did improve during the second half of the year, as staff gaps were filled. The speed of implementation picked up and coordination improved overall through frequent meetings and interactions/communication with key partners. The project recognizes that there is scope for further improvement including changes in attitudes towards collaboration. This may entail more frequent meetings to agree on clear divisions of responsibilities, encourage a more open sharing of plans and (draft) documentation, and model constructive/positive and open dialogue as a way towards better cooperation.
- 2) Coordination with international partners remained a challenge with different cost norms/policies, communication styles, and busy work schedules within a complex project context. The project did make deliberate efforts to foster closer relationships, particularly with FAO (the main international partner). The project will continue to pursue this line in Year 2 for better harmonization especially on supply chain activities, CBS work, IC/CM efforts, and on cost norms. In general, APII will focus

on activities at lower provincial/grassroots levels, whereas FAO (and WHO) will focus on the upper provincial and national levels.

- 3) It is worth noting here that based on past experience and donor behaviors, provinces typically expect donor-funded projects to set up project management units with resources allocated to provincial counterparts and provision of financial incentives (such as topping-up allowances). APII operates under a set of rules that does not allow this kind of support. To clarify this and level the expectations among counterparts who are accustomed to different donor behavior often takes considerable time and extended dialogue.
- 4) The early signing of provincial MOUs, although hailed as a success story, also had its own problems. The process gave rise to some false/unmet expectations among key provincial counterparts e.g. the expectation that they would receive direct fund transfers to manage implementation of activities. This subsequently led to frustrations and complaints when it turned out that the project was not in a position to advance or transfer funds to government institutions (which otherwise is the way they normally operate). This quite sensitive and charged issue (to do with power and control) was largely resolved during the latter parts of the year through face-to-face meetings and open dialogue.
- 5) The role/function of the PCUs remained problematic during Year 1, to some extent because of the 'false expectations' mentioned above. Several PCUs were large compared to the smaller number of member organizations with which APII was able to work directly in implementation. The role and composition of the PCU will be evaluated and revisited in connection with the preparation of MOUs in Year 2.
- 6) The 'dividing up' of PCs, with APII funding two and FAO funding three positions, led to complications with PCs generally prioritizing APII or FAO activities respectively, rather than promoting closer coordination, cooperation and sharing of information. It also led to inconsistencies in the levels of involvement by PCs in the PCUs. Towards the end of the year it was agreed with USAID and FAO that APII should fund all five PCs from Year 2 in an attempt to promote a more consistent approach. The PC TOR will be revisited together with FAO and will emphasize the role of joint coordination of all USAID-funded activities in the provinces in Year 2.
- 7) APII is generally perceived by national counterparts as an 'INGO'. This represents a challenge in terms of gaining access to and directly influencing policy/decision-making processes. The initial idea of establishing a Technical Advisory Group under MARD (with APII acting as a Secretariat) was replaced by a more pragmatic approach of operating via/with strategically located partners such as PAHI, FAO and WHO with more immediate access to central level planners and decision-makers. Support to PAHI was extended and the partnership secretariat is well established inside MARD.
- 8) Most activities were subcontracted out to local and national partners, through Professional Service Agreements (PSAs). Direct implementation requires APII to obtain a PACCOM license, which currently is being sought through a local law firm. However, even with a PACCOM license APII will continue to subcontract most of its work as direct implementation would necessitate a substantial increase in staffing that

is unlikely to be approved. The entry of PSAs with quasi-government organizations required separate approval by USAID's Regional Office in Bangkok, a process which took a fair amount of time. The PSA mechanism, whereby partners are reimbursed on the basis of previously agreed deliverables and budget, turned out to be an unfamiliar and to some degree uncomfortable mechanism for local and national partners. It took much effort and time during Year 1 for all involved, including APII directors, to familiarize themselves with this new contractual arrangement and the learning/adjustment process is ongoing. Local organizations are accustomed to receiving advances, but APII does not have the flexibility to advance/transfer funds to partners only to reimburse upon receipt of agreed and approved deliverables. This presents a dilemma for organizations with little or no working capital, like APII's partners.

- 9) APII did not pursue the option of PSAs with government agencies as this requires higher level approval in USAID (beyond the regional office in Bangkok) and is a time-consuming process. Instead, the project opted for alternative options such as individual consultant contracts with government staff. This process however requires formal letters of 'leave without pay', which in many cases proved difficult to obtain. At the moment there appear to be no easy ways to contract government institutions (other than those with quasi-government status and mandate to generate income under Decree 115) and their staff to work with APII.
- 10) Management and administration (incl. modifications) of sub-contracts generally consumed more time than anticipated and is a new learning experience for all involved, including APII's technical teams, who in many cases found the admin burden unexpectedly high. It is anticipated that subcontract management will improve significantly in Year 2 as project staff and partners gain first-hand experience and continue to build trust and stronger working relationships.
- 11) The bureaucratic nature of the subcontracting process, with approvals required in both Abt's HQ and in USAID (incl. the regional office in Bangkok in some cases) at times resulted in a lengthy, time-consuming and somewhat frustrating implementation experience during Year 1. Now that procedures are clearer and better understood and general approval has been provided (e.g. by the regional office in Bangkok for subcontracting a range of quasi-government organizations) the sub-contracting process is expected to run more smoothly in Year 2. The limited capacity of many potential partners does however remain an ongoing concern. APII will increasingly opt for open, competitive and widely advertised bidding processes in Year 2 in order to (hopefully) identify more high caliber subcontractors.

2.2 Avian Influenza Preparedness and Response Plans

- 1) In order to avoid overlap or duplication of efforts with the USAID-supported H2P project implemented by VNRC, and due to the busy schedule of VNRC preoccupied with emergencies and disasters (such as flooding in central Vietnam) the subcontracting of PPP activities to VNRC was deferred till Year 2. While VNRC is well located strategically to handle this activity, the organization does have limited human resources to cover a large number of provinces. Further consultations with

VNRC and USAID may be required before an agreement can be entered and the PPP work subcontracted to VNRC.

2.3 Early Warning Systems & Surveillance

- 1) Collaboration and coordination with FAO on CBS approaches was an on-going issue in Year 1, but the situation improved significantly during the course of the year with frequent meetings, sharing of information and clear delineation of responsibilities being agreed upon. APII works at grassroots levels and FAO at higher provincial and national levels, with Chief AHWs being the shared point of contact.
- 2) The change from direct implementation to subcontracting, in this case with Provincial Red Cross associations, gave rise to confusion and new challenges in working with local partners who lack capacity, who may not be 'professional' in a foreign/business sense of the word, and who generally have little or no working capital and therefore find it very difficult to work on the principle of cost reimbursement. Assuming that APII obtains the necessary license for direct implementation in Year 2, we may consider reverting to this approach but only to a limited extent as the project does not have enough staff for full-scale direct implementation. The more feasible option, and the one that will be pursued in Year 2, is working through partners at the central level with sufficient capacity.

2.4 Case Management and Infection Control

- 1) A shortage of available human resources and contracting capacity among some intended partners caused a slowdown in the subcontracting process.

2.5 Animal Response Efforts

- 1) The development of the AFAP subcontract was more cumbersome than anticipated. Although a temporary Letter of Agreement signed in February (the actual subcontract was not signed until late May 2010) did help kick-start AFAP's input, the work remained well behind schedule throughout Year 1.
- 2) Both of the main sub-contractors (AFAP and VA) generally needed more time than anticipated to familiarize themselves with APII's subcontracting procedures and AFAP -- as an international NGO -- needed time to establish collaborative working relationships with provincial counterparts.

2.6 Biosecurity

- 1) RUDECs risk assessment work also took longer to complete than anticipated causing delays in overall progress of the bio-security work.
- 2) National level supply chain management occurs through several points, and is not the responsibility of a single ministry or agency. Working with national level planners and policy makers on supply chain issues will be challenged by fragmented and at

times unclear institutional set-ups and mandates. Even where responsibilities fall within the mandate of a single line ministry it is not always certain which agency is directly responsible. This applies for instance to hatcheries. APII will work closely with other strategically located partners (such as FAO) and engage in relevant forums (e.g. Technical Working Groups under PAHI) to leverage influence with planners and decision/policy makers.

2.7 Behavior Change Communication

- 1) Coordination with the AI BCC project to transfer materials -- radio spots, the "Three Good Things" template etc. -- took more time than expected. APII will, however, now be in a much better position to design an effective BCC campaign and materials with local partners.
- 2) Initially it took longer than anticipated to establish PCUs and to authorize a focal point agency (e.g. WU) to implement pre-Tet BCC campaigns under PSAs. This caused initial delays in BCC activities but the situation has since improved and the process is expected to run more smoothly in future campaigns.
- 3) The above-mentioned delays moved some activities too close to Tet with some provinces having to scale down BCC interventions. For example there were no radio spots in Kien Giang and no road shows in any of the focus provinces. In future the project will know better what to expect and should be able to prepare well in advance.
- 4) There was also a delay in the planned publishing of quarterly APII Newsletters. As a part of the capacity and leadership building, the intention was to involve two government communication bodies, namely NAFEC and NCHEC under MARD and MOH respectively, for co-editing and reviewing of articles and news items. The SOW was agreed and a budget was drafted, but as the approval process through USAID for a PSA with a government agency looked to become a lengthy affair the idea was temporarily put on hold, while alternative options were being considered. However, it has proven difficult to identify suitable alternatives and the idea of subcontracting NAFEC and NCHCE may be revived in Year 2.
- 5) The posters (with the three key messages) which were hung at public places typically lasted for some months only. Villagers suggested that we instead promote key behaviors through wall calendars that they will see every day at home rather than, or as complementary to, only having posters in public places. The project subsequently transformed the posters into wall calendars, adding hotline numbers supported by the FAO GETS project in the process.
- 6) It took longer time to prepare and get approval on subcontracts (PSAs) with provincial mass organizations than foreseen. Furthermore, the subcontracting organizations were faced with limited human resources to implementing the contracts which affected both the speed and quality of work.

2.8 Other Cross-Cutting Issues

Staffing

- 1) Finding qualified candidates for the CBS Manager and M&E Manager positions proved more difficult than anticipated. A CBS Manager was eventually identified and joined the project during the last quarter of Year 1. The project also identified an M&E Manager who unfortunately and unexpectedly resigned within a week and decided to return to his old job for loyalty reasons. A new (strong) candidate was identified and is set to join the project in November 2010. Overall, these delays caused an excess workload for the Director HH/M&E.
- 2) Similarly, it proved difficult to attract a qualified Training Manager despite several attempts and interviews. The need for this position is now being reviewed and reconsidered. If feasible, the scope and title of the position may be altered in view of the direction the project is taking in Year 2 (more focus on supply chain strengthening). The Animal Health team has a very high work load with only two full-time staff on board and needs additional human resources to manage its many subcontracts and animal health activities.
- 3) The Partner Coordination Manager, who joined in the middle of Year 1 and whose position was turned into Policy Advocacy Manager, resigned towards the end of Year 1. The scope of this position will be reviewed and reconsidered early in Year 2.

Cost Norms

- 1) Cost norms remained a sore point due in part to some differences between APII and key partners, e.g. FAO. FAO follows the broadly accepted UN-EU guidelines, which APII cannot adopt (due to Abt policies), but ongoing efforts are being made to keep APII's norms closely with these guidelines. The UN-EU guidelines cover upper national-provincial levels but do not offer detailed information for activities at grassroots levels. The grassroots levels are however well covered in the APII cost norms and these rates are shared with and generally applied by FAO.



Avian and Pandemic Influenza
Initiative

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Abt

In association with:

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Annex 1 – Updated International Consultancy & Travel Schedule

Annex 2 – Updated Subcontractor and Local Consultants Schedule

Annex 3 – Updated Annual Work Plan/Gantt Chart

Annex 4 – Updated Log-frame/PMP

Acronyms

Abt	Abt Associates
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015)
APHA	American Public Health Association
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
AVSF	Agronomes et Vétérinaires Sans Frontières
BC	Behavior Change
BCC	Behavior Change Communication
BCP	Business Continuity Planning
BQ	Bill of Quantities
CBS	Community Based Surveillance
CCHIP	Centre for Community Health and Injury Prevention
CDC	Center for Disease Control
CEFACOM	Research Center for Family Health and Community
COP	Chief of Party
CSO	Civil Society Organization
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DLP	Department of Livestock Production
DOFA	Department of Foreign Affairs
DVS	District Veterinary Station
EMMP	Environmental Mitigation & Monitoring Plan
EPT	Emerging Pandemic Threats
FA	Farmers Association
FAO	Food & Agriculture Organization (of the United Nations)
FAPQDC	Food and Agricultural Products Quality Development and Control Project (supported by Canada's CIDA and implemented through MARD)
FMD	Foot-and-mouth disease (in livestock)
FP	Focal Point (appointed by FAO in focus provinces)
GUC	Grants Under Contract
HPAI	Highly Pathogenic Avian Influenza
HPI	Health Policy Initiative
ICS	Infection Control Society
IPC	Infection Prevention and Control
KAP	Knowledge, Attitudes and Practices
LIFSAP	Livestock Competitiveness and Food Safety Project
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MIS	Management Information System
MMB	Market Management Board

MOD	Ministry of Defense
MOH	Ministry of Health
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCD	Newcastle disease (in chicken)
NCERWASS	National Center for Rural Water Supply and Environmental Sanitation (in MARD)
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PAM	Project Area Manager (APII field staff)
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PEPFAR	President's Emergency Plan for AIDS Relief
PIP	Provincial Implementation Plan
PMC	Preventive Medicine Center (province level)
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PRRS	Porcine reproductive and respiratory syndrome (virus)
PSA	Professional Services Agreement
RAHO	Regional Animal Health Office
RC	Regional Coordinator
S3F	Sector 3 Farmers (as per FAO definition)
SARI	Severe Acute Respiratory Infection
SOW	Scope of Work
TOT	Training of Trainers
TOFT	Training of Farmer Trainers
TOMT	Training of Master Trainers
UNJP	United Nations Joint Programme
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VEMEDIM	Veterinary Medicine Import Export Joint-Stock Company
VIPA	Vietnamese Poultry Association
VMSA	Vietnam Medical Services Association
VNA	Vietnam Nursing Association
VNFU	Vietnam Farmers Union
VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WCS	Wildlife Conservation Society
WHO	World Health Organization
WU	Women's Union

Introduction

This report presents the main achievements, challenges and solutions/lessons learnt for USAID's Avian and Pandemic Influenza Initiative (APII) during Year 2, October 2010 – September 2011.

Year 2 saw the project reach full level of implementation in all areas, including animal health, human health and behavior change communication. Activities are implemented via subcontracts as Abt's current license does not accommodate for direct implementation. This carries its own unique challenges as it often is difficult to find subcontractors capable of delivering quality work on time, and strengthening the capacity of subcontractors has therefore become a vital part of APII's work.

The project progressed well in most of the seven main focus areas:

- 1) Animal Health Worker (AHW) Capacity Building;
- 2) Agricultural Extension Worker (AEW) Capacity Building;
- 3) Poultry Supply Chain Strengthening;
- 4) Community-Based Surveillance (CBS);
- 5) Infection Control / Case Management (IC/CM);
- 6) Pandemic Preparedness Planning (PPP); and
- 7) Behavior Change Communication (BCC). BCC is now well integrated into the work of the animal health and human health components.

Year 2 was also the year where the project started orienting itself towards advocating for the wider adoption and sustained implementation of models, beyond the life of the project. Adoption, adaptation, replication and up-scaling of APII innovations by public and private partners is considered the real measure of success for the project. This will require a sustained advocacy and promotional effort for which the project has started preparing itself in close consultation with USAID and API partners.

Below follows a description and discussion of the main achievements, challenges of Year 2.

1. Animal Health Worker (AHW) Capacity Building

The goal is to develop an AHW capacity building package that is adopted by relevant public-private agencies at national and/or provincial levels, and to develop a standard Terms of Reference for AHWs for adoption by Provincial Peoples Committees (PPCs) and the Ministry of Agriculture and Rural Development (MARD).

Year 2 focused on completing and transferring the training package for wider adoption and on establishing well-functioning networks of capable public and private animal health workers in and beyond project areas. The subcontractors included the Australian Foundation for the Peoples of Asia and the Pacific (AFAP) on training/capacity building and the Vietnamese Veterinary Association (VVA) on AHW network development and advocacy.

1.1 Achievements

- 1.1.1 With a new Country Director and field staff onboard, AFAP strengthened its performance and collaboration with provincial counterparts, notably the Sub-departments of Animal Health (SDAH) and the Provincial Agriculture and Fisheries Extension Centers (PAFEC) through lessons learned meetings, technical seminars, planning workshops, and participation in Provincial Coordination Unit (PCU) meetings.
- 1.1.2 The AH team updated the AHW Training of Trainers (TOT) package to include lesson plans, presentations, pre- and post-test questions, visual aids, etc. The package is based firmly on the training manual issued by DAH in 2010 and the work was done in consultation with DAH and FAO. Additional modules on bio-security, basic surveillance and zoonotic diseases emphasizing participatory training and learning by doing were developed together with SDAHs and local consultants. The materials were shared with DAHs epidemiology division for feedback and with WCS/PREDICT (awaiting input from them on a zoonosis module. Finalization and dissemination is scheduled for early in Year 3.
- 1.1.3 The AHW TOT package was successfully tested in Quang Tri through a 30-days training course for 25 new village AHWs. The participants received certificates co-signed by the Director of SDAH and APII. We expect that graduates will become part of Quang Tri's provincial Decision 25 (from 2009) to strengthen the AHW network and provide allowances beginning in 2012. APII will continue to work with Quang Tri on the implementation of this decision.
- 1.1.4 Held a lessons learned workshop on AIHW training curriculum development and AHW training together with the Agricultural College and Vocational Training Center in Quang Tri and the SDAHs from Quang Tri, Ha Nam and Can Tho. This included discussion on formalization of AHW training and certification. Follow-ups with stakeholders and Sub-Departments of Labor, Invalids and Social Affairs who have local funds for career development in vocational training centers is planned in Year 3, together with finalization and adoption of AHW TORs.
- 1.1.5 The first round TOTs for 100 provincial AHW trainers was completed in the five pilot provinces. As many as 20% of these trainers have already become involved in monthly refresher trainings for AHWs as a part of a coaching scheme.
- 1.1.6 AHW monthly meetings and refresher trainings were conducted in all 15 pilot districts throughout the year covering more than 31 topic areas. Approximately 1,000 AHWs participated every month (reaching around 60% of all AHWs in these locations). The model of combining refresher trainings and monthly meetings was well received by AHWs and district/provincial staff. Beginning in February, in response to a request from Can Tho SDAH and DVS, refresher trainings were conducted in two new districts of Can Tho (Ninh Kieu - Binh Thuy and Cai Rang) on a cost-share basis. APII covered the costs of trainers while local counterparts covered travel costs for participants. Similar arrangements were adopted in

seven districts of Ha Nam, Hung Yen and Quang beginning in September 2011. As a result, starting in October 2011 APII will only provide support for trainer preparation and logistics in all provinces.

- 1.1.7 As a part of the plan to strengthen AHW networks and share experiences across districts, AFAP staff, the Animal Health technical team and the SDAHs facilitated a number of technical seminars on how to conduct effective and efficient AHW meetings, veterinary stations and networks. The workshops provided opportunity for Veterinary staff to exchange information, share experiences and work out solutions. 261 representatives from 45 District Veterinary Stations and five SDAHs in the pilot provinces participated.
- 1.1.8 In late April, we signed new subcontract with VVA, focusing on strengthening their organizational capacity and assisting to establish AHW networks with public and private partners. In early June, VVA shared its first draft "Vietnam Veterinary Association Strategy for Sustainable Development period 2011-2015" with provincial SDAHs for comments and feedback. A review workshop was conducted on 26th September in Hanoi (with representatives from 21 provinces in attendance). A final version of the VVA Strategy 2011-2015 will be printed and distributed early in Year 3.
- 1.1.9 Activities to strengthen the VVA branch network at Quang Tri started in May 2011 in three districts. A Handbook for Provincial VVA Network Development was developed from lessons learned in Quang Tri for wider use.
- 1.1.10 Mailboxes and information desks were provided to 45 DVSSs in the five focus provinces to help encourage information access and sharing within AHW networks. Poultry Magazines was distributed to village AHW teams through this mechanism.

1.2. Challenges and Solutions

- 1.2.1 With MARDs Decision 37, DAH now has a '*Community Animal health Division*' – effectively a division for public veterinary health. The new division officially opened in June 2011. The APII and AI Mekong projects have actively been encouraging this development over the past five years. However, none of the SDAHs in the five focus provinces have established their own division as otherwise guided by Decision 37. We have found that veterinary staff assigned to oversee this work typically do not have sufficient training or experience in institutional development. This makes it difficult to advocate with SDAH's and DVSSs on AHW network strengthening. APII will continue to advocate on this issue in collaboration with strategic partners such as FAO, DAH and VVA.
- 1.2.2 Local funds for further capacity building of AHWs are generally very scarce. Despite adopting the Provincial Decision No. 25 (in 2009) on AHW network development in Quang Tri which provides for AHW allowances beginning in 2012, the province has not yet allocated funds for this in the 2012 budget. APII will continue to follow up with SDAH, DARD and the Provincial People's Committee (PPC) in Quang Tri to

advocate for inclusion of AHW monthly allowances in the 2012 budget and offer related Technical Assistance (TA) on AHW network capacity building.

2. Agricultural Extension Worker (AEW) Capacity Building

The goal is to develop and transfer to the National Agriculture Extension Center (NAEC) and Provincial Agriculture and Fisheries Extension Centers (PAFEC) an AEW bio-security training package for small commercial poultry producers, which has been fully tested, including costing, and verified for wider adoption and replication in the national-provincial extension system.

Year 2 focused on package testing and completion and assisting partners in adaption and adoption.

2.1 Achievements

- 2.1.1 After the final Review Workshop on the Biosecurity Training Package in April 2011, which included more than 20 participants from NAEC, MARD poultry research centers, FAO, VAHIP, ASVELIS, VIPA and VVA, and the final round of feedback from the Biosecurity Working Group members, the Biosecurity Training Package was printed in late August 2011 and distributed to target audiences.
- 2.1.2 Two Training of Master Trainers workshops on biosecurity for small commercial farmers were co-hosted with NAEC for 48 participants from NAEC, DLP, poultry research centers, and PAFECs (15 provinces). Selected master trainers are expected to conduct diffusion training in Year 3 (and beyond) to increase small commercial farmer's knowledge on biosecurity and good husbandry practices.
- 2.1.3 In collaboration with PAFECs, four TOTs for Farmer Trainers on biosecurity for small commercial farmers were organized in Ha Nam, Hung Yen, Quang tri, Can Tho and Kien Giang with a total of 125 participants from district and provincial extension centers. The training covered updated concepts of bio-security in small scale poultry; means to improve hygiene and reduce risks through good poultry production practices; and basic training skills with farmers groups. Following this, ten small group discussions for farmers in Ha Nam have been conducted as a first step in the diffusion training. Other provinces will follow early in Year 3.
- 2.1.4 The training package has attracted the interest of PAFECs in other provinces and APII received official requests for support to adoption and training from Soc Trang, An Giang, Bac Lieu, Vinh Long, Dong Thap, Dac Nong, Dac Lac, from Continuing Education Development Center (a local NGO) and Thai Nguyen University. A short term plan to support adoption in An Giang and Soc Trang was agreed. In addition the HCMC office of NAEC adopted the risk factor and biosecurity modules of the

curriculum into their own 2011 water fowl production and biosecurity training program and materials.

- 2.1.5 APII received a proposal from Vietnam Poultry Association (VIPA) on sustainable development of the poultry sector through a series of regional-national workshops, endorsed by the Department of Livestock Production (DLP). The proposal also included support to strengthening of the association's network and promotion of biosecurity practices within their local networks of poultry clubs, adopting the APII biosecurity training package as the training tool. APII is reviewing the proposal in consultation with FAO and will consider options for subcontracting VIPA in Year 3.

2.2 Challenges and Solutions

- 2.2.1 Working closely with NAEC/PAFECs is necessary to help institutionalize the training/extension packages. This is a time-consuming process which requires diplomacy, patience and perseverance in order to forge and maintain close relationships with these agencies. Under MARD's new funding strategy NAEC will compete with other bidders, including private service providers, for extension funds. This may reduce the scope for replication through NAEC' but could perhaps open up opportunities for adoption and uptake of APII extension materials thorough private partners. APII will explore this and partnering with NGOs and Civil Society Organizations (CSOs).

3. Poultry Supply Chain Strengthening

The goal is to develop demonstration models in key (high risk) nodes along supply chains, together with related documents (protocols, guidelines, training materials) for wider replication by national and provincial agencies as well as other development projects/programs.

During the first half of Year 2 a set of technical protocols (including conceptual design drawings and Bills of Quantities with estimated construction costs) were developed for the selected demonstration models. The technical protocols address veterinary public health, hygiene/sanitation, and bio-security/bio-safety issues for animals and humans within, before and after the nodes, in light of the existing regulatory framework and ongoing efforts in Vietnam.

3.1 Achievements

- 3.1.1 The live and plucked bird poultry sections of Dong Ha City central market in Quang Tri were selected for development of a demonstration model. The technical protocols and proposal were completed including all technical drawings and bill of quantities (BQ). Abt's Environmental Compliance Adviser visited Dong Ha market (as well as the centralized slaughterhouses in Can Tho and Kien Giang) in April and submitted Environmental Assessment Checklists and an updated Environmental Mitigation & Monitoring Plan (EMMP) to USAID. A second environmental impact assessment report for upgrading the poultry sections

in Dong Ha market was finalized by a local company as requested by the provincial Department of Environment. A stakeholder agreement was elaborated and signed with the Market Management Board (MMB) and the PCU. An open bidding process for a construction company to implement the upgrade was conducted, and a contract signed with Bach Long Vy Company. The construction is expected to be complete around early November 2011. A training program for traders, vendors and slaughterers and a plan to promote the market upgrade using media and other promotional tools were prepared.

- 3.1.2 Following the “Provincial Strategy Workshop for Risk Reduction in Supply Chains” in Ha Nam in March (after late signing of MOU), APII and local counterparts undertook field trips to potential demonstration model sites. To help leverage SDAH’s recently acquired fund of approximately VND 120-150,000,000 for veterinary hygiene and public inspection services in Duy Tien district market and small home-based slaughterhouses, APII and SDAH prepared a joint proposal for upgrading these nodes. If approved, APII support to this upgrade work will start in Year 3.
- 3.1.3 Upgrade options and drawings were completed for improvements to the Ngoc Xuan centralized slaughterhouse in Can Tho, which has 21 operators which is expected to cost about VND 1.8 billion. Joint investment options were reviewed and Ngoc Xuan Enterprise committed to cover around 55% of the cost under a proposed Grant Agreement with APII.
- 3.1.4 Technical drawings, protocols, and BQ were completed for an upgrade of Phu Nong centralized slaughterhouse in Kien Giang. The total cost of upgrading one processing line and auxiliary works is estimated at around USD 20,000.
- 3.1.5 The Animal Health team conducted two one-week (six day) advanced courses for 45 veterinary staff and poultry inspectors from Can Tho and representatives from Hung Yen and Ha Nam provinces. The training focused on updating them on recent regulations about slaughtering practices. In Year 3, the project plans to modify the course and transfer it to the national veterinary system for regional level trainings.
- 3.1.6 Economic analyses and preparations of business plans for Dong Ha Market and Phu Nong and Ngoc Xuan centralized slaughterhouses were initiated assisted by Abt’s Agricultural Economist.
- 3.1.7 A local consultant undertook a slaughterhouse supply chain mapping/analysis in Kien Giang and Can Tho. The results were shared at a workshop in Can Tho in July with counterparts and partners.
- 3.1.8 In provinces where centralized poultry slaughtering is not yet in place or planned, the best interim/transition option may be upgrading of veterinary hygiene conditions in home-based slaughter facilities. In Quang Tri province, two workshops for upgrading options in home based slaughtering were organized and a first assessment of the scope for upgrading home-based slaughter facilities was conducted. Visits to Ha Nam and Hung Yen for preliminary planning were also done.

- 3.1.9 Two study tours were conducted in collaboration with VIPA, DLP and provincial PCUs with 40 participants from central government authorities, incl. DAH, DLP, the Food Hygiene and Safety Administration of MOH, provincial representatives of DARDs, SDAHs, and SDFHF (Hung Yen, Ha Nam, Hanoi, Bac Giang, Bac Ninh Quang Tri, Can tho, Kien Giang) as well as private entrepreneurs (slaughterhouse owners from Quang Tri, Hung Yen and Ha Nam) and journalists. The first event provided an opportunity for participants to identify firsthand the points of HPAI/EID risk exposure in poultry supply chains in seven different provinces (Hanoi, Hung Yen, Quang Tri, Tien Giang, HCMC, Can Tho and Kien Giang). The second study tour brought participants to different nodes in the poultry supply chain in Long An, Tien Giang (STOP AI model) and Ho Chi Minh City including slaughterhouses and markets of varying sizes/scales. A list of interventions to support risk reduction and improve compliance for supply chain entrepreneurs was prepared in each province as a result.
- 3.1.10 The Animal Health team met with potential partners such as LIFSAP, to exchange information and explore options for collaboration e.g. through the exchange or transfer of demo models.
- 3.1.11 APII and FAO met frequently and developed a 'collaboration matrix' to identify and designate intervention nodes and responsibilities.
- 3.1.12 The Supply Chain Manager (North), Mrs. Nguyen Thai Hoa, joined the team on April 4 and the Supply Chain Manager (South), Mrs. Tran Thi Oanh, joined in August as new staff.

3.2 Challenges and Solutions

- 3.2.1 While provincial counterparts clearly are very interested in the demonstration models, most provinces have no 'master plans' that demarcate future locations e.g. for centralized poultry slaughterhouses and markets. In addition, the processes for local authorities to approve construction are very complex, involving multiple stakeholders with reference to different regulations. APII is learning along the way and adjusting accordingly.
- 3.2.2 Circular 14 on inspection, issued by MARD in March 2011, keeps Vietnam moving in the direction of industrialized slaughterhouses. While following this guidance will be a challenge, it is also an opportunity as it will classify slaughterhouses in Vietnam into A, B and C classes and provides detailed checklists for inspection. It has also focused the attention of DARD and local authorities on the need to improve veterinary, hygiene, sanitary and food safety standards at slaughterhouses. Similarly, the new Food Safety Law coming into effect in July 2011 has provided a strengthened regulatory framework with all the challenges and opportunities this entails for a project like APII. APII continues to work closely with FAO, DAH and other relevant partners on how to operationalize -- or implement -- the emerging regulatory framework.
- 3.2.3 A key challenge is ensuring sustainability of biological hazard risk reduction measures and the replicability of demo models in other provinces. To this end the project has adopted the following principles:

- Incorporate simple improvements/upgrades with minimal cost. The improvements aim to correct gross errors or implement prioritized measures for preventing or minimizing the risk for transmission and spread of biological hazards (HPAI, EIDs, food-borne pathogens);
- Ensure sustained interest in biological hazard risk reduction practices by giving full attention to stakeholders' socio-economic interests (i.e. livelihoods and business/entrepreneurship focus).

3.2.4 Phu Nong slaughterhouse in Kien Giang recently experienced some specific challenges – namely a decrease in the volume of poultry slaughtered in the past 2-3 months, a seemingly low level of interest and commitment from SDAH, and a lack of interest from the slaughter house owners in upgrading if the throughput/volume cannot be guaranteed. APII will review the new situation carefully before deciding how best to proceed.

3.2.5 Profit margins from poultry slaughtering are small especially in small scale operations like in Hung Yen, Ha Nam and Quang Tri province. It can therefore be difficult to motivate the owners and operators of small businesses to invest in improved poultry slaughtering facilities. The emerging signs of commitment from local government agencies e.g. to support development of livestock processing projects in Ha Nam do provide some encouraging signs, but APII will need to carefully review and monitor the local situation before committing itself to supply chain investments.

3.2.6 Despite prolonged discussions and negotiations with Asvelis regarding APII support to the supply chain activities developed under STOP AI, we did not manage to agree on a partnership. APII may decide to follow-up directly with the STOP AI entrepreneurs in Year 3 to assess the current situation, any support needs, and how to best capture and capitalize on the lessons learned and successful outcomes of the STOP AI project.

4. Community-based Surveillance (CBS)

The community-based surveillance (CBS) model engages both human health workers and animal health workers as village level Collaborators and fills an important gap in the national surveillance system by providing up-to-date grassroots level information through active surveillance.

The goal of this activity is to complete a CBS package, including training materials/tools, job descriptions, budget, and recommendations for adoption and scale-up into the provincial/ national surveillance system for both the human and animal health sectors.

In year 2 APII continued to strengthen the 123 CBS networks, expanded the scope from an AI to an events-based model, conducted a mid-term review, supported refresher trainings for Collaborators on emerging infectious and zoonotic diseases, and made preparations for phasing out support, evaluating and transferring the model.

4.1 Achievements

- 4.1.1 The Centre for Community Health and Injury Prevention (CCHIP) was subcontracted to implement CBS field work in close collaboration with provincial counterparts and supervised by the Human Health team.
- 4.1.2 The project continued strengthening CBS Collaborator networks through support to active/passive surveillance for rapid reporting of suspected cases, to monthly network meetings, and to exchange of surveillance information between human health and animal health at grassroots level. Support was phased out completely after July 2011 in 24 'old' communes of Hung Yen and Can Tho where AI Mekong had initiated the networks, but maintained elsewhere through September 2011 when the support will be phased out.
- 4.1.3 We met frequently with FAO to collaborate and coordinate.
- 4.1.4 The Human Health team conducted a CBS mid-term review in four provinces (Quang Tri, Kien Giang, Can Tho and Hung Yen) in December 2010. The review found that the model contributes to the ability of the surveillance system to detect suspected cases and convey useful information upwards. Collaborators reported 4,936 AI suspected cases in humans and 11,452 in poultry. Local partners appreciate the approach and have assumed new roles and responsibilities. General public awareness has increased, and Collaborators are being credited for their efforts and are building trust in the community as effective service providers. While the model builds on existing human resources, important challenges remain in terms of developing closer collaboration between the human and animal health sectors, and institutionalizing the model (including funding) with local resources.
- 4.1.5 APHIS hosted Mid-term Review Findings workshops in the focus provinces to review findings and recommendations for the next phase of CBS interventions. The project secured agreement from provincial human and animal health counterparts to expand the CBS model to an events-based surveillance system, including other EIDs.
- 4.1.6 An advanced TOT course was held February 14-15, 2011 for 21 participants from provincial Preventive Medicine Centers, SDAHs, and Quang Tri Village Health Association. The course covered training skills, AI, EIDs as well as skills related to identifying EID and AI events. Diseases covered included HPAI, Influenza-like Illnesses, Dengue Fever, Cholera, Newcastle Disease in chicken, Duck Plague, Porcine reproductive and respiratory syndrome (PRRS) or 'blue ears' in pigs, and Foot and Mouth Disease (FMD) in livestock.
- 4.1.7 Following the TOT, 62 diffusion courses were implemented in March 2011, for more than 2000 commune health providers, AHWs and Collaborators (village health workers) in all 123 project communes. AFAP trained AHWs and Collaborators associated with our CBS work in veterinary skills/techniques and disease therapies.
- 4.1.8 The CBS handbook for Collaborators was reviewed and updated with EID surveillance information and revised reporting forms for quick and

convenient reporting of suspected events in animals and humans. CBS handbooks and raincoats were distributed to Collaborators.

- 4.1.9 An updated list of CBS Collaborators in the 5 provinces was made available with support from CCHIP. The list indicated an average Collaborator turn-over rate of 11%, ranging from 4% - 26%. Can Tho showed the lowest average dropout rate of 4%. More in-depth analysis will be done to inform future activities and prevent high levels of turnover or dropouts.

- 4.1.10 Between March 2011 – August 2011, Collaborators detected and reported the following number of suspected cases at the commune level which were subsequently confirmed at higher levels:

- 0 AI cases in humans
- 9 AI outbreaks in poultry; 7 confirmed (in Quang Tri)
- 17,201 cases of influenza-like illnesses
- 328 cases of Dengue fever
- 11,599 cases of Newcastle disease (in chicken)
- 6,950 cases of Duck plague
- 73 cases of FMD (in livestock)
- 127 cases of PRRS (in pigs)

This data, especially the seven confirmed outbreaks of AI in poultry flocks detected and reported by animal health Collaborators in Quang Tri and subsequently confirmed by lab tests, indicate that the CBS model is working to correctly and efficiently to identify EIDs.

- 4.1.11 Surveillance data from monthly surveillance reports of 246 village Collaborator meetings in the five provinces was collected, reviewed, and analyzed. Feedback was sent to PC/PCUs and their members (PMCs, SDAHs and DVSSs) as well as to APII field offices. This helps the provinces strengthen their overall surveillance.

- 4.1.12 The following abstracts and presentations were accepted for national and international events:

- A presentation entitled “Sustaining Community-Based Surveillance (CBS) for early detection and response to Avian Influenza and Emerging Infectious Diseases (EIDs)”, was given by the Technical Director for Human Health at the Global Health Council’s 38th Annual International Conference on “Global Health: Securing a Healthier Future in a Changing World”, June 13-17, 2011 in Washington DC (http://www.globalhealth.org/conference_2011/)
- A presentation entitled “*Building and sustaining the Community Based Surveillance Model (CBS): A Midterm Review and Sustainability Analysis*” was given by the Technical Director for Human Health at “The Joint DAI-FAO Information Sharing Meeting” Hanoi, June 2011.
- Two abstracts were accepted for poster presentations at the American Public Health Association (APHA) conference in November, 2011: <http://apha.confex.com/apha/139am/webprogram/Paper242729.html>; <http://apha.confex.com/apha/139am/webprogram/Paper242716.html>

- 4.1.13 A CBS ‘mini-evaluation’ was conducted in Hung Yen by a US intern to investigate how the CBS network functions; its relevance, effectiveness, sensitivity adaptability; linkages between human and animal health sectors and with the early warning system; and to collect evidence for wider expansion and sustainability. The final report is expected in November, 2011. This ‘mini-evaluation’ will feed into the larger final evaluation of the CBS model which planned for December 2011 - January 2012.

4.2 Challenges and Solutions

- 4.2.1 The provincial based subcontractors lacked adequate human resources including surveillance experience and were replaced by CCHIP in 2011.
- 4.2.2 The turnover rate for CBS Collaborators, while fairly low, still required effort to recruit replacements. Many of the animal health Collaborators who dropped out were weak on veterinary skills. New replacements were identified and supplement training courses and on-the-job training provided. We also implemented a better screening process for new AH Collaborators.
- 4.2.3 Including additional EIDs into the reporting forms required the APII team and local provincial health and animal health staff to constantly provide on-the-job training for the Collaborators. Once the Collaborators became accustomed to the new forms, they found them user-friendly. In addition, the new reporting forms were better aligned with the national surveillance systems’ forms and reporting systems.

5. Infection Control/Case Management (IC/CM)

The goal is to develop an IC/CM ‘model’ with training package/tools, guidelines etc. which has been tested/verified (including cost study), for wider adoption in Vietnam.

In Year 2, APII disseminated the district level IC model (including training package, tools, and guidelines) and SARI/AI case management guidelines for village, commune and district levels to MOH and provincial authorities beyond the five focus provinces and to other development partners, for wider adoption.

5.1 Achievements

- 5.1.1 Subcontracted Ho Chi Minh City Infection Control Society (HICS) in 2010 and Hanoi Society on Infection Control (HANSIC) in 2011 to implement field activities guided by the Human Health team.
- 5.1.2 Completed two four-day training courses for IC assurance teams and their networks in Kien Giang and Can Tho on: 1) implementing adapted IC protocols/ guidelines in district hospitals and commune health stations; 2) IC surveillance; and 3) IC principles and standard precautions. Fifty-four local health staff participated.

- 5.1.3 Eight two-day training courses on basic IC/CM principles and compliance for 244 district health staff were completed.
- 5.1.4 Completed four one-day training courses on basic IC/CM principles and compliance for 114 commune and village health workers.
- 5.1.5 HANSIC organized a TOT course for 20 human health providers from nine district and provincial hospitals, plus two representatives from DOD and PEPFAR.
- 5.1.6 Two private companies provided medical masks, PPEs, alcohol hand rubs for all IC training activities at district hospitals organized by HANSIC.
- 5.1.7 APII staff and HANSIC finalized the district hospital IC activity plans and IC Situation Analysis tools and sent them to provincial DOHs and eight district hospitals in the five provinces. The tools will be used for baseline assessments and monitoring compliance during the interventions.
- 5.1.8 IC materials procured by the project (hand rub gel, liquid hand-wash, surface cleaning liquid, racks for hand rub dispensers, masks) were distributed to eight district hospitals.
- 5.1.9 Infection prevention education materials (three types of posters) were distributed to eight district hospitals and the five provincial DOHs.
- 5.1.10 Conducted IC interventions in eight district hospitals, including the following activities: review and re-structure of the IC staff, IC trainings for all district health workers, supply of IC materials and strengthening of IC monitoring practices.
- 5.1.11 Held monitoring meetings with the hospital leaders and IC teams from the intervention district hospitals to review the status of IC improvement to date, discuss how to move forwards and plan for upcoming months.
- 5.1.12 APII's human health technical director presented a paper entitled *"Infection control situation from three districts in Quang Tri: Findings from the rapid assessment"* at the June Infection Control Workshop organized by Hue ICS.
- 5.1.13 IC model cost analysis was conducted with the support from Abt HQ staff.
- 5.1.14 Provincial trainers conducted 16 roll-out training courses on CM in five provinces for about 480 commune health workers. These training courses provided attendees with basic knowledge and skills regarding care of AI and Severe Acute Respiratory Infection (SARI) and provided health workers an opportunity to practice management and referral protocols.
- 5.1.15 Delivered a training course on how to conduct an IC assessment for 30 assigned IC staffs from 14 hospitals in collaboration with Can Tho DOH. The training provided an introduction and practice on IC assessment tools. Following the training, IC assessments will be done early in Year 3 in all hospitals to review organizational structures, equipment, knowledge, and IC practices.
- 5.1.16 Project representatives attended the "Training Workshop in Health Care Epidemiology and Surveillance" organized by MOH/WHO in Hanoi. This workshop reviewed basic epidemiological methods for surveillance of

Healthcare Associated Infection and actions for the implementation of IC surveillance in hospitals in Vietnam.

5.2 Challenges and Solutions

- 5.2.1 HANSIC is short of human resources and not familiar with the type of contract APII can offer (Firm Fixed Price PSA). The APII team has had to work extra closely with them on implementation of the subcontract. HANSIC has great professional expertise, but lacks some of the coordination, oversight and administrative skills needed to handle the contracting process. As a result APII is considering an alternative subcontract with the Vietnam Nursing Association (VNA) instead.
- 5.2.2 There are still low levels of knowledge and practice of IC measures among healthcare providers. Infrastructure to promote IC interventions in district hospital settings remains low as well. IC is often seen to be activities related to cleaning, laundry, disinfection, and waste management as opposed to a public health and hospital management issues. As a result, staffs assigned to IC teams often have skill levels below that required of an IC specialist. To address this, the APII team is working closely with subcontractors and intervention hospitals to provide training, close monitoring, coaching and guidance in order to help hospitals fulfill their IC needs according to MOH guidance/Circular No 18.
- 5.2.3 In order to be sustainable and successful, IC interventions must be integrated into and support the hospital's routine work. Therefore, some planned activities such as hand washing, IC compliance monitoring, and training had to be adapted to the real situation at each hospital, in some cases slowing down the process of the intervention. For example, one-day training courses were broken into smaller sections in order to fit work schedules.

6. Pandemic Preparedness Planning (PPP)

The goal is to develop PPPs in selected focus provinces, introduce the package in other provinces, and advocate for its wider adoption throughout Vietnam. In Year 2, APII developed an MOU with VNRC to revise, test and finalize improved PPPs for wider replication.

In Year 2, APII signed a subcontract with VNRC to revise, test and finalize an improved PPP in Kien Giang province for wider replication.

6.1 Achievements

- 6.1.1 Multi-sector PPP situation analyses were conducted in Quang Tri, Kien Giang, Can Tho and Hung Yen by a national consultant working with DOHs, PMCs, DARDs, SDAHs, and provincial Red Cross.
- 6.1.2 A subcontract for PPP related work was signed with Vietnam Red Cross Federation (VNRC) to implement field activities guided by the Human Health team, focusing on Kien Giang province.

- 6.1.3 VNRC had several meetings with the leaders of local Red Cross, PMC, DARD and PCs in the five focus provinces to get their commitment in development and implementation of PPP plans and local implement activities.
- 6.1.4 VNRC hosted a workshop on PPP design and implementation. About 50 representatives from international organizations, Ministries and Provincial Pandemic Prevention Committees, DOH and Red Cross were given an introduction on the new concept of “whole of society” PPP approach and Business continuity Planning (BCP) and shared the findings of recent situation analysis on PPP in 5 focus provinces as well as experiences/ lessons learnt from the H2P project. The participants discussed and agreed on the timeframe, mechanisms and steps for implementation of PPP activities through collaboration between VNRC and provincial partners.
- 6.1.5 Kien Giang PPC organized a PPP development workshop for about 30 representatives from Provincial Departments, Provincial Military Agency and social organizations (such as Red Cross, Women’s Union, Farmers Union). The workshop introduced the concept of the “whole of society” PPP approach and shared the experiences/lessons learned from Ha Nam’s PPP development process.
- 6.1.6 APII team members participated in the PPP workshop hosted by MOH for the human health and agriculture sectors. Findings and gaps in PPP within other sectors were shared. The findings from PPP situation analysis of APII in four project provinces (except Ha Nam, where the PPP was recently revised by VNRC under the H2P project) were also shared for reference and comments.

6.2 Challenges and Solutions

- 6.2.1 VNRC was very busy with humanitarian and emergency activities, such as flooding in Central Vietnam, during late 2010/early 2011. They are generally short on human resources and must give priority to emergencies over more routine work such as that being offered under the APII subcontract. In addition there were delays due to VNRC’s lack of familiarity with subcontracting mechanisms (Firm Fixed Price PSA without fund advances). Both parties are however committed to see this subcontract through and VNRC has so far shown good commitment and performance after entering the subcontract.
- 6.2.2 The current PPPs of provinces mainly focus on health with little or no mentioning of other sectors. The whole society approach and the business continuity plan (BCP) concept are not well understood by local counterparts and yet to be adopted in the PPP framework. APII will work closely with VNRC and Kien Giang province to incorporate these new elements in the PPP.
- 6.2.3 PPP revision and approval by provincial authorities requires multi sectorial involvement and good coordination and facilitation will be key to success. The APII team will work closely with VNRC, local counterparts and international partners on this.

7. Cross-Cutting Issues

Behavior Change Communication (BCC)

The BCC work aims to identify appropriate behaviors and messages for key target audiences and to strengthen the BCC capacity of national and provincial stakeholders. The BCC work feeds into and helps integrate and enhance the work of the other technical components in animal and human health, notably around the poultry supply chains.

Year 2 aimed to build up provincial BCC teams who can take the lead in designing, implementing and evaluating future BCC campaigns, and increasingly involve local media in communicating AI/EID and lessons learned to a broader audience. BC activities were carefully integrated in particular into CBS and supply chain activities.

7.1 Achievements

At national level

- 7.1.1 Entered subcontracts for Year 2 with Women's Union in Ha Nam and Kien Giang, Provincial Humanity Center under Red Cross in Hung Yen, Women's Union in Quang Tri (a new subcontractor) and CEFACOM (Research Center for Family Health and Community Development) in Can Tho. Women's Union in Can Tho did not have sufficient human resources to carry on the work from Year 1.
- 7.1.2 Conducted planning workshops with key local stakeholders in four provinces (except Ha Nam) to design Year 2 BCC activities. The workshops provided consensus on the number of desired behaviors and on barriers and motivators, which in turn were used to develop appropriate key messages for target audiences. Due to the late entry of MOU and risk reduction strategy development in Ha Nam, the BCC planning workshop was cancelled in this province. Instead the results from Hung Yen and Quang Tri were used to inform and guide the activities in Ha Nam
- 7.1.3 Developed the Year 2 BCC Strategy (a living document) based on the results of the Year 1 risk assessment, the risk reduction strategies, and the results of the BCC assessment. The Year 2 strategy focuses on the seasonal BCC campaign and closer integration of BCC work into the animal health and human health components. The BCC seasonal campaign was targeted for Feb-June. The strategy was shared with FAO and WHO for technical verification and feedback.
- 7.1.4 Developed four discussion guides with supply chain target audiences including live bird and plucked market vendors, collectors/traders, and slaughterers. These discussion guides embedded insights, inputs and contributions from provincial BCC trainers, health, animal health, agricultural extension officers, and stakeholder representatives in Can Tho, Kien Giang and Quang Tri through design workshops. Inputs and comments were also solicited from national reviewers/experts in NAEC, DAH, DLP (MARD) and NCHEC (MOH) through their participation in

the design and review workshops and written inputs/feedbacks. These discussion guides will be used by BCC Interpersonal Communicators to facilitate small group discussions with target audiences and help encourage the application of good practices.

- 7.1.5 Designed Year 2 BCC materials (calendar, flipcharts, logo, BCC theme, pocket guides to facilitate and organize for community events, small group discussion with small and medium commercial poultry farmers, notebook with BCC theme) together with BCC and artwork consultants. All materials were pre-tested in Can Tho (for Southern materials) and Hung Yen (for Northern materials). They were printed and distributed to target audiences. Other BCC promotional materials such as raincoat, shirts and pens with BCC theme and messages were designed and produced and used during various BCC events to distribute to target audiences. These promotional materials were also used for human health and animal health activities. FAO and WHO were consulted for technical verification.
- 7.1.6 Engaged national communication experts from MOH and MARD to help with BCC materials revision and design, mentor provincial/district BCC trainers, and support provincial officers in developing provincial communication guidelines on API and EID (Can Tho and Ha Nam).
- 7.1.7 Conducted a TOT refresher course on communication skills and BCC materials in February for seasonal campaigns for 22 provincial and district master trainers from the five focus provinces. These trainers trained local communicators and facilitators of community events and discussion forums during the BCC campaign from February to June.
- 7.1.8 Conducted two advanced TOT courses for provincial and district trainers of Can Tho, Kien Giang & Quang Tri in September on BCC theory, facilitation skills update and use of discussion guides in priority nodes. These trained trainers/interpersonal communicators will facilitate small group discussions in priority nodes in Year 3.
- 7.1.9 To prepare manpower for BCC seasonal campaign, more than 100 communicators selected among animal health workers, human health workers and Women's Union members from the commune level of the five provinces were trained on BCC and facilitation skills using a discussion flipchart. These trained communicators were to conduct small group discussion with target audience on desired behaviors promoted during BCC seasonal campaign (hand washing, reporting suspected cases and buying and selling healthy poultry). About 120 facilitators and organizers of Community Events were trained in on facilitation and organizational skills.
- 7.1.10 BCC seasonal campaigns were completed in five focus provinces. Activities included:
 - Distribution of wall calendars addressing three key priority desired behaviors to small and medium poultry producers/Sector 3 Farmers (S3F);

- Small group discussions with S3F (480 producers in Can Tho, 600 in Kien Giang, 480 in Ha Nam, 480 in Hung Yen, 600 in Quang Tri). The farmers participated in three sessions, one per desired behavior; and
- 42 community events at commune level (4 Community Events in Can Tho, 12 in Hung Yen, 6 in Ha Nam, 8 in Kien Giang, 12 in Quang Tri) with an estimated 300-500 participants/community event

- 7.1.11 The BCC seasonal campaigns were completed with a two-day review workshop in each province to determine lessons learned for the upcoming activities and collect comments on BCC materials used during the campaign for refinement. The final workshop was conducted in Can Tho in late June. Results of these review workshops will be taken into consideration to design BCC campaign for Y3 and the future BCC activities.
- 7.1.12 Conducted training courses on communication skills and counseling for all CBS Collaborators in Quang Tri (more than 300 Collaborators) and selected CBS Collaborators (around 60 Collaborators) in four districts of Can Tho; around 250 Collaborators (240) for two districts of Ha Nam; 150 Collaborators for two districts of Kien Giang and number of Collaborators for Hung Yen province. The trainings were designed to improve CBS Collaborators' service delivery skills. The effectiveness of these trainings will be assessed before deciding to continue for the remaining CBS Collaborators in Year 3.
- 7.1.13 Developed first drafts of Can Tho and Ha Nam's Integrated Communication Strategy, 2011-2015. The development of these Communication Strategies were led by selected provincial officers from SDAH, Center of Preventive Medicine, CHEC (also known as 'T4G'), and Agricultural Extension, Women's Union (Ha Nam) with support from APII, MARD and MOH, FAO and PAHI. These drafts of Provincial Integrated Communication Strategies also received contributions from representatives of different neighboring provinces, organizations and agencies such as Bac Ninh's DARD, Quang Tri's and Ha Nam's WUs. It is expected these provincial Integrated Communication Strategies will be ready early in Year 3. These Integrated Communications Frameworks guide the planning of future AI and EID disease-related communication activities in low risk situations and during pandemic and containment periods.
- 7.1.14 Provided coaching to BCC provincial trainer teams in all five of focus provinces to prepare training plan and materials on all BCC related trainings such as communication skills and counseling for CBS Collaborators; trainings on facilitation and organizational skills for communicators (as AH and HH workers) and for Community Event MCs and organizers.
- 7.1.15 Completed a qualitative study with poultry consumers in Can Tho, Ha Nam, Kien Giang and Quang Tri. The topline report and full report were drafted. The results will help orient APII supply chain activities on the consumer (demand) side, in Year 3.

- 7.1.16 Engaged national journalists (VTC16), provincial journalists (T4g, local newspapers and TV) on the Animal Health bio-security study tour in Northern and Southern provinces. This resulted in various articles and broadcasts. For all BCC events such as training, planning workshops, and community events local journalists were engaged and articles/televised broadcasts were issued in Ha Nam, Hung Yen, Kien Giang and Quang Tri.
- 7.1.17 Facilitated by provincial subcontractors, the provincial media regularly published articles and broadcast news briefs on local BCC activities (APII is maintaining a catalogue and database).
- 7.1.18 Completed the collection of API materials from various sources and passed these on for uploading on the PAHI website.
- 7.1.19 Developed and shared the Year 2 press relations plan with USAID.
- 7.1.20 Compiled and edited weekly updates and success stories to USAID.
- 7.1.21 With support from Abt home office staff and inputs from all technical teams, APII's BCC transition Strategy for Year 3 (and beyond) was drafted.

7.2 Challenges and Solutions

- 7.2.1 Encountered difficulties finding a suitable local subcontractor on Year 2 BCC activities in Can Tho as the provincial WU was short on human resources. Identified CEFACOM (Research Center for Family Health and Community Development) a national NGO based in Hanoi through competitive bidding as a suitable replacement and signed the subcontract in March. The BCC seasonal campaign got delayed about two months in Can Tho. The subcontract preparation process often takes longer than envisaged to complete and the Firm Fixed-Price PSA mechanism is still difficult for many subcontractors to accept/adjust to.
- 7.2.2 The selection of local subcontractors (Quang Tri, Kien Giang and Ha Nam Women's Union; Hung Yen Red Cross Humanity Center) to conduct Year 2 activities was still considered optimal for local ownership and sustainability reasons. However, working with these subcontractors faced many challenges due to their limited capacity and the ongoing need therefore for APII to build capacity in our subcontractors.
- 7.2.3 The BCC Year 2 planning workshop in Ha Nam was cancelled due to the late MOU renewal and the PSA with Ha Nam Women's Union was modified to address this. Nevertheless, Ha Nam Women's Union is a very strong and proactive branch and they managed to complete BCC campaign activities same time as other provinces.
- 7.2.4 It was a long approval process to get national officers (from MOH, MARD) on board as consultants to review BCC materials, but we succeeded in the end (including the required 'leave without pay letters').
- 7.2.5 The three-day training courses for small group discussion communicators on basic facilitation skills and the one-day trainings for Community Event facilitators and organizers were found to be insufficient. We are considering adding more days and more materials for participants to role

play and practice facilitation of discussions with flipcharts on desired behaviors.

- 7.2.6 Through the reports of BCC campaign activities and review workshops, we determined that provincial subcontractors need more analytical thinking and writing skills. Even with hands-on coaching, templates and guidance from the BCC team, it was still hard for them to document and show results and achievements during the review workshop. Building capacity for provincial trainers and subcontractors requires more time than previously envisaged. The same applies to writing skills of local trainers preparing the Provincial Integrated Communication Plans. The writing teams will need more supervision/technical support from APII consultants and the BCC team than expected.
- 7.2.7 For the Provincial Integrated Communication Plan development in Can Tho it was hard to mobilize support and involvement from representatives of all key provincial agencies to participate in this collective work. The BCC team will continue to work more closely with the writing group, the subcontractor, and Can Tho PCU on this.
- 7.2.8 Recently, provincial leaders have found it increasingly difficult to mobilize local resources for AI and EID prevention activities, because of other priorities and the lack of a national plan for AI/EID prevention. The officially approved APEID 2011-2015 is expected to help provide the framework needed to get support and funding.
- 7.2.9 Post-training support to and monitoring of CBS Collaborators having received training on communication and counseling skills is needed to ensure participants can contribute more to promotion of AI and EID prevention practices through their daily interaction with households. This can be integrated into their monthly CBS network meetings.
- 7.2.10 Provincial BCC trainers had difficulties preparing training plans and materials and the BCC team had to spend more time than anticipated to assist trainings team and ensure quality. This capacity building needs more time and practice. A TOT course on basic skills such as preparing training objectives and delivery of competency-based adult training, writing skills (evidence based reports, evidence-based articles), monitoring skills, using monitoring checklists and observations for lessons learning and improvement might also be a good investment.
- 7.2.11 Preparation of BCC materials for supply chain nodes audiences will not begin until improved supply chain nodes were activated.
- 7.2.12 Low risk perception among decision-makers also constitutes a challenge, e.g. collaboration with the communication sub-committee of the National Steering Committee for Human Influenza Pandemic Control and Preparedness (NSCHP) -- and one that APII cannot influence much. National level bodies remain more committed and accustomed to responding to outbreaks.
- 7.2.13 The project cancelled the development and dissemination of the 'One Health Newsletter' via the communication sub-committee because of the low risk perception and likely non-sustainability of the activity.

Provincial Coordination and Implementation

7.3 Achievements

- 7.3.1 The MOUs with five provincial authorities were signed early in Year 2 creating favorable conditions for implementation in Year 2.
- 7.3.2 Soon after USAID's approval of the Year 2 work plan APII organized planning workshops and prepared provincial implementation plans (PIP) together with partners and counterparts. The PIP is an official project document attached to the provincial MOU and used as a framework for project implementation.
- 7.3.3 Conducted quarterly, bi-annual and annual review/planning workshops in the focus provinces with counterparts, subcontractors and FAO.
- 7.3.4 Continued support Provincial Coordination Units (PCUs) and joint Provincial Coordinator (PCs) in the five focus provinces.
- 7.3.5 Improved performance of PCUs and PCs led to increased local buy-in and general improvements in quality of field work/implementation.
- 7.3.6 Enhanced capacity and performance (including monitoring) of two satellite offices in Can Tho and Quang Tri similarly helped up the overall performance and quality of implementation by partners. Bi-monthly meetings with field staff and PCs provided more timely updates on the challenges and progress in each province. The close monitoring by project field staff, PCs, and PCU members provided feedback to project management and PMP data.
- 7.3.7 Facilitated field visits by APII staff, consultants, USAID and other partners as well as two large study tours.
- 7.3.8 Ensured compliance with all requirements for legal operation of the project in provinces (obtained license for operation in province; timely submission of semi-annual reports to DOFA and provincial authorities).
- 7.3.9 Achieved near or in excess of 100% disbursement vis-à-vis MOU budgets and PIP targets in all five provinces, to the satisfaction of provincial counterparts and authorities.

7.4 Challenges and Solutions

- 7.4.1 Changes in leadership, PCU chairmanship, and provincial counterpart agency personnel in Ha Nam and Hung Yen caused some delays and challenges early in Year 2. The (new) relationships improved significantly during the course of the year.
- 7.4.2 The Project Area Manager (North) was terminated in January 2011. Finding a replacement took longer than expected. The new staff has settled in well.
- 7.4.3 The PC in Hung Yen resigned and was replaced in March 2011. A new PC was appointed but the performance has not been convincing. Same applies to the PC in Ha Nam province.

- 7.4.4 Varying levels of participation and commitment by PCU members also represented an ongoing challenge. During the year, project staff and PCs approached the designated organizations (SDAHs, PMCs, PAFECs, etc.) in an effort to increase participation and accountability. Improvements were seen in Quang Tri, Can Tho and Ha Nam in particular. However, gaps remain and more local advocacy work is required.
- 7.4.5 Close communication and sharing of information between PCs and FAO's Focal Points (FP) remained a challenge for various institutional reasons. The PCs remained more loyal to APII and the FPs to FAO/DAH, for understandable reasons. FAO and APII organized joint meetings/workshops to help remedy the situation, but the issue persisted. The fact that PCs and Focal Points have varying levels of seniority in the institutions they are seconded from further complicates the issue. The PC/FP set-up will be reviewed and revised in Year 3, with the aim of gradually facing out these positions (speed may vary across provinces).

National Coordination & Policy Dialogue

The overall aim of APII is to develop successful new models and approaches, which are adopted, adapted, replicated and scaled up by public and private partners. Institutional adoption and local ownership of APII's innovative products is considered a key measure of success for the project.

This is a big challenge given the many competing priorities and fund/budget restrictions that local counterparts and partners generally face, not least in a time of 'low risk perception' with regards to AI. The project is using a wide range of tools and skills to access and influence partners and to identify new (and sometimes unanticipated) opportunities for promoting and transferring its products.

In Year 2, the project initiated the development of a comprehensive advocacy strategy to provide an overall picture of the challenge ahead and lay out advocacy road maps for each of the project's thematic areas. During the course of the year, the project team began to shift focus from implementation at grassroots level to addressing the bigger questions of how to sustain the interventions without project support. This process will be intensified from the start of Year 3 as APII transitions from implementation to 'handing over'.

7.5 Achievements

- 7.5.1 Developed APII's Advocacy Strategy and shared this living document with USAID and API partners including PAHI. The process helped generate a clearer picture (vision) within the APII team of where the project is heading and what results and outcomes to aim for along the way.
- 7.5.2 The Animal Health team maintained close contact with FAO as well as with other partners (e.g. LIFSAP, STOP AI) for coordination and collaboration. LIFSAP in particular have indicated interest in collaboration and technical protocols being prepared by APII.

- 7.5.3 The Animal Health team also maintained close contact and dialogue with DAH, DLP and NAEC including key individuals who may play important roles as ‘champions’ in the adoption of APII products. The team also engaged with representatives of provincial and regional bodies who can help promote the work and facilitate wider adoption.
- 7.5.4 The Animal Health initiated engaged with provincial agricultural colleges/ universities and vocational training centers (notably in Quang Tri) for formal training and certification of local AHWs. These relationships need to be explored and developed further in Year 3.
- 7.5.5 The Animal Health team continued to build relationships with private associations (VVA, VIPA) who potentially could play a significant role as lobbying organizations with AMRD agencies.
- 7.5.6 The Human Health team worked closely with FAO on surveillance and with WHO, MOH, DOD and PEPFAR on IC activities.
- 7.5.7 The Human Health team engaged with a number of strategically positioned individuals and private institutions at central, regional and provincial levels who can help promote the transfer of CBS and IC models in Year 3.
- 7.5.8 The BCC team stepped up its dialogue with API partners. FAO and WHO were regularly consulted for technical verification on AH and HH related BCC issues.
- 7.5.9 The BCC team continued to participate actively in the BCC Working Group
- 7.5.10 The BCC team continued to engage and journalists and mass media.

7.6 Challenges and Solutions

- 7.6.1 The fact that APII and Abt for that matter, in the eyes of many decision-makers ranks as an NGO increases the challenge and emphasizes the need for strategic partnerships with API partners (FAO, WHO, PAHI) and other like-minded projects such as LIFSAP.
- 7.6.2 Engaging with the private sector – as in corporate business – remains a challenge to APII and its API partners. APII struggles to see or identify obvious or straightforward options for public-private-partnerships. The project will continue to follow the work of the public-private-partnership working group and explore options guided short-term experts. Aside from the corporate sector APII is engaging with a wide range of private sector actors along the supply chain including commercial smallholders, traders, collectors, slaughterhouse owners and operators, and market vendors as well as livestock associations.

Monitoring & Evaluation

In Year 2, the guiding principle for the M&E work was to strengthen existing systems in the provinces and help close gaps between grassroots level M&E and provincial-national levels M&E and reporting. This included discrete capacity building activities such as training in data collection, analysis, and interpretation/

use, support to database development, and the development of tools, guidelines, etc. to help provide evidence for replication and up-scaling. This work will continue in Year 3.

APII furthermore acts as the repository for PMP indicators collected under USAID's API program, providing analysis and reporting on the data. In Years 1-2 MEASURE supported this work.

7.7 Achievements

- 7.7.1 The M&E team supported and provided oversight of ongoing monitoring, evaluation and quality assurance on the APII project. This involved data collection, management, analysis and reporting, training and follow-up with staff, subcontractors and local partners on monitoring mechanisms, quality assurance, evaluation tools development process and survey methodology, and use of data for decision-making.
- 7.7.2 Compiled Year 1 PMP data from API partners and reviewed data collection processes, PMP indicators, and data collection templates, in close collaboration with MEASURE and API partners.
- 7.7.3 In May 2011, on behalf of USAID/Vietnam, APII organized the "USAID Vietnam's HPAI and EPT PMP Data Collection Review Workshop", attended by 39 representatives from USAID, API partners, PAHI and local counterparts. Findings challenges were shared among stakeholders. Following the workshop, APII discussed with MEASURE on revisions of indicators and the need for a data base. It is expected that a revised set of indicators and PMP database will be available soon from MEASURE so that data collection by API partners for Year 2 can be initiated on time.
- 7.7.4 Developed the APII project Log-Frame linking activities and outputs to outcomes and impacts and will establishing the baseline for future results and impact assessments. PMP indicators reported by APII were incorporated into the Log-frame. New indicators, particularly at outcome level were added. After the USAID's partners' planning meeting in August 2011, the Log-frame was revised and updated to reflect APII strategy and work plan for the third year. The Log-Frame has now effectively replaced and superseded the PMP table in reporting. Data for APII performance monitoring was collected regularly and updated.
- 7.7.5 Developed mini Log-frames/M&E frameworks for detailed monitoring, evaluation and reporting on specific activities in supply chains which are not well captured within the PMP framework. Conducted an assessment of Dong Ha live bird market and Ngoc Xuan Slaughterhouse to obtain baseline data before interventions. Post-assessment will be done after upgrading and BCC campaign to keep track on the improvements of bio-security/bio-safety practices.
- 7.7.6 Strengthened the system for quality assurance. A detailed guideline for Activity Implementation Monitoring ('AIM Guidelines') and related tools were developed. Training on quality assurance and monitoring tools was conducted for project staff and local partners. With these tools, the monitoring approach and methods were standardized and quality of

monitoring improved. Immediate feedback from local partners and project staff was provided more frequently and interactions among the teams on the monitoring results were promoted. In general, it was found out that the project activities were performed with good quality.

- 7.7.7 Conducted rapid assessment of quality of trainings conducted in Year 1. The identified strengths include standardization of the approach and process in conducting training activities in each component. Some weaknesses that were identified, including: 1) “SMART” key performance indicators are not routinely defined to measure the effectiveness of each training course during the development process; 2) Pre-tests and post-tests (or simply post-tests in some cases) are not used systematically; 3) Training plans do not include post-training follow-up plans to support trainees in the application of their new knowledge and skills in the workplace; and 4) There is no system to conduct post-training assessments of trainees’ ability to apply skills and behaviors learned in their work. Action briefs based on the rapid assessment results to guide the development of SMART objectives, indicators and targets and a system for post-training assessment and follow-up were prepared. These were shared at a USAID Health Partners’ meeting for a discussion on quality assuring, sustaining and institutionalizing “good capacity building”. As a result of this activity, project staff has paid more attention on defining objectives and indicators to measure outputs of a training course.
- 7.7.8 Subcontracted Asian Management and Development Institute (AMDI), a local organization to conduct the post-training assessment. Purpose is to determine the results, outcomes and (where feasible) the impact of the trainings conducted so far, and to identify motivators and barriers to application of new skills and knowledge among trainees. The final report will be ready in Year 3.
- 7.7.9 Reviewed SOWs and deliverables of all subcontractors and program implementation to help ensure that M&E issues are adequately addressed in all work
- 7.7.10 Reviewed SOWs and deliverables of all subcontractors to help ensure that M&E issues are adequately addressed in all work.
- 7.7.11 Provided inputs on methodologies, protocols and tools of CBS review, CBS mini-evaluation and KAP survey to help ensure these studies/survey are technically sound.

7.8 Challenges and Solutions

- 7.8.1 Baseline indicators need to be identified and included in the Log-frame where possible. However, as the project did not conduct a baseline survey before or during start-up it may be difficult to arrive at a complete baseline. The situation analysis report produced in AI Mekong project and previous KAP surveys did not always align with these indicators. Proxy indicators will be used if possible, in the process of establishing (retroactively) the general baseline for APII.

- 7.8.2 Quality of activities is affected by various factors such as subcontractor's capacity and performance, commitment of local partners, technical assistance and coaching by technical teams, and capacity of project implementers in local areas (e.g. local trainers/CBS Collaborators). Quality varies across provinces and components. This requires constant attention, follow-up and tailored solutions, including continuous basic or advanced training for local partners. Sustained quality improvement is a long-term process.
- 7.8.3 The project's interventions are diverse and at times complex. To monitor performance and measure effectiveness of each intervention requires a range of methods and approaches.
- 7.8.4 It takes time and effort to develop a comprehensive database for data retrieval. Currently raw data of certain activities such as training tests, training evaluation results, KAP surveys are stored in multiple places. The M&E team is developing a more systematic and centralized data storage/Management Information System (MIS) for easy access and retrieval of data and information during and after the project.
- 7.8.5 There were challenges in coordinating PMP data collection for the API program. The workshop on with USAID's API partners in May identified the following: (1) unclear operational definition and/or lack of alignment with the Government's existing record keeping system in some indicators; (2) Quality of collected data has weaknesses such as limited data validity/reliability and precision, especially of the indicators on local training; (3) Difficult coordination among many facilities, inconvenient data collection template, and limited access to data source, especially of those data on local training/interventions; and (4) Linkage between the PMP and current existing government's record keeping system and usefulness of each PMP indicator for the local program management are not very clear, especially to the local partners. To address these issues, efforts should be made not only at micro-level such as tool improvement and training for local partners on indicators and data collection, but also at macro-level such as participatory multi-sector approaches, enhancing management and coordination of information systems, and promoting data use for decision making. In putting into practice these efforts, a training course on data based decision making (DDM) for local decision makers is planned for Year 3.

Administration & Finance

7.9 Achievements

- 7.9.1 Recruitment of project staff was completed including two Supply Chain Managers, a replacement for the Project Area Manager (North), a new Strategic Communications Manager (in lieu of the Policy Advocacy Manager who resigned), two F&A Assistants in the field offices and an Administration Manager in the Hanoi Office.

- 7.9.2 Managed the finance and administration aspects of all subcontracts and consultant agreements effectively after the procedures were streamlined during the course of the year.
- 7.9.3 Shorter turnaround time with the Regional Contracting Officer also helped improve the Consultant recruitment process during the course of the year.
- 7.9.4 Overall the project saw an increase in the expenditure rate of around 50% compared with Year 1 and progressed well on this account given the caps on human resources and the available implementation mechanisms (i.e. sub-contracting).

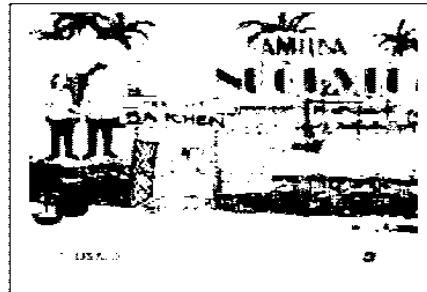
7.10 Challenges and Solutions:

- 7.10.1 Retroactive approval for AFAP Year 1-2 Consultants pending with USAID. Will follow-up.
- 7.10.2 Lack of a clear understanding of the conditions for 'Grants Under Contract' (GUC) will cause some delays in supply chain work. The project will explore subcontracting options instead, but this is a time-consuming process.
- 7.10.3 Application for registration with Paccom (to open up for direct implementation) still pending. Will continue to follow up.
- 7.10.4 According to Ernst & Young, APII cannot obtain VAT exempt status on locally procured goods and services. This was communicated to USAID. Awaiting USAID's reply and will continue to follow-up.
- 7.10.5 The available sub-contracting mechanisms remain a challenge to partners particularly those with little working capital or capital reserves and little experience in contracting with international development partners/donors. No immediate alternatives or solutions available other than to continue to work closely with the subcontractors to prepare contracts and fulfill their obligations under contracts.
- 7.10.6 The Biodata form also continues to challenge new consultants. APII staffs still have to provide careful guidance.

8. Success Stories

8.1 Partner uptake of APII Biosecurity Training Package broadens its reach nationwide

Good poultry husbandry practices are an essential tool to preventing the spread of emerging infectious and zoonotic diseases by increasing biosecurity on farms. To capitalize on this efficient prevention method, the Avian and Pandemic Influenza Initiative worked with USAID's other API partners including the National Agriculture Extension Center (NAEC), to develop a biosecurity training package to be delivered by agriculture extension workers. The training package contains technical protocols, discussion flipcharts and comic books explaining improved biosecurity farming practices for raising chicken and ducks.



Expanding the reach of the project, NAEC and some provincial branches recently has agreed to begin disseminating the training materials in provinces not originally targeted by the project, and to incorporate the materials into their own national training system. The first step in this broader dissemination occurred in April and then in August when a series of training of extension worker trainer events were held in Ha Noi and Ho Chi Minh City respectively. Approximately 50 provincial agriculture extension system trainers from more than 20 provinces in the Red River and Mekong River deltas attended the training. Consequently, An Giang, Soc Trang and Ba Lieu provinces also requested the course for trainers. In September, a training of farmer trainers course for key staff in An Giang and Soc Trang's provincial agricultural and extension centers was prepared with APII's biosecurity training package for implementation in early October 2011. An Giang is planning to follow up with diffusion trainings for their commune level extension staff using local funds.

Formal national and provincial level adoption of the package into NAEC's training system will be key to ensuring the sustainability of APII's interventions and future scale up of biosecurity improvement interventions in the public system. APII is also exploring options for adoption with non-government partners.

APII has also shared the package with the Wildlife Conservation Society to explore options for collaboration with the EPT programs PREDICT and RESPOND. It is hoped that the package can help inform training on EIDs originating in wildlife and the interface between wildlife, humans and livestock.

8.2 Proactive Community-Based Surveillance System allows for early detection and timely control of Highly Pathogenic Avian Influenza in Quang Tri

The most effective way to control avian influenza (AI) and mitigate its effects on human health and livelihoods is early detection. A good surveillance system allows suspected cases to be identified early before an outbreak spreads.

The Community Based Surveillance (CBS) model developed by APII aims to assist communities in mitigating the effects of AI and other EIDs by identifying outbreaks where they occur and feeding them quickly into the national surveillance system.



A CBS Collaborator visits a home to follow up on a rumor and observe the chickens.

In order to continuously build capacity for CBS network, refresher training courses and monthly meeting have been designed to provide technical update on AI and emerging infectious diseases (EIDs) such as foot-and-mouth disease (FMD) in livestock and dengue in humans. These monthly meetings also help foster links in reporting and information sharing between village animal health and human health collaborators.

Animal health collaborators are furthermore offered monthly refresher training on a broader range of zoonotic and animal diseases such as streptococcus suis, rabies, liver fluke, swine fever, piglet diarrhea, erysipelas suum, E. coli and cattle pasteurellosis. For many participants it is the first time they receive update training since graduation.

Since the launch in August 2010, Quang Tri province has developed a particularly strong CBS network which includes 301 collaborators covering 152 villages and 26 communes. In March 2011, an HPAI outbreak was prevented following a suspected case in Hai Que commune, Hai Lang district. From June to Aug. 2011, another 8 suspected HPAI cases were reported by CBS collaborators in Gio Quang and Gio Mai communes, Gio Linh district. These cases were all confirmed by upper level lab reports. The duck flocks were culled and the outbreaks contained.

CBS animal health collaborators benefit from being able to provide better services to members in their community and building trust with clients



USAID
FROM THE AMERICAN PEOPLE

**AVIAN AND PANDEMIC
INFLUENZA INITIATIVE**

**Avian and Pandemic Influenza
Initiative**

GHS-I-08-07-00003-00

**Report for
Year 2, Quarter 1**

Jan. 31, 2011



Abt Associates Inc.

In association with:

**Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross**

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Annex 1 - Updated Consultancy Schedule

Annex 2 - Updated Annual Work Plan

Annex 3 - Updated PMP

Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
CBS	Community Based Surveillance
COP	Chief of Party
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DEEFS	Department of Economics, Environment and Farming Systems
FAO	Food & Agriculture Organization (of the United Nations)
H2P	Humanitarian Pandemic Preparedness
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PSA	Professional Services Agreement
RUDEC	Rural Development Center (under MARD)
TOT	Training of Trainers
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VIPA	Vietnamese Poultry Association
VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WHO	World Health Organization

Introduction

This report presents the main achievements, challenges and solutions for USAID's Avian and Pandemic Influenza Initiative during the first quarter of Year 2, Oct.–Dec. 2010.

The report is divided into the following thematic sections:

1. Animal Health Worker Capacity Building
2. Agricultural Extension Worker Capacity Building
3. Poultry Supply Chain Strengthening
4. Community-Based Surveillance
5. Infection Control / Case Management
6. Pandemic Preparedness Planning
7. Cross-Cutting Issues
8. Success Stories

1. Animal Health Worker (AHW) Capacity Building

The goal is to develop an AHW capacity building package that is adopted by relevant public-private agencies at national and/or provincial levels, and to develop a standard Terms of Reference for AHWs for adoption by PPCs and MARD.

Year 2 will focus on completing and transferring the training package for wider adoption and on establishing well-functioning networks of capable public and private animal health workers in and beyond project areas. The subcontractors include AFAP on training/capacity building and VVA on AHW network development and advocacy.

1.1 Achievements

1.1.1 Extended the Year 1 subcontract with AFAP into October-November and initiated the modified contract for Year 2 in December. The working relationship with AFAP has recently improved. AFAP now has a new Country Director and new field staff onboard and has strengthened its in-country team overall. AFAP is also engaging more closely with provincial counterparts, notably the Sub-DAHs and PAFECS through lessons learnt meetings, and participated actively in the Year 2 planning workshops with all key provincial partners.

1.1.2 The AHW TOT package, which is based firmly on the new training manual issued by DAH in 2010 was updated. Additional modules on bio-security, basic surveillance and zoonotic diseases were developed together with Sub-DAH's. Testing of the TOT package was initiated in Quang Tri through a 30-days training course for 25 AHWs. Emphasis was given to participatory training and learning by doing. All participants are expected to receive certificates co-signed by the Director of Sub-DAH. The (improved) training materials will be presented to and shared with DAH early in 2011.

1.1.3 Entered into dialogue provincial-based Agricultural Colleges and Vocational Training Centers and, who can provide formalize AHW training and certification (while Sub-DAH can issue AHW licenses).

1.1.4 Conducted AHW refresher training courses in all 15 pilot districts.

1.1.5 SOW was prepared for a new subcontract with Vietnam Veterinary Association (VVA) to continue their work on institutional strengthening and AHW network establishment with public and private partners.

1.2 Challenges and Solutions

1.2.1 The subcontracts with AFAP and VVA are running behind schedule. The APII team will continue to work very closely with both subcontractors in order minimize further delays.

1.2.2 DAH and Sub-DAH's have no function or division in charge of AHW network development, and any staff(s) assigned for this task are often not specialized in such work. This makes it difficult to advocate with Sub-DAH's and District Veterinary Stations (DVS) for AHW network strengthening. APII will continue to pursue this agenda with DAH and Sub-DAH leaders in close collaboration with relevant and strategically located partners, such as FAO and VVA. There is growing recognition of the need for grassroots-based AHW development.

2. Agricultural Extension Worker (AEW) Capacity Building

The goal is to develop and transfer to NAEC and PAFECs an AEW bio-security training package for small commercial poultry producers, which has been fully tested (incl. costing) and verified, for wider adoption and replication in the national-provincial extension system.

2.1 Achievements

2.1.1 The AEW bio-security training package was drafted in Year 1. During Q1 of Year 2 drawings and visual aids were completed by NAEC local consultants and artists together with a set of flipcharts and comic stories. Two technical review workshops were scheduled for January 2011 in Hanoi and HCMC, to be followed by field testing in February 2011.

2.2 Challenges and Solutions

2.2.1 Each region has different traditions and habits in poultry production and a training/extension package should ideally reflect this. APII has prepared separate materials on chicken production for the north and duck production for the south which need careful field testing for effective promotion of good husbandry practices. The training materials development is slightly behind schedule as managing subcontractors and consultants proves to be a continuing challenge.

2.2.2 Working closely with NAEC/PAFECs is necessary to help institutionalize the training/extension packages. This is a time-consuming process which requires diplomacy and patience in order to forge and maintain close relationships with these agencies.

3. Poultry Supply Chain Strengthening

The goal is to develop demonstration models in key (high risk) nodes along supply chains, together with related documents (protocols, guidelines, training materials) for wider replication by national and provincial agencies as well as other development projects/programs.

During Year 1 key intervention nodes and lists of priority risk reduction measures were identified together with public and private stakeholders. To guide the actual, practical risk reduction efforts in each of the nodes a set of technical protocols (incl. conceptual designs and drawings) will be developed for the demonstration models. The technical protocols will address veterinary public health, hygiene/sanitation, and bio-security/bio-safety issues for animals and humans in/around the nodes, in light of the existing regulatory framework and ongoing efforts in Vietnam.

The project also plans to provide support to the continuation of STOP AI supply chain work and is in the process of preparing subcontract with ASVELIS.

3.1 Achievements

3.1.1 Several field visits were made to potential demonstration slaughterhouses (Can Tho and Kien Giang) and the live bird market in Dong Ha (Quang Tri). The conceptual drawings and technical protocols drafted for live bird markets and centralized slaughterhouses were shared with APII partners in a technical workshop. The workshop brought together key stakeholders (including DAH, DLP, FAO, VAHIP, ASVELIS, etc.) and the materials presented were very well received. VAHIP expressed interest in potentially adopting some of the protocol work.

3.1.2 An in-country study tour was conducted in collaboration with VIPA and DLP, with 22 participants from government authorities, incl. DAH, DLP, the Food Hygiene and Safety Administration of MOH, provincial representatives of DARDs, Sub-DAHs, and SDFHF as well as private entrepreneurs and journalists. The event provided an important opportunity for participants to identify firsthand the points of HPAI/EID risk exposure in poultry supply chains in seven different provinces (Hanoi, Hung Yen, Quang Tri, Tien Giang, HCMC, Can Tho and Kien Giang). As an outcome of the tour a list of interventions to support risk reduction and improve the compliance of supply chain entrepreneurs was prepared.

3.1.3 Several meetings took place between APII and FAO resulting in a detailed 'collaboration matrix' (a living document).

3.2 Challenges and Solutions

3.2.1 While provincial counterparts clearly are very interested in the demonstration models the provinces have no 'master plans' that clearly demarcate future locations e.g. of centralized poultry slaughterhouses and poultry markets. This may affect APII's work and could cause some delays. In Can Tho, following several rounds of discussions with the PCU and Sub-DAH, the final decision on where to develop the slaughterhouse demonstration unit has not yet been made. APII will stay well informed on

this and only support upgrades of existing/prioritized facilities in line with PCU/DARD recommendations.

4. Community-Based Surveillance (CBS)

The goal is to complete a CBS package, including training materials/tools, job descriptions, budget, and recommendations for adoption and up-scaling in the provincial-national surveillance system, in both the human and animal health sectors.

The CBS model is being implemented in 123 communes of 18 districts and 5 provinces since the beginning of 2010. During Year 2 APII will: conduct a midterm review; conduct refresher trainings to add other emerging infectious and zoonotic diseases; connect to the poultry supply chain strengthening efforts by using high risk nodes (smallholder commercial farms, hatcheries, traders, slaughterhouses, markets) for events based surveillance, early warning and responses; gradually phase out support to community-based CBS networks to test their sustainability and potential for up-scaling; and conduct final evaluation (incl. costing) of the model for wider replication and uptake at provincial and national levels.

4.1 Achievements

4.1.1 Maintained CBS collaborator networks in 123 communes of 18 districts in 5 provinces. Between September-December collaborators reported 2545 suspected cases in humans and 9334 in animals. However, no AI outbreaks were confirmed.

4.1.2 Worked with FAO for continued coordination, technical verification, and talks on how to better link grassroots level reporting into the provincial-national system. It was agreed to maintain (at least) quarterly FAO-APII meetings on surveillance.

4.1.3 Identified the Centre for Community Health and Injury Prevention (CCHIP) as the subcontractor for Year 2, through a competitive bidding process.

4.1.4 Conducted a CBS mid-term review, incl. 65 semi-structured group/individual interviews with 257 stakeholders in four provinces (excl. Ha Nam). The assessment provided evidence on network collaborator activities, identified strengths and weaknesses in the current model, and gave recommendation for improvements. The results will be presented to provinces for further discussion and feedback in January 2011.

4.1.5 Entered into dialogue with the Village Health Worker Association and the Medical College of Quang Tri on potential collaboration and expansion of CBS work through the Village Health Worker, Association which reaches out to all villages in Quang Tri.

4.2 Challenges and Solutions

4.2.1 Carefully analyze the findings of the mid-term review and follow-up where necessary on identified gaps/weaknesses in the model.

4.2.2 The relatively low capacity and shortage of human resources among local subcontractors required the APII Human Health team to work closely with them to support, coach, and guide their work. This in itself constitutes an important local capacity building input by the project, but one that may cause some delays in implementation.

4.2.3 Linking the reporting at grassroots level to the provincial-national surveillance system, though the Chief/Commune AHW's with whom both APII and FAO work, remains a challenge. APII will continue to address this issue in close consultation with FAO and the provincial Sub-DAHs and District Veterinary Stations.

4.2.4 Separate meetings of animal and human health workers do not necessarily promote multi-sector collaboration. However, this reflects the way the system currently operates -- a system that is not easily changed. APII will continue to explore options for closer integration of animal and human health activities in close consultation with local stakeholders and national experts.

5. Infection Control/Case Management (IC/CM)

The goal is to develop an IC/CM 'model' with training package/tools, guidelines etc. piloted and tested/verified (including costing), for wider adoption in Vietnam.

In Year 2, IC/CM activities will aim to disseminate the APII district level IC model (including training package, tools, and guidelines) and SARI/AI case management guidelines for village, commune and district levels to MOH and provincial authorities beyond the five focus provinces as well as to other development partners, for wider adoption.

5.1 Achievements

5.1.1 Completed two four-day training courses for IC assurance teams and their networks, in Kien Giang and Can Tho for 54 health staff. The courses covered the following topics: (1) Implementation of adapted IC protocols/guidelines in district hospitals and commune health stations; (2) IC surveillance; and (3) IC principles and standard precautions

5.1.2 Completed eight two-day training courses on basic IC and CM principles and compliance for 244 district level health staff.

5.1.3 Completed four one-day training courses on basic IC and CM principles and compliance for 114 commune and village health workers.

5.1.4 Initiated dialogue with the PEFAR program to explore collaboration on IC activities. During the next trainings (in Hanoi), APII will invite participants from PEPFAR provinces.

5.2 Challenges and Solutions

5.2.1 It took longer than expected to develop the subcontract in this area. This is a general observation (subcontracts taking longer to initiate than expected) that will be taken into future planning and projections.

6. Pandemic Preparedness Planning (PPP)

The goal is to develop PPPs in selected focus provinces, introduce the package in other provinces, and advocate for its wider adoption throughout Vietnam.

During Year 1, Vietnamese Red Cross (VNRC) who is the selected subcontractor for this work, implemented USAID's Humanitarian Pandemic Preparedness (H2P) project with civil society organizations in Ha Nam and Quang Tri. Following this, VNRC started reviewing the status of PPPs in the five focus provinces in collaboration with APII. In Year 2, APII plans to enter an MOU with VNRC to revise, test and finalize improved PPPs for wider replication.

6.1 Achievements

6.1.1 Prepared MOU with VNRC and submitted to VNRC for comments and feedback.

6.1.2 Developed/revised tools and planned for implementing the PPP situation analysis in the provinces.

6.2 Challenges and Solutions

6.2.1 VNRC was occupied with humanitarian and emergency activities (incl. flooding in Central Vietnam) and did not have time/resources to finalize the MOU with APII. As a mass organization under the Fatherland Front, VNRC was furthermore awaiting the outcome of the 11th Party Congress in January 2011 before entering any new commitments. The nature of VNRC's work, including focus on emergency responses, can make it a particular challenge to implement a subcontract with VNRC.

7. Cross-Cutting Issues

Behavior Change Communication (BCC)

The BCC work aims to identify appropriate behaviors and messages for key target audiences and to strengthen the BCC capacity of national and provincial stakeholders. The BCC work feeds into and helps integrate and enhance the work of the other technical components in animal and human health.

7.1 Achievements

7.1.1 Closer integration of BCC activities into animal and human health activities, e.g. in the supply chain work.

7.1.2 Developed the Year 2 BCC Strategy (a living document) based on the results of the Year 1 risk assessment, the risk reduction strategies, and the results of the BCC assessment. The Year 2 strategy focuses on the seasonal BCC campaign and closer integration of BCC work into the animal health and human health components. The strategy was shared with FAO and WHO for technical (i.e. animal/human health) verification and feedback.

7.1.3 Conducted planning workshops with key local stakeholders in four provinces (except Ha Nam) to design Year 2 BCC activities. The workshops provided consensus on the number of desired behaviors and on barriers and motivators, which in turn were used to develop appropriate key messages for target audiences.

7.1.4 Prepared subcontracts for Year 2 BCC activities: Women's Union in Ha Nam, Kien Giang and Quang Tri (i.e. same as in Year 1) and the Provincial Humanity Center under Red Cross in Hung Yen. The subcontractor in Can Tho is to be determined.

7.1.5 Completed BCC TOT trainings for district trainers (representing AH, Animal extension, HH, and communication bodies) in Quang Tri, Can Tho and Ha Nam. The trainings were conducted by provincial Master Trainers.

7.1.6 Designed Year 2 BCC materials (calendar, flipcharts, logo, BCC theme, guidelines for community events, etc.) together with BCC and artwork consultants, and identified vendors for printing and distribution. FAO and WHO were consulted for technical verification.

7.1.7 Pre-tested the above BCC materials in Can Tho (for Southern materials) and Hung Yen (for Northern materials).

7.1.8 Completed the collection of API materials from various sources and passed these on for uploading on the PAHI website.

7.1.9 Engaged national journalists (VTC16), provincial journalists (from Centers for Health Communication and Education/T4g), and local newspaper and TV journalists television on the Animal Health bio-security study tour in Northern and Southern provinces. This resulted in articles and broadcasts.

7.1.10 Developed and shared the Year 2 press relations plan with USAID.

7.1.11 Provided frequent updates/success stories to USAID.

7.2 Challenges and Solutions

7.2.1 Encountered difficulties in finding local subcontractor to implement Year 2 BCC activities in Can Tho. Currently working with CEFACOM (Research Center for Family Health and Community Development), a national NGO based in Hanoi to take on this activity. Subcontract preparation generally takes longer than envisaged.

7.2.2 The BCC Year 2 planning workshop in Ha Nam was cancelled due to the pending MOU renewal in Ha Nam (see also 'Provincial Implementations' section below). The PSA with Ha Nam Women's Union in Year 2 was modified to address this (Note: subcontract modification can be a time-consuming process).

7.2.3 Difficult to get national officers to give technical inputs into project activities such as reviewing BCC materials, as we are constrained in the way we can compensate their efforts. We are working to find suitable ways to bring them on board in close consultation with the F&A team and the Project Director, but the options are limited. This constraint could also affect the production of newsletters with/through NAEC and NCHEC.

Provincial Coordination and Implementation

7.3 Achievements

7.3.1 Signed MOUs for Year 2 with Can Tho, Kien Giang, Quang Tri and Hung Yen provinces. Ha Nam pending due to changes in leadership.

7.3.2 Worked with subcontractors to prepare provincial work plans and conducted provincial planning workshops, with all APII components and local partners fully involved, in Kien Giang, Dec. Can Tho, and Quang Tri (Note: Hung Yen workshop held in early January; Ha Nam to follow – see also 7.4.2 below).

7.3.3 Submitted provincial implementation plans for PCU for approval in Kien Giang, Can Tho and Quang Tri.

7.3.4 Identified and engaged Provincial Coordinators in consultation with counterparts in four provinces (Ha Nam still pending).

7.3.5 Relocated project offices in Can Tho and Quang Tri from within DARDs to privately rented premises, for compliance and easy/equal access by all partners.

7.4 Challenges and Solutions

7.4.1 The contract for the Project Area Manager (North) was terminated by mutual consent due to unsatisfactory performance. The recruitment process for a replacement was initiated. The ideal candidate will be a more senior person with management experience, a proven track record in dealing with provincial counterparts, and prepared to relocate to Ha Nam or travel extensively to the field.

7.4.2 Changes in leadership in Ha Nam meant that no persons were yet assigned as PCU Chair and Vice-Chair. It was therefore not possible to sign the MOU for Year 2 or conduct the Risk Reduction and Year 2 planning workshops in Ha Nam. As a result some activities were temporarily suspended. APII's Deputy Director for Provincial Implementation maintained close dialogue with Ha Nam leaders for a resolution early in 2011.

7.4.3 Close communication between the shared APII-FAO Provincial Coordinators and FAOs Focal Points/Field Coordinators remains a challenge. The APII partners are aware of this and the institutional issues involved, and are looking for ways to improve the situation. The Provincial Coordinators are expected to play a key role in coordination.

7.4.4 Field level coordination at the 'programmatic' level, i.e. across USAID's activities, also remained a challenge. The APII partners are making good efforts to improve the situation including shared review and planning workshops, as well as more joint visits, where feasible, to promote a more programmatic approach.

7.4.5 Provincial budgets and plans for the following fiscal/calendar year are prepared during June-September. This is the time for APII to advocate for allocation of local funds to models and interventions advanced by the project. Staffs, however, are not yet well versed in the local decision-making processes. The project teams will work to better anticipate and prepare for this important period of the year, in order to take advantage of opportunities for sustaining APII work at the local level beyond the lifetime of the project. This includes early preparation for upcoming costing studies.

National Coordination & Policy Dialogue

7.5 Achievements

7.5.1 Developed the APII Advocacy Strategy with inputs from technical teams and others. This ‘living document’ was shared with USAID and API partners.

7.5.2 Generated a clearer picture (vision) within the APII team of where the project is heading and what achievements (milestones) to target along the way.

7.5.3 The AH team maintained close and frequent contact with FAO in particular, as well as with other relevant initiatives (e.g. VAHIP, STOP AI) for coordination and collaboration on supply chains and related work.

7.5.4 The HH team worked closely with FAO on surveillance, with WHO and MOH on IC activities and provided inputs on an IC assessment at a VAHIP project planning workshop. The HH Team maintains regular communications with partners and has agreed to hold (at least) quarterly meetings on coordination of surveillance activities with FAO.

7.5.5 The BCC team stepped up its dialogue with API partners, during the reporting period. FAO and WHO are now regularly consulted for technical verification on AH and HH related BCC issues. The BCC team also continued to participate actively in the BCC Working Group.

7.6 Challenges and Solutions

7.6.1 Coordination with many partners remains an ongoing challenge. APII will continue to participate actively in and contribute to/enhance the profile of relevant working groups. APII will maintain close interaction with FAO and WHO on technical issues through regular communications/exchanges and meetings, and where feasible through joint activities and events.

7.6.2 Gaining access to decision- and policy-makers is a challenge for an initiative that is often perceived as an ‘NGO-effort’. APII will continue to engage closely with API partners and through them in its advocacy work. More active participation in PAHI working groups will also be pursued. Other options such as working with MARD’s International Support Group (ISG) will be explored in consultation with USAID.

Monitoring & Evaluation

7.7 Achievements

7.7.1 Recruited the M&E Manager who has settled in well and quickly.

7.7.2 Worked closely with MEASURE and USAID’s partners to review and improve the PMP data collection tools (ongoing albeit behind schedule).

7.7.3 Reviewed and updated the project’s PMP. Collected and entered data. Developed related databases.

7.7.4 Initiated the drafting of a project Logical Framework, or 'Log-frame', which more clearly links activities and outputs to outcomes and impacts and will help establish the baseline for future results and impact assessments.

7.7.5 Developed detailed guidelines for Activity Implementation Monitoring ('AIM Guidelines') and related tools and shared these with staff, subcontractors and local partners.

7.7.6 Reviewed APII SOWs to help ensure that M&E issues are adequately addressed in all work.

7.7.7 Provided training to field-based Project Area Managers and Provincial Coordinators on M&E with focus on performance monitoring and quality control.

7.8 Challenges and Solutions

7.8.1 The current PMP does not show clearly the causal pathways from inputs to outcomes and impacts and the baseline indicators have not been identified specifically. To solve this, the project is developing a Logical Framework, or 'Log-frame'. Baseline indicators will be identified and included in the Log-frame where possible. However, as the project did not conduct a baseline survey before or during start-up it may be difficult to arrive at a complete baseline. Some reverse engineering (assisted by USAID) may be needed.

7.8.2 The project interventions are diverse and complex. To monitor performance and measure effectiveness of each intervention area requires a range of methods and approaches.

Administration & Finance

7.9 Achievements

7.9.1 Recruited the M&E Manager and a new F&A Assistant in Can Tho. Initiated the recruitment process for a new Strategic Communications Manager (to replace the Policy Advocacy Manager who departed in November), two Supply Chain Managers (for North/Central and for South), an F&A Manager for the Quang Tri Office, a Finance Officer and an IT Officer (the latter is a shared position with the HPI project).

7.9.2 Revised the TOR for Provincial Coordinators in close consultation with FAO and recruited four Provincial Coordinators (except in Ha Nam) for Year 2.

7.9.3 Facilitated that move of two provincial satellite offices (Can Tho, Quang Tri) from DARDs to independent locations in rented premises.

7.9.4 Developed and entered subcontracts with AFAP for AHW/AEW work, CCHIP for CBS work, Hanoi Infection Control Society for IC work, and with provincial Women's Union and Red Cross for BCC activities in four provinces (Can Tho pending). Trained subcontractors on related finance and compliance issues.

7.9.5 Prepared SOWs and entered a number of consultant agreements with national and international short-term consultants.

7.9.6 Revised the project's cost norms (in close consultation with FAO).

7.9.7 Prepared and submitted the Year 1 report to USAID.

7.10 Challenges and Solutions

7.10.1 The project is frequently questioned and challenged by partners, counterparts and subcontractors on its subcontracting mechanism. The Firm Fixed-Price Subcontract, whereby subcontractors are reimbursed on the basis of submission and approval of agreed deliverables is an unfamiliar contract form. Partner agencies have no working capital and are accustomed to working on the basis of fund advances. This, however, is not possible under APII. The issue is causing a significant element of discomfort among subcontractors, despite the fact that PSAs are designed in ways that trigger early releases of significant funds. Project staffs continue to go to great lengths to explain the policies and conditions under which the project is operating in an effort to generate more goodwill and appreciation. The project is succeeding in entering and completing most planned subcontracts so far, albeit often with delays which are due partly to the contracting mechanism.

7.10.2 The project is often facing a limited choice of relatively weak subcontractors. Building capacity in local subcontractors is one of the products of the project, but does cause a slow-down in implementation. Direct implementation (DI) as opposed to working through subcontractors is not a realistic option given the current legal status of APII and the level of staffing. APII is working on a registration with PACCOM to give more scope and flexibility for DI.

7.10.3 Another challenging point is the cost norms. APII is striving towards financial sustainability by keeping activity/field costs comparatively low. The project is repeatedly being compared with other donor-funded initiatives and found by most partners and counterparts to be less flexible and less 'competitive' (e.g. due to the fact the project provides no allowances/salary topping up to government staff). It makes APII a less attractive project in the eyes of local partners and may unfortunately be causing reduced local commitment/ownership. Again, the project staffs expend great efforts to explain the rationale and underlying principles and policies, in an effort to develop greater mutual understanding, acceptance, and commitment. It helps when USAID representatives are present to help clarify with counterparts.

7.10.4 Most subcontractors and consultants find the required biodata forms difficult to complete and the F&A team often has to go through several reiterations before the forms are ready for submission to Abt's HQ.

7.10.5 Delays in higher-level decisions concerning for instance staff salary increases (pending since June 2010) are discouraging and potentially demotivating for staffs.

8. Success Stories

Multi-Sector and Participatory Work Planning in Provinces

During the first quarter of Year 2 APII signed new MOUs with Can Tho, Hung Yen, Kien Giang and Quang Tri provinces and held provincial planning workshops with participation of local public/private stakeholders, subcontractors, and international partners. Multiple sectors were represented including animal health, human health, information/communication, civil society and poultry supply chain actors.

In Year 1 local counterparts had expressed some concern and dissatisfaction with coordination and information sharing. This year's planning workshops marked an effort to improve on these accounts as a prerequisite for more effective implementation and stronger local ownership.



From Kien Giang Annual Planning Workshop, Dec. 2010.

The planning workshops included a review of Year 1 and lessons learnt followed by presentations and discussions of proposed activities in Year 2. The process helped level expectations as to what the project can and cannot provide and generate consensus on the implementation mechanisms and the way forward in Year 2.

The PCU Vice-chair in Quang stressed that "...Each PCU member is responsible to collaborate and provide instruction back to his/her own agency to involve in the assigned component. S/he should review the plan from the subcontractor to provide comments to make the activities more relevant to and meet the needs of the locality. S/he should lead the monitoring work done by all subcontractors in order to ensure the quality and bring effectiveness to the people of Quang Tri in prevention of AI specifically and livestock diseases in general, and to ensure the regulations of the Government of Viet Nam and of Quang Tri are followed..."

In order to maintain close relations between the many actors and agencies involved, it was agreed to hold monthly/bi-monthly meetings with Provincial Coordination Units (PCU) and quarterly meetings involving districts and communes in future.

Subcontractors are expected to join the meetings to which international partners are also invited. The joint FAO-APII Provincial Coordinators are tasked to play a very proactive role in all this together with FAO's Focal Points in the Sub-Departments of Animal Health and APIIs provincial implementation team.

Communes Become Vigilant in Tracking Bird Flu

(Posted on <http://vietnam.usaid.gov/node/272> in Dec.2010)

USAID is supporting new teams of villagers who, for the first time, are filling a crucial gap in the avian influenza reporting chain that boosts Vietnam's ability to quickly detect and prevent the spread of avian influenza at the grassroots level.

One of them is Nguyen Van Van, who works in Dai Hoa commune in Vietnam's central Quang Tri Province. A veteran village animal health worker with 20 years of veterinary service experience, he is one of nine community based surveillance collaborators in Dai Hao village helping 60 families. Before May 2010, these village animal health workers worked independently and provided private services to households on vaccination and selling veterinary medicines. Coordinated and trained, they do a better job.

Each month, Van makes two or three visits to up to 160 households, providing animal health services such as poultry vaccination and foot and mouth disease prevention as well as instruction on how villagers can spot abnormal signs in their poultry flocks.

Vietnam is one of the hardest hit countries when it comes to bird flu. Since 2004, they have had to cull 45 million chickens and ducks, most of them early on. Fifty-nine people have died of avian influenza.

Vietnamese authorities moved quickly and effectively to launch mass vaccinations of poultry and have successfully managed the situation so far. It remains vital however, to build up a strong national surveillance systems for early detection and action, starting in communities and extending to the national level.

"There is the gap between the official surveillance system and the surveillance at community level," said Do Huu Dung, Deputy Head of the Epidemiology Division, in the Department of Animal Health, Ministry of Agriculture and Rural Development. "The Vietnamese Government is looking for a relevant community-based surveillance model that fills this gap and has the collaboration between animal health and health sectors."

Van and his colleagues are helping to fill this gap, and villagers increasingly understand their role.

"We actively reported to village animal health workers and human health workers to have immediate solution in order to minimize economic loss then we could be compensated from local authorities," said farmer Le Quan Dinh. "The vet services are helpful. We reported to them (village health animal health worker



Van, right, explains how to recognize abnormal signs in duck. Photo: Nguyen Thanh Dien at USAID's Avian and Pandemic Influenza Initiative.

and health worker) who then came immediately. We strongly believe in this network's capability."

In his first few months' time as a community collaborator, Van has identified more than 15 households, each with five to 10 sick and dead poultry, and reported them to the surveillance network. He also provides services to the neighboring communes.

With the community-based collaborator networks, USAID's Avian and Pandemic Influenza Initiative is developing one of the essential building blocks in Vietnam's national surveillance system. By training and equipping village human health and animal health workers, the project is strengthening the surveillance system from the grassroots with a unique approach that combines human and animal health efforts to fight bird flu and other emerging infectious diseases and pandemic threats.

So far 1,778 collaborators have been trained in five provinces and 123 communes across Vietnam. From July to September 2010, they reported more than 2,218 sick and dead poultry and 1,131 suspected acute respiratory infection cases in humans, many of which may have otherwise gone unreported.

With the recognition of the commune governing People's Committee and radio spots explaining the network, the community is more aware about the collaborators and the services they provide. By 2012, Quang Tri Province will enroll these village animal health workers into the state system and provide a salary to entrench the surveillance network in the communities, where these trained eyes and ears can more effectively stop sick poultry in their tracks.



USAID
FROM THE AMERICAN PEOPLE

**AVIAN AND PANDEMIC
INFLUENZA INITIATIVE**

**Avian and Pandemic Influenza
Initiative**

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**Report for
Year 2, Quarter 1**

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Abt Associates Inc.

In association with:

**Australian Foundation for the Peoples of Asia and the Pacific
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Annex 1 - Updated Consultancy Schedule

Annex 2 - Updated Annual Work Plan

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Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
CBS	Community Based Surveillance
COP	Chief of Party
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DEEFS	Department of Economics, Environment and Farming Systems
FAO	Food & Agriculture Organization (of the United Nations)
H2P	Humanitarian Pandemic Preparedness
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PSA	Professional Services Agreement
RUDEC	Rural Development Center (under MARD)
TOT	Training of Trainers
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VIPA	Vietnamese Poultry Association
VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WHO	World Health Organization

Introduction

This report presents the main achievements, challenges and solutions for USAID's Avian and Pandemic Influenza Initiative during the first quarter of Year 2, Oct.–Dec. 2010.

The report is divided into the following thematic sections:

1. Animal Health Worker Capacity Building
2. Agricultural Extension Worker Capacity Building
3. Poultry Supply Chain Strengthening
4. Community-Based Surveillance
5. Infection Control / Case Management
6. Pandemic Preparedness Planning
7. Cross-Cutting Issues
8. Success Stories

1. Animal Health Worker (AHW) Capacity Building

The goal is to develop an AHW capacity building package that is adopted by relevant public-private agencies at national and/or provincial levels, and to develop a standard Terms of Reference for AHWs for adoption by PPCs and MARD.

Year 2 will focus on completing and transferring the training package for wider adoption and on establishing well-functioning networks of capable public and private animal health workers in and beyond project areas. The subcontractors include AFAP on training/capacity building and VVA on AHW network development and advocacy.

1.1 Achievements

1.1.1 Extended the Year 1 subcontract with AFAP into October-November and initiated the modified contract for Year 2 in December. The working relationship with AFAP has recently improved. AFAP now has a new Country Director and new field staff onboard and has strengthened its in-country team overall. AFAP is also engaging more closely with provincial counterparts, notably the Sub-DAHs and PAFECS through lessons learnt meetings, and participated actively in the Year 2 planning workshops with all key provincial partners.

1.1.2 The AHW TOT package, which is based firmly on the new training manual issued by DAH in 2010 was updated. Additional modules on bio-security, basic surveillance and zoonotic diseases were developed together with Sub-DAH's. Testing of the TOT package was initiated in Quang Tri through a 30-days training course for 25 AHWs. Emphasis was given to participatory training and learning by doing. All participants are expected to receive certificates co-signed by the Director of Sub-DAH. The (improved) training materials will be presented to and shared with DAH early in 2011.

1.1.3 Entered into dialogue provincial-based Agricultural Colleges and Vocational Training Centers and, who can provide formalize AHW training and certification (while Sub-DAH can issue AHW licenses).

1.1.4 Conducted AHW refresher training courses in all 15 pilot districts.

1.1.5 SOW was prepared for a new subcontract with Vietnam Veterinary Association (VVA) to continue their work on institutional strengthening and AHW network establishment with public and private partners.

1.2 Challenges and Solutions

1.2.1 The subcontracts with AFAP and VVA are running behind schedule. The APII team will continue to work very closely with both subcontractors in order minimize further delays.

1.2.2 DAH and Sub-DAH's have no function or division in charge of AHW network development, and any staff(s) assigned for this task are often not specialized in such work. This makes it difficult to advocate with Sub-DAH's and District Veterinary Stations (DVS) for AHW network strengthening. APII will continue to pursue this agenda with DAH and Sub-DAH leaders in close collaboration with relevant and strategically located partners, such as FAO and VVA. There is growing recognition of the need for grassroots-based AHW development.

2. Agricultural Extension Worker (AEW) Capacity Building

The goal is to develop and transfer to NAEC and PAFECs an AEW bio-security training package for small commercial poultry producers, which has been fully tested (incl. costing) and verified, for wider adoption and replication in the national-provincial extension system.

2.1 Achievements

2.1.1 The AEW bio-security training package was drafted in Year 1. During Q1 of Year 2 drawings and visual aids were completed by NAEC local consultants and artists together with a set of flipcharts and comic stories. Two technical review workshops were scheduled for January 2011 in Hanoi and HCMC, to be followed by field testing in February 2011.

2.2 Challenges and Solutions

2.2.1 Each region has different traditions and habits in poultry production and a training/extension package should ideally reflect this. APII has prepared separate materials on chicken production for the north and duck production for the south which need careful field testing for effective promotion of good husbandry practices. The training materials development is slightly behind schedule as managing subcontractors and consultants proves to be a continuing challenge.

2.2.2 Working closely with NAEC/PAFECs is necessary to help institutionalize the training/extension packages. This is a time-consuming process which requires diplomacy and patience in order to forge and maintain close relationships with these agencies.

3. Poultry Supply Chain Strengthening

The goal is to develop demonstration models in key (high risk) nodes along supply chains, together with related documents (protocols, guidelines, training materials) for wider replication by national and provincial agencies as well as other development projects/programs.

During Year 1 key intervention nodes and lists of priority risk reduction measures were identified together with public and private stakeholders. To guide the actual, practical risk reduction efforts in each of the nodes a set of technical protocols (incl. conceptual designs and drawings) will be developed for the demonstration models. The technical protocols will address veterinary public health, hygiene/sanitation, and bio-security/bio-safety issues for animals and humans in/around the nodes, in light of the existing regulatory framework and ongoing efforts in Vietnam.

The project also plans to provide support to the continuation of STOP AI supply chain work and is in the process of preparing subcontract with ASVELIS.

3.1 Achievements

3.1.1 Several field visits were made to potential demonstration slaughterhouses (Can Tho and Kien Giang) and the live bird market in Dong Ha (Quang Tri). The conceptual drawings and technical protocols drafted for live bird markets and centralized slaughterhouses were shared with APII partners in a technical workshop. The workshop brought together key stakeholders (including DAH, DLP, FAO, VAHIP, ASVELIS, etc.) and the materials presented were very well received. VAHIP expressed interest in potentially adopting some of the protocol work.

3.1.2 An in-country study tour was conducted in collaboration with VIPA and DLP, with 22 participants from government authorities, incl. DAH, DLP, the Food Hygiene and Safety Administration of MOH, provincial representatives of DARDs, Sub-DAHs, and SDFHF as well as private entrepreneurs and journalists. The event provided an important opportunity for participants to identify firsthand the points of HPAI/EID risk exposure in poultry supply chains in seven different provinces (Hanoi, Hung Yen, Quang Tri, Tien Giang, HCMC, Can Tho and Kien Giang). As an outcome of the tour a list of interventions to support risk reduction and improve the compliance of supply chain entrepreneurs was prepared.

3.1.3 Several meetings took place between APII and FAO resulting in a detailed 'collaboration matrix' (a living document).

3.2 Challenges and Solutions

3.2.1 While provincial counterparts clearly are very interested in the demonstration models the provinces have no 'master plans' that clearly demarcate future locations e.g. of centralized poultry slaughterhouses and poultry markets. This may affect APII's work and could cause some delays. In Can Tho, following several rounds of discussions with the PCU and Sub-DAH, the final decision on where to develop the slaughterhouse demonstration unit has not yet been made. APII will stay well informed on

this and only support upgrades of existing/prioritized facilities in line with PCU/DARD recommendations.

4. Community-Based Surveillance (CBS)

The goal is to complete a CBS package, including training materials/tools, job descriptions, budget, and recommendations for adoption and up-scaling in the provincial-national surveillance system, in both the human and animal health sectors.

The CBS model is being implemented in 123 communes of 18 districts and 5 provinces since the beginning of 2010. During Year 2 APII will: conduct a midterm review; conduct refresher trainings to add other emerging infectious and zoonotic diseases; connect to the poultry supply chain strengthening efforts by using high risk nodes (smallholder commercial farms, hatcheries, traders, slaughterhouses, markets) for events based surveillance, early warning and responses; gradually phase out support to community-based CBS networks to test their sustainability and potential for up-scaling; and conduct final evaluation (incl. costing) of the model for wider replication and uptake at provincial and national levels.

4.1 Achievements

4.1.1 Maintained CBS collaborator networks in 123 communes of 18 districts in 5 provinces. Between September-December collaborators reported 2545 suspected cases in humans and 9334 in animals. However, no AI outbreaks were confirmed.

4.1.2 Worked with FAO for continued coordination, technical verification, and talks on how to better link grassroots level reporting into the provincial-national system. It was agreed to maintain (at least) quarterly FAO-APII meetings on surveillance.

4.1.3 Identified the Centre for Community Health and Injury Prevention (CCHIP) as the subcontractor for Year 2, through a competitive bidding process.

4.1.4 Conducted a CBS mid-term review, incl. 65 semi-structured group/individual interviews with 257 stakeholders in four provinces (excl. Ha Nam). The assessment provided evidence on network collaborator activities, identified strengths and weaknesses in the current model, and gave recommendation for improvements. The results will be presented to provinces for further discussion and feedback in January 2011.

4.1.5 Entered into dialogue with the Village Health Worker Association and the Medical College of Quang Tri on potential collaboration and expansion of CBS work through the Village Health Worker, Association which reaches out to all villages in Quang Tri.

4.2 Challenges and Solutions

4.2.1 Carefully analyze the findings of the mid-term review and follow-up where necessary on identified gaps/weaknesses in the model.

4.2.2 The relatively low capacity and shortage of human resources among local subcontractors required the APII Human Health team to work closely with them to support, coach, and guide their work. This in itself constitutes an important local capacity building input by the project, but one that may cause some delays in implementation.

4.2.3 Linking the reporting at grassroots level to the provincial-national surveillance system, though the Chief/Commune AHW's with whom both APII and FAO work, remains a challenge. APII will continue to address this issue in close consultation with FAO and the provincial Sub-DAHs and District Veterinary Stations.

4.2.4 Separate meetings of animal and human health workers do not necessarily promote multi-sector collaboration. However, this reflects the way the system currently operates -- a system that is not easily changed. APII will continue to explore options for closer integration of animal and human health activities in close consultation with local stakeholders and national experts.

5. Infection Control/Case Management (IC/CM)

The goal is to develop an IC/CM 'model' with training package/tools, guidelines etc. piloted and tested/verified (including costing), for wider adoption in Vietnam.

In Year 2, IC/CM activities will aim to disseminate the APII district level IC model (including training package, tools, and guidelines) and SARI/AI case management guidelines for village, commune and district levels to MOH and provincial authorities beyond the five focus provinces as well as to other development partners, for wider adoption.

5.1 Achievements

5.1.1 Completed two four-day training courses for IC assurance teams and their networks, in Kien Giang and Can Tho for 54 health staff. The courses covered the following topics: (1) Implementation of adapted IC protocols/guidelines in district hospitals and commune health stations; (2) IC surveillance; and (3) IC principles and standard precautions

5.1.2 Completed eight two-day training courses on basic IC and CM principles and compliance for 244 district level health staff.

5.1.3 Completed four one-day training courses on basic IC and CM principles and compliance for 114 commune and village health workers.

5.1.4 Initiated dialogue with the PEFAR program to explore collaboration on IC activities. During the next trainings (in Hanoi), APII will invite participants from PEPFAR provinces.

5.2 Challenges and Solutions

5.2.1 It took longer than expected to develop the subcontract in this area. This is a general observation (subcontracts taking longer to initiate than expected) that will be taken into account in future planning and projections.

6. Pandemic Preparedness Planning (PPP)

The goal is to develop PPPs in selected focus provinces, introduce the package in other provinces, and advocate for its wider adoption throughout Vietnam.

During Year 1, Vietnamese Red Cross (VNRC) who is the selected subcontractor for this work, implemented USAID's Humanitarian Pandemic Preparedness (H2P) project with civil society organizations in Ha Nam and Quang Tri. Following this, VNRC started reviewing the status of PPPs in the five focus provinces in collaboration with APII. In Year 2, APII plans to enter an MOU with VNRC to revise, test and finalize improved PPPs for wider replication.

6.1 Achievements

6.1.1 Prepared MOU with VNRC and submitted to VNRC for comments and feedback.

6.1.2 Developed/revised tools and planned for implementing the PPP situation analysis in the provinces.

6.2 Challenges and Solutions

6.2.1 VNRC was occupied with humanitarian and emergency activities (incl. flooding in Central Vietnam) and did not have time/resources to finalize the MOU with APII. As a mass organization under the Fatherland Front, VNRC was furthermore awaiting the outcome of the 11th Party Congress in January 2011 before entering any new commitments. The nature of VNRC's work, including focus on emergency responses, can make it a particular challenge to implement a subcontract with VNRC.

7. Cross-Cutting Issues

Behavior Change Communication (BCC)

The BCC work aims to identify appropriate behaviors and messages for key target audiences and to strengthen the BCC capacity of national and provincial stakeholders. The BCC work feeds into and helps integrate and enhance the work of the other technical components in animal and human health.

7.1 Achievements

7.1.1 Closer integration of BCC activities into animal and human health activities, e.g. in the supply chain work.

7.1.2 Developed the Year 2 BCC Strategy (a living document) based on the results of the Year 1 risk assessment, the risk reduction strategies, and the results of the BCC assessment. The Year 2 strategy focuses on the seasonal BCC campaign and closer integration of BCC work into the animal health and human health components. The strategy was shared with FAO and WHO for technical (i.e. animal/human health) verification and feedback.

7.1.3 Conducted planning workshops with key local stakeholders in four provinces (except Ha Nam) to design Year 2 BCC activities. The workshops provided consensus on the number of desired behaviors and on barriers and motivators, which in turn were used to develop appropriate key messages for target audiences.

7.1.4 Prepared subcontracts for Year 2 BCC activities: Women's Union in Ha Nam, Kien Giang and Quang Tri (i.e. same as in Year 1) and the Provincial Humanity Center under Red Cross in Hung Yen. The subcontractor in Can Tho is to be determined.

7.1.5 Completed BCC TOT trainings for district trainers (representing AH, Animal extension, HH, and communication bodies) in Quang Tri, Can Tho and Ha Nam. The trainings were conducted by provincial Master Trainers.

7.1.6 Designed Year 2 BCC materials (calendar, flipcharts, logo, BCC theme, guidelines for community events, etc.) together with BCC and artwork consultants, and identified vendors for printing and distribution. FAO and WHO were consulted for technical verification.

7.1.7 Pre-tested the above BCC materials in Can Tho (for Southern materials) and Hung Yen (for Northern materials).

7.1.8 Completed the collection of API materials from various sources and passed these on for uploading on the PAHI website.

7.1.9 Engaged national journalists (VTC16), provincial journalists (from Centers for Health Communication and Education/T4g), and local newspaper and TV journalists television on the Animal Health bio-security study tour in Northern and Southern provinces. This resulted in articles and broadcasts.

7.1.10 Developed and shared the Year 2 press relations plan with USAID.

7.1.11 Provided frequent updates/success stories to USAID.

7.2 Challenges and Solutions

7.2.1 Encountered difficulties in finding local subcontractor to implement Year 2 BCC activities in Can Tho. Currently working with CEFACOM (Research Center for Family Health and Community Development), a national NGO based in Hanoi to take on this activity. Subcontract preparation generally takes longer than envisaged.

7.2.2 The BCC Year 2 planning workshop in Ha Nam was cancelled due to the pending MOU renewal in Ha Nam (see also 'Provincial Implementations' section below). The PSA with Ha Nam Women's Union in Year 2 was modified to address this (Note: subcontract modification can be a time-consuming process).

7.2.3 Difficult to get national officers to give technical inputs into project activities such as reviewing BCC materials, as we are constrained in the way we can compensate their efforts. We are working to find suitable ways to bring them on board in close consultation with the F&A team and the Project Director, but the options are limited. This constraint could also affect the production of newsletters with/through NAEC and NCHEC.

Provincial Coordination and Implementation

7.3 Achievements

7.3.1 Signed MOUs for Year 2 with Can Tho, Kien Giang, Quang Tri and Hung Yen provinces. Ha Nam pending due to changes in leadership.

7.3.2 Worked with subcontractors to prepare provincial work plans and conducted provincial planning workshops, with all APII components and local partners fully involved, in Kien Giang, Dec. Can Tho, and Quang Tri (Note: Hung Yen workshop held in early January; Ha Nam to follow – see also 7.4.2 below).

7.3.3 Submitted provincial implementation plans for PCU for approval in Kien Giang, Can Tho and Quang Tri.

7.3.4 Identified and engaged Provincial Coordinators in consultation with counterparts in four provinces (Ha Nam still pending).

7.3.5 Relocated project offices in Can Tho and Quang Tri from within DARDs to privately rented premises, for compliance and easy/equal access by all partners.

7.4 Challenges and Solutions

7.4.1 The contract for the Project Area Manager (North) was terminated by mutual consent due to unsatisfactory performance. The recruitment process for a replacement was initiated. The ideal candidate will be a more senior person with management experience, a proven track record in dealing with provincial counterparts, and prepared to relocate to Ha Nam or travel extensively to the field.

7.4.2 Changes in leadership in Ha Nam meant that no persons were yet assigned as PCU Chair and Vice-Chair. It was therefore not possible to sign the MOU for Year 2 or conduct the Risk Reduction and Year 2 planning workshops in Ha Nam. As a result some activities were temporarily suspended. APII's Deputy Director for Provincial Implementation maintained close dialogue with Ha Nam leaders for a resolution early in 2011.

7.4.3 Close communication between the shared APII-FAO Provincial Coordinators and FAOs Focal Points/Field Coordinators remains a challenge. The APII partners are aware of this and the institutional issues involved, and are looking for ways to improve the situation. The Provincial Coordinators are expected to play a key role in coordination.

7.4.4 Field level coordination at the 'programmatic' level, i.e. across USAID's activities, also remained a challenge. The APII partners are making good efforts to improve the situation including shared review and planning workshops, as well as more joint visits, where feasible, to promote a more programmatic approach.

7.4.5 Provincial budgets and plans for the following fiscal/calendar year are prepared during June-September. This is the time for APII to advocate for allocation of local funds to models and interventions advanced by the project. Staffs, however, are not yet well versed in the local decision-making processes. The project teams will work to better anticipate and prepare for this important period of the year, in order to take advantage of opportunities for sustaining APII work at the local level beyond the lifetime of the project. This includes early preparation for upcoming costing studies.

National Coordination & Policy Dialogue

7.5 Achievements

7.5.1 Developed the APII Advocacy Strategy with inputs from technical teams and others. This ‘living document’ was shared with USAID and API partners.

7.5.2 Generated a clearer picture (vision) within the APII team of where the project is heading and what achievements (milestones) to target along the way.

7.5.3 The AH team maintained close and frequent contact with FAO in particular, as well as with other relevant initiatives (e.g. VAHIP, STOP AI) for coordination and collaboration on supply chains and related work.

7.5.4 The HH team worked closely with FAO on surveillance, with WHO and MOH on IC activities and provided inputs on an IC assessment at a VAHIP project planning workshop. The HH Team maintains regular communications with partners and has agreed to hold (at least) quarterly meetings on coordination of surveillance activities with FAO.

7.5.5 The BCC team stepped up its dialogue with API partners, during the reporting period. FAO and WHO are now regularly consulted for technical verification on AH and HH related BCC issues. The BCC team also continued to participate actively in the BCC Working Group.

7.6 Challenges and Solutions

7.6.1 Coordination with many partners remains an ongoing challenge. APII will continue to participate actively in and contribute to/enhance the profile of relevant working groups. APII will maintain close interaction with FAO and WHO on technical issues through regular communications/exchanges and meetings, and where feasible through joint activities and events.

7.6.2 Gaining access to decision- and policy-makers is a challenge for an initiative that is often perceived as an ‘NGO-effort’. APII will continue to engage closely with API partners and through them in its advocacy work. More active participation in PAHI working groups will also be pursued. Other options such as working with MARD’s International Support Group (ISG) will be explored in consultation with USAID.

Monitoring & Evaluation

7.7 Achievements

7.7.1 Recruited the M&E Manager who has settled in well and quickly.

7.7.2 Worked closely with MEASURE and USAID’s partners to review and improve the PMP data collection tools (ongoing albeit behind schedule).

7.7.3 Reviewed and updated the project’s PMP. Collected and entered data. Developed related databases.

7.7.4 Initiated the drafting of a project Logical Framework, or 'Log-frame', which more clearly links activities and outputs to outcomes and impacts and will help establish the baseline for future results and impact assessments.

7.7.5 Developed detailed guidelines for Activity Implementation Monitoring ('AIM Guidelines') and related tools and shared these with staff, subcontractors and local partners.

7.7.6 Reviewed APII SOWs to help ensure that M&E issues are adequately addressed in all work.

7.7.7 Provided training to field-based Project Area Managers and Provincial Coordinators on M&E with focus on performance monitoring and quality control.

7.8 Challenges and Solutions

7.8.1 The current PMP does not show clearly the causal pathways from inputs to outcomes and impacts and the baseline indicators have not been identified specifically. To solve this, the project is developing a Logical Framework, or 'Log-frame'. Baseline indicators will be identified and included in the Log-frame where possible. However, as the project did not conduct a baseline survey before or during start-up it may be difficult to arrive at a complete baseline. Some reverse engineering (assisted by USAID) may be needed.

7.8.2 The project interventions are diverse and complex. To monitor performance and measure effectiveness of each intervention area requires a range of methods and approaches.

Administration & Finance

7.9 Achievements

7.9.1 Recruited the M&E Manager and a new F&A Assistant in Can Tho. Initiated the recruitment process for a new Strategic Communications Manager (to replace the Policy Advocacy Manager who departed in November), two Supply Chain Managers (for North/Central and for South), an F&A Manager for the Quang Tri Office, a Finance Officer and an IT Officer (the latter is a shared position with the HPI project).

7.9.2 Revised the TOR for Provincial Coordinators in close consultation with FAO and recruited four Provincial Coordinators (except in Ha Nam) for Year 2.

7.9.3 Facilitated that move of two provincial satellite offices (Can Tho, Quang Tri) from DARDs to independent locations in rented premises.

7.9.4 Developed and entered subcontracts with AFAP for AHW/AEW work, CCHIP for CBS work, Hanoi Infection Control Society for IC work, and with provincial Women's Union and Red Cross for BCC activities in four provinces (Can Tho pending). Trained subcontractors on related finance and compliance issues.

7.9.5 Prepared SOWs and entered a number of consultant agreements with national and international short-term consultants.

7.9.6 Revised the project's cost norms (in close consultation with FAO).

7.9.7 Prepared and submitted the Year 1 report to USAID.

7.10 Challenges and Solutions

7.10.1 The project is frequently questioned and challenged by partners, counterparts and subcontractors on its subcontracting mechanism. The Firm Fixed-Price Subcontract, whereby subcontractors are reimbursed on the basis of submission and approval of agreed deliverables is an unfamiliar contract form. Partner agencies have no working capital and are accustomed to working on the basis of fund advances. This, however, is not possible under APII. The issue is causing a significant element of discomfort among subcontractors, despite the fact that PSAs are designed in ways that trigger early releases of significant funds. Project staffs continue to go to great lengths to explain the policies and conditions under which the project is operating in an effort to generate more goodwill and appreciation. The project is succeeding in entering and completing most planned subcontracts so far, albeit often with delays which are due partly to the contracting mechanism.

7.10.2 The project is often facing a limited choice of relatively weak subcontractors. Building capacity in local subcontractors is one of the products of the project, but does cause a slow-down in implementation. Direct implementation (DI) as opposed to working through subcontractors is not a realistic option given the current legal status of APII and the level of staffing. APII is working on a registration with PACCOM to give more scope and flexibility for DI.

7.10.3 Another challenging point is the cost norms. APII is striving towards financial sustainability by keeping activity/field costs comparatively low. The project is repeatedly being compared with other donor-funded initiatives and found by most partners and counterparts to be less flexible and less 'competitive' (e.g. due to the fact the project provides no allowances/salary topping up to government staff). It makes APII a less attractive project in the eyes of local partners and may unfortunately be causing reduced local commitment/ownership. Again, the project staffs expend great efforts to explain the rationale and underlying principles and policies, in an effort to develop greater mutual understanding, acceptance, and commitment. It helps when USAID representatives are present to help clarify with counterparts.

7.10.4 Most subcontractors and consultants find the required biodata forms difficult to complete and the F&A team often has to go through several reiterations before the forms are ready for submission to Abt's HQ.

7.10.5 Delays in higher-level decisions concerning for instance staff salary increases (pending since June 2010) are discouraging and potentially demotivating for staffs.

8. Success Stories

Multi-Sector and Participatory Work Planning in Provinces

During the first quarter of Year 2 APII signed new MOUs with Can Tho, Hung Yen, Kien Giang and Quang Tri provinces and held provincial planning workshops with participation of local public/private stakeholders, subcontractors, and international partners. Multiple sectors were represented including animal health, human health, information/communication, civil society and poultry supply chain actors.

In Year 1 local counterparts had expressed some concern and dissatisfaction with coordination and information sharing. This year's planning workshops marked an effort to improve on these accounts as a prerequisite for more effective implementation and stronger local ownership.



From Kien Giang Annual Planning Workshop, Dec. 2010.

The planning workshops included a review of Year 1 and lessons learnt followed by presentations and discussions of proposed activities in Year 2. The process helped level expectations as to what the project can and cannot provide and generate consensus on the implementation mechanisms and the way forward in Year 2.

The PCU Vice-chair in Quang stressed that "...Each PCU member is responsible to collaborate and provide instruction back to his/her own agency to involve in the assigned component. S/he should review the plan from the subcontractor to provide comments to make the activities more relevant to and meet the needs of the locality. S/he should lead the monitoring work done by all subcontractors in order to ensure the quality and bring effectiveness to the people of Quang Tri in prevention of AI specifically and livestock diseases in general, and to ensure the regulations of the Government of Viet Nam and of Quang Tri are followed..."

In order to maintain close relations between the many actors and agencies involved, it was agreed to hold monthly/bi-monthly meetings with Provincial Coordination Units (PCU) and quarterly meetings involving districts and communes in future.

Subcontractors are expected to join the meetings to which international partners are also invited. The joint FAO-APII Provincial Coordinators are tasked to play a very proactive role in all this together with FAO's Focal Points in the Sub-Departments of Animal Health and APIIs provincial implementation team.

Communes Become Vigilant in Tracking Bird Flu

(Posted on <http://vietnam.usaid.gov/node/272> in Dec.2010)

USAID is supporting new teams of villagers who, for the first time, are filling a crucial gap in the avian influenza reporting chain that boosts Vietnam's ability to quickly detect and prevent the spread of avian influenza at the grassroots level.

One of them is Nguyen Van Van, who works in Dai Hoa commune in Vietnam's central Quang Tri Province. A veteran village animal health worker with 20 years of veterinary service experience, he is one of nine community based surveillance collaborators in Dai Hao village helping 60 families. Before May 2010, these village animal health workers worked independently and provided private services to households on vaccination and selling veterinary medicines. Coordinated and trained, they do a better job.

Each month, Van makes two or three visits to up to 160 households, providing animal health services such as poultry vaccination and foot and mouth disease prevention as well as instruction on how villagers can spot abnormal signs in their poultry flocks.

Vietnam is one of the hardest hit countries when it comes to bird flu. Since 2004, they have had to cull 45 million chickens and ducks, most of them early on. Fifty-nine people have died of avian influenza.

Vietnamese authorities moved quickly and effectively to launch mass vaccinations of poultry and have successfully managed the situation so far. It remains vital however, to build up a strong national surveillance systems for early detection and action, starting in communities and extending to the national level.

"There is the gap between the official surveillance system and the surveillance at community level," said Do Huu Dung, Deputy Head of the Epidemiology Division, in the Department of Animal Health, Ministry of Agriculture and Rural Development. "The Vietnamese Government is looking for a relevant community-based surveillance model that fills this gap and has the collaboration between animal health and health sectors."

Van and his colleagues are helping to fill this gap, and villagers increasingly understand their role.

"We actively reported to village animal health workers and human health workers to have immediate solution in order to minimize economic loss then we could be compensated from local authorities," said farmer Le Quan Dinh. "The vet services are helpful. We reported to them (village health animal health worker



Van, right, explains how to recognize abnormal signs in duck. Photo: Nguyen Thanh Dien at USAID's Avian and Pandemic Influenza Initiative.

and health worker) who then came immediately. We strongly believe in this network's capability."

In his first few months' time as a community collaborator, Van has identified more than 15 households, each with five to 10 sick and dead poultry, and reported them to the surveillance network. He also provides services to the neighboring communes.

With the community-based collaborator networks, USAID's Avian and Pandemic Influenza Initiative is developing one of the essential building blocks in Vietnam's national surveillance system. By training and equipping village human health and animal health workers, the project is strengthening the surveillance system from the grassroots with a unique approach that combines human and animal health efforts to fight bird flu and other emerging infectious diseases and pandemic threats.

So far 1,778 collaborators have been trained in five provinces and 123 communes across Vietnam. From July to September 2010, they reported more than 2,218 sick and dead poultry and 1,131 suspected acute respiratory infection cases in humans, many of which may have otherwise gone unreported.

With the recognition of the commune governing People's Committee and radio spots explaining the network, the community is more aware about the collaborators and the services they provide. By 2012, Quang Tri Province will enroll these village animal health workers into the state system and provide a salary to entrench the surveillance network in the communities, where these trained eyes and ears can more effectively stop sick poultry in their tracks.



Avian and Pandemic Influenza
Initiative

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Report for
Year 2, Quarter 3

July 22, 2011



Abt Associates Inc.

In association with:

Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross

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Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
CBS	Community Based Surveillance
CCHIP	Centre for Community Health and Injury Prevention
COP	Chief of Party
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
FAO	Food & Agriculture Organization (of the United Nations)
KAP	Knowledge, Attitudes and Practices
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PSA	Professional Services Agreement
RUDEC	Rural Development Center (under MARD)
TOT	Training of Trainers
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VIPA	Vietnamese Poultry Association
VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WHO	World Health Organization

Introduction

This report presents the main achievements, challenges and solutions for USAID's Avian and Pandemic Influenza Initiative during the third quarter of Year 2, April-June 2011.

The report is divided into the following thematic sections:

- 1 Animal Health Worker (AHW) Capacity Building
- 2 Agricultural Extension Worker (AEW) Capacity Building
- 3 Poultry Supply Chain Strengthening
- 4 Community-Based Surveillance (CBS)
- 5 Infection Control / Case Management (IC/CM)
- 6 Pandemic Preparedness Planning (PPP)
- 7 Cross-Cutting Issues
- 8 Success Stories

1. Animal Health Worker (AHW) Capacity Building

The goal is to develop an AHW capacity building package that is adopted by relevant public-private agencies at national and/or provincial levels, and to develop a standard Terms of Reference for AHWs for adoption by Provincial Peoples Committees (PPCs) and the Ministry of Agriculture and Rural Development (MARD).

Year 2 will focus on completing and transferring the training package for wider adoption and on establishing well-functioning networks of capable public and private animal health workers in and beyond project areas. The subcontractors include AFAP on training/capacity building and the Vietnamese Veterinary Association (VVA) on AHW network development and advocacy.

1.1 Achievements

- 1.1.1 Finalized the AHW Training of Trainers (TOT) package for printing including lesson plans, presentations, pre- and post-test questions, visual aids, etc. The package is based firmly on the new training manual issued by the Department of Animal Health (DAH) in 2010.
- 1.1.2 Completed the first round TOTs for 125 provincial trainers in five pilot provinces. 16 trainers were furthermore invited to participate in AHW monthly refresher trainings as a part of a coaching scheme.
- 1.1.3 Held a lessons learned workshop on AHW training curriculum development and training with representatives of Quang Tri-based Agricultural Colleges and Vocational Training Centers and other project provinces' SDAHs. This included discussion on formalization of AHW training and certification. A stronger commitment from other local authorities including Sub-Departments of Labor, Invalids and Social Affairs (which have local funds for career development in vocational training centers) and SDAHs/DARDs is needed to create a joint effort to replicate trainings locally. Next steps to be explored.

- 1.1.4 AHW monthly meetings and refresher trainings were conducted in all 15 pilot districts throughout the quarter. In total more than 30 training sessions have been conducted in 17 districts with about 1000 AHW participants each month.
- 1.1.5 As part of the replication plan, beginning in February, cost shared refresher trainings have been conducted in two districts of Can Tho (Ninh Kieu-Binh Thuy and Cai Rang). APII covered trainer fees and local counterparts covered travel costs. SDAHs have requested additional trainings for non-project districts in Can Tho (3), Hung (3) Yen and Quang Tri (3). Detailed plans and mechanisms for cost sharing were discussed in these three provinces, and we are consulting with USAID on how APII can best facilitate this.
- 1.1.6 As a part of the plan to strengthen AHW networks and share experiences across districts, AFAP staff and the Animal Health technical team facilitated six technical seminars on conducting AHW meetings and defining a “good” veterinary station were held between April and June, in conjunction with the SDAHs. Attendees included representatives from 45 District Veterinary Stations (DVS) and five SDAHs.
- 1.1.7 Signed new subcontract with VVA in late April, focusing on institutional strengthening and AHW network establishment with public and private partners. In early June, VVA shared its first draft “Strategy for Sustainable Development 2011-2015” with provincial SDAHs to get comments and feedback. A review workshop is planned in September in Hanoi.
- 1.1.8 Activities to strengthen the Sub-VVA network at Quang Tri started in May 2011 in three districts. A Handbook for Provincial VVA Network Development will be developed in Q4 including the lesson learns from Quang Tri sub-VVA network implementation.
- 1.1.9 Thirty Mailboxes and Information Desks were provided to all district Veterinary Stations in the five focus provinces to increase information access and sharing within AHW networks

1.2. Challenges and Solutions

- 1.2.1 DAH and SDAH's have no function or division in charge of AHW network development. Staff assigned to this task are often not specialized in such work. This makes it difficult to advocate with SDAH's and DVS for AHW network strengthening. APII invited some DAH staff from Hanoi and Vinh to attend some of the seminars with DVS in Can Tho and Quang Tri but more effort will be needed to pursue this agenda with DAH and SDAH leaders. This includes close collaboration with strategic partners such as FAO and VVA. There is growing recognition of the need for grassroots-based AHW development within the sector.

2. Agricultural Extension Worker (AEW) Capacity Building

The goal is to develop and transfer to the National Agriculture Extension Center (NAEC) and Provincial Agriculture and Fisheries Extension Centers (PAFEC) an AEW bio-security training package for small commercial poultry producers, which has been fully tested, including costing, and verified for wider adoption and replication in the national-provincial extension system.

2.1 Achievements

- 2.1.1 Held a Final Review Workshop of the Biosecurity Training Package (developed in Year 1, and finalized in Year 2 Q1) in April with more than 20 participants from NAEC, the poultry research centers, FAO, VAHPI and ASVELIS. A final version was developed with inputs from Biosecurity Working Group Members and is now ready for printing.
- 2.1.2 Co-hosted a four-day Master Trainer TOT Workshop on Biosecurity for small commercial farmers in April in Hanoi with NAEC for 24 participants from NAEC, DLP, poultry research centers, and PAFECs (10 provinces). The master trainers will conduct diffusion training to increase small commercial farmer's knowledge on biosecurity and good farming practices at farm level.
- 2.1.3 In collaboration with the PAFECs, four TOTs for Farmer Trainers on biosecurity for small commercial farmers were organized in Ha Nam, Hung Yen, Can Tho and Kien Giang with total of 100 participants from district and provincial extension Centers. The training covered updated concepts of bio-security in small scale poultry; means to improve hygiene and reduce risks through good poultry production practices; and basic training skills to provide diffusion training to farmers later on.
- 2.1.4 Five planning workshops were conducted in collaboration with PAFEC to gather information on the need and discuss opportunities study the costs of implementing diffusion biosecurity training.
- 2.1.5 With the support of DLP, Vietnam Poultry Association (VIPA) submitted a proposal for policy/sector workshops on sustainable development and strengthening of the association's network in order to promote biosecurity practices in small poultry commercial farms. In June, APII and FAO met with DLP and VIPA to discuss further. A subcontract is being prepared with VIPA to implement some of these activities.

2.2 Challenges and Solutions

- 2.2.1 Working closely with NAEC/PAFECs is necessary to help institutionalize the training/extension packages. This is a time-consuming process which requires diplomacy, patience and perseverance in order to forge and maintain close relationships with these agencies. However, MARD's strategy may affect NAEC's centralized power and therefore replication of the trainings as well as local funding. An alternative approach needs to be identified which may be more focused on PAFECs and other provincial sources. Will continue to dialogue and explore with MARD/NAEC/PAFECs.

- 2.2.2 VIPA have demonstrated their ability to coordinate with MARD institutions such as DLP, DAH and NAEC. However, detailed plans and agreement need to be discussed before a sub-contract can be developed and signed based on the APII project approach and focus. FAO will be consulted in that process.

3. Poultry Supply Chain Strengthening

The goal is to develop demonstration models in key (high risk) nodes along supply chains, together with related documents (protocols, guidelines, training materials) for wider replication by national and provincial agencies as well as other development projects/programs.

During Year 1 key intervention nodes and lists of priority risk reduction measures were identified together with public and private stakeholders. During the first half of Year 1, to guide the actual, practical risk reduction efforts in market and centralized slaughterhouse, a set of technical protocols (incl. conceptual designs drawings and Bill of Quantities with estimated construction costs) were developed for the related demonstration models. The technical protocols address veterinary public health, hygiene/sanitation, and bio-security/bio-safety issues for animals and humans before and after the nodes, in light of the existing regulatory framework and ongoing efforts in Vietnam.

3.1 Achievements

- 3.1.1 Following the "Provincial Strategy Workshop for Risk Reduction in Supply Chains" in Ha Nam in March (after late signing of MOU), APII and local counterparts undertook field trips to potential demonstration model sites. To leverage the SDAH's recently acquired fund (~120-150,000,000 VND) for veterinary hygiene and public inspection services in Duy Tien's district market and small home-based slaughterhouses, APII and SDAH are now preparing a joint proposal for these nodes as part of APII's demo model development plan.
- 3.1.2 The Dong Ha live/plucked poultry market demo model plans progressed well through frequent visits and intense meetings/ negotiations with key stakeholders. The technical proposal was completed including all technical drawings and bill of quantities.
- 3.1.3 A tripartite Stakeholder Agreement was prepared and is ready for signing by the Dong Ha City Market Management Board, Quang Tri PCU, and APII.
- 3.1.4 Following a request by local authorities, a technical review/ endorsement of the technical drawings by a local agency was processed.
- 3.1.5 Abt's Environmental Compliance Adviser, Mr. Peter Chandonait, visited Dong Ha market and the centralized slaughterhouses in Can Tho and Kien Giang in April and submitted Environmental Assessment Checklists and an updated Environmental Mitigation & Monitoring Plan (EMMP).
- 3.1.6 A second environmental assessment report for Dong Ha market was finalized by a local company as requested by the provincial Department of Environment.

- 3.1.7 An open bidding process for a construction company to implement the poultry market upgrade was initiated and APII is close to signing a contract with the selected company.
- 3.1.8 Drawings were completed for upgrading Ngoc Xuan centralized slaughterhouse in Can Tho. A grant agreement has been drafted and the final proposal is expected in early Q4. APII is happy to report a high level of commitment from the slaughter house owner to implement Circular 14 on inspection.
- 3.1.9 Preparations for a training course for inspectors are under way in coordination with Can Tho SDAH guided by Dr. Yap.
- 3.1.10 Technical drawings, protocols, and bills of quantities were completed for an upgrade of Phu Nong centralized slaughterhouse in Kien Giang. A final draft grant agreement was prepared and shared with stakeholders for comments
- 3.1.11 Economic analyses and preparations of business plans for Dong Ha Market and Phu Nong and Ngoc Xuan centralized slaughterhouses were initiated assisted by Eliot Masters (Agricultural Economist, Abt)
- 3.1.12 A slaughterhouse supply chain mapping/analysis in Kien Giang and Can Tho was undertaken by a local consultant (Nguyen Ngoc Huan). The draft report will be shared at a workshop in Can Tho in July.
- 3.1.13 Paid a visit with USAID to the LIFSAP project and started exploring the possibilities for collaboration and exchange/transfer of demo models. Now that the Technical team has finally arrived (in late June) APII will explore opportunities further.
- 3.1.14 The Supply Chain Manager (North), Mrs. Nguyen Thai Hoa, joined the team on April 4 as a long-term staff.

3.2 Challenges and Solutions

- 3.2.1 While provincial counterparts clearly are very interested in the demo models, most provinces have no 'master plans' that demarcate future locations e.g. for centralized poultry slaughterhouses and markets. In addition, the processes for local authorities to approve construction are very complex, involving multiple stakeholders with reference to different regulations. APII is learning along the way and adjusting accordingly.
- 3.2.2 Circular 14 on inspection, issued by MARD in March 2011, keeps Vietnam moving in the direction of industrialized slaughterhouses. While following this guidance will be a challenge, it is also an opportunity as it will classify slaughterhouses in Vietnam into AB and C classes and provide detailed checklists for inspection. It has also focused the attention of DARD and local authorities on the need to improve veterinary, hygiene, sanitary and food safety standards at slaughterhouses.
- 3.2.3 Similarly, the new Food Safety Law coming into effect in July 2011 will provide a strengthened regulatory framework with all the challenges and opportunities this entails for a project like APII.

- 3.2.4 A key challenge is ensuring sustainability of biological hazard risk reduction measures and the replicability of demo models in other provinces. To this end the project has adopted the following principles:
- Incorporate simple improvements/upgrades with minimal cost. The improvements aim to correct gross errors or implement prioritized measures for preventing or minimizing the risk for transmission and spread of biological hazards (HPAI, EIDs, food-borne pathogens)
 - Ensure sustained interest in biological hazard risk reduction practices by giving full attention to stakeholders' socio-economic interests (i.e. livelihoods and business/entrepreneurship focus).
- 3.2.5 Phu Nong slaughterhouse in Kien Giang recently experienced some specific challenges – namely a decrease in the volume of poultry slaughtered in the past 2-3 months, a seemingly low level of interest and commitment from SDAH to ban home-based slaughterhouses and promote slaughterhouse centralization, and a lack of interest from the slaughterhouse owners in upgrading if the throughput/volume cannot be guaranteed. The technical proposal for needs to be developed further to identify alternative solutions.
- 3.2.6 Discussions/negotiations with ASVELIS on APII support to STOP-AI supply chain activities continued. It looks like a subcontract may be initiated around October 2011.
- 3.2.7 The recruitment/approval process of a Supply Chain Manager (South) is taking longer than expected. A candidate has been identified and awaiting a final reply from Bangkok.

4. Community-based Surveillance (CBS)

The goal of this activity is to complete a CBS package, including training materials/tools, job descriptions, budget, and recommendations for adoption and scale-up in the provincial-national surveillance system. During Year 2 APII set out to: conduct a midterm review of the model; conduct refresher trainings for CBS collaborators including other emerging infectious and zoonotic diseases; connect to the poultry supply chain strengthening efforts by using high risk nodes (smallholder commercial farms, hatcheries, traders, slaughterhouses, markets) for events based surveillance, early warning and responses; gradually phase out support to community-based CBS networks to test their sustainability and potential for scale-up; and conduct a final evaluation (including costing) of the model for wider replication and uptake at provincial and national levels.

4.1 Achievements

- 4.1.1 Provided update and supplemental training courses in Quang Tri and Kien Giang for CBS collaborators who were unable to attend the last update training on EIDs (in Q2).
- 4.1.2 Revised CBS handbooks and raincoats were distributed to CBS collaborators. The revised handbook includes revised reporting forms for quick and convenient reporting of suspected events in animals and humans.

4.1.3 CBS collaborator networks continue to be active – conducting monthly network meetings, and filing rapid reports of suspected cases and monthly reports. Between April and June, the collaborators detected and reported the following incidences at the commune level to be confirmed by district level authorities:

- 0 suspected-AI cases in human
- 3705 ILI cases
- 104: Dengue fever cases
- 15 suspected AI-outbreaks in poultry
- 521 New Castle cases
- 309 Duck Plague cases
- 44 Foot and Mouth disease cases
- 25 Blue Ears cases

Surveillance data from monthly surveillance reports of 246 village collaborator meetings in the 5 provinces was collected, reviewed, and analyzed. Feedback sent to related individuals (PCs, PAMs) and relevant organizations including provincial and district level preventive medicine centers, SDAHs and DVSs.

4.1.4 APII staff visited and awarded the CBS collaborator who first detected the suspected cases in Quang Tri which had been confirmed as an outbreak of bird flu in March.

4.1.5 An updated list of CBS collaborators in the 5 provinces was made available with support from CCHIP. Initial observation from this list indicates an average turn-over rate of 11%, ranging from 4% - 26% depending on the province. In Can Tho there is a 4 % drop-out rate (indicating that the Collaborators are not replaced). More in-depth analysis will be done to inform future activities and prevent high levels of turn over or drop out.

4.1.6 To promote and share lessons learned from APII, abstracts for presentations were accepted at international and national events:

- “Sustaining Community-Based Surveillance (CBS) for early detection and response to Avian Influenza (AI) and Emerging Infectious Diseases (EIDs)” presented by the Technical Director HH/M&E during a round table discussion at the Global Health Council’s 38th Annual International Conference on Global Health: Securing a Healthier Future in a Changing World, June 13-17, 2011 in Washington DC (http://www.globalhealth.org/conference_2011/).
- Two abstracts were accepted for poster presentations at the American Public Health Association (APHA) conference which will be held in September. The papers are shown at the APHA website as the following links:

<http://apha.confex.com/apha/139am/webprogram/Paper242729.html>;
<http://apha.confex.com/apha/139am/webprogram/Paper242716.html>

- Technical Director for HH/M&E participated in and have a presentation on CBS at “THE JOINT DAH-FAO INFORMATION SHARING MEETING”

4.2 Challenges and Solutions

- 4.2.1 CBS diffusion trainings and the BCC campaign occurred at the same time, stretching both APII staff and provincial counterpart staff thin and making it a bit difficult to ensure quality because there was simply not enough time/man power to do all of the monitoring that would be optimal.
- 4.2.2 The turnover rate for CBS collaborators, while fairly low, still required effort to replace staff. This is particularly true for animal health workers in Can Tho. The rate was higher in this case because animal health collaborators less often had veterinary skills, and dropped out more often. However, new replacements were identified and supplement training courses and on-the-job training implemented. We have also implemented a better screening process for Animal Health workers to help mitigate the turnover rate in the future.
- 4.2.3 Including additional EIDs into the reporting forms required the APII team and local provincial health and animal health staff to constantly provide on-the-job training for the collaborators. Once the collaborators became accustomed to the new forms, they have found them user friendly.

5. Infection Control/Case Management (IC/CM)

The goal is to develop an IC/CM ‘model’ with training package/tools, guidelines etc. piloted and tested/verified (including costing), for wider adoption in Vietnam.

In Year 2, IC/CM activities aim to disseminate the APII district level IC model (including training package, tools, and guidelines) and SARI/AI case management guidelines for village, commune and district levels to MOH and provincial authorities beyond the five focus provinces as well as to other development partners, for wider adoption.

5.1 Achievements

- 5.1.1 The plan for infection control (IC) activities at district hospitals and tools for an IC situation analysis were finalized with Hanoi Society of Infection Control (HANSIC) and sent to provincial Department of Health and eight selected district hospitals of the five provinces. The tools will be used for baseline assessments and monitoring compliance during the intervention.
- 5.1.2 IC materials (hand rub gel, liquid hand-wash, surface cleaning liquid, racks for hand rub tube, masks) were distributed to eight district hospitals.
- 5.1.3 Monitoring meetings were held with the IC teams from the five intervention district hospitals, and facilities visited to see how infection control measures were being implemented during the first round of interventions and plans for moving forward discussed.
- 5.1.4 APII’s human health technical director presented a paper titled: *“Infection control situation from 3 districts in Quang Tri: Findings from the rapid*

assessment.” in June at the Infection Control Workshop in Hue which was organized by Hue Infection Control Society.

5.2 Challenges and Solutions

- 5.2.1 Knowledge about, and practice of, infection control measures among healthcare providers, as well as the existence of infrastructure to promote IC interventions in district hospital settings, are still low. IC is often considered to be activities related to cleaning, laundry, disinfection, and waste management as opposed to a public health and hospital management issue. As a result, staffs assigned to IC teams have skill levels below that required of an IC specialist. To address this, the team is working closely with subcontractors and intervention hospitals to provide training, behavior change communication, close monitoring, coaching, and guidance in order to help hospitals fulfill their IC needs according to MOH guidance/Circular No 18.
- 5.2.2 In order to be sustainable and successful, IC interventions must be integrated into and support the hospital's routine work. Therefore, some planned activities had to be adapted to the real situation at each hospital, in some cases slowing down the process of the intervention.
- 5.2.3 HANSIC has great professional expertise, but lacks some of the coordination, oversight and administration skills needed to handle the contracting process without close support and coach from the team.

6. Pandemic Preparedness Planning (PPP)

The goal is to develop PPPs in selected focus provinces, introduce the package in other provinces, and advocate for its wider adoption throughout Vietnam. In Year 2, APII developed an MOU with VNRC to revise, test and finalize improved PPPs for wider replication.

6.1 Achievements

- 6.1.1 Field data was collected and the PPP situation analysis completed. Synthesized results of the findings will be used for intervention steps.
- 6.1.2 A subcontract for PPP related work was signed with VNRC on June 30 and sent to VNRC for signature. We expect it to be completed early in Q4. The work will focus on Kien Giang province.

6.2 Challenges and Solutions

- 6.2.1 The process for subcontracting with VNRC was slow due to the paperwork and negotiation process.

7. Cross-Cutting Issues

Behavior Change Communication (BCC)

The BCC work aims to identify appropriate behaviors and messages for key target audiences and to strengthen the BCC capacity of national and provincial

stakeholders. It directly feeds into and helps integrate and enhance the work of the other technical components in animal and human health.

7.1 Achievements

- 7.1.1 To prepare manpower for BCC seasonal campaign, more than 100 communicators selected among animal health workers, human health workers and Women's Union members from the commune level of the five provinces were trained on BCC and facilitation skills using a discussion flipchart. These trained communicators were to conduct small group discussion with target audience on desired behaviors promoted during BCC seasonal campaign (hand washing, reporting suspected cases and buying and selling healthy poultry). About 120 facilitators and organizers of Community Events were trained in on facilitation and organizational skills.
- 7.1.2 BCC materials including Northern and Southern flipcharts to facilitate small group discussions, pocket guides to organize and facilitate small group discussion with small and medium poultry producers and community event (Northern and Southern versions), raincoats, T-shirts, pens, and notebooks were produced and distributed.
- 7.1.3 BCC seasonal campaigns were completed in five focus provinces. Activities included:
- distribution of wall calendars addressing three key priority desired behaviors to small and medium poultry producers (S3F);
 - small group discussions with S3F (480 producers in Can Tho, 600 in Kien Giang; 480 in Ha Nam, 480 in Hung Yen, 600 in Quang Tri participated three times in the group discussion) facilitated by trained communicators and
 - 42 community events at commune level (4 Community Events in Can Tho; 12 in Hung Yen; 6 in Ha Nam; 8 in Kien Giang; 12 in Quang Tri) with an estimated 300-500 participants/each community event.
- The BCC seasonal campaigns were completed with a two-day review workshop in each province to determine lessons learned for the upcoming activities and collect comments on BCC materials used during the campaign for refinement. The final workshop was conducted in Can Tho in late June.
- 7.1.4 Provided coaching to BCC provincial trainer teams of Quang Tri, Can Tho and Ha Nam to prepare training plan and materials on communication skills and counseling for all CBS collaborators.
- 7.1.5 Conducted training courses on communication skills and counseling for all CBS collaborators in Quang Tri (more than 300 collaborators) and selected CBS collaborators (around 60 collaborators) in four districts of Can Tho. The trainings were expected to improve CBS collaborators' service delivery skills.
- 7.1.6 Conducted design workshops with provincial BCC trainers, health and animal health officers, and stake holder representatives in Kien Giang in Quang Tri to brainstorm ideas for the design of BCC materials for poultry

slaughterers, slaughterpoint owners, live bird and plucked market vendors, and collectors. Discussion guides are in the development process by the BCC team and consultants.

- 7.1.7 Organized a design workshop to help Can Tho develop its Provincial Integrated Communication Plan. Hosted by Can Tho's PCU, the workshop benefited from multi-sector and multi-level contributions of representatives from MOH, MARD (NAEC, RAHO 7); PAHI, DARD of Bac Ninh province, APII, and representatives of Can Tho Animal Health, Health, Communication Agencies and Can Tho mass-organizations. Participants agreed on the outline, the writing group and the process to get this plan officially approved by the PPCs.
- 7.1.8 Regularly published articles, news on BCC activities implemented in provinces and lessons learned through provincial newspapers.
- 7.1.9 During this reporting period, the KAP survey protocol was developed together with a request for proposals. A research firm, Nielsen, was selected through an open bidding process to undertake KAP survey which will happen in the next quarter.
- 7.1.10 A scope of work was developed with USAID's approval to promote seven selected desired behaviors on hand-washing and environmental sanitation for prevention of AI and EIDs through TV spots in a joint effort with UNICEF, Lien Aid and the Center for Rural Water Supply and Environmental Sanitation (NCERWASS).

7.2 Challenges and Solutions

- 7.2.1 Three-day training courses for small group discussion communicators were proven to only provide communicators with very basic facilitation skills. One-day trainings for Community Event facilitators and organizers were insufficient. We will consider adding more days for participants to role play and practice facilitating discussion using flipcharts to promote desired behaviors. Having training guides on interpersonal communication could be very helpful for provincial trainers to conduct their training.
- 7.2.2 Through the reports of BCC campaign activities and review workshop, we determined that provincial subcontractors need more analytical thinking and writing skills. With hands-on coaching, templates and guidance from BCC team, it was still hard for them to document and show results and achievement during the review workshop. Building capacity for provincial trainers and subcontractors took time and sometimes created tension when trying to make short deadlines.
- 7.2.3 Despite Can Tho having started developing their Provincial Integrated Communication Plan before Ha Nam, it was hard to mobilize support and involvement from representatives of all key provincial agencies to participate in this collective work. We have agreed that the BCC team will work more closely with the writing group and subcontractors and that difficulties or issues will be regularly reported to the PCU to help identify solutions, as needed.
- 7.2.4 The development of the Ha Nam Communication Plan was delayed due to recruitment of a national consultant to support the province and APII in

this work. The BCC team decided to start the work without support from a consultant.

- 7.2.5 Provincial leaders find it difficult to mobilize local resources for AI and EID prevention activities, because of other priorities and the lack of a national plan for AI/EID prevention.
- 7.2.6 Post-training support and monitoring for trained CBS collaborators should be done to ensure participants can contribute more to promotion of AI and EID prevention practices through their daily interaction with households. Experience and issues can be integrated into their monthly CBS network meetings.
- 7.2.7 Provincial BCC trainers had difficulties preparing training plans and materials: The BCC team had to spend a lot of time virtually and physically in the provinces to provide assistance to each training team and each training to ensure quality.
- 7.2.8 Preparation of BCC materials for target supply chain nodes audiences could not begin until prioritized supply chain nodes in the provinces were identified. This led to some delays of BCC integrated activities at nodes which will spill into Year 3.
- 7.2.9 It is harder to collaborate with national level especially with the communication sub-committee of the National Steering Committee for Human Influenza Pandemic Control and Preparedness (NSCHP) and MOH when the risk situation and risk perception are low. National level bodies are more committed and accustomed to responding to outbreaks.

Provincial Coordination and Implementation

7.3 Achievements

- 7.3.1 Field visits were organized for USAID and Abt HQ to visitors:
 - USAID's Communications Adviser attended a community event in Ha Nam province;
 - Kathleen Flanagan (Abt's CEO) and Susan Scribner (Abt Portfolio Manager) visited project activities in Can Tho and Quang Tri provinces.
- 7.3.2 Updates were provided to the PCUs on a monthly basis covering the project implementation plan in order to engage provincial organizations in monitoring, supporting and disseminating project successes.
- 7.3.3 Organized Semi-annual Review Workshops in 5 target provinces that helped strengthen ownership and participation of PCU and provincial counterparts in reviewing project performance and sharing lessons learned from the last eight months in order to improve implementation plan for the second half of the year 2 (Hung Yen - May 20, Kien Giang - May 26, Can Tho - May 27, Quang Tri - June 7 and Ha Nam – June 17).
- 7.3.4 Following current Vietnamese regulations, semi-annual reports on project implementation were prepared for each of 5 provinces and submitted to provincial authorities for their information and monitoring in June.

- 7.3.5 Complied with all requirements for legal operation of the project in provinces (obtained license from Can Tho Department of Planning and Investment.)
- 7.3.6 Organized bi-monthly meetings of PI team (April 14th and May 30th) with all PCs and PAMs from 5 provinces. These regular bi-monthly meetings serve to help provide timely updates on the progress and implementation plans in each province, as well as provide PI staff with technical updates that are necessary for them to monitor and support project activities in the provinces.
- 7.3.7 Maintained close communication with provincial stakeholders for smooth model implementation in the provinces. This helps ensure that: logistic and administration needs are prepared and complied with, technical designs are shared and agreed upon with partners, and sites and participants are identified for model implementation in a timely way.
- 7.3.8 Shared weekly work plans for PCs with FAO.

7.4 Challenges and Solutions

- 7.4.1 A new PC began work in Ha Nam in March 2011. At the beginning of his tenure the PCU members were not receiving timely and informative updates on the project implementation, limiting PCU participation. This problem was discussed at the semi-annual review workshop (June 17th), and the PC has committed to prioritizing the provision of timely updates to the PCU with monthly reports and plans.
- 7.4.2 The rice harvesting season in June constrained implementation of activities in the field, because most provincial partners are from the agriculture sector and were focused on the harvest.
- 7.4.3 The National Election on May 22nd also delayed community activities..
- 7.4.4 General comments from review workshops showed that: after nearly eight months of implementation, about 2/3 of Year 2 activities had been completed according to plan, however disbursement had reached only 55% of the provincial budget. This indicates high pressure for the next quarter.

National Coordination & Policy Dialogue

7.5 Achievements

- 7.5.1 The AH team maintained close contact with FAO in particular, as well as with other partners (VAHIP, LIFSAP, ASVELIS) for coordination and collaboration on supply chains and related work. VAHIP and LIFSAP have indicated interest in our supply chain demo models. Need to follow up with both. LIFSAP Technical Consultants arrived in-country in June.
- 7.5.2 The AH team finalized the bio-security training package in close collaboration with NAEC, PAFECs and Bio-security Working Group members.
- 7.5.3 The AH team maintained close dialogue with DAH on the development of an improved training package for AHWs/Vets.

- 7.5.4 The AH team continued to work on new relationships with province based agricultural colleges/universities and vocational training centers for formal training and certification of local AHWs, in collaboration with SDAHs who will certify grassroots level AHWs.
- 7.5.5 The HH team continued to work closely with FAO on surveillance.
- 7.5.6 The HH team continued to work closely with WHO and MOH on IC activities.
- 7.5.7 The HH team stepped up the efforts to enter a contract with VNRC on PPP work.
- 7.5.8 The BCC team stepped up its dialogue with API partners and BCC working group members, incl. the sub-committee on communications under MOH.
- 7.5.9 The BCC team worked with DAH, NAEC, NCHCE, the Sub-Committee on Communication (MOH), FAO, WHO and PAHI to promote a 'One Health' approach in AI/EID prevention reflected e.g. in the Integrated Communication Plans being developed with Can Tho and Ha Nam provinces.
- 7.5.10 The BCC team maintained close contact with provincial mass-media including provincial radio, TV and journal and tracked their articles routinely.
- 7.5.11 It is now becoming standard routine across all three technical teams to consult with FAO and WHO for technical verification on AH, HH related issues.
- 7.5.12 The PI team kept FAO well informed of provincial plans and the weekly activity schedules of the joint PCs.

7.6 Challenges and Solutions

- 7.6.1 Coordination with multiple partners and gaining access to decision-makers remains a challenge, not least due to the prevailing perception of Abt being an NGO, but APII is benefiting from personal networks, collaboration with FAO and WHO, close contact with the USAID mission, and growing awareness and recognition of its work. Options such as working with MARD's International Support Group need to be explored in consultation with USAID.
- 7.6.2 The fact that some of FAOs international staffs are leaving in the coming months may pose a new challenge to the coordination. APII will maintain close contact with the FAO office on the way forward.

Monitoring & Evaluation

APII's M&E work aims to strengthen existing systems in the provinces, and help close existing gaps between grassroots level M&E and provincial-national levels M&E and reporting. In addition, APII acts as the repository for PMP indicators collected under USAID's API initiatives, providing analysis and reporting on this data.

7.7 Achievements

- 7.7.1 APII compiled USAID's PMP data submitted by FAO and WHO for Year 1 and by FAO and APII for the first six months of Year 2. The process of data collection, compilation and analysis helped review the PMP and identify issues related to indicators' relevance, operational definition, means of verification, data validity, availability and accessibility and data collection mechanism.
- 7.7.2 On behalf of USAID/Vietnam, APII organized "USAID Vietnam's HPAI and EPT PMP Data Collection Review" workshop in May attended by 39 representatives from USAID, USAID's partners, PAHI and local partners. In this workshop results of data compilation and analysis were presented.
- 7.7.3 APII released an RFP for bidders on a post-training assessment.
- 7.7.4 Data for APII performance monitoring was collected regularly and updated into the Project's Log-frame per annex. Training related documents and data are being compiled and centralized systematically which will be useful for desk review in the upcoming post-training assessment and retrieving in future.
- 7.7.5 Quality assurance related measures were promoted. As one such measure, the M&E Manager joined with different teams to monitor and strengthen quality of activity implementation in the field through providing technical assistance and coaching to local partners (for example, BCC trainers and CBS collaborators) on-site. Through these trips, quality related issues, as well as capacity building needs for local partners, were identified and feedback provided immediately to the project management. Additional tools such as a trainer's assessment and quality assurance tools were introduced. In parallel, AIM (activity implementation monitoring) reports/checklists submitted by local partners and project staff were compiled and analyzed bi-monthly. Various valuable findings related to activity quality, performance and capacity of sub-contractors, local partners, local trainers and project implementers at grass root level cross components were obtained.
- 7.7.6 An M&E mini-framework for the live bird market in Quang Tri province was assessed, with collaboration between the M&E and AH teams.

7.8 Challenges and Solutions

- 7.8.1 The workshop on USAID/Vietnam's HPAI and EPT PMP Data Collection identified the following issues:
- A number of PMP indicators still have unclear operational definition and/or lack of alignment with the Government's existing record keeping system. These issues were discussed during the USAID's PMP workshop for PMP review and revision.
 - Quality of collected data has weaknesses such as limited data validity/reliability and precision, especially of the indicators on local training.

- Data collection process has issues related to difficult coordination among many facilities, inconvenient data collection template, and limited access to data source, especially of those data on local training/interventions.

- Linkage between the PMP and current existing government's record keeping system and usefulness of each PMP indicator for the local program management are not very clear, especially to the local partners.

Efforts need to be made to address these issues in order to collect valid data that will be useful for preventing and controlling HPAI and EPT across sectors, organizations, and funders/donors. This will require not only micro-level measures such as tool improvement and training for local partners on indicators and data collection but also at the macro-level such as participatory multi-sector approaches, enhancing management and coordination of information systems, and promoting data use for decision making.

- 7.8.2 Baseline data for certain indicators in the project's log-frame are not available. The situation analysis report produced in AI Mekong project and previous KAP surveys did not always align with these indicators. Proxy indicators will be used if possible, in the process of establishing (retroactively) the general baseline for APII.
- 7.8.3 Quality of activities is effected by various factors such as subcontractor's performance, commitment of local partners, technical assistance and coaching by technical teams, capacity of project implementers in local areas (e.g. local trainers/CBS collaborators) and even the nature of the system (e.g. human health vs. animal health). Due to this, issues related to quality vary across provinces and components. This requires constant attention, efforts and tailored solutions, including continuous and advanced training for local partners. In turn quality improvement and sustainability are long-term processes.

Administration & Finance

7.9 Achievements

- 7.9.1 Recruited Admin Manager. Ms. Nguyen Minh Son.
- 7.9.2 Recruited Strategic Communications Manager (in lieu of Policy Advocacy Manager), Ms. Tran Thanh Binh.
- 7.9.3 Recruited Supply Chain Manager (North), Ms. Nguyen Thai Hoa. Supply Chain Manager (South) is pending USAID approval.
- 7.9.4 Mentored and trained new F&A Assistants in field offices.
- 7.9.5 Managed all subcontracts and consultant agreements.

7.10 Challenges and Solutions:

- 7.10.1 Lengthy approval procedures for consultants and new staff following the new directions. Affects implementation.
- 7.10.2 Completion of the biodata form continues to be a challenge for most consultants despite repeat trainings and guidance by the F&A team.

causing delays. Disclosing salary information is sometimes counter-cultural. The F&A team will continue and where necessary step up the guidance.

- 7.10.3 Unfamiliarity with the subcontracting concept, formats and procedures causing delays. The fact that there is no Vietnamese version of the contract (only signed in English) is met with some reluctance. Low capacity among some subcontractors adds to the challenge.
- 7.10.4 The market for animal health consultants is limited. Many potential candidates are Government staffs, who 1) require leave without pay letters which can be difficult to obtain, and 2) typically have a history of low government salary making it difficult for the project to justify hiring them on a competitive market-based salaries. Some consultants are declining for these reasons.
- 7.10.5 The challenge with BCC and human health consultants on the other hand is that they often have a salary history that places them above the USAID threshold level, requiring separate approval.
- 7.10.6 Many counterparts continue to consider APII cost norms to be too low and inflexible, when comparing us with other donor funded interventions. This regularly causes complaints and frictions.
- 7.10.7 We did not obtain a license with Paccom, due to the fact that Abt is a for-profit entity rather than an NGO. Alternatives are now being considered by Abt headquarters.
- 7.10.8 According to Ernst & Young, APII cannot obtain VAT exempt status on locally procured goods and services. This was communicated to USAID.

8. Success Stories

8.1 Innovative and User-friendly BCC Materials Help Communicators Share Information about AI and EIDs



Communicators facilitate a small group discussion with flipcharts.

Based on the results of the API BCC Campaign Assessment conducted during the summer of 2010, as well as inputs from local government officials, the project developed and carefully pre-tested a set of BCC materials for the 2010-11 campaign. These materials included wall

calendars for small and medium scale poultry producers, flip charts and

how-to guides for small group discussions, how-to guides for facilitating and organizing community events, as well as promotional materials including raincoats, t-shirts, pens and notebooks highlighting the BCC campaign's theme "Healthy Poultry Benefits the Family and the People" and encouraging the three "good behaviors": hand washing, reporting sick or dead poultry and buying and selling only healthy poultry.

To educate and promote the good behaviors among all actors of the poultry supply chain who are at risk of exposure to HPAI and other emerging infectious diseases, and who at the same time are also well-positioned to help prevent disease transmission, the project recruits and trains BCC trainers and communicators. While animal health, human health and communication officers have been tasked with these type activities in the past, most have not had sufficient job aids and support documents to assist them previously. In the final assessment of the BCC Campaign review, the communicators praised the usefulness and uniqueness of the materials. In particular they found the step-by-step instructions for implementing activities and inputs on preparing for logistical needs and even decorations for the events very innovative and helpful. In addition they noted that the flip charts and wall calendars were user-friendly and that the color images were very attractive. For example, it was stated that villagers generally receive leaflets that get thrown away, however, the APII wall calendar is more practical and sustainable, sharing motivating messages with the target audience every time they check the date.

The BCC materials' usefulness has also allowed the messages to go beyond the originally targeted audience. Mr. Nguyen Van Son, a teacher in the Thuy Lieu Secondary school, Go Quao district, in Kien Giang saw a communicator using a flipchart for a small group discussion. He was impressed by the ease of use, and the messaging in the flip chart, and asked for permission to use the materials with his students during extra-curricular activities.

8.2 Integrated Follow-up after Small Group Discussions helps promote changes in behavior in addition to increase awareness about Risk Reduction for AI/EIDs

The BCC Campaign Assessment conducted during the summer of 2010 confirmed that while awareness about AI prevention has improved, low risk perception prevails. In an attempt to improve changes in prevention behaviors, not just awareness, the 2010-11 Seasonal BCC Campaign focused on addressing behavior change determinants for our key target audiences related to their uptake of AI/EID prevention practices by emphasizing the potential benefits to their livelihoods from risk-reduction actions.

As a means to do this, the project trained Communicators to facilitate small group discussions and to promote behavior change through inter-personal communication with small and medium sized commercial poultry producers and farmers. Over a six to seven week period each group of producers/farmers were invited to participate in three discussion sessions at which barriers and motivators for the use of risk-reduction practices were discussed. Each session focused on a specific behavior or risk reduction measure that the farmers should use on their farms. The Communicators then conducted follow-up observation visits to 10-30% of attendees. During these visits they used a checklist of promoted behaviors to see if participants had understood the lessons taught during the small group discussions, and that they were also changing their practices. They then discussed in detail the barriers that the farmers encounter when trying to apply risk reduction practices and brainstormed ways to overcome and address these barriers.

During the follow-up visits, Communicators often had opportunities to directly observe the farmers washing their hands, one very basic risk reduction practice. Follow-up visits confirmed that 75-90% of households visited are washing their hands after contact with poultry, and many are also encouraging their family and neighbors to do so as well (20-60%). Unfortunately, because of the limited time available for, and the timing of follow-up visits, Communicators were unable to actually observe other risk reduction practices (reporting sick or dead poultry to CBS collaborators and only buying or selling only healthy poultry). The upcoming APII KAP study will provide additional information on the behavior changes.

Many of the Communicators trained this year are also CBS Collaborators. As CBS Collaborators, these particular Communicators will have additional opportunities to observe reporting of sick or dead poultry, and to follow-up with small group discussion attendees. By training CBS Collaborators in BCC skills we have increased the opportunities for informal follow-up and enhanced local skills and capacity for promoting risk reduction behaviors while conducting surveillance in the communities.



A small commercial farmer washes her hands after touching chickens during a follow-up visit.



Avian and Pandemic Influenza
Initiative

GHS-I-08-07-00003-00

Year 2, Semi-Annual Progress
Report
(October 2010 - March 2011)

April 28, 2011



Abt Associates Inc.

In association with:

Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross

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Annex 1 – Updated International Consultants & Travel Schedule

Annex 2 – Updated Subcontractor & Local Consultants Schedule

Annex 3 – Updated Annual Work Plan

Annex 4 – APII Log-frame (including PMP indicators)

Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
CBS	Community Based Surveillance
CHEC	Center for Health Education and Communication
COP	Chief of Party
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DEEFS	Department of Economics, Environment and Farming Systems
FAO	Food & Agriculture Organization (of the United Nations)
H2P	Humanitarian Pandemic Preparedness
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PSA	Professional Services Agreement
RUDEC	Rural Development Center (under MARD)
SDAH	Sub-Department of Animal Health
TOT	Training of Trainers
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VIPA	Vietnam Poultry Association
VNRC	Vietnam Red Cross
VVA	Vietnam Veterinary Association
WHO	World Health Organization (of the United Nations)

Executive Summary

This report presents the main activities, achievements, challenges and solutions for USAID's Avian and Pandemic Influenza Initiative (APII) during the first six months of Year 2, October 2010 – March 2011.

Overall the project is making good progress in most areas. While the emphasis is still very much on developing 'field' level models, the focus is gradually beginning to shift towards exploring mechanisms for adoption and replication and influencing planners/decision-makers to sustain the efforts beyond the project's lifetime.

Most activities are being outsourced to subcontractors with APII technical teams guiding and providing quality assurance, supported by short-term experts. The restricted choice of subcontracting modalities remains a challenge however, and combined with the challenges in finding good consultants and often longer than expected preparation and approval processes this is resulting in some delays. The innovative nature of the work also means that predicting and adhering to (optimistic) plans, timeframes and targets often remains difficult. Below is a status summary of the main thematic areas.

Animal Health Worker (AHW) Capacity Building: through the AFAP subcontract and in close dialogue with Department of Animal Health (DAH) and Sub-Departments of Animal Health (SDAHs), APII is finalizing an improved training package, based on DAH's 2010 manual for training of AHWs. Opportunities for formal training and certification of AHWs by provincial Agricultural Colleges/Universities and Vocational Training Centers and licensing by SDAHs are now being explored.

Agricultural Extension Worker (AEW) Capacity Building: together with the National Agricultural Extension Centre (NAEC) and provincial extension centers APII is in the process of finalizing an AEW training package on improved farm-level bio-security to be applied in the five focus provinces and beyond.

Poultry Supply Chains Strengthening: three high risk nodes have been identified for development of demonstration models incl. the poultry market in Dong Ha City, Quang Tri and two centralized slaughterhouses in Kien Giang and Can Tho. Conceptual designs for physical upgrades/construction are nearly ready for approval and tendering. Technical protocols for guiding and monitoring operations have been prepared. The development of training programs for key public and private stakeholders has begun. On top of this, APII is negotiating with ASVELIS to support continuation of USAID's STOP AI work under new a subcontract.

Community-Based Surveillance (CBS): this period we moved the CBS model to an events-based surveillance model covering HPAI, Influenza-like Illnesses, Dengue Fever, Cholera, and Newcastle Disease in chickens, Plague in ducks, Porcine Reproductive and Respiratory Syndrome (PRRS or 'blue ears) in pigs, and Foot and Mouth Disease (FMD) in livestock. Rapidly nearing the time for testing to what extent/how the model can be sustained without APII support. A suspected Highly Pathogenic Avian Influenza (HPAI) outbreak was reported by a CBS collaborator and subsequently confirmed in Quang Tri.

Infection Control/Case Management (IC/CM): APII completed a series of training courses with HCMC and Hanoi Infection Control Societies (subcontractors) and are now in the process of planning for roll-out at district and commune levels. In addition we forged a new partnership with PEPFAR, which may lead to the adoption of improved IC/CM practices beyond APII's focus provinces.

Pandemic Preparedness Planning (PPP): the completion of a subcontract with VNRC was delayed due to VNRC's disaster relief commitments (e.g. flooding in central Vietnam) and other events. The subcontract is expected to be signed in April, some months behind schedule. A PPP situation analysis was prepared in the meantime by an independent consultant.

Cross-Cutting Issues: the Year 2 BCC strategy with key messages was developed in close consultation with provinces and other key partners and preparations were made for the BCC campaigns in May-June. This included development of materials, implementation of TOT followed by diffusion training, and working with media. In addition we started work on communication guidelines in consultation with FAO for Can Tho and Ha Nam. The 'One Health' Newsletter work with communication agencies in the Ministry of Health (MOH) and Ministry of Agriculture and Rural Development (MARD) is behind schedule in part due to challenges in engaging with and remunerating government officials and in part due to a temporary staffing gap on the BCC team. Lastly, we initiated Knowledge, Attitudes and Practices (KAP) survey preparations.

APII signed new memoranda of understanding (MOUs) with all five focus provinces; facilitated by the Provincial Implementation Team (Ha Nam was delayed due to leadership changes). Provincial Coordinators with joint APII-FAO terms of reference and responsibilities were engaged. The two satellite offices in Can Tho and Quang Tri shifted location from within DARDs to independent premises with easier access for all partners, public and private alike. The relationships with key provincial stakeholders remain good, although complaints regarding the 'strict' cost norms and the fact that APII does not provide allowances to government offices remain a sore point.

The M&E work is now progressing well with the M&E Manager on board since November. A Log-Frame for the whole of APII is being prepared and will capture PMP indicators. Some of the activities on APII, such as the supply chain work, which address broader economic and livelihoods issues are not easily captured within the PMP framework and require development of separate "mini Log-Frames."

The F&A team was strengthened considerably with two F&A Assistants on board in the two satellite offices and a new Administrative Manager scheduled to join the team in April. This should help ease some of the constraints around the management of subcontracts and consultants.

1. AHW Capacity Building

The goal of this component is to develop an AHW capacity building package that is adopted by relevant public-private agencies at national and/or provincial levels, and to develop a standard Terms of Reference for AHWs for adoption by Provincial People's Committees (PPCs) and MARD.

Year 2 focuses on completing and transferring the training package for wider adoption and on establishing well-functioning networks of capable public and private animal health workers in and beyond project areas. The subcontractors include AFAP for training and capacity building and Vietnam Veterinary Association (VVA) for AHW network development and advocacy.

1.1 Achievements

- 1.1.1 The Year 1 subcontract with AFAP was extended through November, 2010 and APII initiated a new/modified contract for Year 2 in December, 2010. With a new Country Director and field staff on board, AFAP has strengthened its in-country team. AFAP is now engaging more closely with provincial counterparts, notably the SDAHs and Provincial Agriculture and Fishery Extension Centres (PAFECs) through lessons learned meetings, technical seminars, planning workshops, and Provincial Coordination Unit (PCU) meetings, etc.
- 1.1.2 The AHW Training of Trainers (TOT) package, which is based firmly on the training manual issued by DAH in 2010, was updated. Additional modules on bio-security, basic surveillance and zoonotic diseases emphasizing participatory training and learning by doing were developed together with SDAHs and local consultants. The materials were shared with DAH and are scheduled for final review in April, 2011.
- 1.1.3 Tested the TOT package in Quang Tri through a 30-days training course for 25 AHWs (all participants did received certificates co-signed by the Director of SDAH).
- 1.1.4 The first TOT for provincial trainers is being prepared for April 2011 for the five focus provinces plus 3-5 additional provinces.
- 1.1.5 Began discussions with Agricultural Colleges and Vocational Training Centers to develop a formal AHW training and certification (while Sub-DAH can issue AHW licenses). Quang Tri may spearhead this process.
- 1.1.6 AHW monthly meetings and refresher training courses were conducted in all 15 pilot districts. Topics included bio-security and good husbandry practices, disease surveillance and common poultry diseases such as Duck Plague, Duck Hepatitis, Newcastle, etc. From February, AFAP began testing a more cost effective for refresher trainings model in two districts in Can Tho province. In this model, APII provides no allowances for participants, only trainers' fees, room rental and stationery/materials support.

- 1.1.7 To strengthen AHW networks, three technical seminars were conducted with SDAHs, on 'How to manage a good AHW meeting' Similar Seminars will take place every two months in all 5 provinces.
 - 1.1.8 A scope of work (SOW) and a Professional Services Agreement (PSA) were developed for a new subcontract with VVA to continue their work on institutional strengthening and AHW network establishment with public and private partners. This is expected to commence in April 2011.
- 1.2 Challenges and Solutions
- 1.2.1 The subcontracts with AFAP and VVA are running behind schedule due to staffing and consultant recruitment/approval issues. The APII team will continue to work very closely with both subcontractors in order to minimize any further delays.
 - 1.2.2 DAH and SDAH's do not currently have a designated function or division/department in charge of AHW network development. Where vet staff are assigned to this oversee this task, they typically do not have a background or training in institutional development. This makes it difficult to advocate with SDAH's and District Veterinary Stations on AHW network strengthening. APII will continue to work with DAH/SDAH leaders, in close collaboration with key partners such as FAO and VVA, to address this issue. Happily, there is growing recognition of the need for grassroots-based AHW development throughout the national-provincial animal health system.

2. Agricultural Extension Worker (AEW) Capacity Building

The goal is to develop an AEW bio-security training package for small commercial poultry producers, which has been fully tested (including costing), verified and transferred to NAEC and PAFECs for wider adoption and replication within the national-provincial extension system.

2.1 Achievements

- 2.1.1 The AEW bio-security training package was drafted in Year 1. During Q1 of Year 2 drawings, visual aids, flipcharts, and comic stories were completed by NAEC consultants and artists. A technical review workshop was held in January, 2011 in HCMC followed by field testing in March. A second review workshop is planned for April followed by a TOT for Master Trainers in collaboration with NAEC and members of the Bio-security Working Group in preparation for eventual dissemination by the NAEC/PAFEC system.

2.2 Challenges and Solutions

- 2.2.1 Each region has different traditions and habits in poultry production and a training/extension package should reflect this. APII has prepared separate materials on chicken production for the north and

duck production for the south which need careful field testing for effective promotion of good husbandry practices.

- 2.2.2 We are slightly behind schedule in developing the training materials. Working closely with NAEC/PAFECs to help 'institutionalize' the training/extension packages is a time-consuming process which requires diplomacy and patience in order to forge and maintain close relationships with these key partner.

3. Poultry Supply Chain Strengthening

We aim to develop demonstration models in key (high risk) nodes along supply chains, as well as related documents (protocols, guidelines, training materials) for wider replication by national/ provincial agencies and other development projects/programs.

During Year 1 key intervention nodes and lists of priority risk reduction measures and public/private stakeholders were identified. To guide the actual, practical risk reduction efforts in each node, demonstration models will be developed in Year 2. Aside from physical upgrades of facilities this includes development of technical protocols on veterinary public health, hygiene/sanitation, and bio-security/bio-safety and related training of public and private partners.

The project also plans to provide support to the continuation of STOP AI supply chain work.

3.1 Achievements

- 3.1.1 Completed Risk Reduction Strategy Workshops with public and private partners and identified key intervention nodes (model demonstration sites) in the main poultry supply chains of all five provinces. The workshops were planned and conducted with FAO inputs. The workshop in Ha Nam was delayed till March due to late signature of an MOU.
- 3.1.2 Made multiple site visits to centralized slaughterhouses in Can Tho and Kien Giang, home-based slaughter points in Quang Tri, live bird/poultry meat markets in Quang Tri and Ha Nam, and poultry shops/restaurants in Hung Yen for verification of demo sites, and discussions of interventions including financing. A local architect and the international bio-security consultant provided significant inputs.
- 3.1.3 Prepared draft conceptual drawings and technical protocols for two centralized slaughterhouses (Can Tho, Kien Giang) and the live bird/poultry meat market in Dong Ha (Quang Tri) and shared with all partners on several occasions (including a large technical workshop in December 2010 with DAH, DLP, FAO, VAHIP, and ASVELIS). VAHIP and LIFSAP have expressed interest in adopting some of the protocol work.
- 3.1.4 Prepared final proposals for upgrading the poultry section of Dong Ha market (Quang Tri) and two centralized slaughterhouses in Kien

Giang and Can Tho with complete technical drawings and bills of quantities in close consultation with key local counterparts and partners (public and private). Drafted Stakeholder Agreements. The proposals are almost ready for tender/bidding by local construction companies.

- 3.1.5 Initiated development of a risk reduction training program for supply chain actors.
- 3.1.6 Prepared for environmental assessments for the demonstration sites.
- 3.1.7 Held frequent meetings with FAO and developed a 'collaboration matrix' (a living document) for the supply chain work.

3.2 Challenges and Solutions

- 3.2.1 While provincial counterparts are clearly very interested in the demonstration models, most have no 'master plan' that clearly demarcates future locations of centralized poultry slaughterhouses and poultry markets. In addition to this we are finding/learning that approval and screening procedures for construction work are very complex, involve many agencies and must take into account many regulations. The fact that the regulatory framework is fragmented and emerging poses an additional challenge.

For instance in Can Tho, following several rounds of discussions with the PCU and SDAH over the past few months, the final decision on where to locate the demonstration unit is still pending due to inter-agency disagreement. Similarly, in Dong Ha, after several meetings and conversations, it is still not clear whether an environmental report is required by local authorities before commencing any upgrade work in the market.

- 3.2.2 APII is working on a subcontract with ASVELIS to continue the STOP AI work with APII support. Developing the PSA is taking longer than expected because of prolonged negotiations over rates and fees.

4. Community-Based Surveillance (CBS)

We intend to complete a CBS package with training materials/tools, job descriptions, budget, and recommendations for adoption and scale-up into the provincial/national surveillance system for both the human and animal health sectors.

During Year 2 the project is continuing to maintain CBS networks, will conduct a mid-term review, is supporting refresher trainings for collaborator to include additional emerging infectious and zoonotic diseases, and integrate into the poultry supply chain strengthening efforts by using high risk nodes (smallholder commercial farms, hatcheries, traders, slaughterhouses, markets) for events based surveillance and early warning/responses. The mid-term review will inform any efforts to advocate for wider replication and uptake at provincial and national levels.

4.1 Achievements

- 4.1.1 Continued maintenance of CBS collaborator networks in 123 communes in 18 districts in the five focus provinces from October to December 2010 with monthly network meetings, rapid reports of suspected cases and monthly reports, exchanging surveillance information between human health and animal health at grassroots level. From October to December, collaborators reported 2545 suspected cases in humans and 9334 in poultry. However, all no AI outbreaks were confirmed.
- 4.1.2 Subcontracted the Centre for Community Health and Injury Prevention (CCHIP) to implement IC/CM field work in 2011 guided by the Human Health team.
- 4.1.3 Held frequent update meetings with FAO on CBS implementation in an effort to collaborate and coordinate technical effort. Continued effort to ensure a mutual understanding of surveillance efforts is needed.
- 4.1.4 Conducted CBS mid-term review in four provinces (Quang Tri, Kien Giang, Can Tho and Hung Yen). The review found that the model contributes to increasing the 'sensitivity' of the surveillance system, i.e. its ability to detect and convey useful information. Collaborators reported 4,936 AI suspected cases in humans and 11,452 in poultry. Our grassroots partners appreciate the approach and have appropriately taken on their new roles and responsibilities. General public awareness has increased, and collaborators are being credited for their efforts and gaining more trust of the community as effective service providers. While the model builds on existing human resources, important challenges remain in terms of developing closer collaboration between the human and animal health sectors, and institutionalizing the model (including funding through local resources.) In the new near future, we will continue our efforts to develop an events-based approach which includes AI and other important EIDs, and turn our attention towards advocacy and policy dialogue.
- 4.1.5 Held review/planning workshops in the focus provinces to present the CBS mid-term review findings and recommendations for the next phase of the CBS intervention. The project secured agreement from provincial health and animal health counterparts to expand the CBS model to an events-based surveillance system, including other EIDs.
- 4.1.6 Explored the possibility of expansion of CBS work through Quang Tri Village Health Worker Association reaching out to all villages in Quang Tri province. The Association sent two participants to the CBS TOT training in Hanoi in February with their own funding.
- 4.1.7 Held advanced TOT course in Hanoi, February 14-15, 2011 for 21 participants from provincial Preventive Medicine Centers, SDAHs, and Quang Tri Village Health Association. The course covered training skills, AI, EIDs and events-based surveillance skills for HPAI, Influenza-like Illnesses, Dengue Fever, Cholera, Newcastle

Disease in chicken, Duck Plague, PRRS ('blue ears) in pigs, and Foot and Mouth Disease (FMD) in livestock.

- 4.1.8 This was followed by 62 diffusion/roll-out courses around March, for more than 2000 commune health providers, AHWs and collaborators in all 123 project communes. AFAP trained AHWs and Collaborators (village health workers) associated with our CBS work in veterinary skills/techniques and disease therapies.
- 4.1.9 CBS handbook for collaborators was reviewed and updated with EID surveillance information. The handbook will be distributed in April.
- 4.1.10 A suspected HPAI outbreak was detected and reported in a household in Hoi Yen village, Hai Que commune, Hai Lang district, Quang Tri by an animal health collaborator – Mr. Do Van Hung. The case was confirmed as an HPAI outbreak in early March (see story in Section 8).
- 4.1.11 The abstract "*Sustaining Community-Based Surveillance (CBS) for early detection and response to Avian Influenza (AI) and Emerging Infectious Diseases (EIDs)*" was accepted for the Global Health Council's 38th Annual International Conference "Securing a Healthier Future in a Changing World", June 13-17, 2011 in Washington DC. This is a great opportunity for APII to present its work to a wider, international audience.

4.2 Challenges and Solutions

- 4.2.1 The Provincial Red Cross was initially supposed to subcontract many of these activities. However, due to a lack of human resources with appropriate surveillance experience, the CCHIP was identified to take their place in late 2010.
- 4.2.2 We had a turnover rate of 5% among collaborators, mainly in animal health. Replacements were identified and updated right away through on-the-job training.

5. Infection Control/Case Management (IC/CM)

The goal is to develop an IC/CM 'model' with training package/tools, guidelines etc. which can be piloted and tested/verified (including costing), for wider adoption.

In year 2, the aim is to assist the MOH, provincial authorities and other development partners in disseminating the district level IC model and SARI/AI CM guidelines at village, commune and district levels beyond the five focus provinces.

5.1 Achievements

- 5.1.1 Subcontracted Hanoi Society on Infection Control (HANSIC) to implement field activities guided by the Human Health team.
- 5.1.2 Completed two four-day training courses for IC assurance teams and their networks in Kien Giang and Can Tho on: 1) implementing adapted IC protocols/ guidelines in district hospitals and commune

health stations; 2) IC surveillance; and (3) IC principles and standard precautions. Fifty-four local health staff participated.

- 5.1.3 Completed eight two-day training courses on basic IC/CM principles and compliance for 244 district health staff (79 male, 165 female).
- 5.1.4 Completed four one-day training courses on basic IC/CM principles and compliance for 114 commune and village health workers (59 male, 55 female).
- 5.1.5 Met with PEPFAR to explore collaboration on IC activities.
- 5.1.6 Held an IC TOT course with participation of 20 human health providers from nine district and provincial hospitals, plus two representatives from DOD/PEPFAR's and USAID's partners.
- 5.1.7 Two private companies committed to provide medical masks, PPEs, alcohol hand rubs for all IC training activities at district hospitals organized by HANSIC.
- 5.1.8 Planned for IC model roll out in eight district hospitals of five provinces.
- 5.1.9 Participated in the Healthcare Acquired Infection Surveillance workshop by WHO/MOH. This brought direction to implementing IC activities
- 5.1.10 Participated in the IC and Pandemic Management in Hospitals workshop and the IC Circular Implementation review workshop to participate in the development of a Master Plan on IC for 2011-2015 funded by DOD/PEPFAR.

5.2 Challenges and Solutions

- 5.2.1 HANSIC is somewhat short of human resources and not familiar with the type of contract APII can offer (Firm Fixed Price PSA). The team has had to work closely with them to support.

6. Pandemic Preparedness Planning (PPP)

The goal is to develop PPPs in the selected focus provinces, introduce the package in other provinces, and advocate for wider adoption throughout Vietnam.

During the first project year, Vietnamese Red Cross (VNRC) implemented USAID's Humanitarian Pandemic Preparedness (H2P) project with civil society organizations in Ha Nam and Quang Tri. Following this, VNRC started reviewing the status of PPPs in the five focus provinces through an APII subcontract. In Year 2, we aim to assist APII focus provinces to revise, test and finalize improved PPPs, through a subcontract with VNRC.

6.1 Achievements

- 6.1.1 Multi-sector PPP situation analyses were conducted in Quang Tri, Kien Giang, Can Tho and Hung Yen by a national consultant working with DOHs, Preventive Medicine Centers, DARDs, SDAHs, and provincial Red Cross. A draft report was prepared.

- 6.1.2 In late March, discussions were finalized establishing a subcontract with VNRC for PPP activities. The PSA expected to be signed in April.

6.2 Challenges and Solutions

- 6.2.1 VNRC was very busy with humanitarian and emergency activities, such as flooding in Central Vietnam, during late 2010/early 2011. They are generally short on human resources and must give priority to emergencies over more routine work such as that being offered under the APII subcontract. In addition there were delays due to VNRC's lack of familiarity with subcontracting mechanisms (Firm Fixed Price PSA without fund advances). Both parties are however committed to see this subcontract materialize and APII does not immediately see alternative candidates for a subcontract.

7. Cross-Cutting Issues

Behavior Change Communication (BCC)

The BCC work aims to identify appropriate behaviors and messages for key target audiences and to strengthen the BCC capacity of national and provincial stakeholders. The BCC work feeds into and helps integrate and enhance the work of the other technical components in animal and human health, notably around the poultry supply chains.

7.1 Achievements

- 7.1.1 Developed the Year 2 BCC Strategy (a living document) based on the results of the Year 1 risk assessment, the risk reduction strategies, and the results of the BCC assessment. The Year 2 strategy focuses on the seasonal BCC campaign and closer integration of BCC work into the animal health and human health components. The BCC seasonal campaign is targeted for May-June. Efforts are being made to establish team of BCC trainers in provinces who will conduct training for local communicators and facilitators of BCC activities. The strategy was shared with FAO and WHO for technical verification and feedback.
- 7.1.2 Conducted planning workshops with key local stakeholders in four provinces (except Ha Nam) to design Year 2 BCC activities. The workshops provided consensus on the number of desired behaviors and on barriers and motivators, which in turn were used to develop appropriate key messages for target audiences. Due to the late entry of MOU and risk reduction strategy development in Ha Nam, the BCC planning workshop was cancelled in this province. Instead the results from Hung Yen and Quang Tri were used to inform and guide the activities in Ha Nam.
- 7.1.3 Entered subcontracts for Year 2 with Women's Union in Ha Nam and Kien Giang, Provincial Humanity Center under Red Cross in Hung Yen, Women's Union in Quang Tri (a new subcontractor) and CEFACOM (Research Center for Family Health and Community

Development) in Can Tho. Women's Union in Can Tho did not have sufficient human resources to carry on the work from Year 1.

- 7.1.4 Completed TOT trainings for district trainers (representing Animal Health, Animal Extension, Human Health, and communication bodies) in Quang Tri, Can Tho and Ha Nam. The trainings were conducted by provincial Master Trainers.
- 7.1.5 Designed Year 2 BCC materials (calendar, flipcharts, logo, BCC theme, guidelines for community events, small group discussion with small and medium commercial poultry farmers, notebook with BCC theme) together with BCC and artwork consultants. All materials were pre-tested in Can Tho (for Southern materials) and Hung Yen (for Northern materials). They were printed and are being distributed to target audiences. Other BCC promotional materials such as raincoat, shirts and pens with BCC theme and messages were designed and are now being produced. These promotional materials will be also used for human health and animal health activities. FAO and WHO were consulted for technical verification.
- 7.1.6 Conducted a TOT refresher course on communication skills and BCC materials for 22 provincial and district master trainers from the five focus provinces who in turn will train local communicators and facilitators of community events and discussion forums. The activities will target key supply chain nodes. APII Project Area Managers attended the TOT and will help coach/guide local subcontractors.
- 7.1.7 Conducted Year 2 BCC implementation planning workshops in all five focus provinces, with partners and counterparts from provincial to village level, to discuss and get consensus on the detailed plans for Year 2 BCC activities, related monitoring/quality assurance mechanisms and related media activities.
- 7.1.8 Identified a technical team composed of provincial officers from SDAH, Center of Preventive Medicine, CHEC (also known as 'T4G'), and Agricultural Extension to develop Can Tho's communication guideline on API and EIDs with the support from APII, MARD and MOH experts. This activity will be led by APII together with FAO. The same process is planned for Ha Nam.
- 7.1.9 Engaged national journalists (VTC16), provincial journalists (T4g, local newspapers and TV) on the Animal Health bio-security study tour in Northern and Southern provinces. This resulted in various articles and broadcasts. For all BCC events such as training, planning workshops, and community events local journalists were engaged and articles/televised broadcasts were issued in Ha Nam, Hung Yen, Kien Giang and Quang Tri.
- 7.1.10 Identified national communication experts from MOH and MARD to help with BCC materials revision and design, review One Health Newsletter articles, mentor provincial/district BCC trainers, and support provincial officers in developing provincial communication guidelines on API and BID (Can Tho and Ha Nam).

- 7.1.11 Completed the collection of API materials from various sources and passed these on for uploading on the PAHI website.
- 7.1.12 Developed and shared the Year 2 press relations plan with USAID. Provided weekly updates and success stories to USAID.

7.2 Challenges and Solutions

- 7.2.1 Encountered difficulties finding local subcontractor on Year 2 BCC activities in Can Tho. Provincial Women's Union lacks human resources. Instead identified CEFACOM (Research Center for Family Health and Community Development) a national NGO based in Hanoi through competitive bidding. Subcontract signed in March. The BCC seasonal campaign was delayed about two months in Can Tho. The subcontract preparation process generally continues to take longer than envisaged and the Firm Fixed-Price PSA is difficult for many subcontractors to accept/adjust to.
- 7.2.2 The BCC Year 2 planning workshop in Ha Nam was cancelled due to the late MOU renewal. The PSA with Ha Nam Women's Union was modified to address this (Note: subcontract modification can be a time-consuming process). Nevertheless Ha Nam Women's Union expect to complete BCC campaign activities same time as other provinces (Ha Nam Women's Union is very strong and proactive).
- 7.2.3 Difficult to get national officers to give technical inputs into project activities such as reviewing BCC materials, as we are limited in the way we can compensate their efforts. We are working to find suitable ways to bring them on board in close consultation with the F&A team and the Project Director, but the options are limited. This constraint could affect the planned newsletter production with NAEC and NCHEC. With national experts from MOH and MARD coming on board as consultants and a new Strategic Communication Manager coming on board in April we expect this area of work to move forward soon, albeit behind schedule.

Provincial Coordination and Implementation

7.3 Achievements

- 7.3.1 Signed MOUs for Year 2 with all five provinces. Changes in Ha Nam leadership meant that the MOU was not signed until March.
- 7.3.2 Worked with counterparts and subcontractors to prepare provincial work plans and conducted Year 2 provincial planning workshops in Kien Giang, Can Tho, and Quang Tri (Dec 2010), Hung Yen (Jan 2011), and Ha Nam (March 2011).
- 7.3.3 Finalized the provincial implementation plans together with the PCUs for approval by local authorities. All but Can Tho were approved this quarter.
- 7.3.4 Identified and engaged joint APII-FAO Provincial Coordinators in close consultation with counterparts in all five focus provinces.

- 7.3.5 Continued to work closely with FAO on provincial coordination and cooperation with emphasis on closer relationships between PCs and FAO focal points.
- 7.3.6 Organized PCU quarterly meetings to review the roles and functions of PCUs and agree on clear mechanism and formats for monthly planning and reporting.
- 7.3.7 Worked closely with provincial counterpart agencies and subcontractors on implementation and monitoring of activities.
- 7.3.8 Initiated weekly work plans for Project Area Managers (PAM) and PCs on a weekly basis. PCs are shared with FAO and work according to a joint Terms of Reference.
- 7.3.9 Relocated project offices in Can Tho and Quang Tri from within DARDs to privately rented premises, for compliance and easy/equal access by all partners. It was decided in the end not to open a satellite office in Ha Nam as it proved too difficult to find a new Project Area Manager willing to be based in Ha Nam.

7.4 Challenges and Solutions

- 7.4.1 The contract for the PAM (North) was terminated by mutual consent due to unsatisfactory performance. The recruitment of a suitable replacement took longer than expected and the support to and coordination in Hung Yen and Ha Nam provinces suffered somewhat as a result of this gap in staffing
- 7.4.2 Changes in leadership in Ha Nam meant no appointments of PCU Chair and Vice-Chair until March, when the Year 2 MOU was finally signed. In the meantime the Deputy Director for Provincial Implementation maintained close dialogue with Ha Nam leaders to help ensure good working relationships.
- 7.4.3 Close communication between the shared APII-FAO Provincial Coordinators and FAOs Focal Points/Field Coordinators remains a challenge for various institutional reasons. The API partners are aware of this and working on ways to improve the situation.

National Coordination & Policy Dialogue

7.5 Achievements

- 7.5.1 Developed APII's Advocacy Strategy and shared this 'living document' with USAID and API partners. This process helped generate a clearer picture (vision) within the APII team of where the project is heading and what achievements and outcomes (milestones) to aim for along the way
- 7.5.2 The AH team maintained close contact with FAO in particular, as well as with other partners (VAHIP, LIFSAP, STOP AD) for coordination and collaboration on supply chains and related work. VAHIP and LIFSAP have indicated interest in the supply chain work, notably the technical protocols being prepared by APII.

- 7.5.3 The AH team prepared for submission of an updated bio-security training package, developed in close collaboration with NAEC, to the Bio-security Working Group at its next meeting.
- 7.5.4 The AH team is maintaining close dialogue with DAH on the development of improved training materials for AHW/Vets.
- 7.5.5 The AH team is also working on developing new relationships with provincial agricultural colleges/universities and vocational training centers for formal training and certification of local AHWs.
- 7.5.6 The AH team organized an in-country study tour in collaboration with VIPA and DLP, with 22 participants from government authorities, incl. DAH, DLP, the Food Hygiene and Safety Administration of MOH, DARDs, SDAHs, and SDFHF as well as private entrepreneurs and journalists. The event provided an opportunity for participants to identify firsthand the points of HPAI/EID risk exposure in poultry supply chains in seven provinces (Hanoi, Hung Yen, Quang Tri, Tien Giang, HCMC, Can Tho and Kien Giang).
- 7.5.7 The HH team worked closely with FAO on surveillance, with WHO and MOH on IC activities and provided inputs on an IC assessment at a VAHIP project planning workshop. PEPFAR representatives attended the IC TOT workshop in March.
- 7.5.8 The BCC team stepped up its dialogue with API partners. FAO and WHO are now regularly consulted for technical verification on AH and HH related BCC issues. The BCC team also continued to participate actively in the BCC Working Group.

7.6 Challenges and Solutions

- 7.6.1 Coordination with multiple partners and gaining access to decision-makers remains a challenge, but APII is benefiting from personal networks, collaboration with FAO and WHO, and growing recognition of its work. Other options such as working with MARD's International Support Group (ISG) need to be explored in consultation with USAID.

Monitoring & Evaluation

In Year 2, the guiding principle for the M&E work is to strengthen existing systems in the provinces, and help close existing gaps between grassroots level M&E and provincial-national levels M&E and reporting. This includes discrete capacity building activities such as training in data collection, analysis, and interpretation/use, support to database development and web-based data management where feasible, and the development of tools, guidelines, etc. to help provide evidence for replication and up-scaling where appropriate.

APII will act as the repository for PMP indicators collected under USAID's API initiatives, provide analysis and report on this data. This involves collaboration with MEASURE on data collection, management, analysis and reporting, training

and follow-up with staff, subcontractors and local partners on monitoring mechanisms, quality assurance, and use of data for decision making.

7.7 Achievements

- 7.7.1 Worked closely with MEASURE and USAID's API partners to review and improve the PMP data collection tools. The M&E team developed forms for data collection, conducted training to PCs and guided them to collect data for project Year 1 and the first six months of the Year 2.
- 7.7.2 The data collection process identified key issues which can be helpful in a future PMP review e.g. in a workshop with API partners.
- 7.7.3 Developed a draft APII project Log-Frame which links activities and outputs to outcomes and impacts and will help establish the baseline for future results and impact assessments. PMP indicators reported by APII were incorporated into the Log-frame. New indicators, particularly at outcome level were added. The Log-Frame is intended to replace the PMP table in future reporting.
- 7.7.4 Developed mini Log-Frames/M&E frameworks for more detailed monitoring, evaluation and reporting on specific activities e.g. around CBS and supply chain interventions.
- 7.7.5 Developed databases for basic socio-demographic information of intervention sites, CBS, PMP and trainings. The database are frequently updated and reviewed. Other databases to store more detailed information on APII activities are in the process of being finalized.
- 7.7.6 Developed detailed guidelines for Activity Implementation Monitoring ('AIM Guidelines') and related tools and shared these with staff, subcontractors and local partners. The tools are being used in the field by all relevant stakeholders to monitor quality of activities as well as to coach and build up capacity for local trainers and grassroots implementers.
- 7.7.7 Conducted rapid assessment of quality of trainings conducted in Year 1, with technical assistance from Abt's Headquarters. The identified strengths include standardization of the approach and process in conducting training activities in each component. Some weaknesses that were identified include 1) "SMART" key performance indicators are not routinely defined to measure the effectiveness of each training course during the development process; 2) Pre-tests and post-tests (or simply post-tests in some cases) are not used systematically; 3) Training plans do not include post-training follow-up plans to support trainees in the application of their new knowledge and skills in the workplace; and 4) There is no system to conduct post-training assessments of trainees' ability to apply skills and behaviors learned in their work
- 7.7.8 Drafted action briefs based on the rapid assessment results to guide the development of SMART objectives, indicators and targets and a system for post-training assessment and follow-up. Currently, APII is

identifying local institutions to assist in post-training assessment and follow-up activities to improve the quality of the training and approaches to institutionalize to local capacity building for API prevention, control and response.

- 7.7.9 Disseminated the assessment results to APII staff and partners at a USAID Health Partners' meeting for a discussion on quality assuring, sustaining and institutionalization "good capacity building".
- 7.7.10 Reviewed SOWs for technical assistance and program implementation to help ensure that M&E issues are adequately addressed in all work.
- 7.7.11 Provided training to field-based Project Area Managers and Provincial Coordinators on M&E with focus on performance monitoring and quality control. Trainings were subsequently diffused to local partners.
- 7.7.12 Provided inputs and suggested methodologies for CBS reviews and KAP survey as well other related research/studies.

7.8 Challenges and Solutions

- 7.8.1 Baseline indicators need to be identified and included in the Log-frame where possible. However, as the project did not conduct a baseline survey before or during start-up it may be difficult to arrive at a complete baseline. APII will work with key partners and the client to address this issue.
- 7.8.2 The project interventions are diverse and complex. To monitor performance and measure effectiveness of each intervention area requires a range of methods and approaches. As a result, we are focusing our quality performance reviews on concrete activities – beginning with training, CBS and BCC campaigns. We will then plan to move on to examine supply chain interventions, and facility based IC interventions.
- 7.8.3 It will take time and effort to develop a comprehensive data base for a specific activity/component and the entire project if it is to be fully useful for data retrieve and analysis in future. Currently, raw data of certain activities such as training tests, training evaluation results, KAP surveys are stored in multiple places. The M&E team will follow-up for a more systematic and centralized data storage which is easily accessible by/to the project.
- 7.8.4 There were challenges to coordinating with the health sector to collect data to inform the PMP. Training data is not a regular part of the government's MIS; therefore, access to the original training data in each agency was limited or original data had been lost, which affects data validity. A review with partners and counterparts may help address this. APIIs supply chain work which addresses issues related to economics and livelihoods is not well captured in the current PMP framework. This prompted the development of a separate mini Log-Frame to capture the outputs, outcomes and potential impact of this important work.

Finance & Administration

7.9 Achievements

7.9.1 New staff on board:

- Project Area Manager for Hung Yen/Ha Nam, Mr. Nguyen Kim Hai (replacing Mr. Ninh) – joined the team in late March;
- Two F&A Assistants: Mrs. Ha Thanh Lan joined the office in Can Tho in December and Mrs. Nguyen Thi Hong joined the team in Quang Tri in January.

In addition we prepared for the arrival of new staff joining in Q3:

- Supply Chain Manager (North), Mrs. Nguyen Thai Hoa.
- Administration Manager (Ha Noi), Mrs. Nguyen Minh Son.
- Strategic Communication Manager (Ha Noi), Mrs. Tran Thanh Binh, following a lengthy search for a replacement of the Partner Relations Manager who left in November 2010.

We are still searching for a Supply Chain Manager for the South.

7.9.2 Opened and equipped new satellite offices Can Tho and Quang Tri, in independent locations outside of DARD.

7.9.3 Managed multiple Subcontracts and Consultant Agreements for all components.

7.10 Challenges and Solutions

7.10.1 Hiring local consultants above their current rate or above the FSN scale requires CO approval. Since CO approvals have entailed long waiting periods that are not conducive to the pace of project activities, APII has tried to minimize the number of approval requests. However, this is making it difficult for APII, in an increasingly competitive market, to attract and engage high caliber national consultants on time. This applies to independent consultants and consultants on subcontracts (e.g. CEFACOM, AFAP).

7.10.2 The fact that there are less than two years left on the project is making it increasingly difficult to attract new high caliber staff.

7.10.3 Many counterparts consider the APII cost norms to be strict/low, and we continue to receive direct and indirect complaints from them.

7.10.4 Many subcontractors find the subcontracting instrument difficult to work with, particularly those that have little or no working capital.

7.10.5 Still working on a PACCOM license (very lengthy process).

7.10.6 Still working through Ernst & Young to clarify VAT status (another very lengthy process).

8. Success Stories

8.1 National Extension System Plans to Disseminate APII Bio-security Training Packages to a broader audience.

The Avian and Pandemic Influenza Initiative has developed a training package on biosecurity practices for chicken and duck farms to be used by agricultural extension workers in educating farmers about the best practices for poultry raising to prevent the spread of diseases including Avian Influenza. Throughout this process, the National Agricultural and Extension Center (NAEC) has been an integral partner in the packages' development, contributing directly to the design of the materials and their review.



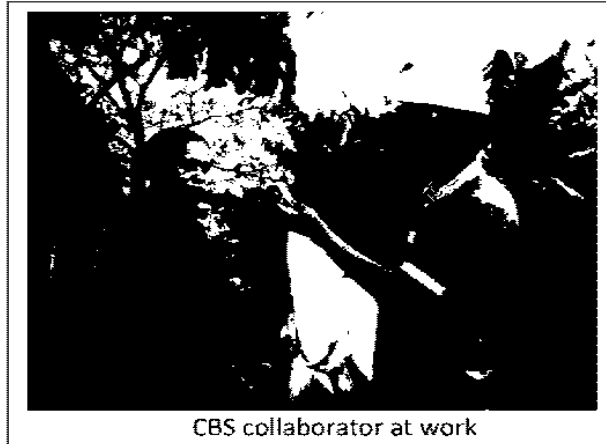
Recently, NAEC has also agreed to expand the reach of the APII project by disseminating the materials in five provinces not targeted by the project, and to incorporate the materials into their own (national) training system. A TOT is planned for April, which will include trainers from ten provinces, as a first significant step in taking the APII materials beyond the five focus provinces.

NAEC's adoption of the materials into their own training system will be key to ensuring the sustainability of APII's interventions and future scale up of biosecurity improvement interventions.

8.2 Community-Based Surveillance System established by USAID's Avian and Pandemic Influenza Initiative helps to identify Avian Influenza before outbreak spreads

The most effective way to control avian influenza (AI) and mitigate its effects on human health and livelihoods is early detection. A good surveillance system allows suspect cases to be identified early before an outbreak spreads.

In early March 2011, Mr. Vo Van Hung, a village animal health worker trained by the Avian and Pandemic Influenza Initiative (APII) as a Community-Based Surveillance Collaborator, successfully identified suspected cases of AI in a duck flock in the Quang Tri province of central Vietnam. While the farmer and Mr. Hung originally suspected that the ducks were suffering from duck Plague during his first visit, on the next day Mr. Hung was alarmed by the number of birds in the flock that had died, and identified symptoms that might be consistent with AI. He reported the cases to the Commune Chief Animal Health Officer and the District Veterinary Station, who came and confirmed with blood tests that the ducks died from the highly pathogenic H5N1 strain of AI. The district and village animal health workers culled the flock and disinfected the farm and neighboring areas according to national guidelines to prevent additional infections. They also notified the local human health authorities to be on alert for human cases.



CBS collaborator at work

APII works to identify, prevent, and control influenza outbreaks in both animals and humans. This happens in close collaboration with FAO and WHO under a USAID Avian and Pandemic Influenza partners program. A key activity under this program is the implementation of the Community Based Surveillance (CBS) system. The national disease surveillance systems for human and animal health operate between the commune and national levels. The CBS system, implemented under APII is designed to extend surveillance down to the village level. Through the CBS system, volunteer "Collaborators" – usually public animal and human health workers, but also private sector actors and general community members – serve as key informants for groups of households in a village. They are trained to identify typical symptoms of AI both in humans and poultry, as well as other suspected emerging infectious diseases like foot and mouth disease, dengue fever, and cholera, and report information about possible

cases in their respective areas. USAID's AI Mekong Initiative (2006-2009) implemented the CBS system in two provinces, and APII expanded CBS to three additional provinces. The CBS system was officially launched in Quang Tri in August of 2010.

Highly Pathogenic Avian Influenza (HPAI) cases are rare but the impact on farm incomes and human health can be significant. Therefore, it is particularly notable that the CBS system established by the APII project correctly identified suspect cases and responded appropriately. This successful identification will help further promote the CBS system to Vietnamese counterparts, and stimulate their interest in ensuring that the community level system is strengthened and interacts well with existing national surveillance systems. Because of the publicity around this case, a second outbreak was identified early and addressed in a neighboring commune shortly thereafter. Despite the rarity of HPAI, Vietnam is still experiencing regular outbreaks in poultry and occasional human deaths.

8.3 Community based “Edu-entertainment” events on the benefits of Healthy Poultry to the Health of the Community Create an Opportunity for Commune Level Collaboration.

As part of the Avian and Pandemic Influenza Initiative’s “Healthy Poultry – Profit Family – Profit Community” BCC campaign in the spring of 2011, provincial partners have been conducting “edu-entertainment” community events targeting all community members, including the various actors of poultry supply chains. To date, 22 of 42 community events have been conducted in 22 communes of 15 districts of the five focus provinces of the project. These events have created an opportunity for community level cooperation and coordination in order to create lively and interesting events for the community at large.



Various commune level stakeholders were involved in the implementation of each event. For example, members of the Commune AI Steering Committees include chairmen/vice chairmen of Commune People’s Committee, representatives from animal and human health workers and other representatives from mass organizations at commune level. This committee, working closely with the APII provincial BCC trainer teams, developed task lists with clear roles for individual agencies to plan and implement the community events. They also worked together to form an acting troupe, modifying APII designed drama scripts on three desired behaviors – Washing your hands after contact with poultry, buying and selling only healthy poultry, and reporting sick animals and humans – and adding songs and dances celebrating their communities. Following each drama, an interactive discussion session reinforced the messages and allowed audiences the chance to share practical experiences.

These community events benefited from a clear plan and designation of responsibilities. The Commune People’s Committees play the lead role, complemented by Women’s Union and other mass organizations (such as the Youth Union and Farmers’ Association) playing a coordinating role and the provision of significant technical support by the animal and human health sectors. This collaboration enabled the successful development and implementation of the events, which have and will continue to reach 200-600 people each.



Avian and Pandemic Influenza
Initiative

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Report for Year 3, Quarter 1

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In association with:

Australian Foundation for the Peoples of Asia and the Pacific

Vietnamese Red Cross

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Annex 1 – Updated International Consultancy & Travel Schedule

Annex 2 – Updated Subcontractor and Local Consultants Schedule

Annex 3 – Updated Annual Work Plan/Gantt Chart

Annex 4 – Updated Log-frame/PMP

Annex 5 – APHA CBS Poster

Annex 6 – APHA Simulation Poster

Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015)
APHA	American Public Health Association
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
AVSF	Agronomes et Vétérinaires Sans Frontières
BC	Behavior Change
BCC	Behavior Change Communication
BCP	Business Continuity Planning
CBS	Community Based Surveillance
CCHIP	Centre for Community Health and Injury Prevention
CDC	Center for Disease Control
CEFACOM	Research Center for Family Health and Community
COP	Chief of Party
CPE	Committee for Popularization and Education
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DDM	Data based decision making
DFP	Department of Forest Protection
DLP	Department of Livestock Production
DOH	Department of Health
EPT	Emerging Pandemic Threats
FA	Farmers Association
FAO	Food & Agriculture Organization (of the United Nations)
FAPQDC	Food and Agricultural Products Quality Development and Control Project (supported by CIDA through MARD)
FP	Focal Point (appointed by FAO in focus provinces)
HPI	Health Policy Initiative
ICS	Infection Control Society
IPC	Infection Prevention and Control
KAP	Knowledge, Attitudes and Practices
LIFSAP	Livestock Competitiveness and Food Safety Project
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MMB	Market Management Board
MFI	Micro-Finance Institution
MOD	Ministry of Defense
MOH	Ministry of Health
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCERWASS	National Center for Rural Water Supply and Environmental

	Sanitation (in MARD)
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PEPFAR	President's Emergency Plan for AIDS Relief
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PSA	Professional Services Agreement
QTLVA	Quang Tri Livestock Production and Veterinary Association
RAHO	Regional Animal Health Office
RC	Regional Coordinator
SARI	Severe Acute Respiratory Infection
SOW	Scope of Work
TOT	Training of Trainers
TOFT	Training of Farmer Trainers
TOMT	Training of Master Trainers
UNJP	United Nations Joint Programme
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VEMEDIM	Veterinary Medicine Import Export Joint-Stock Company
VIPA	Vietnamese Poultry Association
VMSA	Vietnam Medical Services Association
VNA	Vietnam Nursing Association
VNFU	Viet Nam Farmers Union
VNRC	Vietnamese Red Cross
VUSTA	Vietnam Union of Science and Technology Associations
VVA	Vietnamese Veterinary Association
WCS	Wildlife conservation Society
WHO	World Health Organization
WU	Women's Union

Introduction

This report presents the main achievements, challenges and solutions/lessons learnt for USAID's Avian and Pandemic Influenza Initiative (APII) during Year 3, Quarter 1 (October - December 2011).

The report is divided into the following thematic sections:

1. Animal Health Worker (AHW) Capacity Building
2. Agricultural Extension Worker (AEW) Capacity Building
3. Poultry Supply Chain Strengthening
4. Community-Based Surveillance (CBS)
5. Infection Control / Case Management (IC/CM)
6. Pandemic Preparedness Planning (PPP)
7. Cross-Cutting Issues
8. Success Stories.

1. Animal Health Worker (AHW) Capacity Building

The goals are to develop an AHW capacity building package and an AHW network model that is adopted by relevant public-private agencies at national and/or local levels, and to develop a standard Terms of Reference for AHWs for adoption by Provincial Peoples Committees (PPCs) and the Ministry of Agriculture and Rural Development (MARD).

The first quarter of Year 3 focused on completing and transferring the AHW training package for wider adoption and on establishing well-functioning networks of capable public and private animal health workers in and beyond project areas. Subcontractors included AFAP and Vietnam Veterinary Association (VVA).

1.1 Achievements

- 1.1.1 The Year 2 subcontract with AFAP was extended through November, 2011 to cover ongoing activities in the field including AHW monthly meetings and refresh trainings for current and new districts as well as biosecurity training for farmers.
- 1.1.2 AFAP's work plan for the remainder of Year 3 promotes development of provincial strategies to maintain monthly meetings and refresher training for grassroots AHWs without APII financial support. The plan also includes an AHW training model for replication in other provinces and districts. AFAP and APII will continue to work together on the challenge of getting local government to allocate funds for adoption of the AHW model.
- 1.1.3 Under the AFAP subcontract training for new AHWs in Quang Tri was conducted on a cost-share basis with AHWs taking care of lunch themselves and local authorities supporting travel.

- 1.1.4 A lessons learned-cum-advocacy workshop on training of and TORs for AHWs was conducted on 22-23 Nov 2011 in Quang Tri with participation of Quang Tri-based AHW agencies (incl. Agricultural Colleges and Vocational Training Centers) other project province SDAHs and SDAHs of Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Thua Thien Hue, Quang Nam as well as representatives of DAH and RAHO3. This included discussion on formalization of AHW training and certification. The workshop provided a lively forum for discussions on recommendations for AHW TOR and how to facilitate training for AHWs in future. Quang Tri SDAH informed that the PPC has decided to allocate 1 billion VND (~USD 50,000) on the provincial budget for training of AHWs in Quang Tri in 2012. A clear indication of the province's commitment to adopt and replicate the AHW training model/package.
- 1.1.5 AHW monthly meetings and refresher trainings were conducted in all 15 pilot districts plus 9 new districts during Sep-Oct 2011 in Can Tho (2 districts), Hung Yen (2 districts), Ha Nam (3 districts) and Quang Tri (2 districts). It was agreed that from Oct 2011 APII will refrain from funding ongoing activities in pilot districts except supporting local trainers lecture preparation and course logistics (venue, stationery). The rest is now covered by local resources.
- 1.1.6 VVA finalized and disseminated their 2011-2015 Strategy in October 2011 within the national network. Mr. Dang Huu Hung, a representative from VUSTA noted in an official speech at a large VVA event: *"This is considered as a shining pearl in the development of various associations and it is very practical. Your lessons learned should be documented and shared with other associations to help strengthening our capacity."*
- 1.1.7 Using Quang Tri as a good model, VVA mobilized other provinces to develop the VVA network coverage. As result of this, a number of provinces have now registered to open their own Veterinary and Husbandry Associations such as Thai Nguyen, Bac Giang, Bac Ninh, and Quang Binh. Bac Giang Veterinary and Animal Husbandry Association hosted a large (VVA-funded) ceremony on December 15 with 422 members and more than 100 public and private guests. The event was recorded as a success story for APII during this quarter.
- 1.1.8 VVA in collaboration with Thua Thien Hue SDAH organized a workshop on "Cooperation of Government Administrative Bodies and Private Sector in Building Capacity for Local Veterinaries" on October 1, 2011. The workshop was chaired by VVA and Thua Thien Hue DARD with participation of 46 representatives of provincial SDAHs from Quang Binh, Quang Tri, Thua Thien Hue, Da Nang, Quang Nam, Quang Ngai and Bac Giang, and from private feed and drug companies. Participants discussed strengthening local AHW networks, training for vets, challenges in managing AHWs and vet service delivery by private AHWs.

1.2. Challenges and Solutions

- 1.2.1 Allocation of local funds for training of AHWs remains a big issue. While Quang Tri DARD will receive 1 billion VND on the provincial budget for

AHW training in 2012 (for implementation of the provincial decision no. 25 of 2009 to implement and strengthen AHW networks) many other provinces have no clear picture or plans yet in this area. Can Tho appears to be interested but while SDAH is committed to maintaining the refresher training and monthly meetings, no funds have yet been allocated on the provincial budget as far as APII is informed. APII will continue to follow-up and advocate in this area, including with other provinces.

- 1.2.2 APII and SDAHs will need to continue to work with DARDs and PPCs and advocate for inclusion of AHW support in the 2013 annual budget cycle, for which plans and negotiations will be initiated in June 2012. TA and other support from APII may well be needed (and justified so not to lose momentum) in the coming months to help position the AHW model for wider adoption provincial resource allocations.

2. Agricultural Extension Worker (AEW) Capacity Building

The goal is to develop an AEW bio-security training package for small commercial poultry producers, which is adopted by the national-provincial extension system, and by other partners.

2.1 Achievements

- 2.1.1 In collaboration with PAFECs, four TOTs for Farmer Trainers on biosecurity for small commercial farmers were organized in Ha Nam, Hung Yen, Quang tri, Can Tho and Kien Giang with total of 100 participants from district and provincial extension centers, preparing the provinces for further roll out/replication. Following this 10-12 small group discussions per province for farmers in Ha Nam, Hung Yen, Quang Tri, Can Tho and Kien Giang were conducted to test and cost implementation. A total of 292 male and 239 female farmers attended the 52 courses in the five provinces. AFAP and APII staff dialogued actively with PAFECs to encourage pilot provinces to replicate the training further. Can Tho and Kien Giang have included further diffusion training in their work plans but no concrete financial commitments have yet been made.
- 2.1.2 Integration of biosecurity training for farmers in communication plans was promoted by the AH and BCC teams for adoption in Year 3 BCC PSAs in all pilot provinces.
- 2.1.3 In response to a request from An Giang and Soc Trang provinces, a TOFT course for farmer trainers was conducted October 1-3 in An Giang. 21 trainees from An Giang and 3 from Soc Trang province attended. The total number of farmer trainers trained mostly from provincial and district agricultural and extension centers now stands at 127. After this course, An Giang started to provide diffusion training for their extension staff at commune level and poultry farmers using local funds and using the biosecurity training package developed by APII.

- 2.1.4 The finalized biosecurity training package was distributed in pilot provinces and prepared for wider introduction through NAEC into high risk provinces. The training package seems to attract much attention and APII receive official requests for further support and training on this package from many PAFECS including Soc Trang, An Giang, Bac Lieu, Vinh Long, Dong Thap, Dac Nong, Dac Lac, as well as a local NGO ('Trung tam giao duc thuogn xuyen Hoa Binh') and Thai Nguyen University. Plans for roll out in new provinces are being made with AFAP.
- 2.1.5 The NAEC office in HCMC adopted parts of the training curriculum into water fowl biosecurity training documents in the regional 2011 program.
- 2.1.6 With support of DLP, Vietnam Poultry Association (VIPA) submitted a proposal to APII for livestock sector workshops and strengthening of the association in order to promote biosecurity practices within their farmer club networks. The APII biosecurity training package is to be used as the official training tool. A subcontract is being prepared with VIPA in consultation with FAO and DLP.

2.2 Challenges and Solutions

- 2.2.1 Working closely with NAEC/PAFECS is necessary to help institutionalize the training/extension package. This is a time-consuming process which requires diplomacy, patience and perseverance in order to forge and sustain close relationships. MARD's recent strategy of opening up the competitive bidding for extension funds to not only NAEC and PAFECS but also private enterprises will have implications for our work and will influence our strategy to promote replication of our AEW package. We will need to include NGOs, Civil Society Organizations and private entities in our advocacy and partnership efforts. This may provide an opportunity for some novel and unconventional public-private-partnerships.
- 2.2.2 VIPA have demonstrated their ability to coordinate with MARD institutions such as DLP, DAH and NAEC. However, the association is still in need of substantial and sustained capacity strengthening. APII plans to help initiate and spearhead this process through the proposed subcontract.

3. Poultry Supply Chain Strengthening

The goal is to develop biosecurity/biosafety demonstration models in key (high risk) nodes along supply chains, together with related documents (protocols, guidelines, training materials) which are adopted, adapted and replicated by public agencies, private partners and/or other development projects and programs elsewhere.

The key nodes for direct APII interventions in Year 3 are:

- Dong Ha live bird and poultry meat market in Quang Tri;
- District market in Ha Nam;

- Ngoc Xuan centralized poultry slaughterhouse, Can Tho City;
- Phu Nong centralized poultry slaughterhouse, Rach Gia City, Kien Giang;
- Home-based slaughter points around Dong Ha market, Quang Tri;
- Small slaughter points around Duy Tien district market, Ha Nam;

3.1 Achievements

- 3.1.1 The upgrade of the poultry sections in Dong Ha Market by a local construction company was completed in Nov 2011, co-funded by APII, the Market Management Board (MMB) and the vendors. A launching event was conducted on December 5 with representatives of Quang Tri province, neighboring provinces, DAH, VIPA, DLP, LIFSAP, FAO, USAID and APII. A success story was published on USAID's website.
- 3.1.2 A training session on risk reduction and good practices was conducted before the re-opening. A total 38 participants attended including vendors, MMB representatives, district veterinary staff and cleaning staff. A follow-up training plan to provide further risk reduction knowledge and good practice skills for key stakeholders developed.
- 3.1.3 Together with BCC team and local media, a plan to further promote the improved Market was developed. A video (w. photos) documenting the Dong Ha Market upgrade and 'before and after' was prepared.
- 3.1.4 Technical drawings, protocols, and bills of quantities were completed for an upgrade of Phu Nong centralized slaughterhouse in Kien Giang and Ngoc Xuan slaughterhouse in Can Tho. However, the plan to use Grants Under Contract as the financing vehicle was abandoned following USAID's advice and replaced with a Stakeholder Agreement procedure. This caused a significant delay. The bid for the Ngoc Xuan upgrade was prepared and advertised in late December.
- 3.1.5 Following the in-country study tour in late September 2011 to slaughterhouses in the south (incl. STOP AI sites), provincial participants prepared action plans and recommendations for: strengthening risk mitigation measures at slaughter points; improving provincial regulations; developing slaughter point models and management roles of district vet stations; and strengthened collaboration between provincial SDAHs and stakeholders including slaughterhouse owners for control of poultry slaughter and transportation, including agreement and commitment of owners on renovation of slaughter facilities.
- 3.1.6 Based on the Veterinary Inspectors training courses in Can Tho, September 2011, a third course was conducted in HCMC for participants from the Mekong Region. This 'Advanced Training Course for Inspectors on Veterinary Hygiene and Risk Reduction in Poultry Slaughterhouses' was implemented together with HCMC Veterinary Inspection Center and FAO and took place from December 19-23. 26 participants from provinces in the Mekong Region (including LIFSAP partners) and RAHO's 6-7 as well as DLP representatives attended the course. APII received positive

feedback from the Veterinary Inspection Center and suggestions for further training courses for local inspectors from SDAH representatives.

- 3.1.7 Invited LIFSAP's consultant team to Abt's office to exchange information and discuss potential collaboration especially in Hung Yen (where we both operate) and other provinces. APII shared various materials including risk assessment reports, supply chain node prototype designs, small group discussion flipcharts etc. and continued throughout the quarter to invite LIFSAP along to relevant events (such as Vet. Inspector training courses, Dong Ha Market reopening, workshops, etc.).

3.2 Challenges and Solutions

- 3.2.1 While provincial counterparts clearly are very interested in the demo models, most provinces have no 'master plans' that demarcate future locations e.g. for centralized poultry slaughterhouses and markets. In addition, the processes for local authorities to approve construction are very complex, involving multiple stakeholders and complex regulatory frameworks which are not always well understood by all or straightforward to implement. APII is still learning along the way and adjusting plans and expectations accordingly
- 3.2.2 Profit margins from poultry slaughtering are small especially in small scale slaughtering operations. It is understandably hard to persuade the small private entrepreneurs to invest in facility upgrades without some form of 'subsidy' (financial support) in this environment. Micro-finance options in the commercial financial sector (banks, MFIs) are rarely available.
- 3.2.3 Successfully upgrading the poultry sections in Dong Ha Market was an important milestone. However, follow-up in order to see sustained change behaviors and improve operations and food safety remains vital. This needs the continued commitment of SDAH and MMB with APII support. The APII team has prepared and initiated a training/follow-up plan for key stakeholders notably market vendors.

4. Community-based Surveillance (CBS)

The goal is to develop an events-based grassroots surveillance package, including training materials/tools and job descriptions for grassroots 'collaborators', which is adopted, adapted and scaled-up in the provincial-regional-national surveillance system with local resources.

4.1 Achievements

- 4.1.1 From October 2011, APII ceased providing financial support to CBS networks in Ha Nam, Hung Yen, Can Tho and Kien Giang provinces. Only support in Quang Tri, where the province will start providing monthly allowances for AHWs from the provincial budget in 2012, was maintained in order not to lose momentum before provincial takeover.

- 4.1.2 Signed a contract with Quang Tri Livestock Production and Veterinary Association (QTLVA) to continue monitoring, supervising, maintaining and supporting the CBS collaborator networks in Quang Tri from Oct. to Dec, 2011. From Jan. 2012 onwards the province is expected to assume responsibility for supporting/maintaining CBS collaborators and networks.
- 4.1.3 Handover meeting between CCHIP (previous subcontractor) and QTLVA (new subcontractor) October 24, 2011. The meeting provided opportunity for two subcontractors to share learning, insights and experiences on CBS implementation and discuss the challenges and possible solutions.
- 4.1.4 CBS workshop in Quang Tri to share experiences with other/new districts and communes in the province. Included experience sharing and field visits to see the CBS model at work. Participants also discussed plans and feasibility for model expansion to all communes and districts in Quang Tri.
- 4.1.5 Drafted agenda for national dissemination/advocacy workshop on CBS for API partners comments and feedback.
- 4.1.6 Conducted an assessment in Quang Tri on human health - animal health cross-sector collaboration and coordination and knowledge/use of human health - animal health services among sector three farmers. The assessment was done by an international intern supported by the APII team. Preliminary findings were shared with local partners in Quang Tri. The final report is forthcoming and will provide inputs to the larger CBS evaluation currently being prepared.
- 4.1.7 Two SOWs for an international consultant and a local subcontractor to evaluate the CBS model were approved by USAID. APII completed the selection process and initiated preparations with the selected consultant and subcontractor. We expect the final report to be ready within April 2012.
- 4.1.8 An economist from Abt's Home Office updated the previous costing of the CBS model costing, including a cost-benefit analysis. This study will complement the final evaluation of the CBS model to be presented in advocacy events later in 2012.
- 4.1.9 Had two posters (Annexes 5 and 6) on the CBS work presented at the American Public Health Association (APHA) conference in Washington DC Oct 29 – Nov 2, 2011:
<http://apha.confex.com/apha/139am/webprogram/Paper242716.html>
<http://apha.confex.com/apha/139am/webprogram/Paper242729.html>
- 4.1.10 The APII Technical Director for Human Health Delivered a lecture on the CBS model for 11 visiting undergraduate students from the University of North Carolina at Chapel Hill, USA. The students also visited the field work to see the CBS model at work in Ha Nam.

4.2 Challenges and Solutions

- 4.2.1 In Year 3, APII will focus on CBS model evaluation and advocating for its wider adoption with local resources. A major advocacy event was initially

slated for February but will likely take place in April-May 2012. The process of engaging consultant and subcontractor for the CBS evaluation took longer than anticipated. In addition, the advocacy work is quite complex this type of work in many ways new to the team (i.e. a learning process for APII).

5. Infection Control/Case Management (IC/CM)

The goal is to develop a model (with training tools, guidelines etc.) for implementation of Circular 18 at the local level, which is adopted more widely in Vietnam.

5.1 Achievements

- 5.1.1 Met with WHO to exchange IC work plans and information on the latest advances in the National Program Development on infection and prevention control. Reviewed scope for collaboration between the two APII partners.
- 5.1.2 The SOW for Viet Nam Nursing Association (VNA) on APII infection control activities in year 3 was approved by USAID. VNA will work closely with APII technical staff, national IC experts and WHO in collaboration with MoH and 3 IC Societies (Hanoi, Hue, and Ho Chi Minh) to share IC model with other provinces in regional workshops. VNA will furthermore revise/finalize the training materials, curriculum and practical handbooks for district hospitals and submit MOH for formal approval before advocating for replication/application in more than 600 district hospitals throughout the whole country. The subcontract with VNA was prepared for approval by Abt's Head Office.
- 5.1.3 Conducted monitoring visits and provided technical assistance to Gio Linh district hospital in October 2011 in collaboration with Hue Infection Control Society (ICS) experts. The results of this work are posted on the Website of Hue ICS: http://www.husic.org.vn/vn_tin-tuc/thoi-su/hoat-dong-ksnk-tai-bv-gio-linh-tinh-quang-tri-91-husic.aspx
- 5.1.4 Can Tho provincial Department of Health (DOH) applied APII's assessment tools and methodology to conduct IC infection control status for other hospitals in in Can Tho including provincial and specialized hospitals using their own resources. The results of the assessment will not only help them understand current situation of IC practices but also develop their action plans for IC improvement.
- 5.1.5 Met with the DOH in Quang Tri, Can Tho and Kien Giang to review results of IC interventions in selected district hospitals and IC assessments in other hospitals on IC organizational structure, hospital equipment, knowledge and practice of health workers. The assessments were done by DOH with technical support from APII (methodology, tools, etc.).
- 5.1.6 All 8 intervention hospitals in 5 provinces informed that (thanks to APII's support) their IC activities were ranked excellent or very good and among highest scores in the annual evaluation by DOHs.

- 5.1.7 USAID delegation visited Gio Linh district hospital on December 5, 2011. During the visit, the delegation had opportunities to observe IC activities and interact with the hospital board of directors and IC specialists.
- 5.1.8 Meetings with Can Tho and Kien Giang DOHs on December 5-7 to discuss support to IC activities and get ideas from the provinces on future IC implementation. The provinces appreciate APII support and the development of good demonstration for other district hospitals to learn and replicate.
- 5.1.9 Invited WHO and MOH IC experts to Kien Giang province to visit Thot Not district hospital supported under USAID's AI Mekong Initiative and Go Quao district hospital supported by APII. The team also had chance to visit a non-intervention district hospital in Hon Dat district. During the visit, the experts had chances to observe and discuss with the hospital board of directors and IC specialist's achievements and lessons learned, success stories from IC interventions supported by APII and to compare intervention with non-intervention hospitals.
- 5.1.10 APII is planning for a final evaluation of the IC activities in including an assessment of cost effectiveness in the second quarter of Year 3. The SOWs for consultants were prepared for USAID approval.

5.2 Challenges and Solutions

- 5.2.1 All hospitals and DOHs were busy at the end of year with little time for IC activities. To support the hospitals and DOH, APII's team undertook field monitoring visits to help integrate IC activities into the DOH annual evaluation.
- 5.2.2 The upcoming SOW for VNA's subcontract was approved but the process of contract preparation required more time than expected. It is typically the budget negotiations and the preparations of CVs, Biodata, and leave without pay letters that cause delay. Many partners are unfamiliar with the formats and procedures and are not comfortable revealing salary histories.

6. Pandemic Preparedness Planning (PPP)

The goal is to develop PPPs in selected pilot province(s), introduce the package in other provinces, and advocate for its wider adoption in Vietnam.

6.1 Achievements

- 6.1.1 Met with WHO to discuss PPP collaboration in Year 3, including how APII and WHO will support the Government to revise the PPP with inclusion of business continuity planning (BCP).
- 6.1.2 Organized a PPP workshop November 15-17 for representatives from local authorities including people's committees, animal and human health agencies and mass organizations. Participants discussed the new concept of "whole-of-society" approach and developed a framework for multi-sector involvement in the design and implementation of their PPP.

Following the workshop, the Kien Giang PPC assigned members to the writing team including technical staff from different sectors to draft the provincial PPP outline.

- 6.1.3 Compiled inputs and comments on the outline of Kien Giang's PPP from APII technical experts, national consultants and API partners.
- 6.1.4 Presented the revised PPP outline to VNRC and Kien Giang representatives. The outline was subsequently finalized and VNRC and local counterparts initiated the full writing process. The first draft is expected for comments and review after Tet.
- 6.1.5 Finalized the revision of training materials for community leaders with WHO inputs. The training materials focus on three main topics: concepts of influenza and pandemic; community planning for pandemic preparedness; and business continuity planning and livelihood maintenance plans during the difference phases of a pandemic.
- 6.1.6 Organized four training courses for community leaders in Ly Nhan, Duy Tien, Binh Luc and Thanh Liem districts, Ha Nam from December 16-26, 2011. The training provided basic knowledge for community leaders on pandemic influenza and community preparedness for pandemics. Sixteen similar courses will be organized in Hung Yen, Can Tho, Kien Giang and Quang Tri in the next quarter.

6.2 Challenges and Solutions

- 6.2.1 It took a month to obtain feedback and comments on the PPP outline from API partners and local experts. This, and other delays, led to the late of submission of VNRC deliverables and was followed by a subcontract modification.
- 6.2.2 The "whole-of-society" approach and the business continuity planning concept adopted in Kien Giang's PPP are both new to the province and to VNRC. APII technical staff, with inputs from WHO, worked very closely with VNRC and provincial counterparts to provide technical support in the development of the PPP.

7. BCC and Cross-Cutting Issues

Behavior Change Communication (BCC)

The BCC work aims to identify appropriate behaviors and messages, integrate these into the work of the animal and human health components, and strengthen the BCC capacity of national and provincial stakeholders, enabling them to carry on BCC activities beyond the life-time of the project.

7.1 Achievements

- 7.1.1 Finalized the KAP qualitative survey of poultry consumers in 4 provinces of Can Tho, Ha Nam, Kien Giang and Quang Tri. The results helped to design follow-up activities with poultry consumers such as forums for

poultry supply chain stakeholders in Dong Ha market and monthly meetings with poultry vendors and transporters in Dong Ha market to follow up on behavior changes.

- 7.1.2 Designed and produced BCC promotional materials including aprons and hair bandeau for poultry vendors in Dong Ha Market.
- 7.1.3 Finalized the seven steps discussion guides for vendors in Dong Ha market with technical inputs from MOH, MARD, WHO and FAO. These guides will be used by provincial BCC specialists to help the five focus provinces develop their own discussion guides on new bio-security behaviors and facilitate small group discussions farmers in the year 3 campaign. They will similarly be shared with other provinces during advocacy events and BCC transition strategy dissemination workshops.
- 7.1.4 Organized a Consultation Workshop on the Year 3 BCC Strategy in Da Nang with participation of key leaders and officers from Ha Nam, Kien Giang and Quang Tri. The outcomes of workshop helped promote new and innovative BCC activities (e.g. excellent poultry farmer competitions) and local contributions in Year. This workshop was a first step in the BCC transition strategy to position provincial partners to carry out their own BCC work post-APII.
- 7.1.5 Conducted Year 3 implementation planning workshops during December in 4 provinces (except Hung Yen, slated for January 2012). The workshops helped provinces to think through the Year 3 transition strategy and prepare their BCC plans including campaigns, follow-up on farm level biosecurity, new activities such as farmer competition, exploring options for provincial counterpart funding contribution in implementing Y3 BCC activities, etc. and prepare proposals for the 2013 budget to be submitted in June 2012.
- 7.1.6 Provided technical guidance and support to the review and finalization of provincial proposals for Year 3 BCC activities in all five focus provinces. These proposals will be turned into subcontracts.
- 7.1.7 Finalized and submitted the Can Tho's Multi-sector Communication Guide to the PCU for approval. The development of this document was led by Can Tho's BCC specialists from SDAH, PAFEC, CHEC (T4G) with involvement of experts from DLP, DAH, NAEC, NCHCE, the MOH sub-committee for communication and with inputs from FAO and CDC.
- 7.1.8 Supported the Central Committee for Popularization and Education to integrate AI and EIDs into their regional workshops in Ha Noi on Oct. 20 and in HCMC on Oct. 27 for 577 representatives from 63 provinces including Communist Party Committees, government bodies (such as Ministries of Foreign Affairs, Justice, Central Committee of External Relations, Home Affairs., Education and Training, Agricultural and Rural Development, Health, etc.), the military sector, provincial CPEs, and information centers of universities and associations. The training helped raise awareness on AI/EID prevention and emerging zoonotic diseases. Monitoring visits were conducted to several provinces (Hau Giang, Can Tho, Ha Nam, Quang Tri, Son La, Ha Noi, Hai Phong, Vinh Phuc, Phu

Tho) to observe diffusion training and discuss how to secure local funds, especially from the provincial CPEs for further training in provinces.

7.1.9 Seven TV spots were filmed by Minh Studio for airing on national TV around Tet in Jan. – Feb. 2012.

7.1.10 Implementation of KAP survey (behind schedule – see below).

7.2 Challenges and Solutions

7.2.1 Limitations in writing skills and analytical thinking among provincial subcontractors were reconfirmed through their participation as members of the writing team developing Can Tho's Multi-sector Communications Guide and also through their progress reports and activity proposals. This partly explains the delay in some activities. Other reasons include pre-occupation of writing team members (from PAFEC, SDAH, PCHCE, PMC) with other work. Recognizing the weaknesses, provinces have asked APII to provide training on writing skills and proposal writing in Year 3.

7.2.2 The filming of TV spots was delayed because of the tight schedule of the Goodwill Ambassador Mr. Xuan Bac.

7.2.3 APII's planning and budget cycle does not match with that of the Government making it more difficult to get the timing right and call for local contributions in cash to implement APII models.

7.2.4 The KAP quantitative survey on supply chain actors, implemented by Nielsen (subcontractor) started later than planned, August instead of April after a prolonged subcontractor recruitment process. APII worked closely with Nielsen to finalize questionnaires and do spot checking on field work to help ensure quality of Nielsen's work. With a sample of 2340 poultry supply chain actors including small and medium commercial farmers, breeders, slaughterers, vendors and transporters, data entry took time for Nielsen to complete and for APII to double check (to verify quality). The topline report was completed after significant revisions by the APII team with inputs from Abt's Head Office. A full report is expected to be available for final comments within Feb. 2012.

Provincial Coordination and Implementation

APII's provincial implementation (PI) team works closely with the animal health, human health and BCC technical teams to coordinate field activities implemented by subcontractors, develop/test successful models at provincial and grassroots level, and advocate for their wider adoption with local public and private partners. The PI team operates out of the main office in Hanoi covering activities in northern Vietnam and through two satellite offices in Quang Tri for activities in central Vietnam and Can Tho for activities in southern Vietnam.

Provincial Coordination Units (PCUs), representing the body of key provincial counterparts and civil society, were established in Year 1 in the five focus provinces (Ha Nam, Hung Yen, Quang Tri, Can Tho and Kien Giang). Each province has a Provincial Coordinator (PC) appointed jointly with FAO and funded by APII. The PCs are typically seconded from a provincial

agricultural/livestock agency. The PCs work closely with the PI team, coordinate their efforts with FAO's focal points, and report to the PCUs.

7.3 Achievements

- 7.3.1 Signed MOU addendums for Year 3 with all five focus provinces.
- 7.3.2 Worked closely with provincial subcontractors to prepare work plans with emphasis on dissemination and advocacy activities.
- 7.3.3 Worked with FAO to prepare agenda for provincial planning workshops in December 2011 - January 2012 (Ha Nam will be postponed till after Tet).
- 7.3.4 With FAO, extended the contracts for Provincial Coordinators (PCs) until Jan. 2012. Further contract extension to be agreed with USAID and FAO.
- 7.3.5 Worked with PCUs on the strategy for APII supported activities in Year 3 to explain change in focus from implementation to advocacy and replication with local resources, and get provincial buy-in.

7.4 Challenges and Solutions

- 7.4.1 Collaboration between the shared APII-FAO PCs and FAOs Focal Points (FPs) remains a challenge due to local institutional issues. Maintaining both PCs and does generate balanced goodwill towards both APII and FAO.
- 7.4.2 Initial delays in contract extensions for PCs caused concern among PCUs and PCs. The provinces were pleased to retain the PCs and are aware of the plans to phase out the PCs within Year 3.

National Coordination & Policy Dialogue

The goal in Year 3 is to increase the focus on ways and mechanisms to transfer packages/models/approaches to public and private partners for adoption, adaptation, replication and up-scaling. The project consults and coordinates closely with API partners in this effort.

7.5 Achievements

- 7.5.1 The advocacy matrix and plan of action was updated in close consultation with the other teams.
- 7.5.2 Provided inputs into the Dong Ha market re-opening. The upgraded poultry sections are expected to promote enhanced food safety and improved biosecurity practices and serve as a model for others to see, learn from, adopt/adapt and replicate.
- 7.5.3 Co-facilitated the BCC Working Group and drafted a Plan of Action to revitalize the Working Group in Year 3 and beyond. This action plan will be executed in collaboration with PAHI, partners and counterparts and

aims to transition the governance of the body to national counterparts for sustained life of the BCC Working Group.

- 7.5.4 SOW to recruit an international expert on a part-time basis was developed to help implement, facilitate and drive the advocacy work and policy dialogue forward.

7.6 Challenges and Solutions

It will be a challenge to implement advocacy events and (the crucial) follow-up in the remaining project period; will require effective team work and good collaboration with key partners and counterparts. APII will aim for events to be convened and models promoted by local-national partners and counterparts to strengthen their commitment and ownership.

- 7.6.1 There are not many projects working on AI and EIDs currently making it difficult to sustain momentum in the BCC Working Group. APII and PAHI will review and update the member list and advocate for better mechanisms to engage in particular government counterparts in the Working Group. The NAISC/subcommittee for communication could potentially play a key role in governing and sustaining Working Group.

Monitoring & Evaluation

APII's M&E work aims to strengthen existing systems in the provinces, and help close existing gaps between grassroots level M&E and provincial-national levels M&E and reporting. In addition, APII acts as the repository for PMP indicators collected under USAID's API initiatives, providing analysis and reporting on this data.

In Year 3, M&E focuses on gathering data and evidence for showing the results of project implementation, especially the project's outcomes and effectiveness of the project models. Continuous capacity building for local partners to enhance sustainability will be conducted, based on the recommendations of the post-training assessment. The Project will continue to work closely with USAID's API partners to revise/update the result framework and PMP as well as to compile and analyze PMP data.

7.7 Achievements

- 7.7.1 Collected Year 2 PMP data from API partners for entry into database to be provided by MEASURE.
- 7.7.2 Continued to update and fine-tune the project Log-frame.
- 7.7.3 Worked closely with AMDI (subcontractor) conducting the post-training assessment. The assessment aims to determine the results, outcomes and (where feasible) the impacts of the training conducted so far and identify motivators and barriers to application of new skills and knowledge among trainees. The field work was completed by AMDI and the final report is expected to be ready by mid-February.

- 7.7.4 Continued to provide oversight of ongoing monitoring, evaluation and quality assurance of activities on the APII project. Monitoring checklists are analyzed in Excel for a systematic review of quality of activities.
- 7.7.5 Provided inputs to SOWs and deliverables on the KAP survey and other assessments in order to help ensure technical soundness in APII's work.

7.8 Challenges and Solutions

- 7.8.1 To manage and ensure quality of delivery from subcontractors is often a 'painstaking' process with much time and effort spent by APII staff from the beginning to the end and final deliverable. It requires frequent communication, close monitoring, careful checking, guidance and mentoring to help ensure that we receive products of acceptable quality throughout. Very often we end up spending far more time than expected on assuring quality of work by subcontractors. An important lesson learned is the need to have clear and well elaborated deliverables from the outset.
- 7.8.2 The PMP database with revised indicators set is not yet available from MEASURE. This has caused a delay in the entry and compilation of PMP data, received from API partners (FAO and WHO).

Administration & Finance

APII continues to submit routine deliverables to USAID, including quarterly progress reports, quarterly financial reports, semi-annual and annual reports etc. The F&A team support the technical teams in managing all subcontracts and consultants.

7.9 Achievements

- 7.9.1 All subcontracts and consultants are now better tracked by the F&A team helping to prepare contract modifications in advance (and reduce need for retroactive approvals). Technical teams are regularly updated and reminded of due dates for upcoming deliverables.
- 7.9.2 Smooth coordination and communication with USAID and quicker approvals/turnaround times help reduce delays.
- 7.9.3 Internal communications in APII on recruitment of consultants and preparations of subcontracts have improved.

7.10 Challenges and Solutions:

- 7.10.1 Satisfactory completion of USAID's Contractor Employee Biographical Data Sheet ('Biodata') is still a big challenge for new consultants often causing delays in consultant recruitment or entry of subcontracts. Many consultants are reluctant to reveal for instance salary history.

- 7.10.2 Obtaining 'leave without pay letters' also continues to be a challenge and regular cause of delays in consultant recruitment.
- 7.10.3 Many Subcontractors find it difficult to prepare technical proposals that meet the required standards. The need to involve local partners and the limited market for subcontractors gives APII little choice to pick and choose quality partners.
- 7.10.4 Many subcontractors submit unrealistic (inflated) budgets that need several rounds of negotiations and rechecking before they are acceptable.
- 7.10.5 Many Subcontractors struggle to submit quality deliverables. Follow-up and mentoring by the APII team is often required to meet minimum standards and minimize delays. In other words, we continue to spend much time and effort capacity building subcontractors.
- 7.10.6 Some approvals have required several back and forth communications between APII and Bangkok (e.g. retroactive approval of AFAP staff and consultants for Years 1-2; disposal list). The processes consume a fair amount of time.

8. Success Stories

8.1 Capacity building efforts come to fruition as Bac Giang Animal Husbandry and Veterinary Association achieves self- financing

Over the last two years, supported by USAID's Avian and Pandemic Influenza Initiative (APII), Vietnam Veterinary Association (VVA) has gradually been building its capacity towards becoming a self-sustained private association.

VVA recently finalized a five year development strategy (2011-2015) to help establish and strengthen central and provincial branches as more independent entities that can conduct workshops, train networks of animal health workers and provide other much needed services in the livestock sector.



Members of BAVA Executive Board

As an outcome of this, on Dec. 15 2011 and following decision number 1670/QĐ-UBND of Nov. 2011, the Bac Giang Provincial Branch hosted a formal launching ceremony with more than 500 participants representing the private, corporate and government sectors.

"This is considered a shining pearl in the development of various associations and it is very practical. Your lessons learned should be documented and shared with other associations to help strengthening our capacity", said Mr. Dang Huu Hung, a representative from VUSTA during VVA's annual review meeting on Nov. 30.

BAVA is best described as a civil society organization under VVA and the Provincial Technical and Science Union. BAVA will disseminate knowledge, transfer new techniques on poultry, offer vocational training, and provide counseling and assessment of legal documents and poultry development project proposals for provincial partners and authorities. The association is thus set to play a unique role as a bridge between corporate business, livestock producers, animal feed and drug and vaccine dealers and local government agencies.

With nearly VND 600 million put forward as capital by its members at the launch ceremony, Mrs. Huyen, member of the BAVA Executive Board proudly noted: *"This shows that the establishment of BAVA really meets the real needs of the local community as well as the expectations of its members".*

8.2 APII's supports realization of Circular 18 on Infection Control Improvement – a case of Thot Not district hospital, Can Tho

Infection control (IC) is a challenge that every hospital faces, no matter where it is located. To help ensure hospitals in Viet Nam remain safe places for patients to seek care, the Ministry of Health issued Circular 18 in Dec, 2009. The Circular specifically mandates IC implementation activities in hospitals such as hand hygiene, sterilization during surgery/procedure, cleaning, disinfection and sterilization of devices and equipment for medical care and treatment of instruments, equipment and supplies etc.

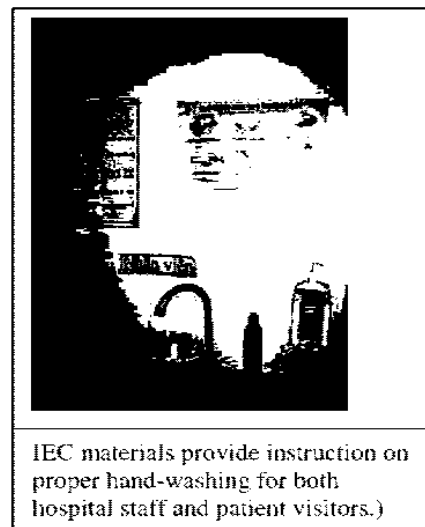
As with most circulars, Circular 18 does not include detailed operational guidelines on how to implement IC work at the hospital level. From May 2012 APII has supported 8 district hospitals in five focus provinces to implement important actions through collaboration with HCMC infection control and Ha Noi Society for Infection control (HANSIC). These actions have included improved instrument and linen processing and waste management, increased use of personal protective equipment, standardized facility disinfection, and standard cleaning practices to prevent the spread of infectious disease within the confines of the institutions.

APII, in close collaboration with Bach Mai hospital, HANSIC and HCMC Infection Control Society has helped provincial Departments of Health (DOH) train and engage more staff in proper IC work. This also includes development of training materials on IC procedures and training of 20 master trainers to conduct diffusion trainings in their hospitals. To support the interventions APII also provided IC supplies including alcohol hand rub, masks and IEC materials/posters to the hospitals.

As in other hospitals receiving training on IC and case management, Thot Not district Hospital – a 250 bed hospital in Can Tho – recently established an IC committee consisting of 15 hospital staff who meet monthly to review work done and plans for improvement. This was done in compliance with Circular 18.

With support from APII, antiseptic/alcohol hand rub is now readily available in all patient rooms, and IEC materials are posted throughout the hospital.

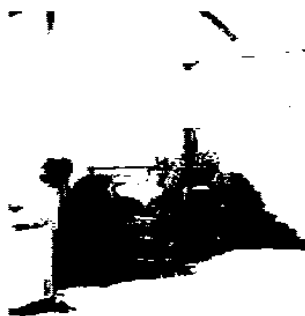
“Working with the APII project helped us to see that all staff were uniformly trained and informed about IC, and to establish a monitoring and tracking system for IC” according to Thot Not Hospital director, Dr. Le Duc Long (December 2011).



IEC materials provide instruction on proper hand-washing for both hospital staff and patient visitors.)



In the new IC department buildings, sterilization and decontamination have been consolidated.



In 2011 the hospital moved into new buildings, which facilitated IC improvements. For example, 70 percent of rooms now have sinks for hand washing. The new facilities allow for easy decontamination and sterilization of equipment and supplies from all departments in the new IC department building. The new separate, dedicated IC building was built to house proper cleaning areas and autoclaves, as well as a packaging area. Dr. Long notes that creating this centralized unit allows the hospital to ensure consistent quality and manage the steps of decontamination efficiently.

Despite the strides made in the hospital, challenges still exist in improving IC. The physical arrangement of rooms and infrastructure, even in Thot Not's new building, create barriers to optimal IC and is costly to change. Hospitals need to work with their DOH's and Boards of Directors to find money in the budget to make these changes little by little over the next few years. While APII has provided chemical solutions for both surface sanitization and hand washing, hospitals need to plan and budget for keeping these in their pharmacies in future. Ongoing

behavior change and correction of misunderstandings, for example regarding how to dispose of sharps and when it is necessary to use gloves, will need to be reinforced through supportive supervision and refresher trainings in order to continue to build on and reinforce the correct behaviors learned in the APII trainings. As always, there is need for follow-up in order to see the improvements sustained.

In 2012, APII and HANSIC are working with Vietnam Nursing Association (VNA) to hand over the IC package with training materials, tools, and guidelines to provincial and national counterparts. VNA will work closely national IC experts, WHO/MOH and three regional IC Societies (Hanoi, Huc, and Ho Chi Minh City) for wider adoption and presenting this package to MOH for formal approval.

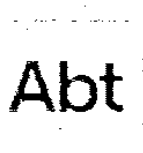


Avian and Pandemic Influenza
Initiative

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Year 3, Semi-annual Report
(October 2011 – March 2012)

Submitted on April 26, 2012



In association with:

Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross

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Annex 1 – Updated International Consultancy & Travel Schedule

Annex 2 – Updated Subcontractor and Local Consultants Schedule

Annex 3 – Updated Annual Work Plan/Gantt Chart

Annex 4 – Updated Log-frame/PMP

Annex 5 – APHA CBS Poster

Annex 6 – APHA Simulation Poster

Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015)
APHA	American Public Health Association
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
AVSF	Agronomes et Vétérinaires Sans Frontières
BC	Behavior Change
BCC	Behavior Change Communication
BCP	Business Continuity Planning
CBS	Community Based Surveillance
CCHIP	Centre for Community Health and Injury Prevention
CDC	Center for Disease Control
CEFACOM	Research Center for Family Health and Community
COP	Chief of Party
CPE	Committee for Popularization and Education
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DDM	Data based decision making
DFP	Department of Forest Protection
DLP	Department of Livestock Production
DOH	Department of Health
EPT	Emerging Pandemic Threats
FA	Farmers Association
FAO	Food & Agriculture Organization (of the United Nations)
FAPQDC	Food and Agricultural Products Quality Development and Control Project (supported by CIDA through MARD)
FP	Focal Point (appointed by FAO in focus provinces)
HPI	Health Policy Initiative
ICS	Infection Control Society
IPC	Infection Prevention and Control
KAP	Knowledge, Attitudes and Practices
LIFSAP	Livestock Competitiveness and Food Safety Project
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MMB	Market Management Board
MFI	Micro-Finance Institution
MOD	Ministry of Defense
MOH	Ministry of Health
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCERWASS	National Center for Rural Water Supply and Environmental

	Sanitation (in MARD)
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PEPFAR	President's Emergency Plan for AIDS Relief
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PSA	Professional Services Agreement
QTLVA	Quang Tri Livestock Production and Veterinary Association
RAHO	Regional Animal Health Office
RC	Regional Coordinator
SARI	Severe Acute Respiratory Infection
SOW	Scope of Work
TOT	Training of Trainers
TOFT	Training of Farmer Trainers
TOMT	Training of Master Trainers
UNJP	United Nations Joint Programme
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VEMEDIM	Veterinary Medicine Import Export Joint-Stock Company
VIPA	Vietnamese Poultry Association
VMSA	Vietnam Medical Services Association
VNA	Vietnam Nursing Association
VNFU	Viet Nam Farmers Union
VNRC	Vietnamese Red Cross
VUSTA	Vietnam Union of Science and Technology Associations
VVA	Vietnamese Veterinary Association
WCS	Wildlife conservation Society
WHO	World Health Organization
WU	Women's Union

Introduction

This report presents the main achievements, challenges and solutions/lessons learnt for USAID's Avian and Pandemic Influenza Initiative (APII) during the first six months of Year 3 (October 2011 – March 2012).

The report is divided into the following thematic sections:

1. Animal Health Worker (AHW) Capacity Building
2. Agricultural Extension Worker (AEW) Capacity Building
3. Poultry Supply Chain Strengthening
4. Community-Based Surveillance (CBS)
5. Infection Control / Case Management (IC/CM)
6. Pandemic Preparedness Planning (PPP)
7. Cross-Cutting Issues
8. Success Stories.

1. Animal Health Worker (AHW) Capacity Building

The goals are to develop an AHW capacity building package and an AHW network model that is adopted by relevant public-private agencies at national and/or local levels, and to develop a standard Terms of Reference for AHWs for adoption by Provincial Peoples Committees (PPCs) and the Ministry of Agriculture and Rural Development (MARD).

The first half of Year 3 focused on completing and transferring the AHW training package for wider adoption and on establishing well-functioning networks of capable public and private animal health workers in and beyond project areas. Subcontractors included AFAP and Vietnam Veterinary Association (VVA).

1.1 Achievements

- 1.1.1 The Year 2 subcontract with AFAP was extended through November, 2011 and a Year 3 sub-contract developed and signed to cover ongoing activities in the field including AHW monthly meetings and refresh trainings for current and new districts as well as biosecurity training for farmers. The current subcontract ends in June 2012 and may be subject to extension.
- 1.1.2 AFAP's work promotes development of provincial strategies to maintain and expand monthly meetings and refresher training for grassroots AHWs. Training for new AHWs in Quang Tri was conducted on a cost-share basis with AHWs taking care of lunch themselves and local authorities supporting travel.
- 1.1.3 Quang Tri PPC has allocated 1 billion VND (~USD 50,000) on the provincial budget for training of AHWs in Quang Tri in 2012. This is a clear indication of the province's commitment to adopt and replicate the AHW training model/package.

- 1.1.4 A local consultant was recruited to help AFAP develop an E-book for the AHW training manual. A first version of the E-book is expected in May. The hard copy will be printed in the coming quarter after final revision.
- 1.1.5 A lessons learned-cum-advocacy workshop on training of and TORs for A lessons learned-cum-advocacy workshop on training of and TORs for AHWs was conducted 22-23 Nov 2011 in Quang Tri with participation of Quang Tri-based AHW agencies (incl. Agricultural Colleges and Vocational Training Centers), SDAHs of other focus provinces and of new provinces Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Thua Thien Hue, Quang Nam as well as representatives of DAH and RAHO3. The workshop included discussion on formalization of AHW training and certification.
- 1.1.6 VVA finalized and disseminated their 2011-2015 Strategy in October 2011 within the national network. Bac Giang Veterinary and Animal Husbandry Association hosted an event with 422 members and more than 100 public and private guests. The event highlighted the success of APII's support to VVA. Mr. Dang Huu Hung, a representative from Vietnam Union of Science and Technology Associations (VUSTA) noted in his speech that *"This is considered as a shining pearl in the development of various associations and it is very practical. Your lessons learned should be documented and shared with other associations to help strengthening our capacity."* A new subcontract to further network expansion is being prepared with VVA.

1.2. Challenges and Solutions

- 1.2.1 Allocation of local funds for training of AIHWs remains a big issue. While Quang Tri DARD has allocated 1 billion VND on the provincial budget for AHW training in 2012 (for implementation of the provincial decision no. 25 of 2009 to implement and strengthen AHW networks) many other provinces have no clear plans yet to do so. SDAHs in Can Tho, Hung Yen and Ha Nam have expressed commitment to maintaining the refresher training and monthly meetings, but no funds have yet been allocated in the provincial budget to APII's knowledge. Currently, most of the local contribution has been provision of free meeting venues by District Veterinary Stations (DVS) and the voluntary participation of AHW without compensation, allowances or travel support. APII will continue to follow-up and advocate in this area, including reaching out to other provinces and consider cost-sharing TOTs (subject to USAID approval).
- 1.2.2 APII and SDAHs will need to continue to work with DARDs and PPCs and advocate for inclusion of AHW support in the 2013 annual budget cycle, for which plans and negotiations will be initiated in June 2012. TA and other support from APII may well be needed (not to lose momentum) in the coming months to help position the AHW model for wider adoption with provincial resource allocations.

2. Agricultural Extension Worker (AEW) Capacity Building

The goal is to develop an AEW bio-security training package for small commercial poultry producers, which is adopted by the national-provincial extension system, and by other partners.

The first six months of Year 3 focused on package completion and dissemination.

2.1 Achievements

- 2.1.1 In collaboration with PAFECs, four TOTs for Farmer Trainers on biosecurity for small commercial farmers were organized in the five focus provinces in Quarter 1 with a total of 100 participants from district and provincial extension centers, preparing the provinces for further roll out/replication.
- 2.1.2 Following the TOTs small group discussions for farmers were conducted to test and cost implementation. A total of more than 500 farmers attended 52 courses in the five focus provinces. AFAP and APII staff dialogued actively with PAFECs to encourage pilot provinces to replicate the training further. Can Tho is currently planning diffusion in May and June.
- 2.1.3 The finalized biosecurity training package was distributed in the five pilot provinces and through NAEC to more than 40 high risk provinces. APII receive official requests for further support and training on this package from PAFECs in Soc Trang, An Giang, Bac Lieu, Vinh Long, Dong Thap, Dac Nong, Dac Lac, as well as a local NGO ('Trung tam giao duc thuogn xuyen Hoa Binh') and Thai Nguyen University. An advocacy event followed this in Q3, which will be reported on in the next quarterly report.
- 2.1.4 Integration of biosecurity training for farmers in provincial communication plans was promoted by the AH and BCC teams for adoption in Year 3 BCC PSAs in all pilot provinces. The next quarterly progress report will help document how successful this effort has been so far.
- 2.1.5 Vietnam Poultry Association (VIPA) entered a new contract with APII for livestock sector workshops and strengthening of the association in order to promote biosecurity practices within their farmer club networks. APII is working with VIPA two prepare two national workshops: i) Biosecurity and sustainable development of garden chicken to be chaired/hosted by DLP; ii) Current food safety situation in markets and slaughterhouses in Vietnam chaired/hosted by DAH. FAO has been brought up to date on all of these events.

2.2 Challenges and Solutions

- 2.2.1 Working closely with NAEC/PAFECs is necessary to help institutionalize the training/extension package. This is a time-consuming process which requires diplomacy, patience and perseverance in order to forge and sustain close relationships. MARD's recent strategy of opening up to competitive bidding the allocation/awarding of extension funds to not only

NAEC and PAFECS but also private enterprises will have implications for our work and will influence our strategy to promote replication of our AEW package. We will include NGOs, Civil Society Organizations and private entities as well in our advocacy and partnership efforts. This may provide opportunities for some novel and unconventional public-private-partnerships.

- 2.2.2 VIPA has demonstrated their ability to coordinate with MARD institutions such as DLP, DAH and NAEC. However, the association is still in need of substantial and sustained capacity strengthening. APII will continue to support this process through the subcontract.

3. Poultry Supply Chain Strengthening

The goal is to develop biosecurity/biosafety demonstration models in key (high risk) nodes along supply chains, together with related documents (protocols, guidelines, training materials) which are adopted, adapted and replicated by public agencies, private partners and/or other development projects and programs elsewhere.

The key nodes for APII interventions in Year 3 are:

- Dong Ha live bird and poultry meat market in Quang Tri;
- District market in Ha Nam;
- Ngoc Xuan centralized poultry slaughterhouse, Can Tho City;
- Home-based slaughter points around Dong Ha market, Quang Tri;
- Small slaughter points around Duy Tien district market, Ha Nam.

3.1 Achievements

- 3.1.1 The upgrade of the poultry sections in Dong Ha Market by a local construction company was completed in Nov 2011, co-funded by APII, the Market Management Board (MMB) and the vendors. A launch event was conducted on December 5 with representatives of Quang Tri province, neighboring provinces, DAH, VIPA, DLP, LIFSAP, FAO, USAID and APII. A success story was published on USAID's website.
- 3.1.2 A training session on risk reduction and good practices was conducted before the re-opening market for vendors, MMB representatives, district veterinary staff and cleaning staff. Follow-up trainings on bio-security, bio-safety and business development are provided at regular (usually monthly) intervals. Continued 'hand-holding' is absolutely necessary (and a positive thing) in order to see sustained behavior changes materialize.
- 3.1.3 Technical drawings, protocols, and bills of quantities were completed for an upgrade of Phu Nong centralized slaughterhouse in Kien Giang and Ngoc Xuan slaughterhouse in Can Tho. However, the initial plan to use Grants Under Contract as the financing vehicle was abandoned following USAID's advice and replaced with a Stakeholder Agreement procedure. This caused a significant delay. The Ngoc Xuan (Can Tho) upgrade is

scheduled to start in April, whereas the slaughterhouse work in Kien Giang looks less promising, partly due to lack of buy-in and commitment from provincial counterparts.

- 3.1.4 Two slaughter points in Dong Ha, both supplying the live bird market, were selected for upgrades and demonstration model development. Technical proposals and stakeholder agreement were prepared.
- 3.1.5 A similar approach is underway in Ha Nam with plans for upgrading a district market and one home based slaughter point.
- 3.1.6 Based on the Veterinary Inspectors training courses in Can Tho, September 2011, a third course was conducted in HCMC for 26 participants from the Mekong Region in December. This 'Advanced Training Course for Inspectors on Veterinary Hygiene and Risk Reduction in Poultry Slaughterhouses' was implemented together with HCMC Veterinary Inspection Center and FAO. Participants included LIFSAP counterparts, RAHO 6-7 staff, and DLP representatives. APII received positive feedback suggestions for further training courses elsewhere.
- 3.1.7 APII actively shared materials including risk assessment reports, supply chain node prototype designs, small group discussion flipcharts etc. with LIFSAP and continued throughout the reporting period to invite LIFSAP and VAHIP representatives along to relevant events for closer collaboration and experience/lessons learned sharing.

3.2 Challenges and Solutions

- 3.2.1 While provincial counterparts clearly are very interested in the demo models, most provinces have no 'master plans' that demarcate future locations e.g. for centralized poultry slaughterhouses and markets, which makes it difficult for them to commit resources in this area. In addition, the processes for local authorities to approve construction are very complex, involving multiple stakeholders and complex regulatory frameworks which are not always well understood by all or straightforward to implement. APII is still learning along the way and adjusting plans and expectations accordingly.
- 3.2.2 Profit margins from poultry slaughtering are small especially in small scale slaughtering operations. It is understandably hard to persuade the small private entrepreneurs to invest in facility upgrades and without some form of 'subsidy' (financial support) in this environment. Micro-finance options in the commercial financial sector (banks, MFIs) are rarely available. Many small entrepreneurs appear to be comfortable where they are without plans to expand. Cost-cutting measures seem a more appealing way forward to improve business and increase profits. This also implies cutting private costs on environmental safeguarding and food safety related measures. Sustained awareness raising is necessary combining stick-and-carrot for more attention to public goods issues.
- 3.2.3 APII continues to reach out to and invite partners such as LIFSAP and VAHIP. Partners rarely reciprocate however. USAID may need to step in and help promote the dialogue at donor level.

4. Community-based Surveillance (CBS)

The goal is to develop an events-based grassroots surveillance package, including training materials/tools and job descriptions for grassroots 'collaborators', which is adopted, adapted and scaled-up in the provincial-regional-national surveillance system with local resources.

The first six months of Year 3 focused on phasing out CBS implementation at the field level, preparing and initiating the CBS evaluation, and advocacy activities.

4.1 Achievements

- 4.1.1 In October 2011, APII ceased providing financial support to CBS networks in Ha Nam, Hung Yen, Can Tho and Kien Giang provinces. Only support in Quang Tri, where the province will start providing monthly allowances for AHWs from the provincial budget in 2012, was maintained in order not to lose momentum before provincial takeover.
- 4.1.2 APII held a handover meeting in October between CCHIP (previous subcontractor) and Quang Tri Livestock Production and Veterinary Association (QTLVA), the new subcontractor on CBS in Quang Tri. QTLVA continued monitoring, supervising, maintaining and supporting the CBS collaborator networks in Quang Tri from until end of December. From Jan. 2012 onwards the province is expected to assume responsibility for supporting/maintaining CBS collaborators and networks. As of January 2012 animal health collaborators have received a monthly allowance from the provincial budget, following Decision 25 of Quang Tri PCC. The CBS evaluation now underway will provide insights into the extent to which CBS activities in Quang Tri and elsewhere are being sustained.
- 4.1.3 Supported by the APII team an international (Australian) intern conducted an assessment in Quang Tri on human health - animal health cross-sector collaboration, coordination and knowledge/use of human health - animal health services among sector three farmers. The University of Sydney awarded a high distinction for the thesis work submitted towards a Masters' degree and is now encouraging the student to submit to a peer reviewed journal for publication.
- 4.1.4 An economist from Abt's Home Office updated the previous costing of the CBS model costing, including a cost-benefit analysis. This study will complement the final evaluation of the CBS model.
- 4.1.5 Prepared for and initiated the CBS evaluation led by an International Consultant working with and guiding a local subcontractor (AMDI). The evaluation aims to identify whether the CBS system is effective in enabling timely detection, reporting, and investigation of, and response to, animal and human disease events with outbreak potential, as well as the feasibility and barriers for sustained adoption, adaptation and replication of the CBS system in Viet Nam. Both quantitative and qualitative evaluation methods are being applied.

- 4.1.6 Prepared for a national workshop in Hue in early April on the CBS model, lessons learned and recommendations on the way forward.
- 4.1.7 Had two posters (Annexes 5 and 6) on the CBS work presented at the American Public Health Association (APHA) conference in Washington DC Oct 29 – Nov 2, 2011:
<http://apha.confex.com/apha/139am/webprogram/Paper242716.html>
<http://apha.confex.com/apha/139am/webprogram/Paper242729.html>
- 4.1.8 The APII Technical Director for Human Health Delivered a lecture on the CBS model for 11 visiting undergraduate students from the University of North Carolina at Chapel Hill, USA. The students also visited the field work to see the CBS model at work in Ha Nam.

4.2 Challenges and Solutions

- 4.2.1 The firm initially identified to implement the subcontract for the CBS evaluation withdrew and another company (AMDI) was identified as a suitable replacement. The change in subcontractor caused some delay in implementation but the evaluation is progressing well. As is usually the case, APII staff have spent considerable time on quality assuring subcontractor work.

5. Infection Control/Case Management (IC/CM)

The goal is to develop a model (with training tools, guidelines etc.) for implementation of Circular 18 at the local level, which is adopted more widely in Vietnam.

The first six months of Year 3 focused on preparing and initiating a subcontract with the new IC subcontractor, Vietnam Nurses Association (VNA). The highlight was a series of regional workshops on IC advocacy and replication in Hanoi, Hue and Ho Chi Minh City in late March/early April chaired by MOH, VNA and Infection Control Societies, and covered by local and national media.

5.1 Achievements

- 5.1.1 Signed a contract with VNA to implement APII IC activities in Year 3. The work progressed well culminating with three regional workshops with key stakeholders on IC advocacy and replication in Hanoi, Hue, and Ho Chi Minh City in late March/early April. The events were chaired by MOH, VNA together with the regional Infection Control Societies. This was aired on O2TV and uploaded to the T5G/NCHEC website (<http://www.t5g.org.vn/Default.aspx?u=dt&id=3706>). The media clip was subtitled for wider dissemination. A media advisory and press release were made available and shared.
- 5.1.2 VNA conducted a training needs assessment and review of current IC status in the five focus provinces during February. Findings were shared in the above-mentioned IC workshops.

- 5.1.3 IC evaluation conducted by an international consultant from Abt Head Quarters and a local consultant. Preliminary findings were presented in the IC workshops. The final report will be available soon.
- 5.1.4 Conducted monitoring visits and provided technical assistance to Gio Linh district hospital in October 2011 in collaboration with Hue Infection Control Society (ICS) experts. The results of this work are posted on the Website of Hue ICS: http://www.husic.org.vn/vn_tin-tuc/thoi-su/hoat-dong-ksnk-tai-bv-gio-linh-tinh-quang-tri-91-husic.aspx
- 5.1.5 Can Tho provincial Department of Health (DOH) applied APII's assessment tools and methodology to conduct IC infection control status for other hospitals in in Can Tho including provincial and specialized hospitals using their own resources. The results of the assessment will not only help them understand current situation of IC practices but also develop their action plans for IC improvement.
- 5.1.6 Meetings were conducted with the DOH in Quang Tri, Can Tho and Kien Giang to review results of IC interventions in selected district hospitals and IC assessments in other hospitals on IC organizational structure, hospital equipment, knowledge and practice of health workers. The assessments were done by DOH with technical support from APII (methodology, tools, etc.).
- 5.1.7 The annual DOH evaluations ranked all eight APII intervention hospitals' in the five provinces IC activities excellent or very good and among highest scores.
- 5.1.8 USAID delegation visited Gio Linh district hospital on December 5, 2011. During the visit, the delegation had opportunities to observe IC activities and interact with the hospital board of directors and IC specialists.
- 5.1.9 Invited WHO and MOH IC experts to Kien Giang province to visit Thoi Not district hospital supported under USAID's AI Mekong Initiative and Go Quao district hospital supported by APII. The team also had chance to visit a non-intervention district hospital in Hon Dat district. During the visit, the experts were able to observe and discuss with the hospital board of directors and IC specialist's achievements and lessons learned, success stories from IC interventions supported by APII and to compare intervention with non-intervention hospitals.

5.2 Challenges and Solutions

- 5.2.1 All hospitals and DOHs were busy at the end of the year with little time for IC activities. To support the hospitals and DOHs, the APII team undertook field monitoring visits to help integrate IC activities into DOH annual evaluations.
- 5.2.2 The process of subcontract preparation with VAN required more time than expected. Budget negotiations and the preparations of CVs, Biodata, and leave without pay letters typically cause delays.

- 5.2.3 It required extra time and effort to get the necessary involvement of MOH but the result justified this strategy as seen in the regional IC workshops.

6. Pandemic Preparedness Planning (PPP)

The goal is to develop PPPs in selected pilot province(s), introduce the package in other provinces, and advocate for its wider adoption in Vietnam.

The first six months of Year 3 focused on developing the Kien Giang PPP with the new concepts and gathering the comments and inputs from relevant sectors, local organizations, and national and international experts.

6.1 Achievements

- 6.1.1 Met with WHO to discuss PPP collaboration in Year 3, including how APII and WHO will support the Government to revise the PPP with inclusion of business continuity planning (BCP).
- 6.1.2 Organized a PPP workshop November 15-17 for representatives from local authorities to discuss the new concept of "whole-of-society" approach and develop a multi-sector framework for the design and implementation of their PPP.
- 6.1.3 Compiled inputs and comments on Kien Giang PPP outline and drafts from technical experts, national consultants and API partners.
- 6.1.4 Finalized the revision of training materials for community leaders with WHO inputs. The training materials focus on three main topics: concepts of influenza and pandemic; community planning for pandemic preparedness; and business continuity planning and livelihood maintenance plans during the different phases of a pandemic.
- 6.1.5 Engaged an experienced local consultant to work closely with VNRC and provide technical inputs on PPP revisions, finalization and dissemination process and help ensure the quality of the PPP activities.
- 6.1.6 Ten PPP training courses for about 250 community leaders were organized by VNRC in Ha Nam, Hung Yen, Quang Tri, Kien Giang and Can Tho. The training provided basic knowledge for community leaders on pandemic influenza and community preparedness for pandemics (such as preparedness for health, livelihood, essential services provision, business continuity planning, etc.).
- 6.1.7 A preparation meeting was organized in Kien Giang on the table top exercise plan. The plan with some scenarios was drafted with experiences shared from Ha Nam experts. The table-top exercises are scheduled for early May.

6.2 Challenges and Solutions

- 6.2.1 It took a time to obtain feedback and comments on the PPP outline from API partners and local experts. This, and other delays (including flooding

in Kien Giang), led to the late of submission of VNRC deliverables and was followed by a subcontract modification (time-wise extension).

- 6.2.2 The “whole-of-society” approach and the business continuity planning concepts adopted in Kien Giang’s PPP are new to the province and to VNRC. APII technical staff, with inputs from WHO, worked very closely with VNRC and provincial counterparts to provide technical support in the development of the PPP.

7. BCC and Cross-Cutting Issues

Behavior Change Communication (BCC)

The BC work aims to identify appropriate behaviors and messages, integrate these into the work of the animal and human health components, and strengthen the BCC capacity of national and provincial stakeholders, enabling them to carry on BCC activities beyond the life-time of the project. The second ‘C’ concerns APII’s advocacy and policy dialogue work.

The first six months of Year 3 focused on the development of BCC transitional strategy and plans in the five focus provinces where local partners will take the ownership and leadership in designing, implementing, monitoring and evaluating their future campaigns and other BC efforts. Local partners and BCC trainer teams were provided coaching and mentoring by the APII team to develop their own BCC materials including discussion guides and training plans targeting to small and medium commercial farmers for improved biosecurity practices and recommended behaviors prioritized by line ministries and provinces to prevent AI and EIDs.

7.1 Achievements

- 7.1.1 Organized a Consultation Workshop on the Year 3 BCC Strategy in Da Nang with participation of key leaders and officers from Ha Nam, Kien Giang and Quang Tri. The outcomes of workshop helped promote new and innovative BCC activities (e.g. excellent poultry farmer competitions) and local contributions. This workshop was a first step in the BCC transition strategy to position provincial partners to carry out their own BCC work post-APII.
- 7.1.2 Conducted Year 3 implementation planning workshops in December in the five focus provinces. The workshops helped provinces to think through the Year 3 transition strategy and prepare their BCC plans including campaigns, follow-up on farm level biosecurity, new activities such as farmer competition, identifying provincial counterpart funding contribution in implementing Year 3 BCC activities, etc., and prepare proposals for the 2013 budget to be submitted in June 2012.
- 7.1.3 Provided technical guidance and support on the review and finalization of provincial proposals for Year 3 BCC activities in all five focus provinces. These proposals served as the basis for developing Year 3 BCC SOWs for each province which subsequently were turned into subcontracts for local BCC subcontractors of Ha Nam, Hung Yen, Kien Giang and Quang Tri.

- 7.1.4 Designed and produced BCC promotional materials including aprons and hair bandeau for poultry vendors in Dong Ha Market during the market launch event.
- 7.1.5 Guided two small group discussions (SGD) with live bird and plucked poultry vendors of and two monthly meetings with poultry clubs at Dong Ha market facilitated by Quang Tri BCC trainers with coordination and support from Dong Ha market management board. In these monthly meeting, participants also have opportunity to receive technical update on important health check-up and improvement of recordkeeping and business plan.
- 7.1.6 Finalized and produced the seven-step discussion guides for live bird and plucked poultry vendors in Dong Ha market with technical inputs from MOH, MARD, WHO and FAO. These guides are being used by provincial BCC trainer team in Quang Tri in group discussion to promote desired behaviors among these vendors. The guides also serve as reference for all focus provinces to develop their own discussion guides on new bio-security behaviors and will be used by trained communicators to facilitate small group discussions with farmers in this Year 3.
- 7.1.7 Provided technical assistance to Quang Tri Women's Union (WU) to organize their 'Three Clean Movement Ceremony', part of a National Program on Building New Rural Areas, which utilize BCC trainer team's efforts, applies BC interactive approaches and integrates desired behaviors for AI/EIDs prevention in the WU network.
- 7.1.8 Finalized the seven-step discussion guides for poultry slaughterers and collectors to be used by provincial BCC specialists leading small group discussions in APII supported slaughterhouses/points.
- 7.1.9 Prepared for the upcoming training on proposal development and writing skills (in May) for key staff from the five focus provinces and other interested provinces, national agencies and organizations. This training is scheduled to be completed in May 2012 with ongoing coaching and follow-up so that provincial teams can develop their proposals ready to be submitted to their PPC in June 2012.
- 7.1.10 Provided technical assistance to build capacity of provincial trainer teams in Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri.
- 7.1.11 Can Tho's Multi-sector Communication Guide was endorsed by the PCU before submission to Can Tho People's Committee for approval and dissemination to interested institutions in Can Tho and neighboring provinces . The development of this document was led by Can Tho's BCC specialists from SDAH, PAFEC, CHEC (T4G) with involvement of experts from DLP, DAH, NAEC, NCHCE, the MOH sub-committee for communications and with inputs from FAO and CDC.
- 7.1.12 In the process of designing Ha Nam provincial Integrated Behavior Change Communication Plan for print out and distribution in April – May, including a dissemination workshop.
- 7.1.13 Worked with Centre Committee for Popularization and Education (CCPE) to provide training on AI and EIDs prevention for more than 500

participants from 63 provinces and cities in the whole country. The diffusion training courses in CCPE network in 63 provinces/cities were included in provincial monthly plans submitted to CCPE. The monitoring visits made by CCPE to 13 provinces found that nearly 100 articles and 60,300 internal news on AI/EIDs prevention were disseminated and 59 times aired on provincial TVs and 48 times broadcasted through local radio systems.

- 7.1.14 In collaboration with National Center for Rural Water Supply and Environmental Sanitation (NCERWASS), UNICEF and Lien Aid, worked with Minh studio, a local media firm to develop and air seven TV spots on hand-washing and sanitation practices related to raising, slaughtering and selling poultry. These spots were aired on provincial TV channels and will be used for discussion with sector three farmers, market vendors and slaughterers in project and demonstration sites.
- 7.1.15 Completed a qualitative Knowledge, Attitudes and Practice (KAP) study of poultry customers in 4 provinces of Can Tho, Ha Nam, Kien Giang and Quang Tri. Results served to inform USAID/APII activities design, for example they were extracted to discuss with related provinces on Year 3 BCC activities (e.g poultry stakeholders forum) on food safety practices. The qualitative KAP study was conducted by a national expert.
- 7.1.16 A large quantitative KAP survey was completed by a subcontractor (Nielsen) guided carefully by APII. More thorough analysis of key indicators is underway by staff in Abt's home office. A final report that combines findings from the quantitative and qualitative KAP studies will be submitted to USAID in the next reporting period.

7.2 Challenges and Solutions

- 7.2.1 Limitations in writing skills and analytical thinking among provincial subcontractors were reconfirmed through their participation as members of the writing team developing Can Tho's Multi-sector Communications Guide and also through their progress reports and activity proposals. This partly explains the delay in some activities. Other reasons include pre-occupation of writing team members (from PA FEC, SDAH, PCHCE, PMC) with other work. Recognizing the weaknesses, provinces have asked APII to provide training on writing skills and proposal writing in Year 3.
- 7.2.2 Exploring local contributions to implement Year 3 BCC activities required discussions and negotiations, which delayed provincial implementation of activities. Intensive technical assistance from APII staff and strict schedule management helped manage the delays.
- 7.2.3 Unlike other provinces, it took time to reconsider a local subcontractor who is likely to take the ownership and leadership for subsequent communication program on BCC work in Can Tho. However, CEFACOM was nominated again by the PCU as the quality of their work is appreciated. The disadvantage is that CEFACOM may have weaker connections with other agencies in the province than a local subcontractor. Key CEFACOM staff were not available until April 2012 so the APII BCC

team initiated the work with BCC trainer team in Can Tho to develop their own BCC materials for their future campaign(s).

- 7.2.4 The KAP survey outsourced to Nielsen required far more inputs, checking and quality assurance by the APII team than envisaged. Illustrates once more the point that APII plays an important (and somewhat unrecognized) role in building the capacity of subcontractors. This needs to be better documented and written up in future.

Provincial Coordination and Implementation

APII's provincial implementation (PI) team works closely with the animal health, human health and BCC technical teams to coordinate field activities implemented by subcontractors, develop/test successful models at provincial and grassroots level, and advocate for their wider adoption with local public and private partners. The PI team operates out of the main office in Hanoi covering activities in northern Vietnam and through two satellite offices, one in Quang Tri for activities in central Vietnam and one in Can Tho for activities in southern Vietnam.

Provincial Coordination Units (PCUs), representing the body of key provincial counterparts and civil society, were established in Year 1 in the five focus provinces. Each province has a Provincial Coordinator (PC) appointed jointly with FAO and funded by APII. The PCs are typically seconded from a provincial agricultural/livestock agency. The PCs work closely with the PI team, coordinate their efforts with FAO's focal points, and report to the PCUs.

7.3 Achievements

- 7.3.1 Signed MOU addendums for Year 3 with all five focus provinces.
- 7.3.2 Worked closely with the APII technical teams to facilitate an integrated approach at the field level.
- 7.3.3 Worked closely with provincial subcontractors to prepare work plans with emphasis on dissemination and advocacy activities.
- 7.3.4 Cooperated with FAO in preparing and conducting provincial planning workshops.
- 7.3.5 Worked with FAO to extend the contracts for Provincial Coordinators (PCs) until June 2012.
- 7.3.6 Worked with PCUs to enhance their commitment to the strategy of Year 3 shifting focus from implementation to advocacy and replication with local resources and getting provincial buy-in.
- 7.3.7 Worked closely with provincial partners to review the models and draw lessons learned and field-based evidence for advocacy.
- 7.3.8 Organized stakeholder consultation workshops in the focus provinces to and supported provincial partners in preparing their inputs and presentations at the CBS review workshop in Hue (held in early April).

7.4 Challenges and Solutions

- 7.4.1 Need and justification for continued support to PCUs to be reviewed and determined.
- 7.4.2 Future of PCs beyond June 2012 to be considered and decided with USAID and FAO. The provinces are well aware of the plans to phase out the PCs within Year 3.
- 7.4.3 Maintaining provincial interest and commitment as APII continues to withdraw its support to implementation and shifts towards advocacy for adoption and uptake increasingly with local resources.

National Coordination & Policy Dialogue

The goal in Year 3 is to increase the focus on ways and mechanisms to transfer packages/models/approaches to public and private partners for adoption, adaptation, replication and up-scaling. The project consults and coordinates closely with API partners in this effort.

The first six months of Year 3 focused on updating the advocacy strategy and action plan and supporting strategic communications and project promotion in (upcoming) advocacy events.

7.5 Achievements

- 7.5.1 Facilitated the BCC working group meeting in March 2012 where BCC working group members shared their communications plans and common interests in AI and EIDs prevention in 2012 and beyond (under the AIPED framework) including scope for further collaboration maximize efforts and resources.
- 7.5.2 Prepared media advisories and press releases for (upcoming) advocacy event on APII's IC, CBS and AEW work. The IC workshop in Hanoi in late March was aired on O2TV and websites (including NCHEC). The TV clip was subtitled in English and shared with USAID for wider dissemination.
- 7.5.3 Prepared an advocacy matrix for APII advocacy activities and shared with USAID and API partners for inputs and feedback.
- 7.5.4 Engaged an international expert as Advocacy/Policy Dialogue Advisor. This input is already bearing fruits and boosting APII's communications work.

7.6 Challenges and Solutions

- 7.6.1 APII's planning and budget cycle does not match that of the Government making it more difficult to get the timing right and call for local funding to adopt, adapt and implement models developed with APII. The APII team needs to be well prepared and think/plan ahead with partners and counterparts.

Monitoring & Evaluation

APII's M&E work as a critical component linked with all other program's components in the project's strategic plan and framework to strengthen existing systems for AI/EIDs detection, prevention and management in the focus provinces. In addition, APII acts as the repository for PMP indicators collected under USAID's API initiatives, providing analysis and reporting on this data.

In Year 3, M&E focuses on gathering data and evidence for showing the results of project implementation, especially the project's outcomes and effectiveness of the models. Continuous capacity building for local partners to enhance sustainability will be carefully considered, based on the recommendations of the post-training assessment.

The Project will continue to work closely with USAID's API partners to revise/update the result framework and PMP as well as to compile and analyze PMP data.

7.7 Achievements

- 7.7.1 Collected Year 2 PMP data from API partners for entry into database to be provided by MEASURE. Contributed to finalizing the revised indicators and database with MEASURE's lead.
- 7.7.2 Continued to provide oversight of ongoing monitoring, evaluation and quality assurance of activities on the APII project. Monitoring checklists are analyzed in Excel for a systematic review of quality of activities.
- 7.7.3 Continued to update and fine-tune the project Log-frame.
- 7.7.4 Worked closely with AMDI (subcontractor) conducting the post-training assessment in November 2011. The assessment aims to determine the results, outcomes and (where feasible) the impacts of the training conducted so far and identify motivators and barriers to application of new skills and knowledge among trainees. The assessment applied self-administered questionnaires on knowledge, attitudes and practices combined with focus group discussions and in-depth interviews for 1316 trainees, 220 trainers, and 59 local animal and human health officers. Overall, it identified a high level of knowledge and positive attitudes in all groups eight months to a year after the training courses. High percentages of trainees self-reported applying almost all gained skills with a high level of confidence. The assessment also acknowledged the working mechanism for AI prevention through hand-in-hand cooperation between AH, HH and communication sectors as a promising way to create long-term impact.
- 7.7.5 Provided inputs to SOW and deliverables on the KAP survey and other assessments in order to help ensure technical soundness in APII's work.

7.8 Challenges and Solutions

- 7.8.1 To manage and ensure quality of delivery from subcontractors is often a 'painstaking' process with much time and effort spent by APII staff from

the beginning to the end and final deliverables. It requires frequent communication, close monitoring, careful checking, guidance and mentoring to help ensure that we receive products of acceptable quality throughout. Very often we end up spending far more time than expected on assuring quality of work by subcontractors. An important lesson learned is the need to have clear and well elaborated deliverables from the outset. APII needs to document this effort and highlight any related 'capacity building success stories'.

- 7.8.2 The PMP database with revised indicators set is not yet available from MEASURE. This has caused a delay in the entry and compilation of PMP data from API partners (FAO and WHO). USAID is following up with MEASURE.
- 7.8.3 The post-training assessment identifies important challenges such as assuring standards and quality of training activities conducted through various sub-contractors; training on skills and competencies; assessment on skills, competencies, training outcomes and impacts; and sustaining changes and improvements after training. Key barriers for sustainability at institutional and individual levels include a lack of regular incentives (e.g. salary or allowances) for public AHWs possibly leading to high turnover of the trained AHWs; shortage of resources, standardized tools and frameworks for follow-up, coaching and continued on-site training and learning. The assessment recommends involving local partners in all stages, discussing with the partners on a follow up strategy as well as advocating for policy development to create an enabling environment for a higher sustainability.
- 7.8.4 The project is unable to maintain project-specific reporting mechanisms after the CBS piloting to obtain data for the indicators on AI suspected cases in Animal Health and Human Health (USAID PMP 1.3 and 2.7). These indicators are not a regular indicator in the national surveillance system. In the Human Health Sector, the '24 Communicable Diseases Form' does not include AI. In Animal Health, disease reporting goes down to commune level only. Moreover, the investigation and appraisal records are usually prepared only for the events which are confirmed positive by lab tests and/or where control measures are taken later on. Records are not kept on suspected, unconfirmed cases.

Administration & Finance

APII continues to submit routine deliverables to USAID, including quarterly progress reports, quarterly financial reports, semi-annual and annual reports etc. The F&A team supports the technical teams in managing all subcontracts and consultants.

The first six months of Year 3 focused on the management of expenses versus budget, subcontracts and consultants and early preparations for Project Close Out.

7.9 Achievements

- 7.9.1 Smooth coordination and communication with USAID/Vietnam and quick approval turnaround time from USAID that helps to facilitate the process better.
- 7.9.2 Improved APII internal communication regarding the procurement process of consultant and subcontract that help the team works more efficient.
- 7.9.3 USAID Vietnam was very supportive and proactive in SOW approval and planning activities of Project for Year 3 that help project in its work plan for subcontracts and consultants. APII regularly update USAID on the revise timeline of any subcontract and consultant.

7.10 Challenges and Solutions:

- 7.10.1 New approval procedures sent by Bangkok were extremely helpful and helped speed up the approval process.
- 7.10.2 With only six months left on the project some staff have left (Technical Director for Human Health, Admin Assistant, F&A Assistant – Can Tho office) giving extra work to an already stretched team. Will need to focus on way to keep remaining staff motivated and be prepared for stop-gap measures if/where necessary. A senior HPI staff was brought in on 30% to help close the gap after the Technical Director for Human Health.
- 7.10.3 May need to think of replacements for vacant positions, albeit it may be difficult to attract new 'long-term' staff with the amount of time left.

8. Success Stories

8.1 APII training package assists An Giang in improving biosecurity practices

In 2011, An Giang People's Committee approved the project "developing biosecurity poultry production in An Giang period 2011-2013" which aims to improve biosecurity and food safety practices in poultry production. To implement this, the An Giang provincial Agriculture and Extension center (PAFEC) included 79 training courses for 2,000 poultry raising households and 22 intensive training courses for 600 members of 66 newly established cooperative groups into their 2011 plan and budget.

Master Trainer in Action at a TOT Course



The USAID/APII project assisted PAFEC in this endeavor. During October-December 2011, the project hosted a two-day training of trainers (TOT) course in Long Xuyen for 25 agriculture extension workers on biosecurity measures and application of training packages (trainers' flipcharts, guidebooks and comic books) with farmers. Following the training of trainers course, the newly trained trainers

organized 35 biosecurity courses reaching more than a thousand small and medium commercial poultry farmers in 11 districts in An Giang and 11 courses for 329 poultry cooperative members.

Preliminary findings from USAID/APII's recent study on cost and benefits of the biosecurity training package shows that knowledge and skills learned from these trainings are being put into practice. Early data indicates that for poultry farmers, there has been a 5-10% decrease in the number of sick poultry. Similarly, poultry production productivity has increased by up to 19% thanks (in part) to the application of improved biosecurity measurements.

As a result of the training undertaken in 2011, An Giang PAFEC is organizing another 44 biosecurity training courses for 1,320 households under the "Developing biosecurity poultry production in An Giang period 2011-2013." The PAFEC project also plans to set up 66 poultry raising cooperative groups by the end of 2012, and has requested additional assistance from USAID/APII, including additional training packages for both trainers and farmers.



USAID
FROM THE AMERICAN PEOPLE

**AVIAN AND PANDEMIC
INFLUENZA INITIATIVE**

Avian and Pandemic Influenza
Initiative

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Annual Report, Year Four
(October 2012 – September 2013)

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Abt

In association with:

Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross

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Annex 1 – Updated International Consultancy and Travel Schedule

Annex 2 – Updated Subcontractor and Local Consultants Schedule

Annex 3 – Updated Annual Work Plan/Gantt Chart

Annex 4 – Updated Log-frame/PMP

Acronyms

Abt	Abt Associates
ADB	Asian Development Bank
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AH	Animal Health
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015)
AMS	Administration of Medical Services
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
BCP	Business Continuity Plan
CBS	Community-based Surveillance
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DLP	Department of Livestock Production
DOH	Department of Health
DOLISA	Department of Labor, Invalids and Social Affairs
DQA	Data-quality Assurance
EID	Emerging Infectious Disease
FA	Farmers Association
FAO	Food and Agriculture Organization (of the United Nations)
FMD	Foot and Mouth Disease
GHP/GMP	Good Hygiene Practices and Good Manufacturing Practices for Slaughtering
GVN	Government of Vietnam
GDPM	General Department of Preventive Medicine
HAI	Hospital-acquired Infection
HANSIC	Hanoi Society for Infection Control
HCMC	Ho Chi Minh City
HPAI	Highly Pathogenic Avian Influenza
HUSIC	Hue Infection Control Society
IC	Infection Control
KAP	Knowledge, Attitudes and Practices
LBM	Live Bird Market

LIFSAP	Livestock Competitiveness and Food Safety Project
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MFI	Micro-finance institution
MMB	Market Management Board
MOET	Ministry of Education and Training
MOH	Ministry of Health
MOLISA	Ministry of Labor, Invalids and Social Affairs
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre
NCHEC	National Center for Health Education and Communication
NGO	Non-government Organization
NIHE	National Institute of Hygiene and Epidemiology
NSCAI	National Steering Committee on Avian Influenza
OHCN	One Health Communications Network
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PRRS	Porcine Reproductive and Respiratory Syndrome
PSA	Professional Services Agreement
RAHO	Regional Animal Health Office
SDAH	Sub-Department of Animal Health
SH	Slaughterhouse
SOP	Standard Operating Procedure
SOW	Scope of Work
TAD-Info	Trans-boundary animal disease information
TOFT	Training of Farmer Trainers
TOMT	Training of Master Trainers
TOR	Terms of Reference
TOT	Training of Trainers
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VIPA	Vietnamese Poultry Association
VNA	Vietnam Nursing Association

VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WB	World Bank
WU	Women's Union
VFU	Vietnam Farmers' Union
WHO	World Health Organization
WU	Women's Union

Introduction

This report presents the major achievements, challenges and solutions/lessons learned for USAID's Avian and Pandemic Influenza Initiative (USAID/APII) during Year four, covering the period from October 2012 to August 2013. In preparation for the close out of the project contract, project activities and staffing levels were significantly reduced in beginning in July 2013. The shortened period of coverage in this report reflects project activity levels.

Year four saw the project complete the transition, which commenced during Year three, to full implementation of the project, with a focus on adoption and adaptation of projects throughout Vietnam of key models that were previously developed and tested by the project in the five original focus provinces. We continued with the three major focus areas: animal health (AH), human health, and behavior change communication (BCC). Activities were implemented via subcontracts, as Abt's current license does not accommodate direct implementation. Working in this way required attention to identifying subcontractors capable of delivering quality work on time, and strengthening the capacity of subcontractors as a vital part of USAID/APII's work, in order to fulfill our objectives for Year four in a timely way and to achieve close out of programs.

The project progressed well in most of the eight main focus activities:

1. Coordination and Policy Dialogue
2. Human Health Surveillance
3. Case Management and Infection Control (IC) Capacity Building
4. Pandemic Preparedness
5. Animal Health Surveillance
6. Animal Health Worker (AHW) Capacity Building and Agricultural Extension Worker (AEW) Capacity Building
7. Supply Chain (Poultry Supply Network) Strengthening
8. Behavior Change Communication (BCC).

In Year four the project focused strongly on the wider adoption and sustained implementation of models, leading to ongoing impact beyond the life of the project. Adoption, adaptation, replication and scaling up of USAID/APII innovations by public and private partners are considered the real measures of success for the project. In order to achieve this, the project carried out sustained advocacy and promotional campaigns in close consultation with USAID and API partners. These campaigns achieved very strong results across key components and models developed by the project, particularly in relation to Infection Control, Animal Health Worker (AHW) Capacity Building and Agricultural Extension Worker (AEW) Capacity Building, Supply Chain (Poultry Supply Network) Strengthening and Behavior Change Communication (BCC). What follows is a description and discussion of the main achievements and challenges of Year four.

1. National Coordination and Policy Dialogue

Under National Coordination and Policy Dialogue we have three goals to achieve by the end of Year four:

- Improved coordination in order to improve highly pathogenic Avian Influenza HPAI prevention and control
- Sustained dialogue, coordination and lesson sharing on communications in Vietnam at a national level
- National communication framework revised in line with Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015) (AIPED), officially approved by National Steering Committee for Avian Influenza (NSCAI), and applied by all members in planning and implementation.

1.1 Achievements

- 1.1.1 Developed and executed an advocacy plan and matrix as well as the communication strategy with support from an international expert, David Payne, as Advocacy/Policy Dialogue Advisor to boost project advocacy and communications work.
- 1.1.2 Developed six briefs on key models established to present in the project final dissemination workshop and to share widely for further adoption and adaption.
- 1.1.3 USAID/APII representatives attended, provided technical comments and shared experiences in several national/regional workshops on Infection Control (IC) (see Section 3 below).
- 1.1.4 IC training curriculum and IC training material developed with USAID/APII supported in line with the National Action Plan on IC Strengthening at Health Facilities (2013-2015). The Infection Control training materials are the official standard documents for training in health system in the whole country.
- 1.1.5 Supported NAEC to chair the quarterly meetings of the One Health Communication Network (formerly known as the Avian Influenza BCC Working Group) through development of meeting agenda and worked presenters to prepare for their presentation.
- 1.1.6 Attended in design meetings and provided inputs to the One Health Communications Network (OHCN).
- 1.1.7 Provided comments and inputs into the development of the National Strategic Framework for Communications on Emerging Infectious Diseases 2013-2015 facilitated by Partnership on Avian and Human Influenza (PAHI) Secretariat.
- 1.1.8 Participated and presented on communication results in the other PAHI Secretariat's support advocacy events including the national One Health conference on Enhancing Coordination on Emerging Infectious Diseases in Vietnam: building on the avian influenza response for a One Health approach in April 2013.

1.1.9 Regularly participated in Biosecurity Working Group, giving presentations on our lessons learned and the results of animal health and communication work.

1.1.10 Communicated project results to the wider audience through media advisories and press releases. Tracked aired clips and news and shared with partners and USAID.

1.2 Challenges and Solutions

1.2.1 During the first three years, the USAID/APII focused its work primarily at the provincial level. During Year four, the project has shifted its focus on working more with national stakeholders such as technical departments in key ministries in order to advocate that they endorse the models, to create supportive conditions for provinces to continue and replicate the models, and to adopt the models for application within ongoing national programs.

2. Human Health Surveillance

The human health surveillance model was developed over the first three years of the project as part of an integrated approach to community-based surveillance (CBS) in the five USAID/APII focus provinces: Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri. Following the findings of the external evaluation of CBS activity conducted during Year three of the project, the human health surveillance model has been separated from the AH surveillance model to promote its adoption, adaptation, replication and scale up during the final year of the project.

The goal of USAID/APII activities in Year four was to support national/provincial policies that facilitate community level surveillance and to replicate the relevant model in both current focus provinces and new provinces.

To get these goals, the USAID/APII had worked closely with National Institute of Hygiene and Epidemiology (NIHE) to develop a detail plan on implementing human health surveillance activities in Year four. A Statement of Work (SOW) had been submitted and approved by USAID, following a competitive bidding process. However, we were informed that the General Department of Preventive Medicine in Ministry of Health (MOH) plans to assess Circular 48 in 2013, that overlaps to our plan with NIHE and USAID/APII was requested not to conduct activities related to Circular 48 for the time being because of certain sensitive internal issues. USAID/APII decided to cancel the intended activities with NIHE and shifted those designated monies elsewhere.

2.1 Achievements

2.1.1 Promising initial achievements were recorded in Year four with the development of a detailed plan and SOW and bidding process. However, as noted above it was not possible to proceed with this subcontract.

2.2 Challenges and Solutions

- 2.2.1 The predictability and reliability of information from MOH is out of USAID/APII's and NIHE's control. We therefore decided that it was necessary to end the contract with NIHE.

3. Case Management and Infection Control (IC) Capacity Building

The Year four goals were to assist the Government of Vietnam (GVN) in replicating a training model to assist health facilities in implementing Circular 18 and to explore and foster opportunities for training institutions to incorporate the USAID/APII infection control-training module within their curricula.

3.1 Achievements

- 3.1.1 Continued the subcontract with Vietnam Nursing Association (VNA) to implement Year four IC activities. The subcontractor collaborated with MOH and three IC Societies in Hanoi, Hue, and Ho Chi Minh City (HCMC) to replicate the IC training model for in-service and pre-service systems.
- 3.1.2 Advocated for the MOH's Administration of Medical Services (AMS) to issue official letters endorsing implementation of the IC training package developed with the support from USAID/APII and approved by MOH for grassroots level:
- On February 27, 2013, the MOH issued a letter to require all 63 Departments of Health (DOHs) in Vietnam and 34 national hospitals under the management of MOH to develop and implement provincial/hospital action plans on strengthening IC activities in healthcare facilities, including IC training for health care workers in public and private sectors.
 - On March 1, 2013, the MOH issued a letter about supportive monitoring trips to 13 hospitals in eight provinces where key staff was trained with support from USAID/APII in 2012 to support provincial DOHs and hospitals on strengthening their IC practices including training for healthcare workers.
 - On August 9, 2013, the Vice Minister of Health approved the IC practical handbook developed with the support from USAID/APII with the Decision 2289/QĐ-BYT.
- 3.1.3 Three supportive monitoring trips were conducted in April 2013 by MOH and VNA, covering 13 hospitals in eight provinces including four Northern provinces, two Central provinces and two Southern provinces. The monitoring team reviewed provincial IC activities in 2012 and IC plans for 2013. The monitoring team together with provincial DOH leaders also visited district hospitals to review the IC system, IC diffusion training and IC practices at these hospitals. Significant improvements were noted, including in the reinforcement of the hospital IC system, diffusion training, planning, updating IC regulations, supplying disposable towels and enhancing IC practices at health care facilities. More attention should be paid to IC planning

and to supervision of compliance to IC standards. The eight hospitals that received support from USAID/APII in 2011 were assessed to have better compliance and practices than the other hospitals covered by the supportive monitoring visits.

- 3.1.4 Three six-day regional Training of Trainer (TOT) courses were conducted in March and April with total 91 participants from 16 new provinces and 17 nursing/medical schools in Hanoi, Hue and HCMC. In addition to updated IC knowledge, participants also gained knowledge on adult learning methods and worked on their diffusion training plans. A one-day field study at the national hospitals provided participants with an opportunity to observe actual IC practices and demonstrated how to conduct Hospital Acquired Infection (HAI) surveillance and how to monitor compliance with IC practices in health facilities. They also had opportunities to practice teaching with their own lesson plans, which they then applied following the training through IC diffusion training courses in their provinces and medical and nursing schools.
- 3.1.5 Approximately 6,000 copies of the IC training materials and 2,500 copies of the IC training curriculum were supplied to 63 provincial DOHs and about 60 medical/nursing schools to support and encourage them in self-replication of the USAID/APII's IC training model within the healthcare system and in training institutions.
- 3.1.6 During the period from March to July, with the technical support from MOH, VNA and USAID/APII, 37 out of 63 provincial DOH throughout the country developed and shared their action plans for 2013-2015 on strengthening IC activities at healthcare facilities and their 2013 training plans on IC for workers at health facilities in their respective locations. All training courses included in these plans will use the IC material supported by USAID/APII, and will mainly utilize local funds to carry out these training courses.
- 3.1.7 In October and November 2012, Can Tho DOH conducted four training courses on IC with local fund for 140 participants from all 21 hospitals in Can Tho including nine provincial hospitals, nine district hospitals, two private hospitals in Can Tho and one private hospital in Bac Lieu, a neighboring province. These hospitals contributed to the costs from their local budgets. The trainers of these four training courses were those trained by the USAID/APII in July 2012 and used IC training material developed by USAID/APII and approved by MOH.
- 3.1.8 On May 6-9, a provincial TOT course on IC was conducted in Dong Thap General Hospital for 120 participants from 16 hospitals, including four provincial hospitals, four specific hospitals and eight district hospitals. In addition to updated IC knowledge and skills, participants also learned about the design and practice of cross-sectional studies on HAI. The trainers for this course were those trained by the USAID/APII in April 2013, together with a national expert from the HCMC Infection Control Society. IC training materials for the course were provided by USAID/APII. Dong

Thap's DOH and Johnson & Johnson Vietnam co-funded this course.

- 3.1.9 During the period from May to July, USAID/APII provided copies of the IC training materials and contributed 30% of the training cost to conduct nine provincial TOT courses on IC in four new provinces of Binh Dinh, Quang Nam, Nghe An and Lam Dong. The provincial DOH contributed the remaining 70 percent of the costs for these courses. Two hundred and sixty participants from the 108 hospitals, including 40 provincial general and specialized specific hospitals, 62 district hospitals and six private hospitals had an opportunity to update their IC knowledge and skills in the class and they had one day to learn about HAI surveillance and IC practice compliance in provincial hospitals. The trainers for this course were those trained by the USAID/APII in 2012-2013.
- 3.1.10 In July, HCMC DOH conducted four training courses on IC for around 300 leaders of IC departments, chief of nurse and IC staff from all 149 healthcare facilities. The training cost was paid from local funds. USAID/APII provided copies of the IC training materials for these courses. The trainers for these courses were those trained by the USAID/APII in 2012-2013 and IC specialists from HCMC's IC Society. Some other provinces and cities have also prepared plans on IC training to commence in August, including Hanoi and Hue.
- 3.1.11 Attended and/or supported IC training curriculum copies, IC training material copies developed by USAID/APII for participants in several workshops and training courses:
- In October 2012, the "Workshop on the National Action Plan on IC Strengthening at Health Facilities sine now to 2015" chaired by the MOH Vice Minister in Hanoi. In the workshop, USAID/APII introduced the IC training model as a means to achieve national plan objective: "Up to 2015, at least 80% of health care workers in health care facilities will be trained on basic Infection Control".
 - In October 2012, the "IC Scientific Conference" hosted by MOH's Administration of Medical Service in Hanoi. The participants had the opportunity to share research and new IC guidelines. After the meeting, these guidelines were distributed and implemented in all health facilities. All updated issues on IC were included in the IC training material developed with USAID/APII supported and they will be disseminated in IC diffusion training courses.
 - On October 25 and 26, 2012: the "National Workshop on Nursing Science" and "National Review Workshop of Vietnam Nursing Association" led by the MOH and VNA. Achievements of VNA -USAID/APII collaboration and IC training material were introduced with high appreciation of participants.

- In March, five-day training course on “Infection Control in Hospital Settings” conducted by Military Medical Department in Vietnam Ministry of Defense in Hanoi. This training provided update on international, US and National Hospital-focused IC practices and hospital pandemic preparedness.
- In March, the “Infection Control Training Program for Vietnam’s Healthcare Workforce” workshop conducted by MOH and VNA in Hanoi for 17 military hospitals and eight medical/nursing schools. In this workshop, the MOH introduced existing IC training materials and introduced the draft IC training curriculum for the schools. Participants, who included directors of medical/nursing schools, were very interested in USAID/APII’s IC training materials and were planning to adapt this material for use in their schools.
- In April, the “National Workshop on Sharing the Experience of Nursing Education” hosted by MOH and VNA in Pham Ngoc Thach Private Medical School in HCMC. More than 210 participants from 26 medical/nursing schools and 37 hospitals nationwide attended this event. The USAID/APII also supported Dr. Phi Nguyet Thanh from the Training and Education Department of MOH to make a presentation on the training curriculum for nurses and how in-service training institutions can apply the IC training materials developed by USAID/APII and approved by MOH.
- In May, the “Scientific Workshop for the Central Region on Infection Control and Patient Safety” was conducted in Hue by the Hue National General Hospital and the Hue Infection Control Society (HUSIC) with approximately 300 participants from around 100 hospitals. USAID/APII supported for printing the Journal of Clinical Medicine with detail introduction of IC training curriculum and IC material developed by USAID/APII and approved by MOH. The journal was distributed to all workshop’s participants, hospitals and medical schools in the central region.
- In June, the “Scientific Workshop on Infection Control for the Northern Region” co-chaired by MOH, Bach Mai hospital and the Hanoi Society for Infection Control (HANSIC). More than 350 participants from around 100 hospitals including some national hospitals, district hospitals and specialized hospitals had an opportunity to share experiences and to develop their skills on IC, as well as being updated with new technical information. During the workshop, participants also discussed the IC situation in hospital as well as IC training for health care system. The USAID/APII staff shared the status of the nationwide IC training model’s replication in provinces and in training institutions following the TOT courses conducted in 2012 and 2013.

3.1.12 With technical support from USAID/APII, the Au Lac Private Nursing School in Hue and the Phu Yen Medical Secondary School

issued Decisions on adapting the USAID/APII-MOH IC training materials to their training program for nurse, physician students. Two full credits for IC theory and practice with 60 sessions were used to train 220 nurses and 150 physicians in Au Lac School and 100 nurses in Phu Yen School in the school year 2012-2013.

- 3.1.13 Advocated 17 training institutions attended TOT in 2012-2013 including Vinh Long Medical College, Can Tho Medical College, HCMC University on Medicine and Pharmacy, and Hong Bang University, Soc Trang Medical Secondary School, Duy Tan University, Hanoi Medical College, Thanh Tay University, Vinh Medical University, Hue Medical College, Hai Duong Medical Technical University, Nam Dinh Nursing University, Quang Nam Medical College, An Giang Medical Secondary School, Binh Dinh Medical College, Thanh Hoa Medical College and the Nguyen Tat Thanh University in HCMC to issue official letters on revising their IC training program to adapt the IC training curriculum and material developed with support from USAID/APII.
- 3.1.14 With the technical support from USAID/APII and VNA, Hanoi Medical College and Hong Bang University not only reviewed their curriculum and apply the new material but also developed 10 detail lesson plans for the new IC training curriculum. Hanoi Medical College also developed the detailed IC fundamentals and conducted training course for all clinical teacher in the school.
- 3.1.15 Advocated the South West Asia Technical and Economic Secondary School, a private school, in HCMC issued a letter on adapting the IC training curriculum and IC training materials in their training program since school year 2013-2014 on July 15, 2013. This increases the number of private schools up to six out of 20 schools, which have been integrating the USAID/APII IC training material into their training program. The revised training program will be applied in 20 schools for around 17,000 students in school year 2013-2014.
- 3.1.16 Conducted the “Workshop on Strengthening Infection Control Training Programs in Nursing and Medical Schools” co-chaired by VNA, MOH and USAID/APII in Hanoi in June. The workshop had 44 participants coming from WHO, the Department of Science Technology and Training of MOH, the Military Medical Department of Ministry of Defense and 28 medical and nursing universities, colleges and schools. Workshop participants had an opportunity to share their IC training curricula and materials as well as information about student IC practicums in hospitals. One public medical college and one private medical school shared their experience on integrating USAID/APII’s IC training into their training program with technical support from VNA. Participants agreed that strengthening IC training in medical schools is necessary and the IC training curriculum and IC training material developed by USAID/APII and approved by MOH are good reference documents for schools to develop their own IC training curricula and materials.

Participants from medical and nursing schools shared their expectations on institutionalizing the IC training curriculum and IC materials in their institutions through additional TOT courses on IC for their teachers.

3.1 Challenges and Solutions

- 3.1.1 The process of finalizing the VNA contract took longer than anticipated due to year-end time commitments and the large number of meetings and workshops on IC that took place during the early fall, requiring the attention of both USAID/APII and VNA staff. While these meetings caused delays, they were also opportunities for USAID/APII to share the IC training model with in-service and pre-service systems, leading to several fruitful conversations with provincial DOHs and training institutions, some of whom have expressed great interest in the IC curriculum and materials.
- 3.1.2 The USAID/APII required subcontractors to submit their reports in English, which took additional time for VNA to write, revise and translate the deliverables prior to submission.
- 3.1.3 The Ministry of Education and Training (MOET) has issued an outline of the training curriculum for nurses, which includes a required two credits on IC; however, as of the publication of this report, there is no similar requirement for medical students. In addition to working closely with MOH, VNA and other partners to introduce and integrate the IC training model into the nursing training program, the human health team introduced USAID/APII materials to medical schools for reference in IC lessons within other subject courses and encouraged them to develop an optional course on IC for medical students.

4. Pandemic Preparedness Planning (PPP)

The Year four goals were to introduce PPP packages to other provinces, and to advocate for wider adoption of PPP throughout Vietnam.

4.1 Achievements

- 4.1.1 Conducted a national dissemination workshop in Hanoi on October 31, 2012 to introduce new approaches for developing and revising PPPs, share experiences from the process of developing and improving Kien Giang's provincial plan, and identify recommendations for improving provincial plans. Participants in the workshop included the Vietnamese Red Cross (VNRC), provincial Departments of Animal Health (DAHs), General Department of Preventive Medicine (GDPM), the Central Propaganda Department/Committee, the HCMC Institute of Hygiene and Public Health, Vietnam Avian and Human Influenza Control and Preparedness Project (VAHIP), FAO, WHO, PAHI, USAID/APII and USAID, as well as representatives from Hung Yen, Ninh Binh, Bac Ninh, Bac Giang, Hai Phong, Hoa Binh, Ha Tinh, Nam Dinh, Bac Kan, Thanh Hoa, Ha Nam, Quang Tri and Kien Giang. After the

workshop, USAID/APII worked with interested provinces to support the revision of provincial PPP.

- 4.1.2 Subcontracted with Humanitarian Center, Hung Yen Red Cross Association to implement Year four PPP activities. The subcontractor coordinated with Hung Yen authorities, representatives of all related sectors and mass organizations to revise provincial PPP with the new concepts of “whole of society” approach and Business Continuity Plan (BCP).
- 4.1.3 Advocated the Hung Yen Provincial People’s Committee (PPC) to issue an official letter assigning Hung Yen Red Cross to take the lead in coordination with other relevant departments in the province to revise the provincial PPP.
- 4.1.4 Conducted “PPP Introduction Workshop” hosted by the Hung Yen PPC with participants from Hung Yen PPC, the Provincial Steering Committee on AI Control, Sub-Department of Animal Health (SDAH), and local media agencies. They had opportunity to share experience from PPP revision in other provinces and express the requirements of PPP revision. A detail plan of PPP activities was introduced and approved by all participants. The Hung Yen PPC committed to support these activities.
- 4.1.5 Built an Editorial Team with the approval from the Hung Yen PPC in March. The team consisted of representatives from DOH, Department of Agriculture and Rural Development (DARD), Department of Communication and Information, and Hung Yen Red Cross. This editorial team was responsible for developing a PPP outline and provincial PPP drafts for comments from other sectors.
- 4.1.6 Conducted a PPP training workshop for about 30 participants from various provincial authority agencies and mass organizations on April 5, 2013. Participants had an opportunity to learn about the new concepts of a Whole-of-Society approach and Business Continuity Planning and how to apply them in their PPP. The PPP outline was introduced and approved.
- 4.1.7 Conducted two PPP Review Workshops on April and May in Hung Yen with participants from around 20 agencies and organizations in Hung Yen province, including government management offices, the propaganda agency, the provincial Police Department, mass organizations, media agencies and local staff to review the first and second draft of provincial PPP. New approaches introduced in the draft plan include (i) preparedness planning covering diseases in human and animals, (ii) multi-sectorial involvement and (iii) inclusion of livelihoods, food security and business continuity planning for both during and after a pandemic. The draft compiled all the inputs and comments from participants, national and local organization, WHO and FAO feedback. After revision, the plan was submitted for approval by the People’s Committee of Hung Yen province.

- 4.1.8 On May 22, Hung Yen People's Committee approved the Hung Yen PPP.
- 4.1.9 On June 11-12, Hung Yen People's Committee organized the provincial PPP dissemination workshop in Hung Yen, with the participation of 33 leaders of 24 agencies including provincial departments, nine district People's Committees and mass organizations in Hung Yen. As required by the Vice Chairman of Hung Yen People's Committee, all related Departments and districts in Hung Yen province developed or revised their individual PPPs in July 2013.

4.2 Challenges and Solutions

- 4.2.1 This was the first time that Hung Yen Red Cross implemented this kind of complex activity with the involvement of multiple sectors at provincial level. A plan with detailed activities indicating the persons in charge, expected outputs, and timeline was prepared with support from USAID/APII. The commitment of Hung Yen's People Committee and the effective activities of the Editorial Team played an important role in the success of this activity. In addition, the USAID/APII always worked closely with the Hung Yen Red Cross to strengthen their capacity during the period of the PPP revision.

5. Animal Health (AH) Surveillance

The AH surveillance model was developed over the first three years of the project as part of an integrated approach to community-based surveillance (CBS) in the five USAID/APII focus provinces/cities: Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri. Based on the results of the external evaluation of the CBS activity, which was conducted during Year three of the project, the AH surveillance model has been separated from the human health surveillance model for promotion of adoption, adaptation, replication and scaling up during the final year of the project.

The goal of USAID/APII activities in Year four is to support national/provincial policies that would facilitate community-level surveillance and to replicate the relevant models in both current focus provinces and new provinces.

5.1. Achievements

5.1.1. Supported national/provincial policy that would facilitate community level surveillance and/or events based surveillance:

In Year four, Animal Health surveillance activities were concentrated in the Central region in collaboration with Regional Animal Health Office (RAHO) 3 and a local counterparts in Quang Tri. A scope of work (SOW) was developed for integrating AH surveillance with Animal Health Worker Capacity Building and Supply Chain Model Replication submitted to USAID for approve in the beginning of the second quarter. The Quang Tri Livestock and Veterinary Association were identified to review the USAID/APII AH surveillance model and AHW network model in Quang Tri province beginning in March.

A local consultant, with a strong background in national AH surveillance systems, was also recruited in late March to provide technical assistance to the subcontractor in this area and develop a curriculum for AH surveillance for a regional course planned for April and May 2013.

The USAID/APII AH surveillance model in Quang Tri reviewed by several meetings and workshops with relevant partners conducted to discuss AHW network development and roles (including animal disease surveillance at grassroots level) and was under linkage with local network development policy. A set of animal disease reporting forms has been issued by Quang Tri SDAH to harmonize the reporting forms and enhance the passive surveillance system of the province.

5.1.2. Continued to advocate at the national and provincial level for the adoption of a formal AHW TOR:

A report on the improvement of the AHW network of Quang Tri province, including the adoption of formal Village Animal Health Worker (VAHW) terms of reference (TORs) which specifically included a surveillance task (to detect and to report suspected cases) has been developed and shared. A local consultant was invited to develop this study and his report includes detailed recommendations for an animal disease surveillance-training curriculum to be introduced by the DAH as a reference document. The DAH is expected to adapt the model identified in the report for provinces to develop an AHW network.

A regional five-day TOT was conducted in Dong Ha on Animal Disease Surveillance at the Community Level for six provinces in the central region (provinces covered by RAHO 3) with 30 participants (10 Female: 20 Male). RAHO 3 trainers and the Head of the Epidemiology division of the DAH were invited as lecturers and the Quang Tri example was discussed during the course.

5.1.3. Replicated the relevant model in existing provinces and in new provinces

A draft of the Policy Brief on the Quang Tri Case Study and successes in animal health surveillance and AHW Network improvement has been developed and was published in July 2013.

A documentary on the Quang Tri model in animal health network development has been developed by the local Quang Tri Livestock and Veterinary Association in collaboration with the SDAH. It was shared with 26 participants (4 Female: 22 Male) from RAHO 3 and the central provinces in a regional Technical Dissemination Workshop on AHW and network development conducted in Hue on May 21, 2013. As a result of the workshop, the formal commune and village TORs for AHWs, including the specialized surveillance task to detect and to report suspected disease events, has been reviewed by participants.

5.2. Challenges and Solutions

- 5.2.1. Early desk review of national regulations showed that while a standard operating procedure (SOP) for HPAI has been developed there are a number of variations of surveillance guides available. For example, separate guidance on specific diseases such as porcine reproductive and respiratory syndrome (PRRS), foot and mouth disease (FMD) and TAD-info (Trans-boundary animal disease information) exist. However, with the exception of the SOP for HPAI, these guidelines have gaps, especially at community and village level where commune based surveillance (CBS) can play a vital role in improving detection and reporting of new cases.

Similarly, despite the regulations issued in 2005 specifying 15 animal diseases be included in the mandatory reporting list, only some are regularly reported. The varying SOPs and lack of consistent reporting practices complicates our ability to develop harmonized official guidance or a manual for AH surveillance, which does not conflict with current regulations and guidance but covers all the reportable diseases. The local consultant is expected to make recommendations to address these issues.

- 5.2.2. Animal disease surveillance improvement for the grassroots level continues to be challenging due to the lack of official legislation to support local network development and the commitment by local authorities of allocated funds from limited annual provincial resources. The new veterinary law expected in the coming year and the new national proposal for Animal Health Sector Development are good initial steps by DAH and MARD to cover the gaps in the regulatory framework and policy directions. It will require a long term strategy and commitment from all levels to be successful given the current weaknesses in the overall veterinary service network.

6. AHW Capacity Building and AEW Biosecurity Training

The goals of the Animal Health Worker (AHW) Capacity Building and Agricultural Extension Worker (AEW) Biosecurity Training activities are to:

- Introduce the AHW training package to new provinces and seek other educational training opportunities
- Introduce the AHW networking model that will be adopted by relevant public-private agencies at national and local levels.
- Introduce the AEW training materials to the National Agriculture Extension Center (NAEC), new Provincial Agriculture and Fishery Extension Centers (PAFEC) and private sector to applying them throughout AEW system.

6.1 Achievements

AHW Capacity Building

6.1.1 The year started with negotiations with subcontractor AFAP, which needed pre-approval from USAID for an extension of one more year. The work plan, schedule and budget for Year four were completed in the first quarter and submitted to USAID for approval of the contract modification. A final revised contract was signed with AFAP in January 2013.

6.1.2 *Animal Health Worker Networks: Expand the AHW capacity building model:*

The AHW Training Package consists of a hardcopy training manual, which provides a reference for AHWs (an enhanced manual based on the existing DAH Manual) as well as an E-Book version on CD with additional content for trainers and a sample toolkit with standard equipment for AHW service provision.

After the AHW Training package was approved by DAH/MARD, 8,000 hardcopies were printed along with a letter from the DAH Director officially introducing and endorsing them. The Training packages were distributed to 700 district veterinary stations throughout Vietnam between September and October 2012.

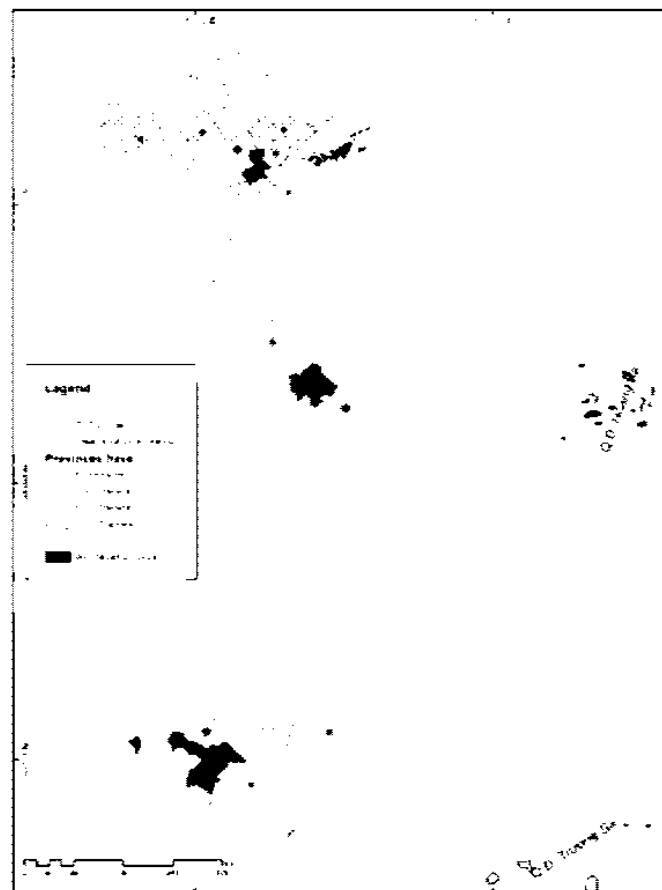
The first advocacy Dissemination Workshop for AHW and Biosecurity Training material for Year four took place on January 11, 2013 in An Giang with the participation of 51 participants from 13 Mekong provincial SDAH and PADECs as well as representatives of RAHO 6, RAHO 7 and NAEC. During the workshop, the demand to increase knowledge and capacity for AHW in general has been addressed by local counterparts and Mekong SDAH.

On March 5, a second AHW Dissemination Workshop was conducted in Hanoi in collaboration with the Vietnam Farmer Union (VFU) targeting VFU's vocational training centers as well as the private sector. More than 50 participants joined the training, coming from regional and provincial vocational training centers under VFU as well as NGOs and the private sector.

As a result of these dissemination workshops, USAID/APII received requests from 14 provinces, specifically those in RAHOs 6 and 7, for further assistance with TOTs for AHWs from VFU and RAHO 3.

In an effort to replicate the AHW training package more widely and responding to requests from Mekong SDAH and RAHO 3, USAID/APII scaled up the use of AHW training modules through regional TOTs for RAHOs 1, 2, 3, 6 and 7. A total of 159 local trainers were trained during quarters 2 and 3 (51 Female: 108 Males) in 32 new replication provinces and RAHO offices.

Figure 1. Provinces reached with AHW Trainings



6.1.3 *Explore Public Private Partnerships in order to leverage resources and build sustainability for AHW capacity building:*

As a result of cost-shared AHW TOT courses in Moc Chau in Year 3, the Moc Chau Dairy Cattle Company Joint Stock Company (Moc Chau Dairy) has decided to use the diffusion training program for new AH technicians in the Moc Chau area using their own funds. USAID/APII and AFAP worked with Moc Chau Dairy to develop the training curriculum and suggested follow-up coaching by USAID/APII national trainers. This public-private partnership model was initiated with an MOU (Memorandum of Understanding), which indicated that Moc Chau Dairy would contribute to training on animal surveillance, biosecurity and veterinary skills. However, to simplify the paperwork and align more closely with the interests of Moc Chau Dairy, in February it was agreed to just implement the veterinary skills training without a formal MOU. As a result 15 technicians have been trained by a local trainer and were recruited by Moc Chau Dairy to strengthen their AH services.

6.1.4 *Present the AHW training package to relevant ministries and department to advocate for the adoption of the package in vocational training schools:*

Meetings and AHW curriculum presentations with the Ministry of Labor, Invalids and Social Affairs (MOLISA) in March and the early part of Quarter three indicated some interest; however, because of the lengthy processes required for introducing a new curriculum, the adoption of the AHW Training into this system would not be possible during the life of USAID/APII. As an alternative solution, the Farmers' Union vocational training system, which often receives MOLISA funding, was selected as an option. USAID/APII's subcontractor AFAP conducted a TOT course in Hai Duong in late May, reaching seven provincial Farmers' Union Vocational Training Centers with 25 local trainers (13 Female: 12 Males). It is promising to note that these vocational training centers are expected to conduct their own training courses for local AHW using provincial DOLISA funding resources.

Agricultural Extension Worker (AEW) Biosecurity Training

6.1.5 *Support NAEC to officially adopt AEW training manual and training materials and to promote their use within the national agricultural system:*

The AEW capacity building activities in the first quarter of Year four focused on identifying new provinces, and the corresponding local counterparts and dissemination activities, to introduce the AEW Biosecurity training package and prepare for Trainings of Master Trainers/Trainings of Farmer Trainers (TOMTs/TOFTs). While USAID/APII and AFAP could have easily conducted those TOMTs independently, for sustainability purposes it was determined that they should be conducted together with local authorities and Provincial Agriculture and Fishery Extension Centre (PAFEC). An advocacy workshop was planned in quarter two to this end.

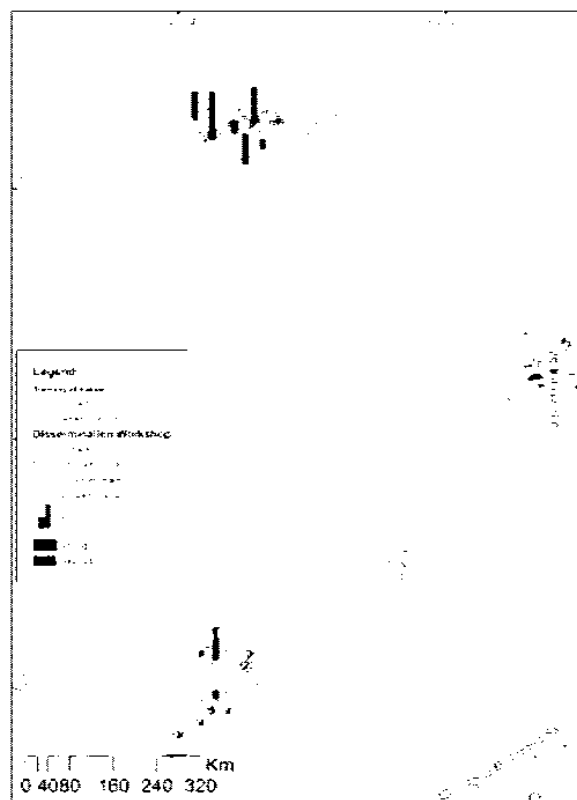
USAID/APII met with the National Agricultural Extension Center (NAEC) to identify ways to facilitate their official adoption of the AEW training manual and training materials and to promote their use within the national agricultural system. USAID/APII introduced the training system to NAEC, outlined the current projects and agreed on follow-up activities required. These activities were incorporated into a draft SOW for the Vietnam Poultry Association (VIPA) to undertake.

Facilitated by VIPA, NAEC completed a review and approval of the biosecurity training package, as well as the formally dissemination of the package through three national and regional biosecurity forums in Quang Ninh (May), Ha Nam (June) and Khanh Hoa (June) to 159 participants (45 Females: 114 Males) from 14 provinces.

In addition, NAEC integrated the Biosecurity Training package into two national projects providing training for farmers: (i) *Establishment of a commune model of animal disease prevention*

and control in Thai Binh, Hai Duong, Vinh Phuc, Thanh Hoa, Bac Ninh, Bac Giang and Hue; and (ii) *Intensive disease prevention for animals* in Hanoi, Thai Binh and Hai Phong. This and the VIPA farmer club training courses have reached 837 farmers (604 Females; 233 Males) with good farming practices and biosecurity training.

Figure 2. Location of Dissemination Workshops

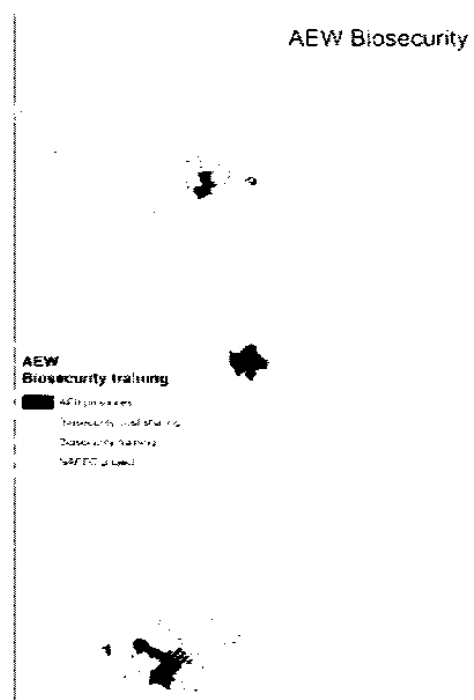


6.1.6 *Scale up use of AEW training through reproduction of materials and TOMT/TOFT as needed:*

The first advocacy Dissemination Workshop on Biosecurity Training packages for Year four took place on January 11, 2013 in An Giang in combination with AHW dissemination as reported above. Participants from most of Mekong PAFFCs attended. During this workshop, the An Giang PAFFC and HCMC NAEC office shared the experiences and success of adopting and adapting the training materials for their waterfowl program while introducing the Biosecurity training material. As a result Long An, Tien Giang, ben Tre, Dong Thap, Can tho, An Giang, Sóc Trăng, Hau Giang, Cà Mau, Bac Lieu and Kien Giang provinces requested assistance from local trainers. In April two TOMT courses were then conducted in Hau Giang and Sóc Trăng. Finally the project supported a TOFT

course in Bac Giang in collaboration with NAEC May 2013. During Year four a total of 81 local trainers were trained.

Figure 3. Locations of Biosecurity Trainings



6.1.7 Other replication of AEW/Biosecurity training programs for poultry farmers in additional provinces:

The biosecurity training package was successfully transferred to NAEC's National Waterfowl Development Project (2011-2013). This project, chaired by Mr. Nguyen Van Bac, covers 14 provinces: five provinces in the Hong River Delta including Bac Ninh, Hanoi, Hai Duong, Hung Yen and Hai Phong and nine provinces in the Mekong Delta including Kien Giang, An Giang, Bac Lieu, Cà Mau, Dong Tháp, Long An, Sóc Trăng, Tra Vinh and Tien Giang. We identified 452 farmer-developed demonstration farms with 1,320 duck farmers who were all trained by NAEC with materials adapted from the training package. At this time, 4,680 trainees who are raising ducks for meat and eggs have visited demonstration sites and received training materials. In addition, using local funds and integrating activities into the local vocational training centers program, there were 95 training courses conducted in Bac Lieu (10 courses), Vinh Long (five courses), Tra Vinh (20 courses) and An Giang (60 courses) with total of more than 1,000 people attending (Source: NAEC, National Waterfowl Development Project I, NAEC HCMC office Jan, 2013).

Following a TOFT for 25 local farmer trainers in October 2011, An Giang officially adopted the training package into their provincial project "Developing biosecurity poultry production in An Giang

during the period 2011-2013.” This project is being implemented in 11 districts and towns of An Giang from July 2011 to December 2013. Since December 2011, these farmer trainers have organized 79 courses on biosecurity for poultry production with 2,319 trainees who are raising chicken and ducks for meat and eggs. They also offered 22 courses for 649 members of 66 poultry cooperative groups, providing training on upgrading biosecurity for poultry production. The training materials were also used by trainers for another 55 training courses on animal husbandry organized by the Provincial Agriculture Extension Center in 2011 and 2012 under the national New Countryside (*Nong Thon moi*) development program. (Source: An Giang PAFEC, Jan 2013).

6.1.8 *Explore using NAEC's online training programs to disseminate training package:*

NAEC and its counterparts have developed a DVD for on-line training, as recommended by USAID/APII. The final draft version was completed in late June and is planned to be posted on the NAEC website following final approved, which is expected during July 2013.

6.1.9 The Project Management Unit within MARD of the World Bank-supported Vietnam Avian and Human Influenza Prevention and Control Project (VAHIP) has officially requested to reproduce 50,000 copies of the “Bac Mau nuoi ga” (Mr. Mau Raises Chickens) comic book developed as part of USAID/APII’s biosecurity training package for poultry farmers to use in their HPAI awareness raising program in schools during 2013.

6.2 Challenges and Solutions

AHW Capacity Building

6.2.1 The lengthy AFAP approval process had a bit of an effect to the time schedule of AHW and AEW/Biosecurity Training activities in overall. The USAID/APII team worked with AFAP and the local counterparts to speed up implementation after approval.

AEW Biosecurity Training:

6.2.2 It is important for the sustainability and institutionalization of training/extension packages to work closely with NAEC and the PAFECs. This is a time-consuming process, which may not always be the top priority for these organizations and thus requires diplomacy, patience and perseverance in order to forge and maintain close relationships. Obtaining official approval from government authorities was a suggestion from the Deputy Director of NAEC and introducing the AEW/Biosecurity training through NAEC/PAFEC system and national/provincial projects remains a good option for replication of this training package widely and efficiently.

6.2.3 Figures on replication training conducted in additional provinces may not be available in a timely manner where these activities are being funded from local, national or other resources not sourced by

USAID/APII. USAID/APII has tried its best to introduce and train local trainers, distribute the AHW and Biosecurity training packages widely as well as to follow up with SDAH that requested and send their staff to sit in USAID/APII TOT courses with the expectation that diffusion training will then be taken up by local authorities once they appreciate the value of these approaches and the related tools and supporting materials.

7. Supply Chain (Poultry Supply Network) Strengthening

The goals in Year four are to advocate and encourage adoption, adaption and replication by public agencies, private partners and/or other development projects and programs elsewhere of USAID/APII developed biosecurity/biosafety demonstration models in key (high risk) nodes along the poultry supply chain, together with related documents (such as protocols, guidelines and training materials).

7.1 Achievements

The key activities and achievements of the supply chain work during the third quarter of Year 4 focused on the following activities and nodes:

7.1.1. The supply chain activities of Year 4 started with a *Completion and Handover Ceremony of the Upgraded Meat Section in Hoa Mac Market and Poultry Slaughter Point in Hoa Mac town, Duy Tien district, Ha Nam province* on October 26, 2012 by USAID/APII, its counterpart and local authorities. Together with Mr. Hue, a small upgraded slaughtering facility owner, these two upgrades serve as a model for the province and is being used as a demonstration site. It is also a key stepping stone in the long-term restructuring of the livestock slaughtering network including transition to centralized slaughtering, providing a smaller-scale option that adheres to standard risk reduction measures.

Key activities and milestones for the Hoa Mac and Dong Ha Market and Poultry Slaughter Point were summarized into a roadmap for biosecurity improvement as following:

- Mapping and risk assessment of poultry supply chains;
- Provincial Strategic Planning for HPAI Risk Reduction, Prevention and Control along the Poultry Supply Network;
- Assessment, design and upgrading/renovation of infrastructure;
- Training of slaughterers, meat and market vendors
- Communications activities.

These upgraded models have included training on good slaughtering practices and veterinary hygiene assurance for slaughterers, vendors and veterinarians. It has also helped to reduce the potential spread of

disease during the slaughtering, selling and transportation processes. Training was conducted by local SDAH, District Veterinary Station and USAID/APII on good operation, the requirements for infrastructure improvements and was collection and management.

7.1.2. Technical coaching and monitoring of risk reduction demonstration models in slaughterhouses, slaughter points and live bird markets (LBM) to improve them as a training platform:

Periodic review meetings were conducted monthly or quarterly until June, 2013 with participation of market management boards (MMB), slaughterhouse/slaughter point owners, the SDAH, Veterinary Inspectors and BCC trainers in different model sites. These visits included observation and recording of behaviors as well as to encouraging the maintenance of good practices at model markets of Dong Ha and Hoa Mac and the model slaughtering facilities in Ha Nam, Quang Tri and Can Tho. In addition, in June 2013, with partial support from USAID/APII, the MMB and vendors in Dong Ha poultry market have repaired some items for better management of waste and to create more space for free vendors.

All of these effort aim to maintain good models and to support their use as a training platform, to encourage wider replication and to be handed over to local related resources. The following is a summary of behavior scores identified on technical monitoring checklists:

Table 1. Behavior Change Summary in Risk Reduction Demonstration Sites

<i>Model site</i>	<i>Positively increased as compared with the baseline*</i>
Dong Ha LBM	19% (in April 2011) - 67% (Nov. 2012) - 69% (June 2013) - 69% (late July 2013)
Hoa Mac Market	12.9% (Sept 2012) - 69.4% (Jan. 2013) - 73% (June 2013) *Using USAID/APII's checklist
Ngoc Xuan Slaughterhouse	48% (Sept. 11, 2012) - 65% (Nov. 27, 2012)
Slaughter points in Dong Ha	Mr. Tien: 32.1% (April 2011) - 60.4% (Nov. 2012) - 32.1% (Apr 2013) - 74% (May 2013) Mrs. Thuy: 43.4% (April 2011) - 58.5% (Nov. 2012) - 43.4% (April 2011) - 72.2% May 2013)
Slaughter points in Ha Nam	Mr. Hue: 35% (Sept. 2011) - 56% (Jan. 2013) 35% (Sept. 2011) - 63% (Jun. 2013) *Using Degree 14 checklist

On November 15, 2012, USAID/APII and SDAH and other local counterparts of Ha Nam province hosted a *Supply Chain Models Technical Review Meeting*. This was a good chance for all sites to review the road map taken over the past two-years of collaboration and to identify achievements. The meeting confirmed that most of the identified and agreed upon indicators have been achieved, for example: successfully upgrading a district model market and a slaughter point that can be used for replication in the other districts

and deployed to new province; increasing the effectiveness of state management of slaughtering and veterinary hygiene inspection activities for slaughter points and the sale of meat products. As a result, the _____ issued a *new provincial decision number 32/2012/QĐ-UBND on the management of animal and animal product slaughtering, transportation and inspection in Ha Nam* on December 13, 2012. After the provincial proposal for 2012-2020 to improve the animal slaughter inspection and the Duy Tien district proposal of slaughter inspection 2011-2012, this was a very positive outcome of the past three years of collaboration between USAID/APII and Ha Nam local authorities.

7.1.3. Follow up and replication in Quang Tri:

Using two models of physically upgraded slaughter points as the platform for training, USAID/APII and local counterparts focused on encouraging the replication to other slaughterhouses in Dong Ha city and Quang Tri town. Activities were including provision of training on good poultry slaughtering practices, household visits, technical consultations and provision of some slaughterhouse equipment.

At the same time, the Quang Tri SDAH enhanced the application of veterinary certification by increasing awareness of the value of certification with producers, vendors and consumers. Certification by stamping of poultry products slaughtered with the application good slaughtering practice commenced in the USAID/APII model slaughtering facilities in June 2013. This government effort immediately encouraged the replication of the model. As a result, nine of 12 slaughter points have registered for facility upgraded following the technical recommendations from the SDAH. Some small slaughtering operations will be re-grouped and relocated to selected bigger facilities. To date, two slaughtering facilities have completed upgrading activities. Three others will complete their upgrades within September 2013, and the remainder will continue with technical support from the SDAH. Equipment totaling 183,340,000 VND (~8,700 USD) including 53 pieces of items such as tables, ozone generators, drum pickers, high pressure cleaners and sets of bleeding cones for safer slaughtering practices have been delivered to 11 potential replication slaughterhouse in Quang Tri.

Quang Tri DARD issued the following legal documents during this period: Decision No.286/QĐ-SNN dated May 29, 2013 on Temporary Regulations for poultry slaughtering and poultry production trade in Quang Tri and Official Letter No.494/SNN-CN directing the management of poultry slaughtering, poultry production trade in Quang Tri.

7.1.4. Follow up and replication in Mekong region (RAHO 6 and RAHO 7):

Mekong Regional training courses for slaughterhouse owners: USAID/APII aim to introduce the model and encourage risk reduction replacement in Mekong region especially for the provinces where there is no support from VAHIP or LIPSAF. On December 19-

21 and 24-26, 2012, in collaboration with RAHO 7, USAID/APII organized two training courses on Veterinary Sanitation and Food Safety for 58 slaughterhouse owners and selected staff of SDAHs from 13 provinces in RAHOs 6 and 7. These participants had the opportunity to join study tours to slaughtering facilities in Can Tho, Long An and Tien Giang including the USAID/APII supported Ngoc Xuan slaughterhouse model, and the USAID STOP AI supported Go Cong slaughterhouse model. Many slaughterhouse owners in those provinces as well as SDAH showed their interest in replicating the USAID models through official letters calling for support that have been reviewed and incorporated in the plan for provision of technical assistance in the following months.

Following this training and responding to requests submitted by 12 SDAH for case assessments to upgrade 50 small slaughterhouses, USAID/APII experts worked with technical staff from the RAHO and provincial SDAH to assess operations in slaughtering facilities using the checklist and risk assessment matrix issued with Circular 14. The purpose of this assessment was to identify communicable disease and food safety risks and to propose prioritized upgrade options for the slaughtering facilities. The recommendations selected were appropriate, practical and feasible for the facility owners to easily learn from and follow through on during both short-term and long-term periods. Of the 50 slaughterhouses registered in these provinces, 27 facilities were selected for field assessment. Most of these facilities have similar errors: no one-way processing flow, processing on the floor and no separation of dirty and clean areas.

Table 2. Support provided to Mekong slaughterhouses by province

Province	# of assessment requests	# of slaughterhouses visited and consulted	# Of upgrades made*	Notes
RAHO 6				
BR-VT	20 +1 market	3+1 market	2	
Tien Giang	3	3	3	
Ben Tre	2	0	0	
RAHO 7				
Can Tho	2	2	2	
Vinh Long	6	3	3	
An Giang	3	2	1	Need technical support only
Soc Trăng	1	4	1	
Hau Giang	4+1 market	4 + 1 market	0	Provincial plan in 2014
Ca Mau	4	4	1	
Bac Lieu	3	2 +1 market	0	No poultry slaughterhouse
Dong Thap	1	0	0	
Kien Giang	1	1	1	
Total	50 SHs +2 markets	27 SHs + 3 markets	14	

* As of July 2013

A summary report on risk assessment with detailed recommendations was given to the SDAH of each related province and to RAHO staff. In consultation with the RAHOs and SDAHs, it was decided that facilities that completed upgrading before July 2013 would be eligible to receive some equipment and technical assistance from project as an encouragement and support to their improved operations. For the facilities that did not upgrade before July 2013, only technical recommendations will be given and the facility owners can decide by themselves when they want to upgrade. However, based on the recommendations and reports provided by USAID/APII it is expected that local authorities will follow-up on the upgrading of these slaughterhouse after USAID/APII project closes. A total of 23 pieces of equipment (~7,000 USD) were purchased by USAID/APII for handover in July to 13 facilities in eight provinces. This equipment will provide an example for them to replicate in their other processing lines and will contribute to improving good slaughtering practices including veterinary sanitation, risk reduction in disease transmission and cross-contamination and improving poultry food safety.

In addition, responding to the request from three provinces (Bac Lieu, Hau Giang and Ba Ria-Vung Tau), the project visited existing markets where live poultry are sold. No market models were developed due to time constraints but a dissemination workshop was organized for local authorities in Hau Giang province with 18 participants in May 2013. The local authority stated that this experience sharing was a first step towards developing live poultry market models in Hau Giang. Technical documents from the Dong Ha and Hoa Mac models have been shared accordingly.

7.1.5. Provide technical assistance to the DAH through development of a strategy and accompanying package of how-to guides/protocols for provinces on making upgrades to markets and slaughterhouse:

A regional approach is one of the key approaches for USAID/APII in the Year four of project. On November 27, 2012 in Can Tho, in cooperation with DLP and FAO, 43 participants from RAHO 7, RAHO 6, DLP, FAO and USAID/APII attended *The 21st Biosecurity Working Group meeting*, funded by USAID/APII and FAO. The meeting focused on (i) the current situation of poultry slaughtering in regions 6&7; (ii) dissemination of USAID/APII's risk reduction, veterinary hygiene and sanitation model at Ngoc Xuan Slaughter House; and (iii) recommendations and suggestions to reduce risks in slaughtering facilities by improving bio-security measures. USAID/APII recommended that training for selected slaughterhouse and slaughter point owners in these regions on risk reduction and food safety improvements in as a follow-up activity of the meeting.

In Quang Tri on December 20 and 21, 2012, in collaboration with Quang Tri WU, USAID/APII organized a two-day *dissemination workshop* in the Northern Central region to promote the use of a multi-sectorial approach to improving food safety of poultry and

poultry products through BCC. More than 60 participants from the central Vietnam WU, FAO and the Ha Tinh, Hai Phong, Thanh Hoa, Quang Binh, Quang Ninh and Thua Thien-Hue province WUs participated in this workshop and visited the upgraded Dong Ha market and slaughter points.

As part of the strategy of DAH and MARD's Legislation Department to review and develop a framework of veterinary technical documents, on May 21, 2013, USAID/APII supported DAH to conduct a Food Safety Workshop on Sharing Experiences and Veterinary Technical Documents. More than 70 participants from national and international agencies and projects working in this field joined together to share their experiences on improving veterinary hygiene and food safety in animal and animal product production, storage, processing and trading. In addition to 32 documents and BCC materials from USAID/APII, 50 books, booklets, posters, training materials, protocols and reports were shared. DAH also took advantage of the workshop to share with provincial participants their new proposal to strengthen government capacity in food safety, zoonotic disease and environmental protection and the function and roles of veterinary public health services system.

Studying Vietnam regulations on slaughtering and taking into account model technical protocols, guidance and risk reduction operations, USAID/APII plan to develop draft Guidelines on Good Hygiene Practices and Good Manufacturing Practices for Slaughtering (GHP/GMP) for general application and advocacy by DAH. A local consultant was recruited in April 2013 conduct this documentary work. The draft version was finalized with inputs from Dr. Henry Yap, USAID/APII's International Consultant on Biosecurity, and was shared with DAH's Division of Veterinary Public Health in July 2013. The document will then be handed over to DAH as an input to their development of the legal framework and policy guidance.

7.1.6. Provide information on other funding options (credit sources) that districts/provinces can use to implement upgrades/new trainings:

A local consultant on microfinance was recruited for a short period of time to conduct a study on funding options for local vendors, slaughterhouse owners to access and getting the loans, which has been shared.

7.1.7. While developing the market model, we determined that there is no checklist for markets within the framework of MARD Decree 14. USAID/APII included it in its plan to provide technical assistance to the DAH to develop checklists specific for markets' food safety checklists. However, due to a lack of clarity in the division of tasks between national agencies, it is not clear whether DAH is responsible for this. A checklist developed for Dong Ha and Hoa Mac market monitoring and evaluation has been shared as reference for DAH's Division of Public Health for the future.

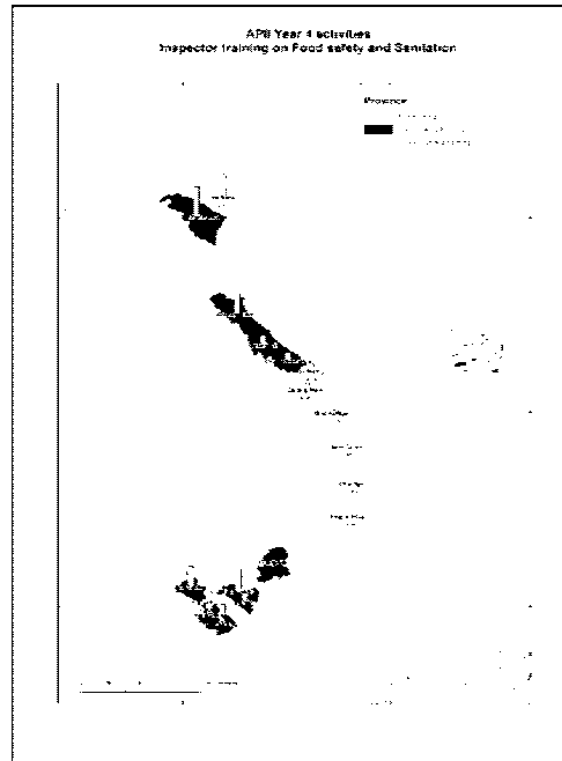
7.1.8. Support DAH/RAHOs/Provinces to develop and implement trainings for inspectors on good slaughtering practices and certification stamp requirements:

In Year three, through the process of implementing three training courses on poultry inspection, USAID/APII has developed a curriculum for Advanced Training on Inspection of Poultry and Poultry Products for Food Safety and Sanitation. This training is complement to the existing RAHO inspector certification trainings. The USAID/APII advanced training include the following additional topics such as updated information on AI, EIDs and food borne diseases; poultry supply chain and how disease transmission occurs at key nodes; and the design and operation of poultry slaughtering facilities to enhance sanitation and food safety.

To facilitate the training course implementation and balancing between interest of different parties, RAHO, provincial SDAH and USAID/APII in same case did agreed to formulate a general course that combined the curriculum developed by USAID/APII and RAHO standards course and costs sharing mechanism has been identified to be able to replicate the USAID/APII designed course. The example can be count for Ba Ria Vung Tau and Quang Binh course. In this example, each province SDAH contributed approximately 50 percent of the total training costs for administration and participants while USAID/APII covered the remaining 50%, mostly related to the costs of the trainers and the training materials.

In cooperation with the RAHOs and DAH, the USAID/APII organized seven training courses for 288 inspectors from 17 provinces, as follows: Thanh Hoa (53), Hue (14), Quang Tri (11); Quang Binh (3); Da Nang (12); Quang Nam (9); Binh Dinh (1), Khanh Hoa(1), Phu Yen (1); Quang Ngai (2);, Tien Giang (39), Ben Tre (20), Dong Nai (7), An Giang (36), Soc Trang (34), Hau Giang (40) and Can Tho (5).

Figure 4. Provinces Where Inspectors Were Trained



Evaluation results from the training showed that most of the trainees achieved sufficient knowledge on good practices for food processing, safe slaughtering and waste management in order to carry out inspection, as well as being capable of providing consultancy and effective supervision to slaughterhouse for better veterinary hygiene and food safety.

7.1.9. Revisit STOP AI models and disseminate lessons learned and activities sustained post-STOP AI:

In January USAID/APII documented the contribution of USAID/STOP AI project activities on small slaughterhouse improvement approach and success, and how USAID/STOP AI project's lessons learned have been incorporated into USAID/APII's. In addition, 58 slaughterhouse owners from Mekong region have been invited to visit the STOP AI slaughterhouse as part of the training program and many pictures and photos of this project site and new established USAID/APII physical models have been used in different training session for slaughterers and inspectors as well as dissemination workshops.

7.1.10. Work with DAH in coordination with VIPA to develop a roadmap for improving food safety at market places, providing input into its design, and share lessons learned from the slaughterhouse and slaughter point models:

In order to finalize the next draft of the National Proposal on Ensuring Food Safety in Livestock Slaughtering and Transportation and to develop roadmap to 2012-2020 on improving food safety in

transportation and slaughtering, on June 14 and 21 two consultation workshops were organized in Hanoi and HCMC, facilitated by DAH. Ninety-six participants from SDAHs and the functional divisions of DARD from northern and southern regions shared experiences on the current complex situation of food safety in relation to slaughterhouses and markets and gave specific comments on the previous draft. DAH planned to incorporate these comments into the final version, which was to be submitted for approval in late July 2013.

In the Mekong project we undertook a mapping poultry slaughter points in the Mekong region. The location and owner's name of slaughtering facilities were collected and included in the reports from the field trips to the Mekong regions that were shared with the SDAH and RAHO. However, due to time and resource constraints and the limitation on the total number of selected small slaughtering facilities for visits, the regional mapping was cancelled.

7.1.11. *Encourage technical groups, provincial authorities, the LIFSAP and VAHIP representatives, and local investors and owners in scaling up and replicating models:*

More than 30 technical protocols, training documents, behavior change communications materials and supply chain documents from USAID/APII were shared in the Technical Document Sharing Workshop on May 24, 2013. These documents were also shared with FAO, VAHIP, LIFSAP and other agencies and projects upon request during the year as appropriate.

In collaboration with VAHIP, a study tour was conducted to Dong Ha live bird market and slaughter points in Dong Ha city in 22-23th July 2013 for 37 VAHIP PMU, SDAHs, MMBs, Veterinary Stations staff and vendors of Hanoi, Thai Binh and Lang Son provinces. The Quang Tri SDAH were updated participants and shared upgrade experiences including difficulties and lessons learned. Feedback from study tour showed that participants appreciated the efforts of Quang Tri SDAH, USAID/APII and Dong Ha Market Management Board in vehicle management for poultry transport, disinfection and clean up of live bird markets and slaughter points. Another study tour is planned for late August 2013 for other VAHIP provinces.

7.2 Challenges and Solutions

7.2.1 For the market models, most of the provinces are facing the problem of controlling and managing live poultry trading in urban areas. Challenges include the need for farmers to sell their poultry products and the traditional cultural and religious practices and habits of consumers to buy live poultry. Many provinces are struggling with management and control of live poultry selling since it is impossible to maintain a taskforce to check all markets during the time period in which live poultry is traded. Some provinces have their own way of managing and organizing live poultry trading. Most of the provinces

have agreed to have a managed poultry market rather than enforcing a total ban on selling of live poultry in markets for now.

- 7.2.2 Profit margins from poultry slaughtering are especially small, and even more so in small-scale slaughtering operations. It is understandably hard to persuade these small private entrepreneurs to invest in facility upgrades without some form of 'subsidy' (financial support). Micro-finance options in the commercial financial sector are rare. Many small entrepreneurs appear to be comfortable with their status quo business (size). Cost-cutting measures seem a more appealing way forward to improve business and increase profits. This also implies cutting private costs on environmental safeguards and food safety-related measures. USAID/APII continues to reach out to and invite partners such as LIFSAP and VAHIP to participate in project activities. Partners rarely reciprocate.
- 7.2.3 Upgrading poultry section in markets model for better control and risk mitigation always faces a number of issues such as location and land availability, local policy and priority. More advocacy with local authorities is needed. While technical briefs may help on this, it might take more time to see the replication of market improvements.
- 7.2.4 Training of veterinary inspectors is assigned to regional animal health offices; however, training modules and duration of the training courses vary among regions. USAID/APII worked with RAHO 3, 6 and 7 on these issues and shared fully developed training curriculum for risk reduction at markets and slaughterhouses. Despite some SDAHs' interest in organizing more inspector trainings RAHOs may have different priorities. Project coordination was required to assist in this. In addition, too many provinces requested to cost share inspector trainings with insufficient notice for USAID/APII to organize a TOT course to help RAHOs train a group of trainers or to help DAH consolidate the training curriculum.

8. Behavior Change Communication (BCC)

By the end of Year four, a team of key BCC trainers/specialists (five to eight people) drawn from animal health, human health and communications agencies as well as mass organizations was left in Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri. They are able to train colleagues not only in their provinces but also in neighboring Provinces such as Ha Tinh, Quang Binh and Thua Thien-Hue. They are able to replicate the BCC work for new issues and with new target audience for example to address safe traffic in Kien Giang and university students in Can Tho. Local BCC teams took over and continued the facilitation of behavior changes among vendors and slaughterers in Ha Nam, Quang Tri and Can Tho.

8.1. Achievements

- 8.1.1 To use in promoting the BCC training model, the USAID/APII conducted a costing exercise about costs of setting-up and maintaining the model.

- 8.1.2 Completed the contract with Quang Tri WU to replicate the BCC training model to three new provinces (Ha Tinh, Quang Binh and Thua Thien-Hue) and to expand the model to promote food safety using the same approach of behavior change communication to other districts of Quang Tri.
 - 8.1.2.1 Conducted three TOT courses on BCC theory and application in promotion of human health behaviors for 62 key staff from provincial office of animal health, human health, education and WUs in Ha Tinh, Quang Binh and Thua Thien-Hue provinces.
 - 8.1.2.2 Conducted two training of trainer courses for 52 participants from different departments and organizations including the VFU, food safety, animal health, WU, police, and defense. Participants learned about communication skills, adult learning methods and food safety promotion.
 - 8.1.2.3 Developed three discussion guides for communicators in Ha Tinh, Quang Binh and Thua Thien Hue on: (i) environmental sanitation, (ii) women's and children's health and (iii) parenting skills; one discussion guide on food safety promotion for communicators in Quang Tri.
 - 8.1.2.4 Conducted nine diffusion training courses for 224 communicators who were from the district and commune women's union, the animal health and human health sectors and population and family planning services have learned about BCC theory and techniques and how to use discussion guides on selected behaviors on environmental sanitation, women's and children's health and parenting skills to facilitate small group discussions in their communities.
 - 8.1.2.5 With local resources from provinces, between April and July, 4,755 women in 114 communes of Quang Binh, Ha Tinh and Thua Thien Hue attended 312 small group discussions (12-20 persons per group) on prioritized behaviors selected by each province.
 - 8.1.2.6 With contribution from Quang Tri WU, organized a costs shared three-day training course on facilitation skills for 30 managerial board leaders/key members of food safety clubs. These trainees then used their updated communication/facilitation skills to facilitate meetings on food safety topics in their 18 clubs and organized five community based events to encourage 400 members each to practicing good food selection practices.
 - 8.1.2.7 Quang Tri WU organized a BCC Year four Review Workshop in Thua Thien Hue to review achievement and lesson learned from replication of BCC training to three new provinces of Ha Tinh, Quang Binh and Thua Thien Huc and to news districts in Quang Tri on food safety promotion. The review workshop was also the forum to share the BCC training model developed in AI and EIDs prevention which was successfully adopted to promote changes in other health behaviors including environment health, women's

health. In the workshop, each province also shared communication plan they would maintain and replicate in 2014 using local funds.

- 8.1.2.8 With technical coaching from a Quang Tri BCC trainer, the Ha Tinh BCC trainer team conducted two three-day training courses on facilitation skills for fifty (50) participants from provincial and communes of six districts within the WU's system and provincial police office. These trained participants are responsible to facilitate their communication events to promote 3 priority behaviors selected by Ha Tinh WU in their communities including washing hands before and after processing foods; properly discard disposables; and cleaning community lanes at least once a month.

Replication of BCC training with local fund and resources:

- 8.1.2.9 Quang Tri WU organized three training courses on communication skills for 141 chairwomen of commune WU chapters in Dong Ha Town to improve their communication skills and understanding of BCC theory.

- 8.1.2.10 Followed-up with individual provincial BCC trainers on utilization of BCC knowledge and skills in their daily work, encouraging dissemination of best practices and results, BCC trainers of Can Tho, Kien Giang and Quang Tri applied BCC to conduct activities in other fields rather than avian influenza and EIDs prevention, such as:

- Forums on BCC to prevent and control cancer (Can Tho)
- Guide students to develop communication plans and communication materials (Can Tho)
- BCC in road safety (Kien Giang)
- BCC in mother's education - under the project to educate five million mothers through Vietnam WU (Kien Giang)
- BCC in environment (Kien Giang)

- 8.1.2.11 These BCC trainers were also mobilized to facilitate BCC trainings or communication events by other projects for example: World Vision in Quang Tri and Helvetas in Kien Giang.

- 8.1.3 Supported the NAEC, organized a TOT course for 32 participants from their seven project provinces (Hanoi, Hai Duong, Bac Ninh, Thai Binh, Thanh Hoa, Vinh Phuc and Bac Giang) to apply the BCC techniques and approach in extension work to promote changes toward biosecurity poultry production. In addition to in-class training, participants had a field visit to a private sow farm to analyze the risks of zoonotic diseases as well as solutions for changing behaviors toward good biosecurity practices.
- 8.1.4 Refined, produced and left behind a package of materials for the adoption and replication of BCC training model, include:
- Can Tho and Ha Nam Provincial Communication Plans

- Communication Strategy Development Guide and BCC Training Manual
 - BCC curriculum and participatory training for VFU
 - List of desired behaviors per prioritized target groups
 - Five sets of discussion guides and flipcharts with different supply chain actors (poultry producers, vendors, slaughterers and collectors),
 - Guidebooks on community event and small group discussion,
 - USAID/APII BCC Training Model Poster sets.
 - Posters promoting the application of biosecurity practices at markets and slaughtering facilities,
 - Promotional behavior change designs: T-shirt, pen, notebook, cap, hat, hair bandeau, apron.
- 8.1.5 To facilitate the adoption and replication the BCC training model, the USAID/APII organized two National Dissemination Workshop in Hanoi and Quang Tri. Each workshop gathered 130 participants from nineteen provinces across Vietnam discuss and understand USAID/APII BCC Training Model and lessons learned while applying this model. A package of key BCC materials was briefly presented and distributed to all participants. These two workshops paved the way for the adoption and replication of BCC Training Model by three new central provinces of Ha Tinh, Hue, and Quang Binh and VFU to its all Vocational Training Schools.
- 8.1.6 Two important USAID/APII BCC manuals, the Communication Strategy Development Guide and BCC Training Manual, were disseminated through a National Training Workshop with 32 participants from twelve provinces as well as national bodies including the VFU and the National Center for Health Education and Communication (NCHEC) of MOH. Besides presentation and discussion sessions enabling participants to fully understand these two documents, the training workshop also guided them to apply the Communication Strategy Development Guide in developing their own provincial communication plans.

Adoption and replication of USAID/APII BCC Training Model

- 8.1.7 VFU successfully developed, introduced and disseminated a BCC curriculum for their livestock and culture teachers at their Vocational Training Schools. VFU leadership officially endorsed this curriculum. Its development benefited of technical expertise and coaching from USAID/APII's BCC trainers from Ha Nam, Quang Tri and National Center for Health Education Communication (NCHEC) of MOH as well as from USAID/APII BCC team.
- 8.1.8 Organized three regional TOT courses on BCC and participatory training approach for 80 teachers from 28 provincial Vocational Training Schools and Centers of Bac Ninh, Ha Nam, Hanoi, Hai

Duong, Hoa Binh, Hung Yen, Nam Dinh, Thai Binh, Da Nang, Dac Lac, Hue, Khanh Hoa, Ninh Thuan, Nghe An, Quang Binh, Quang Nam, Quang Tri, Phu Yen, An Giang, Ba Ria Vung Tau, Binh Duong, Binh Phuoc, Binh Thuan, Ca Mau, Kien Giang, Lam Dong, Long An and Tien Giang. These three TOT courses were co-designed and facilitated by BCC trainers of Quang Tri, MOH and VFU.

- 8.1.9 As requested by VAHIP project to adopt BCC training model for Ha Vi market, the USAID/APII BCC team designed and led two-day training course on BCC and application for promoting changes at Ha Vi market for 21 animal health officers from Hanoi and Thuong Tin district and members of Ha Vi market management board (MMB). As planned, the Hanoi SDAH and VAHIP project would follow-up with these participants on planning and implementing BCC activities at Ha Vi market.

Coaching and follow-up on the maintenance of BCC Training Model

- 8.1.10 As agreed with Ha Nam SDAH, leaders of Hoa Mac People's Committee and MMB during planning meeting, USAID/APII supported BCC trainers of Ha Nam; MMB, Animal Health officers and local authorities of Hoa Mac to plan and conduct monitoring activities to observe changes at Hoa Mac market and Hue - Thanh slaughtering facility. The USAID/APII transferred the leadership of routine monitoring of changes to Hoa Mac market management board and commune People's Committee.
- 8.1.11 Hung posters promoting the application of food safety practices among consumers and poultry vendors at Hoa Mac market and promoting off-floor slaughtering at Hue Thanh slaughtering facility.
- 8.1.12 Broadcasted a 20-minute video of the Stakeholder's Forum on Safer Poultry Production and Food Safety on Can Tho City Television. Key issues addressed in the forum including current regulations related to the responsibility of stakeholders to contribute to the safety of poultry products, consumer's experiences while choosing and preparing poultry and practices and efforts of poultry slaughterers, vendors and Ngoc Xuan slaughterhouse owner to contribute to safer poultry products were broadcasted to reach a larger public audience.

8.2 Challenges and Solutions

- 8.2.1 The development of a BCC curriculum for teachers at Vocational Training Schools of VFU was a challenging task because the module had to satisfy both technical requirements of an effective BCC methodology and the requirements of the VFU so that they could approve and officially introduced the curriculum into their training system. The design and delivery of three regional TOT courses on BCC within only five months required huge efforts in planning and coaching. The USAID/APII BCC team had to work closely with the writing team as well as providing intensive technical support to edit the curriculum. This task had some small delays compared with initial planning but completed as planned, finally.

- 8.2.2 In early of year four, the USAID/APII BCC team met and explored with Hanoi Consumer Associations to understand their role in promotion of demanding food safety, and possible link food safety promotion campaign. However, Consumer Associations has no strong links with our models in provinces where the biosecurity models set up including Ha Nam, Quang Tri and Can Tho. Due to limited consultancy options in the region, the USAID/APII cancelled its plan on a press relations/education campaign on food safety and choosing safe poultry regionally.
- 8.2.3 After the MOH IC training has been rolled out, they took the leadership to conduct training follow up and monitoring with key officers and VNA, MOH and provincial departments of health and staff from hospitals where monitoring conducted. So the USAID/APII could not send any BCC trainers in the IC monitoring team at hospitals as planned but we satisfied with the way the local hospitals took lead in their monitoring.

9. Monitoring and Evaluation (M&E)

In Year four of the project, we focused our efforts on activities of advocacy, documentation and expansion achievements obtained in previous years to new areas. These project activities were implemented on the basis of working directly between the project and selected and interested partners/contractors. This working approach helped to make clearly objectives, roles and functions of each party involved in the cooperation. Agreements reached with the project partners and contractors were again defined more accurately in SOWs and PSAs. These improvements contributed effectively to increasing quality and time for implementing the project activities in year four.

9.1 Achievements

- 9.1.1 During Year four, the project continued working with MEASURE and API partners on the data analysis plan and necessary preparation for a “good shape” PMP database for the evaluation of USAID API activities. Based on PMP data knowledge and discussions with FAO and WHO, USAID/APII provided comments on the draft MEASURE-developed data analysis template and discussed with MEASURE about program’s data analysis needs and data reporting requirements. MEASURE follow up to work on necessary improvements of the analysis plan, based on USAID/APII’s comments and the evaluation plan.
- 9.1.2 The project’s Logframe was finalized through refining indicators to reflect selected approaches and interventions in realization of the annual work plans and defining targets for every indicator. An updated Logframe was maintained through Year four.
- 9.1.3 Responding to the request from UAID, data quality assurance (DQA) documents were prepared and submitted to USAID for a number of the project’s indicators in the Logframe for the first three project years using USAID templates.

- 9.1.4 Reviewed and provided comments on project's advocacy plan as well as assigned indicators for monitoring realization of the advocacy plan, linking with the project's PMP/Logframe
- 9.1.5 Reviewed and provided comments and inputs to the SOWs of subcontractors to ensure the planned approaches, interventions and deliverables are aligned with the set targets and pathways articulated in the Work plan and the Logframe.
- 9.1.6 Comments and other inputs were provided to assessment and survey reports and presentations, such as the KAP survey and AHW costing study.
- 9.1.7 All subcontractors/partners' reports on implementation and deliverables were submitted to the project in time and meeting requirements of the project administration and management.
- 9.1.8 Completed update the project training activities in Trainet.
- 9.1.9 A range of specific monitoring activities were carried out as part of the process of completing and reviewing the performance of key USAID/APII models:
 - 9.1.9.1 Worked with technical teams to implement supportive monitoring plans from September to December 2012 at biosecurity demonstration sites in Can Tho and Ha Nam. Developed, tested and implemented a monitoring checklist on biosecurity practices at local meat market in Ha Nam, which will be used for advocacy to DAH for adoption at national level.
 - 9.1.9.2 Compiled monitoring results at Ngoc Xuan from September to December, 2012 that were used in the review meeting on monitoring activities between the project and Can Tho SDAH to define next steps. The summary of the assessment checklists from the four monitoring sessions shows that there has been an improvement of this Slaughterhouse. The percentage of the checklist items meeting biosecurity standards has increased from 48% in September to 65% in November. The design related issues have been resolved.
 - 9.1.9.3 Joined with animal health team to train inspectors in Ha Nam in November 2012. Concepts and principles on supportive supervision activities were introduced to the trainees. After this, trainees practiced role-plays to acquire necessary skills such as two-way communication, active listening and providing constructive feedback to slaughterers.
 - 9.1.9.4 Collaborated with technical teams, conducted a mini-survey on the situation of access to finance of the owners or investors of slaughter points/houses who were attending two training courses on biosecurity. The survey identified that 84.6% of 26 participants who filled in questionnaires faced difficulty in getting finance at the start up of their business. 65.4% have used their own fund (with or without other sources); 38.5% of all never sought for bank' loans and other 50% sought and granted with loan at least

once with annual rate of 12-18%. A number of them mentioned that they would not be able to upgrade the slaughtering facility and improve the working environment without easier access to finance. The findings of this survey are useful as an input for upcoming project support to this target group through providing education and information on the ways to access possible financial sources. The project is going to repeat the survey with the participants of the next similar training course.

9.1.9.5 Monitored changes in IC activities at selected hospitals that sent their staff to attend TOT training courses in 2012. The monitoring team consisted of staff from the Administration of Medical Services (AMS) of MOH, the VNA and USAID/APII. The team visited eight DOHs and 13 district hospitals. The monitoring team acknowledged positive changes in attitude and behaviors towards IC management and practices in health facilities.

9.1.10 To document in-province sustainability and replication of the achievements supported by USAID/APII including following-up with demonstration models, USAID/APII developed a quarterly report template and requested partners in our five focus provinces to report on the project's achievements in their province and share this report with the project.

9.1.11 Met with Ha Nam DARD in March to review Year four activities, collaboration and coordination in collecting, updating and sharing sustainability and replication of project's achievement.

9.1.12 A similar meeting was implemented with a former leader of the USAID/APII Provincial Coordination Unit (PCU) in Hung Yen in March. Both sides agreed to continue USAID/APII activities scheduled for Year four of the project and to carry out the activity of collecting, updating and sharing the project information.

9.1.13 The SDAH in Ha Nam and in Hung Yen collected and shared reports provided information on the maintaining and expansion of project models within the province as well as limitations and obstacles to the continuation of those interventions. These reports served as helpful references for decision-making and in planning support for the continuation and expansion of the project interventions and their future activities.

9.1.14 Developed a reporting template and guidelines for updating and sharing the project information on what has been replicated and maintained after the project ceased its financial support.

9.2 Challenges and Solutions

9.1.1 As noted during quarterly reporting in Year four, engaging all relevant sides in the process of USAID PMP review and development of analysis template was time consuming since each side has multiple tasks to coordinate and harmonize. The lack of a macro program data analysis plan for assessing program performance according to USAID's expectations hindered the APII partners in determining necessary supplementary data to fill the gaps

in the PMP data, leading to some delays in data analysis and updating.

- 9.1.2 In May 2013 the M&E Manager left to take up a new position. This created some challenges, however the project team pulled together strongly to cover the M&E activities including inputting of raw PMP data into the official Logframe template for USAID.
- 9.1.3 The phasing out of the PCUs in the five original focus provinces in October 2012 created some challenges in the process of updating and sharing the sustainability and replication of project's information. This was address through active follow up with key provincial counterpart agencies such as DARD and SDAH, DOH and the provincial Women's Union chapters, as well as contacts with Provincial People's Committee representatives where necessary.
- 9.1.4 In contrast to the hardware items, it was found to be quite painstaking and challenging to improve 'software' related items at the biosecurity demonstration sites. For examples, in Ngoc Xuan Centralized Slaughterhouse, areas where further improvement could be made were identified in many areas such as disinfection of poultry transportation vehicles, off-floor evisceration, regular water testing, use of toilets and shower room, regular health check-ups for workers, wearing of personal protective equipment, personal hygiene practices, waste water processing and activities on management of by-products in the slaughterhouse according to Standard Regulation QCVN 01-25:2009/BNNT. To address these issues requires multiple approaches including continuous education, technical coaching, supportive monitoring and enforcement. To address these issues, the project continued working with local partners while gradually reinforcing their ownership in managing the sites.
- 9.1.5 It was recognized through the M&E activities that almost all IC health staff in hospital facilities were working part time and many of them did not receive sufficient and systematic training in IC. There was a difference in the level of changes in IC practices from one health facility to another within the same province. This might lead to differences in level of care provided to patients from these facilities.

10. Finance and Administration

10.1 Achievements

- 10.1.1 Managed all aspects of the finance and administration and all subcontracts and consultant agreements effectively. All subcontracts and consultants were closed out.
- 10.1.2 USAID/APII continues to submit routine deliverables to USAID, including quarterly progress reports, quarterly financial reports, semi-annual and annual reports etc. The F&A team support the technical teams in managing all subcontracts and consultants and closing them out.

10.1.3 A better tracking system was set up for the last year of Project including expenditures, travel, supplies, inventory, procurement, staff leave, subcontracts and consultants was developed.

10.1.4 Throughout Quarter Four, F&A has been and will continue working on the close out plan. All subcontractors and consultant contracts successfully closed; Termination agreements have been completed for some staff who finished work in September 2013; procedures for handing over the office in Quang Tri, Can Tho and 5th floor – 72 Xuan Dieu, Hanoi were undertaken. Preparations were made to ship all payment vouchers to the head office in Bethesda.

10.2 Challenges and Solutions:

10.2.1 Year four brings a unique set of challenges: implementing our contractual requirements and preparing for close out in September. We worked to disseminate APII programs and activities to new provinces and districts until July, at which time our focus shifted to close out activities. This indicates a compressed timeline in which to complete all program activities.

11. Success Stories

Central and provincial government officials investigating ways to apply the USAID/APII market and slaughterhouse models in new locations

There are more than 700 live poultry markets currently operating in Vietnam. There is also a strong concern over public health risks including the ongoing avian influenza H5N1 outbreak in Vietnam as well as the recent discovery of the potentially dangerous H7N7 and H7N9 influenza strains in similar poultry markets in China¹. These create a pressing need for practical measures to reduce disease transmission and food safety risks from poultry trading and slaughtering activities in Vietnam and neighboring countries. USAID's Avian and Pandemic Influenza Initiative (USAID/APII) has developed an effective model for reducing public health risks from live poultry trading in public markets that is now being shared widely within Vietnam.

The public health risks from live poultry markets are well established. However, many consumers in countries such as Vietnam strongly prefer to buy live poultry. As a result, completely stopping live



The live poultry market in Dong Ha in 2011, prior to renovation. Photo: Richard Nyberg, USAID

¹ Nature doi: 10.1038/natu

poultry trading in public markets is not feasible in the short-term.

Responding to this reality, USAID/APII has developed and tested a model which focuses on: 1) reducing the risks to human health through separating live poultry from other sections of the market, 2) eradicating dangerous activities like slaughtering poultry inside the market, 3) building better facilities, and 4) promoting safer and more hygienic practices by vendors, transporters and the public.

A public health assessment prior to the USAID/APII interventions found that the Dong Ha market only complied with 19 percent of actions necessary for a healthy market. In two successive assessments after the intervention, compliance had increased to at least 67 percent.

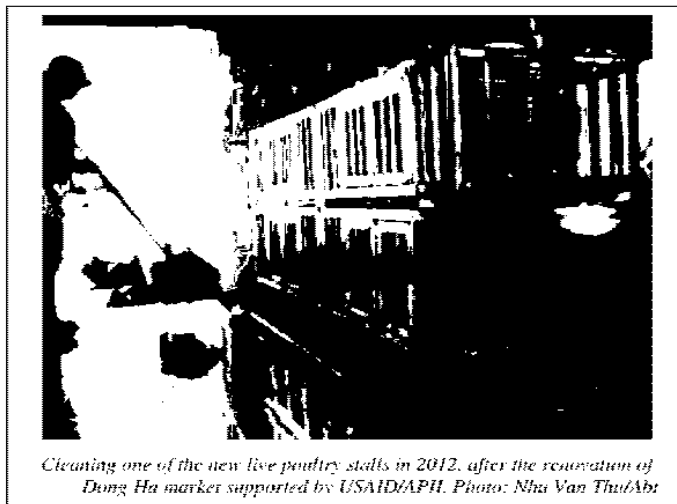
Since USAID/APII's Dong Ha market and small-scale slaughterhouse models were launched in 2012, more than 170 provincial and district officials, market representatives and other stakeholders from 15 provinces and seven national agencies have visited these models.

On July 22-23, 2013, the Ministry of Agriculture and Rural Development (MARD) organized a visit to the USAID/APII models in Dong Ha for 42 representatives from their central Project Management Unit (PMU) as well as from provincial PMUs and Market Management Boards (MMBs) from three cities/provinces (Hanoi, Lang Son and Thai Binh) supported by the Vietnam Avian and Human Influenza Prevention and Control Project (VAHIP) supported by the World Bank. This group included representatives from Ha Vi Poultry Market, a large live poultry market serving Hanoi, where as many as 100,000 birds may be traded on a busy day.

The purpose of the visit was to provide these representatives with examples of successful upgrading of a live poultry market, a plucked poultry market and small-scale slaughtering facilities according to the USAID/APII model, and to share experiences from the process of upgrading these sites, as a basis for applying

these results within the VAHIP project locations and to promote the model generally throughout Vietnam.

Following the visit, Mr. Pham Viet Anh, an official of the Ministry of Agriculture and Rural Development (MARD) who is in charge of the agriculture component of the VAHIP project, praised the implementation of the upgrading works in the USAID/APII models in Dong Ha, noting that they were appropriate



to the local conditions and represented a positive step in enhancing the safety of poultry trading and slaughtering in Quang Tri province.

Mr. Pham Viet Anh stated, "market vendors in Dong Ha are keeping the market area clean and also cleaning their poultry cages and vehicles daily even though the project has now come to an end. The VAHIP project will keep learning from the measures and implementation approach which has produced these results in order to apply it within our own models."

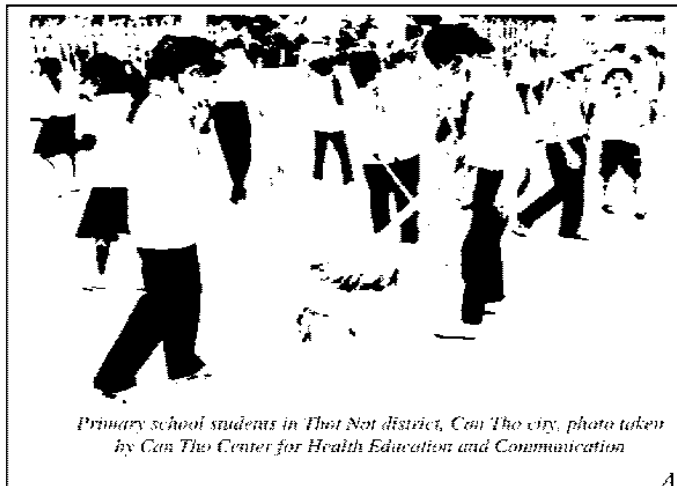
For more information, please refer to USAID/APII's brochure on the market model.

Providing an Affordable Behavior Change Communication Training Model for the Future

Awarded to Abt Associates in October 2009, the USAID's Avian and Pandemic Influenza Initiative (USAID/ APII) has developed a BCC training model (for effective promotion of desired health behaviors towards avian influenza and emerging infectious disease prevention among different target audiences including poultry supply chain actors (farmers, market vendors, slaughterers), mothers with children under five, parents of adolescents, housewives and teachers at vocational training schools.

The USAID/APII conducted a cost assessment of this BCC training model to provide a basis for the provincial counterparts who might also develop thematic communication activities in their provinces. The actual costs each year might increase or decrease depending on the number of issues addressed, the types of communication activities selected and the size of target populations. Results showed that estimated cost for a provincial agency or organization to apply the model is approximately \$32,400 during the first year and approximately \$28,800 per year thereafter. The amount for the first year includes the cost of setting up the team and mobilizing expert trainers to provide an initial training for 20-25 key provincial and district communications staff of the agency on BCC techniques and messages. These key experts will be involved in annual planning and review meetings, diffusion training of district, commune and village communicators for each activity, and implementation of media campaigns, small group discussions, community events and other selected activities.

Vietnamese Women's Unions have shown the sustainability of this investment. By August 2013, BCC trainer and specialist teams in Can Tho, Kien Giang and Quang Tri were able to gain funds from other sources to sustain their 2013 BCC activities with health providers at health facilities, school



Primary school students in Thot Not district, Can Tho city, photo taken by Can Tho Center for Health Education and Communication

children and university students on environment cleaning and prevention and control of breast cancer and cervical cancer (Can Tho). In addition to endorsement from the Provincial People's Committee according to official letter No 790/ CV-UBND regarding utilization of BCC materials of the USAID/APII to strengthen AI and EIDs prevention and control activities, the Kien Giang Women's Union secured about 600million VND from different sources. These funds will be used to conduct BCC theory and communication skills training for communicators and club leaders on road safety, child nutrition and micro-credit lending.

The Quang Tri Women's Union also applied BCC and communication skills into other routine activities such as the "clean house, clean kitchen and clean lane" movement, life skills training for 1,000 high school students in Le Loi, Dong Ha and Le Quy Don; and organized communication skills training for 141 chairwomen of all 141 commune Women's Unions with their annual funds. The Quang Tri BCC trainer team also collaborated with other international including Plan International, World Vision to integrate promotion of behavior changes on water and sanitation, and safe motherhood issues.

USAID/APII has developed and left behind a practical, affordable and effective model for behavior change communications in Vietnam which provide theory and tools to provincial communication teams to address emerging diseases, food safety and a range of other health issues. The model has been applied in 21 provinces and 28 out of 69 vocational training schools and centers for Viet Nam Farmer's Union.

For more information, please refer to USAID/APII's brochure on the BCC.



Avian and Pandemic Influenza
Initiative

GHS-I-08-07-00003-00

Year Four Annual Work Plan
(Oct. 2012 – Sept 2013)

Submitted on August 15, 2012

Abt

In association with:

Australian Foundation for the Peoples of Asia and the Pacific

Vietnamese Red Cross

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Annex 1 – International Consultancy & Travel Schedule

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Annex 3 – Gantt Chart / activities schedule

Annex 4 – Updated Log-frame

Acronyms

Abt	Abt Associates
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
BCP	Business Continuity Plan
CBS	Community Based Surveillance
COP	Chief of Party
DAH	Department of Animal Health
DOH	Department of Health
EPT	Emerging Pandemic Threats
FAO	Food & Agriculture Organization (of the United Nations)
FU	Farmers' Union
HPI	Health Policy Initiative
IPC	Infection Prevention and Control
JICA	Japan International Cooperation Agency
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MMB	Market Management Board
MOU	Memorandum of Understanding
MOH	Ministry of Health
NAEC	National Agricultural Extension Centre
NGO	Non-government organization
NSCAI	National Steering Committee for Avian Influenza
LBM	Live Bird Market
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee

PPP	Pandemic Preparedness Planning
PSA	Professional Services Agreement
RAHO	Regional Animal Health Office
TOT	Training of Trainers
USAID	United States Agency for International Development
VAHW	Village Animal Health Worker
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VHHW	Village Human Health Worker
VIPA	Vietnamese Poultry Association
VNA	Vietnam Nursing Association
VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WHO	World Health Organization
WU	Women's Union

Introduction

USAID's Avian and Pandemic Influenza Initiative (APII) was originally a three-year project (Oct. 2009 – Sept. 2012) implemented by Abt Associates. As of July of 2012 the project is in the process of receiving an extension for a fourth year of implementation. The project aims to strengthen the capacity of the Government of Vietnam and its counterparts to identify, prevent, and control influenza outbreaks in both animals and humans. This document outlines the Year 4 (Oct. 2012 – Sept. 2013) annual work plan for APII.

During Years 1-3 the project has focused on developing the following models: Community-Based Surveillance (CBS) for both the human and animal health systems; Infection Control and Case Management (IC/CM) in local hospitals; Pandemic Preparedness Plans (PPP); Animal Health Worker (AHW) capacity building; Agricultural Extension Worker (AEW) biosecurity training capacity building; Poultry Supply Chain (Network) strengthening; and Behavior Change Communication (BCC). In Year 4 the project will sharpen its focus on working with government and organizational partners to replicate and scale up the use of the models throughout Vietnam. For each model we have set an outcome goal or that which we wish to leave behind come September of 2013:

1. **CBS**: The Ministry of Health (MOH) has issued Circular 48 which requires all levels of health care worker (including at the village level) to report communicable diseases. For the Human Health system the focus of Year 4 APII activities will be to assist the MOH as needed to train Village Human Health Workers (VHHW) in identification of AI/EID symptoms and to report into MOHs event-based surveillance system. While community level animal health workers do exist in some provinces with provincial support, not all are tasked with surveillance. Our goal for enhancing community level surveillance activities in Year 4 is to build a cadre of Village Animal Health Workers (VAHWs) who have surveillance as a standard task and have the skill set to do so.
2. **IC/CM**: With the presumed adoption of IC training materials to accompany Circular 18 in late 2012, our goal is to assist the MOH in disseminating training materials throughout Vietnam in Year 4.
3. **PPP**: Using the PPPs developed in selected pilot provinces with USAID investment, we will provide technical assistance to those provinces wishing to revise their PPPs to include a one health approach and business continuity planning.
4. **AHW capacity building**: In Year 4 we will continue to support the roll out AHW trainings through the private sector and Government of Vietnam (GVN) training institutions.
5. **AEW biosecurity training capacity building**: The goal is to support National Agriculture Extension Center (NAEC) in disseminating the biosecurity trainings throughout their extension system.
6. **Poultry Supply Chains (Supply Network) Strengthening**: In Year 4 we will use the lessons learned from Poultry Supply Network demonstration nodes to provide a basis for replicating the models in new places. In addition we will

continue to support the models we have enhanced to further hone their improvements and provide additional lessons.

7. **BCC:** In the final year we will continue to support all of the models with BCC integration and roll out the BCC training model to new provinces. (1. Ngoc Xuan SH; 2. Dong Ha LBM and plucked; 3. Dong Ha SPs; 4. Ha Nam SP's; 5. Hoa Mac animal meat section; 6. IC training model)

Policy and advocacy is central to the scale up and institutionalization of our models for long term sustainability. Therefore advocacy activities are integrated throughout each technical area and will be enhanced by our participation in policy coordination activities at the national level. This also includes working with Partnership on Avian and Human Influenzas (PAHI) and enhancing the proposal writing skills of provincial counterparts in order to allow them to develop ongoing activities in the future.

Throughout Year 4 we will work to expand our models into new provinces. Our strategy for reaching new provinces is two-fold: 1) to invite participants from neighboring provinces to dissemination workshops and national events and 2) to specifically target provinces based on similar characteristics to model provinces, risk for AI and EIDs and the possibility of building on other partners' efforts (for example with the Food and Agriculture Organization (FAO) in Regional Animal Health Office 3 (RAHO3). Replication will be promoted through the provision of materials, training for trainers to provide dissemination trainings, assistance in identifying funding sources and general technical assistance to the roll out of activities.

USAID API Results Framework

The work plan is also shaped by USAID's avian and pandemic influenza (API) and emerging pandemic threats (EPT) results framework/performance management plan (PMP):

AO4: Improved Health of the People of Vietnam	
IR3: Increased Capacity to Prevent, Detect and Respond to HPAI and EPT in Animals and Humans	
Sub-IR1	(Increased effectiveness of HPAI and EPT prevention and control in the animal health sector)
	Task 1: Strengthen national and provincial surveillance system for HPAI and EPT
	Task 6: Increase preventive veterinary measures in production and markets
	Task 7: Improve attitudes and education related to HPAI and EPT risk
	Task 8: Improve knowledge of HPAI and EPT risk, preventive and control measures in small-scale commercial poultry farmers and market chain participants
	Task 9: Strengthen human capacity in animal health disease control
	Task 10: Strengthen capacity to communicate HPAI and EPT BCC messages
Sub-IR2	Increased effectiveness of prevention and control of human infection with HPAI and EPT

	Task 4: Strengthen human capacity in case management
	Task 5: Strengthen human capacity in infection control
	Task 6: Improve attitudes related to HPAI and EPT risk
	Task 7: Improve knowledge of HPAI and EPT risk, preventive and control measures
	Task 8: Strengthen capacity to communicate HPAI and EPT BCC messages
Sub-IR3	Strengthened policies and systems for improved implementation and management of services and programs
	Task 1: Support development of partner approved national and local plans and SOPs for HPAI and EPT prevention/control
	Task 2: Promote cross-sectoral and cross-border coordination and communication
	Task 3: Support governments in development of evidence based policy, including implementation of special studies
	Task 5: Strengthen involvement of private sector
	Task 7: Scale up provincial and community-based pilot projects
	Task 8: Increase capacity of local governments and communities to plan and test multi-sectoral pandemic preparedness and response activities

APII is furthermore guided by the national framework notably the emerging National Operational Program on Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases 2011-2015 (AIPED).

Implementation and Phase-out plan

To reflect the nature of the Year 4 workplan we have revised our operational model. This includes reducing our presence in original five focus provinces with the elimination of the Provincial Coordinators (PC) and Provincial Coordination Units (PCU), and the revision of Project Area Manager's scopes of work to have a more regional focus. In addition, throughout the year we will reduce positions to reflect the nature of our work and the impending contract close. These staffing reductions will begin in month six and continue through the end of the Year. In Q4 we will close our field offices and reduce our staffing numbers by September to those necessary for contractual close out activities.

Below follows a detailed narrative/description of the work planned in Year 4, beginning with a reflection on our expected outcomes by September 2013. As mentioned previously, these expected outcomes are the skills, improvements and programs which we wish to leave behind at the end of the contract. Annexes 1-2 outline planned inputs from international short-term consultants, national short-term consultants and subcontractors. Annex 3 presents the work plan in Gantt Chart format outlining the proposed timeframes and linking the activities to the results framework by their Sub-IR and Task numbers. The results framework is presented in Logical Framework format in Annex 4.

1. Coordination and Policy Dialogue

Under coordination and policy dialogue we have three goals to achieve by the end of Year 4:

- Improved HPAI prevention and control based on improved coordination
- Sustained dialogue, coordination and lessons sharing on communications in Vietnam at a national level
- National communication framework revised in line with AIPED and officially approved by National Steering Committee for Avian Influenza (NSCAI) and applied by all members in planning and implementation

Policy dialogue and advocacy activities are integrated throughout all parts of our Year 4 plan, focused on applying the results of our models at both central and provincial levels. Some specific activities we will undertake to achieve this include: continuing to support central level working groups to promote knowledge sharing and coordination at the national level, participating in PAHI Policy Forums and continuing to support proposal development for continuation of funding for new related activities. Additionally, important to supporting the growth of API programs we will continue to collect, analyze and share program data and monitor our own project's activities.

1.1. Continue to support central level working groups

- We will continue to act as the Secretariat of the One Health Communications Network until December of this year: Providing administrative support and technical expertise to the group as a whole. After December NAEC will take full responsibility for the Secretariat role, and we will continue to participate in the meetings throughout the life of the project.
- The TDBCC and BCC Manager will participate in meetings and provide inputs to the development of the National Communications Framework led by the Chair and Vice-Chair of the One Health Communications Network, supported by the PAHI Secretariat.
- We will actively participate in the Biosecurity Working Group, giving presentations on our lessons learned and the results of our programs when possible.
- We will identify opportunities to participate in and share our results to other related non-API working groups and workshops – in particular with the IC Societies and the Health Partnership Group, as well as through the Vietnam Veterinary and Vietnam Poultry Associations.

1.2. Participate in Policy Forums organized by PAHI

- Our technical staff will participate in activities organized by the PAHI Secretariat, in particular working with other API partners to review the NSCAI.
- We will identify ways to support implementation of the joint circular from MARD and MOH at the provincial level once it has been finalized.

- We will update the APII project advocacy matrix/plan for FY13 and review on a quarterly basis. This will help us plan and participate more actively in the PAHI organized Forums.
- We will participate in the policy coordination meetings organized by PAHI to identify ways to leverage the Policy Forums and role of PAHI to communicate our advocacy messages. PAHI has relationships and insight into our government partners which can be very useful to helping promote the uptake and replication of our models.
- We will support other API partners on activities to improve routine information sharing within and between key systems and contribute to API knowledge management

1.3. Follow up on Year 3 training for focus provinces in proposal writing

- Our technical staff will provide technical reviews/coaching on proposals developed by provinces for taking forward activities and replicating our models. In addition to sustaining some of our interventions, this activity will build the skills of provincial level staff to secure funding for new related activities in the future.

1.4. Collect and analyze API program data

- The M&E Manager will collect data from API partners and analyze it using tools developed by MEASURE Evaluation in Year 3.
- She will also take the lead in updating the USAID results framework and reporting forms.
- We will share reports on the data analyses.
- The M&E Manager will participate in and contribute to PAHI's work on the National AIPED M&E framework throughout the year, supporting the establishment of an effective, nationally-owned system for measuring progress and impact of Vietnam's overall efforts on AI and EIDs under AIPED.

1.5. APII M&E and Quality Assurance (QA)

- We will review and update APII MIS/filing systems as necessary to ensure easy access to project background documents and deliverables.
- The M&E Manager will update APII Performance Monitoring Plan (PMP) log frames to ensure it measures performance on the new activities in Year 4. The DQA will be carried out through the data collection and management process
- The M&E Manager will contribute to project evaluations/assessments of various activities to ensure that they are objective.
- We will share reports on project performance with USAID and other partners when relevant.
- All technical staff will continue to monitor activities with increasing ownership from local authorities as well and review deliverables for QA throughout the year.

2. Human Health Surveillance

By September of 2013 we aim to have contributed to the improved knowledge and skills of village human health workers (VHHW) in order to participate in community level surveillance in several provinces (five original focus provinces and new replication provinces.) In particular it is important to build VHHWs knowledge and skills related to zoonotic diseases, and continue to promote coordination with the animal health sector on surveillance related issues. This builds on successes made through the CBS model throughout Years 1-3.

In order to accomplish this we will support the operationalization of Circular 48 by sharing our experiences and training programs and replicate our model for training health workers developed under the CBS model in Years 1-3.

2.1. Support national/provincial policy that would facilitate community level surveillance and/or events based surveillance

- We will organize a review workshop on Circular 48's implementation as it relates to grassroots level surveillance and to share experiences from the APII provinces. Participants will include APII focus provinces and some newly selected provinces and will aim to encourage provinces to develop a Circular 48 implementation plan for improving the surveillance skills of their VHHWs.
- We will support interested provinces who attend our workshop to develop provincial plans on implementing Circular 48. The BCC trainers and the DOH will be involved in the process which will include developing training plans to improve VHHWs skills and knowledge of EIDs, surveillance techniques and communication skills. Ultimately this will increase the number of VHHW capable of participating in community based surveillance while providing good services/consultation to the households they are visiting.

2.2. Replication of the relevant model in existing provinces and in new provinces

- We will conduct one regional TOT followed by more in-depth TOT courses to develop a cadre of trainers on EIDs and surveillance and communication/consultation skills for VHHWs of APII provinces with participations from selected new provinces. Following these courses we will work closely with provincial preventive medicine center to develop revised provincial plans incorporating elements of Circular 48. This will provide Trainers that will be able to develop "provincial" specific training based on local needs and direction.

3. Case Management and Infection Control Capacity Building

By September 2013 we plan to have accomplished the following:

- Support MOH in their initial roll out of the approved Infection Control and Prevention (IPC) training program to the grassroots level throughout Vietnam
- Increased capacity of private health care center staff for facility level IPC
- Introduced IC programming in pre-service education, including private institutions

- Improved HCW capacity in IPC at public district hospitals, especially in APII intervention provinces (both new and original five)

Essential to achieving this are providing technical assistance and materials to supplement the MOH's roll out, increasing knowledge about IPC programs from District to National referral level hospitals to facilitate Circular 48's operationalization, introducing IPC programs into pre-service education and assisting private institutions in developing and implementing complementary programs.

3.1. Provide TA, materials replication and TOTs to support the roll out of IC trainings according to the MOH IC dissemination training plan as developed.

- We will print and disseminate approved IC training materials to supplement the MOHs roll out.
- We will advocate that the Administration of Health Services issue an official letter to endorse implementation of the approved IC training materials to all provincial DOHs.
- We will provide coaching and ongoing TA to APII focus provinces to continue to strengthen IC programs in existing district hospitals and to disseminate the programs and trainings down to commune level health centers and clinics. This includes training, IC committees, and hand washing supplies.
- We will conduct three regional IC TOT courses for new provinces allowing them to disseminate the trainings in their home provinces.

3.2. Work with VNA, JICA, WHO to support the MOH to host a workshop to introduce IC training materials being developed for various levels of the health system

- We will support the MOH to host a national workshop in Hanoi (or other location as determined) with key IC partners. This workshop will introduce IC training materials that will have been developed for various levels of the health system and identify ways to strengthen IC networking in the future.

3.3. Supplement MOH roll out of training by working with DOH to disseminate materials and support/coach DOH trainers to disseminate in their respective areas

- We will reproduce and provide materials to DOH partners for dissemination trainings.
- We will support and coach DOH trainers as required in rolling out the trainings in new provinces.

3.4. Explore and foster opportunities for private institutions to include APII IC training module in the institution's curriculum.

- We will identify potential nursing schools and other training institutions in which to promote an IC training module.
- We will conduct one TOT course for participants from nursing/ medical schools on IC training for health care workers at district and commune levels.

- We will provide technical support and continue to advocate that nursing and medical schools adopt and integrate IC training into their programs.

3.5. Explore public-private partnership opportunities in implementing IC activities

- We will work with DOH to identify potential private clinics/hospitals to approach with model.
- We will provide TA to DOHs to organize co-implemented and/or co-funded trainings and other activities with private institutions.

4. Pandemic Preparedness

By September of 2013 we plan to have increased GVN awareness about business continuity planning (BCP) and to have increased the number of approved whole-society PPPs nationally within Vietnam. To accomplish this we will work to promote to new provinces the importance of revising and implementing PPPs which incorporate One Health and BCP.

4.1. Work with National and Provincial Authorities where appropriate in collaboration with USAID/VN API partners to revise and implemented existing PPPs (to incorporate One Health and whole of society)

- We will host a national level PPP Lessons Learned Workshop where we will highlight the experiences of Ha Nam and Kien Giang.
- We will provide TA support and supporting documents to provinces that require it to improve or revise their PPPs.
- We will participate in the WHO training/orientation on BCP for government officials as feasible.

5. Animal Health Surveillance

Complementing Human Health Surveillance, by September 2013 we will have improved the village animal health workers' (VAHW) knowledge and skills to participate in community level surveillance in the both new and previous focus provinces. We will also build a nationwide cadre of VAHWs who have surveillance activities as a standard task. These VAHWs will be encouraged to continue to collaborate with VHHWs on identifying zoonotic diseases. To accomplish this we will support national and provincial policies to include surveillance in a standard AHW terms of reference (TOR) and replicate CBS training models where feasible.

5.1. Support national/provincial policy that would facilitate community level surveillance and/or events based surveillance

- We will look for opportunities to engage DAH in AHW network strengthening, with a focus on strengthening surveillance. This can include reviewing the DAH's 2008 proposal on strengthening the AHW network with a focus on surveillance as a task. This proposal, together with the new proposal 2011 on Strengthening the Capacity of the Animal Health sector, will provide direction to SDAHs to make plans and budgets to enhance the system – including surveillance.

- We will convene meetings/workshops drawing on our experience in the focus provinces and the review of existing national documents; in order to identify ways in which DAH and provinces can strengthen AHW networks with a focus on improved surveillance at the community level. If possible, these meetings will be held in regions 3, 6 and 7 to coordinate with the FAO zonal disease control strategy.

5.2. Continue to advocate at the national and provincial level for the adoption of a formal AHW TOR¹

- We will work with DAH and SDAHs to develop formal VAHW TORs that including surveillance task.

5.3. Replication of the relevant model in existing provinces and in new provinces

- We will complete the documentation of the Quang Tri AHW network development case study to be used as a model for provinces with similar characteristics. Specifically we will share lesson learned on AHW worker network development and surveillance activities.
- We will introduce the Quang Tri AHW case study widely through meeting/workshops. We will begin with RAHO 3 provinces and work out to other parts of the country as time and budget allow.
- We will conduct study tours and additional forums to share lessons learned and experiences on AHW network development and surveillance in order to promote the adoption of the model in new provinces.
- We will conduct training courses on AH surveillance at the community level in appropriate provinces, presumably starting in RAHO 3 where we can both build off of similar characteristics to Quang Tri and increase the reach USAID's investment by collaborating with FAO.

6. AHW Capacity Building and AEW Biosecurity Training

By the end of Year 4 we will have introduced the AHW training package introduced in at least 15 provinces and follow up with them on how can they implement diffusion trainings to reach more AHWs who can help address prevention and control of disease. In addition, by September 2013 NAEC will have officially adopted the AEW training materials and be applying them throughout AEW system and we will have developed a cadre of AEWs trained and skilled in poultry farming biosecurity practices who are training farmers. To accomplish these goals, we will expand the AHW capacity building model to new provinces and through Public Private Partnerships and we will work with NAEC to finalize their adoption of adopt the AEW Biosecurity Training model.

6.1. Animal Health Worker Networks: Expand the AHW capacity building model

¹ This activity was listed under AHW and AEW Capacity Building in USAID's scope of work on July 25, 2012.

- We will identify 15 provinces to target with TOT courses and advocacy events to promote the AHW Network model. We will select the provinces based on characteristics similar to those of the provinces where we have had the most success with uptake of the model demonstrating a perceived need as well as political commitment (i.e. provinces similar to Quang Tri) and/or those where the risk is high (based on numbers of poultry, recent outbreaks etc.) In the negotiation process with the new provinces we will assess commitment of the provinces by their willingness to co-fund and co-implement activities from the beginning.
- We will scale up use of AHW training modules through reproducing materials and implementing TOTs for these new provinces

6.2. Explore Public Private Partnerships in order to leverage resources and build sustainability for AHW capacity building

- We will conduct internal meeting to identify possible partners through which to roll out new trainings.
- Once identified we will support these private partners, and others as identified, to extend diffusion trainings (material templates/samples/designs, coaching).

6.3. Present the AHW training package to relevant ministries and department to advocate for the adoption of the package in vocational training schools

- We will meet with and present the curriculum to MOLISA and selected DOLISA other relevant ministries. MOLISA's system will provide an additional system within which to roll out our training program.

6.4. Support NAEC to officially adopt AEW training manual and training materials and to promote their use within the national agricultural system

- We will support NAEC to review, revise and approve biosecurity training package
- We will work with NAEC to formally disseminate biosecurity training package
- We will scale up use of AEW training through reproduction of materials and TOMT/TOFTs
- And we will explore using NAEC's online training programs to disseminate training package.

7. Supply Chain (Poultry Supply Network) Strengthening

There are two goals for September 2013 with regard to Poultry Supply Networks. One is to increase the DAH/DLP, RAHOs and pilot provinces' use of value chain analyses and risk reduction approaches leading to more targeted and effective disease prevention strategies. The second is to have created exemplary slaughterhouses and markets/trading centers using improved practices that can be duplicated in other places. All events are worked in concert with appropriate partners and will cohost where possible. These slaughter houses and markets are

built on lessons learned from previous USAID and other donor investments. Currently, in Year 3, through our subcontractor VIPA, we are helping the DAH to develop a national proposal for slaughterhouse and animal transportation improvement. In Year 4, we will continue work with DAH to implement the program which will have been submitted at the end of September 2012. This will ensure enforcement and wide spread replication of improved practice venues throughout Vietnam.

To reach these goals we will continue to support poultry markets and slaughterhouses where the APII project has implemented upgrades, providing Market Management Boards (MMB's) additional support to enhance the models.

7.1. Monitor behaviors in markets and slaughterhouses and conduct limited follow-up trainings in biosecurity practices needed

- We will continue to periodically visit and check-in with MMBs, SDAH, BCC trainers to observe and document improvements in behaviors and uptake of risk reduction measures in slaughterhouses and markets.
- We will document changes in risk reduction practices at demonstration sites using checklists.
- We will enhance the application of veterinary certification by increasing awareness of and incentives for adhering to risk reduction measures.
- We will provide information on other funding options (credit sources) that slaughter house owners and market vendors can use to implement upgrades and develop their business based on APII good practice models.

7.2. Help MMBs identify and implement any additional changes/upgrades needed

- We will meet with MMBs/SDAH as needed based on monitoring information to identify upgrade needs.
- We will provide technical support and limited financial support to the MMBs for making upgrades, including limited support to construction and equipment.
- We will implement post intervention biological and environmental testing in Ha Nam and Dong Ha markets and collaborate with FAO on LBM Surveillance.

7.3. Provide technical assistance to the DAH through development of a strategy and accompanying package of how-to guides/protocols for provinces on making upgrades to markets and slaughterhouses²

- We will review tools/protocols and make revisions as necessary for general application and to disseminate and advocate for DAH/SDAH's use.
- We will share lessons learned, including costing exercise results, with the DAH for their strategy/proposal development on market and slaughterhouse

² This activity was listed under AHW and AEW Capacity Building in USAID's scope of work on July 25, 2012.

improvement. The development of this strategy will institutionalize market and slaughterhouse improvement into the DAH system.

- We will provide information on other funding options (credit sources) that districts and provinces can use to implement upgrades/new trainings (specifically slaughter point owners).

7.4. Provide technical assistance to the DAH to develop checklists (for example food safety checklists for markets) and management protocols for management boards to implement³

- We will work with SDAHs to share lessons learned on official slaughterhouse checklists/regulations with DAH for their eventual adoption.
- We will advocate with DAH to adopt live bird market monitoring checklists based on the ones we have developed.
- We will support the DAH, RAHOs and Provinces to develop and implement trainings for inspectors on good slaughtering practices and certification stamp requirements. To this end we will develop the materials (based on existing materials), provide site visits, and identify lecturers for the partner funded trainings. The training will be focused on complementing inspectors' existing training and skill sets. Once the materials are developed and tested they will be handed over to the relevant RAHOs and SDAHs.

7.5. Revisit STOP AI models and disseminate lessons learned and activities sustained post-STOP AI

- We will document how STOP AI lessons learned have been/are being incorporated into APII supported models.

7.6. Work with DAH in coordination with VIPA to develop a roadmap for improving food safety at market places, providing input into its design, and share lessons learned from the slaughterhouse and slaughter point models

- We will meet with DAH/VIPA to discuss the design of a road map for improving food safety and starting to implement the newly approved plan for slaughterhouse and animal transportation improvement.
- With the approval of the Market and Animal Transportation Plan, we will help the DAH to complete a mapping of slaughterhouses in Mekong region. This will be based on the lessons learned from the study already conducted in Can Tho and will assist in identifying locations for food safety improvement activities in the near future. Once this is undertake, as time and budget allow we can extend the mapping exercises to central and northern Vietnam. Finally we will provide this information to WHO to incorporate into their efforts on health mapping.
- We will evaluate, document and share lessons learned. Our project models will serve as examples of safer slaughtering and trading.

³ This activity was listed under AHW and AEW Capacity Building in USAID's scope of work on July 25, 2012.

- We will host dissemination workshops, in RAHOs 3 and 6/7, coordinated with the FAO zonal disease control strategy, but focused on market and slaughterhouse improvements.

7.7. Encourage technical groups, provincial authorities, the LIFSAP and VAHIP representatives, and local investors and owners in scaling up and replicating models

- We will share checklists, protocols and information about funding widely to partners who may have similar mandates and areas of interest.
- We will invite representatives from organizations with potential to scale up or replicate our models on study tours to visit and understand the components of our models.
- As these other organizations begin to adopt relevant models, we will support their implementation of upgrades. Where appropriate we will also explore microfinance options to promote slaughter house/market upgrades.

8. Behavior Change Communication (BCC)

By September 2013, we will leave behind in each province of Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri, a team of key BCC trainers/specialists (five to eight people) drawn from animal health, human health and communications agencies as well as mass organizations. They have been trained, provided intensive coaching and are able to design, implement and evaluate their own communication programs. We will have improved the behaviors of vendors and slaughterers, and increased demand for poultry raised/marketed/slaughtered in a reduced risk environment. To do this we will continue to roll out the BCC trainers' capacity building model and advocate for multi-sectoral use and funding of their positions both in our previous focus provinces as well as in new provinces. We will also continue to incorporate BCC activities (when possible led by provincial BCC trainers/specialists) with each of our other models to enhance the long-term sustainability of the interventions.

8.1. Continue to roll out the BCC trainers' capacity building model to associations and mass organizations, at national and provincial levels, as well as other projects, which can diffuse the training to its own systems

- We will host a workshop with associations and mass organizations to share model and lessons learned and provincial testimonies about the benefits and individual trainer's professional growth of implementing the model and BCC transitional strategy/approach in their provinces, with the goal of having them adopt the model long-term.
- Once the model has been adopted, we will provide TA to associations and mass organizations in its implementation.
- We will explore options to integrate BCC training manual into vocational training curriculum of Farmer's Union.

8.2. Target neighboring provinces that have been invited to the BCC transition strategy review workshops (end of Year 3) and assist them in implementing BCC programs

- We will develop technical brief on processes to build capacity of BCC trainers to share widely in this advocacy process.
- Using the WU network and possibly the FU network we will identify new provinces with whom to advocate adoption of the model. This will also be combined in other model's exchange meeting/visits to other provinces to know their needs and to present our models.
- We will provide TOT's in new provinces/districts and instruct them on processes to build capacity of BCC trainers.

8.3. Advocate for uptake of the model by reviewing the budget allocation, expenditures, and activities implemented in target provinces with trainers and communications

- To use in promoting the model, we will conduct a costing exercise and develop summary document about the costs of its implementation.
- We will provide limited TA and follow-up on the use/application of improved capacity of BCC trainers in their provinces within their respective agencies relating to communication work towards prevention of AI and EIDs, and more broadly where feasible.
- To build their reputation and give them a source for networking and ongoing learning we will connect provincial BCC trainers with the One Health Communication Network. We will do this by circulating meeting notes and inviting the trainers to give presentations on their activities and successes.
- Finally we will work with Provinces to formally recognize the position of BCC Trainers and to acknowledge their capabilities and contributions.

8.4. Support provinces where multi-sectoral communications plans have been approved (in summer of 2012) and where trainer teams are established to submit proposals for funding of communications activities

- We will provide ongoing TA through visits to provinces and BCC Trainers helping implement multi-sectoral communications plans and implementing activities as needs are identified.
- We will coordinate meetings between BCC trainers and the PPC and other related agencies to follow up on their communication proposals submitted after the training course on writing skills and proposal development conducted in Year 3.
- We will support provinces to document and share work through a regional workshop and province-to-province meetings between provinces with similar characteristics to disseminate lessons learned in realization of multi-sectoral communications plans and proposals to use in the development of other communications plans in the future. This workshop and the meetings will be combined with information sharing on provincial pandemic preparedness plan implementation, where appropriate.

8.5. Enhance and facilitate the scale up and replication of other models

- We will support Infection Prevention and Control (IPC) skills-building and model promotion as needed and include BCC trainers into risk

communications trainings, IC training courses, study tours and IPC monitoring at hospitals to provide a sustainable resource to IPC activities.

- After the MOH IC training has been rolled out we will organize teams of MOH/IC Society representatives, a BCC trainers and a local trainers to support IC Prevention teams in organizing one meeting for health care workers to discuss barrier/challenges to IC practices and explore solutions in their respective facilities.
- Based on market/slaughter house monitoring results, we will support BCC trainers to develop BCC interventions in those locations. Providing co-funding in some cases and just TA in others. Most importantly we will link them to MMBs, SDAHs and slaughterhouse/slaughter point owners to become a sustainable resource for program development.
- We will meet with Consumer Associations to exchange information, promote their role in demanding food safety, and link to them to our food safety promotion campaign.
- We will design and implement PR/education campaign on food safety and choosing safe poultry regionally to help increase demand for upgraded markets and slaughterhouses/points targeting consumers and the broader community.
- We will provide TA to slaughterhouse/point operators as requested for promoting their own products. This will be in the form of introducing them to marketing theory, to marketing firms and to resources (credit) for implementing such programs.

8.6. Continue to incorporate the APII trained BCC trainers

- We will refer BCC trainers to participate in APII project activities as BCC program needs are identified.

9. Provincial Implementation and Coordination/Cross Cutting activities

To implement all of the above activities we will need to coordinate internally and with our partners. The following are the means through which we will do so.

- We will host coordination meetings with FAO to plan for provincial level activities and ensure that we can collaborate or align activities when possible.
- The PI team will meet on a bi-monthly basis to plan for activities in the field.
- We will compile a summary of microcredit/micro-lending programs in Vietnam that may be applicable to replication/expansion of APII models. This relates to activities listed throughout the document.
- Develop mechanism for working with provinces to implement the Year 4 workplan.

10. Administration & Finance

APII will continue submit deliverables to USAID as requested. In addition there are several activities which we must implement in order to prepare for contract closure in September.

10.1. Reporting to USAID

- APII will continue to submit routine deliverables to USAID, including quarterly progress reports, quarterly financial reports, semi-annual and annual reports, and a final project closeout report.

10.2. Prepare Project Closeout

- Hold closeout planning meetings (with HQ);
- Prepare for final deliverables;
- Prepare for staff and consultant terminations and/or departures;
- Subcontract closeout;
- Vendor and field office closeout;
- Host End of Project Event
- Inventory and disposition of equipment;
- Inventory and disposition of office files; and
- Prepare final billing.



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FROM THE AMERICAN PEOPLE

**AVIAN AND PANDEMIC
INFLUENZA INITIATIVE**

**Avian and Pandemic Influenza
Initiative**

GHS-I-08-07-00003-00

**3rd Quarterly Report, Year Four
(April – June 2013)**

Submitted on July 31, 2013

Abt

In association with:

**Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross**

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Annex 1 – Updated International Consultancy and Travel Schedule

Annex 2 – Updated Subcontractor and Local Consultants Schedule

Annex 3 – Updated Annual Work Plan/Gantt Chart

Annex 4 – Updated Log-frame/PMP

Acronyms

Abt	Abt Associates
ADB	Asian Development Bank
AEW	Agricultural Extension Worker
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AH	Animal Health
AHW	Animal Health Worker
AI	Avian Influenza
AIPED	Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015)
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
BCP	Business Continuity Plan
CBS	Community-based Surveillance
CEFACOM	Research Center for Family Health and Community
COP	Chief of Party
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
EID	Emerging Infectious Disease
EPT	Emerging Pandemic Threats
F&A	Finance and Administration
FA	Farmers Association
FAO	Food and Agriculture Organization (of the United Nations)
FMD	Foot and Mouth Disease
GVN	Government of Vietnam
GDPM	General Department of Preventive Medicine
HAI	Hospital-acquired Infection
HCMC	Ho Chi Minh City
HPAI	Highly Pathogenic Avian Influenza
JICA	Japan International Cooperation Agency
LIFSAP	Livestock Competitiveness and Food Safety Project
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MMB	Market Management Board
MOH	Ministry of Health
MOU	Memorandum of Understanding
NAEC	National Agricultural Extension Centre

NCHEC	National Center for Health Education and Communication
NGO	Non-government Organization
NSCAI	National Steering Committee on Avian Influenza
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PPC	Provincial People's Committee
PPP	Pandemic Preparedness Planning
PRRS	Porcine Reproductive and Respiratory Syndrome
PSA	Professional Services Agreement
RAHO	Regional Animal Health Office
SDAH	Sub-Department of Animal Health
SOP	Standard Operating Procedure
SOW	Scope of Work
TD	Technical Director
TOT	Training of Trainers
TOFT	Training of Farmer Trainers
USAID	United States Agency for International Development
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
VIPA	Vietnamese Poultry Association
VNA	Vietnam Nursing Association
VNRC	Vietnamese Red Cross
VVA	Vietnamese Veterinary Association
WB	World Bank
VFU	Vietnam Farmers' Union
WHO	World Health Organization
WU	Women's Union

Introduction

This report presents the main achievements, challenges and solutions/lessons learned for USAID's Avian and Pandemic Influenza Initiative (USAID/APII) during the 3rd quarter of Year four, covering the period from April to June 2013.

The 3rd quarter of Year four saw the project continue the full implementation of all planned Year four programs. We expanded from the original five project focus provinces to cover most of Vietnam. We continued with the three major focus areas: animal health (AH), human health, and behavior change communication (BCC). Activities are implemented via subcontracts, as Abt's current license does not accommodate direct implementation. This carries its own unique challenges as often it is difficult to find subcontractors capable of delivering quality work, and strengthening the capacity of subcontractors has therefore become a vital part of USAID/APII's work. This is especially true in Year four, as we have very limited time to complete our projects and close out the project. In addition, we are working to hand over our models and training programs to our partners for long-term sustainability and future use.

The project progressed well in most of the eight main focus activities:

1. Coordination and Policy Dialogue
2. Human Health Surveillance
3. Case Management and Infection Control (IC) Capacity Building
4. Pandemic Preparedness
5. Animal Health (AH) Surveillance
6. Animal Health Worker (AHW) Capacity Building and Agricultural Extension Worker (AEW) Capacity Building
7. Supply Chain (Poultry Supply Network) Strengthening
8. Behavior Change Communication (BCC).

In Year four we have been making a final push for the wider adoption and sustained implementation of models beyond the life of the project. Adoption, adaptation, replication and scaling up of USAID/APII innovations by public and private partners are considered the real measure of success for the project. In order to achieve this, the project has been carrying out sustained advocacy and promotional campaigns in close consultation with USAID and API partners. These campaigns have achieved very good results across key components and models developed by the project, particularly in relation to Infection Control, Animal Health Worker (AHW) Capacity Building and Agricultural Extension Worker (AEW) Capacity Building, Supply Chain (Poultry Supply Network) Strengthening, and Behavior Change Communication (BCC).

What follows is a description and discussion of the main achievements and challenges of the 3rd quarter of Year four.

1. National Coordination and Policy Dialogue

Under Coordination and Policy Dialogue we have three goals to achieve in Year four:

- Improved coordination in order to improve highly pathogenic Avian Influenza HPAI prevention and control
- Sustained dialogue, coordination and lesson sharing on communications in Vietnam at a national level
- Revision of national communication framework in line with Avian Influenza, Pandemic Preparedness and other Emerging Infectious Diseases (2011-2015) (AIPED), officially approved by National Steering Committee for Avian Influenza (NSCAI), and applied by all members in planning and implementation.

1.1 Achievements

- 1.1.1 Reviewing and taking into consideration the results of our work on specific models, approaches and tools across key components, as well as the experiences from advocacy events in previous years, USAID/APII's models have been disseminated and replicated beyond the focus provinces and also integrated into governmental systems/networks such as MOH (infection control), NAEC/MARD (BCC training), Women's Union, and Farmer's Union. As a result, the project models will continue to have an impact beyond the project's lifespan, contributing to AI and EIDs prevention and control at provincial, regional and national scales. Specific activities and achievements on dissemination and advocacy as well as adoption and replication of the models are outlined in the reporting for each work area below.
- 1.1.2 In line with the advocacy plan and matrix for Year four, and building on the initial one-page briefs sent to USAID in the previous quarter, USAID/APII continued to develop briefing papers on key models and aspects of our work. Six briefing papers are now in the late stage of development, covering Infection Control, AHW Training, Separation of Poultry, Small-scale Poultry Slaughtering Facilities, BCC, and an overview of Training Approaches and Curricula developed by the project. The briefing papers specify approaches and desired achievements for replication.
- 1.1.3 On April 3-4, USAID/APII representatives attended and presented at the *USAID/APII Communications on Health and Avian Influenza through Lessons Learned from Control and Prevention Programs in Vietnam* panel in the National Conference on Applying a One Health Approach to Infectious Disease Risks at the Human-Animal-Ecosystem Interface in Vietnam.
- 1.1.4 On May 3, USAID/APII representatives attended the National Conference on Resource Mobilization for Influenza A (H7N9) Prevention, Control and Preparedness in Vietnam.

- 1.1.5 On May 31, USAID/APII representatives attended and provided technical comments and shared experiences in AI and EIDs prevention and control in PAHI's workshop on Preliminary Findings on the Economic Impact of Infectious Diseases of Livestock in Vietnam.
- 1.1.6 On June 12, USAID/APII representatives attended the overall USAID Vietnam partners' meeting. Before and following the meeting, an overall impact statement on USAID/APII was developed for sharing by USAID with the Ambassador.
- 1.1.7 On June 13-14, USAID/APII representatives attended and contributed to the USAID EPT Partners meeting in Hanoi, including the preparatory discussions on June 13 and the actual meeting with GVN and other counterparts on June 14.

1.2 Challenges and Solutions

- 1.2.1 As noted in the previous report, some changes to key personnel within technical agencies of GVN and other key stakeholders in our advocacy activities, for example due to people reaching retirement age, required the project to engage with new personnel in order to ensure their awareness and understanding of our activities, models and achievements. We have been monitoring these changes and actively reaching out to new personnel, with introductions and briefings from outgoing personnel where possible. We also have the advantage in some cases due to promotions of former counterparts at various levels, meaning that officials who are familiar with our work are now in more senior positions and can leverage the experience and capacity they gained in working with USAID/APII previously to support the wider application and replication of our models.
- 1.2.2 During Year four, we have moved away from direct implementation in the original target provinces and stepped down our previous Provincial Coordination Units (PCU). This shift has required us to take a somewhat different approach to working with these provinces in order to continue engaging with key counterparts to track the replication and scaling up of our models within the provinces, ensuring their cooperation in hosting visiting delegations to view the models and sharing their experiences, and also mobilizing them to share the models with other parties. We have done this during Year four by building on the relationships and results of our work over the past three years and, in a few cases, providing limited support for follow-up activities. This approach has continued to prove very successful in the 3rd quarter of Year four, with counterparts in the original target provinces strongly involved in replicating and sharing our models across the different components as outlined below.

2. Human Health Surveillance

The human health surveillance goal of USAID/APII activities in Year four was to support national/provincial policies that facilitate community level surveillance

and to replicate the relevant model in both initial focus provinces and new provinces.

However, as noted in the previous report, despite promising work on a Statement of Work (SOW) for the National Institute of Hygiene and Epidemiology (NIHE) to implement human health surveillance activities in Year four, which had been agreed in principle by NIHE and approved by USAID, ultimately it was not possible to proceed with this contract as we were informed that the General Department of Preventive Medicine and MOH intended to formulate a separate plan to assess Circular 48 in the future. USAID/APII was requested not to conduct activities related to Circular 48 for the time being because of certain sensitive internal issues. In March USAID/APII cancelled the intended activities with NIHE and shifted the designated monies elsewhere.

2.1 Achievements

2.1.1 No further work was done on this activity in the 3rd quarter.

2.2 Challenges and Solutions

2.2.1 The predictability and reliability of information from MOH are out of USAID/APII's and NIHE's control. We therefore decided that it was necessary to end the contract with NIHE.

3. Case Management and Infection Control (IC) Capacity Building

USAID/APII's IC goals for Year four were to assist GVN in rolling out a training model developed to assist health facilities in implementing Circular 18.

3.1 Achievements

3.1.1 Based on the letter issued by MOH dated March 1, 2013 on supportive monitoring trips to 13 hospitals in eight provinces whose key staff were trained with support from USAID/APII in 2012, a monitoring team including members from MOH, Vietnam Nursing Association (VNA) and USAID/APII conducted three trips to four northern provinces, two central provinces and two southern provinces during April. At the provincial level, the team worked with provincial Departments of Health (DOH) to review their IC activities in 2012 and IC plans for 2013. At the district hospitals, the team reviewed each hospital's structure, human resources, infrastructure and activities for IC in 2012. Improvements have been seen in the reorganization of IC human resources and the enforcement of key IC practices including instrument processing. Diffusion training was conducted to hospital health care workers in 2012. Significant improvements were noted, including in relation to IC structure, IC planning, development of hospital regulations, IC research in hospitals, disposable towel supplying, and IC practices at healthcare facilities. More attention should be paid to IC planning and to supervision of compliance to IC standards. The hospitals that received support from USAID/APII in 2011 were observed to be doing significantly better than other hospitals in IC.

- 3.1.2 On April 12, USAID/APII provided IC training materials to the National Workshop on Sharing the Experience of Nursing Education in Pham Ngoc Thach Private Medical School organized by MOH. More than 210 participants from 26 nursing and medical schools and 37 hospitals nationwide attended this event. USAID/APII also supported Dr. Phi Nguyet Thanh from the Training and Education Department of MOH to make a presentation on the training curricula for nurses and ways in which in-service training institutions can apply the IC training materials.
- 3.1.3 On April 22-27, the 3rd regional and final training of trainers (TOT) course on IC was organized in HCMC for 30 participants from six southern provinces, including An Giang, Dong Nai, Dong Thap, Soc Trang, Tay Ninh and Vinh Long. Participants from 7 medical and nursing schools also attended, including HCMC Medical and Pharmaceutical University, Nguyen Tat Thanh and Hong Bang Private Universities, and the Medical Colleges of Can Tho, Soc Trang, An Giang and Vinh Long. In addition to updated IC knowledge, participants also gained knowledge on adult learning methods and worked on their diffusion training plans. A one-day field study at Pediatric Hospital No. 1 in HCMC gave participants an opportunity to observe IC in practice and to undertake Hospital-acquired Infection (HAI) surveillance and IC compliance monitoring. Micro-teaching during the training provided practicum experience for participants.
- 3.1.4 In April, with technical support from MOH and VNA, the four provincial DOH of Vinh Long, Tay Ninh, Dong Nai and Dong Thap shared their action plans for 2013-2015 on strengthening IC activities at healthcare facilities and their 2013 IC training plans for their health staff. All training courses included in these plans will use the IC material supported by USAID/APII, and will utilize local funds for their running from May to September.
- 3.1.5 On May 2, with technical support from USAID/APII, Phu Yen Medical Secondary School issued an official decision on adapting the USAID/APII IC training materials for use in their training program for nurses, physicians and laboratory technical students, beginning in the 2012-2013 school year. After Au Lac Private Nursing School, this is the second nursing school to issue an official decision on integrating the USAID/APII IC training materials into their training program. The USAID/APII IC training materials have been used to train 100 students to a full credit in IC theory and practice over 32 sessions in school year 2012-2013.
- 3.1.6 On May 6-9, a provincial TOT course on IC was conducted in Dong Thap General Hospital for 120 participants from 16 hospitals, including four provincial hospitals, four specific hospitals and eight district hospitals. In addition to gaining updated IC knowledge and skills, participants also learned about the design and practice of cross-sectional HAI studies. The trainers for this course were those trained by the USAID/APII in April 2013, together with a national

expert from the HCM Infection Control Society. IC training materials for the course were provided by USAID/APII. Dong Thap's DOH and Johnson & Johnson Vietnam co-funded this course.

- 3.1.7 On May 8, the Vinh Long Medical Intermediate School issued an official letter to USAID/APII to adapt the IC training materials to train their nursing and midwifery students through 10 lesson plans over 60 sessions in 2013 and 2014, for 55 nursing students and 270 midwifery students.
- 3.1.8 On May 25 in Hue, Hue National General Hospital and the Hue Infection Control Society (HUSIC) held the Scientific Workshop for the Central Region on Infection Control and Patient Safety, with approximately 300 participants from around 100 hospitals including national hospitals, provincial and district hospitals and specialized hospitals. A detailed introduction to the IC training curriculum and IC material was published in the *Journal of Clinical Medicine*, with support from USAID/APII for printing and distribution to workshop participants and to other hospitals and medical schools in Vietnam's central provinces.
- 3.1.9 The Binh Dinh Nursing Association conducted two provincial TOT courses on IC on May 20-25 and June 3-8 in Binh Dinh, with 50 participants from 21 hospitals including Tuy Hoa National Dermatology Hospital, Binh Dinh Provincial General Hospital, two polyclinics, five specialized hospitals, 11 district hospitals and one private hospital. Participants shared updated knowledge and skills on IC and HAI surveillance in hospitals. The trainers for this course were those trained by USAID/APII in April 2013. USAID/APII provided copies of the IC training materials and contributed 30% of training costs. Binh Dinh DOH contributed the remaining 70% of the costs for the course.
- 3.1.10 During May, a further 20 DOH shared their provincial action plans on strengthening IC activities at healthcare facilities, including diffusion training plans with technical support from MOH and VNA. To date, 30 provinces throughout the country have shared their provincial action plans on IC.
- 3.1.11 In May, Phu Yen Medical College, Vinh Long Medical College, Can Tho Medical College, Ho Chi Minh City University of Medicine and Pharmacy, and Hong Bang University have issued copies of their official letters on integrating USAID/APII's IC training materials into their training programs for students.
- 3.1.12 With co-financing support from USAID/APII, Quang Nam's DOH conducted three provincial TOT courses on IC in Quang Nam from May 27 to June 15. In total, 90 participants from Quang Nam Medical College and 35 hospitals, including 12 provincial hospitals and health facilities, 20 district hospitals and three private hospitals, obtained updated knowledge and skills on IC through a total of three TOT courses for all provincial and district facilities. Provincial

trainers conducted these courses with IC training materials supported by USAID/APII and approved by MOH.

- 3.1.13 On June 7, USAID/APII attended the Scientific Workshop on Infection Control for the Northern Region co-chaired by MOH, Bach Mai Hospital and Hanoi Society for Infection Control (HANSIC). More than 350 participants from about 100 hospitals including several national hospitals, district hospitals and specialized hospitals shared experiences, worked together to develop their skills on IC, and were updated with new technical information. Workshop participants also discussed the IC situation in hospitals as well as IC training for the health care system. USAID/APII staff shared information about the status of IC training replication in different provinces and training institutions following the TOT courses conducted in 2012 and 2013.
- 3.1.14 On June 25, the Workshop on Strengthening Infection Control Training Programs in Nursing and Medical Schools co-chaired by VNA, MOH and USAID/APII took place in Hanoi, with 44 participants from 28 medical and nursing universities, colleges and schools. Participants shared their IC training curricula, materials and student IC practicums in hospitals. One public medical college and one private medical school shared their experiences on integrating USAID/APII's IC training materials into their training programs with technical support from VNA. Participants appreciated the presentations and agreed to integrate USAID/APII's IC training materials into their training programs. Participants also shared their expectations on institutionalizing the IC training curriculum and IC materials at their medical and nursing schools together with additional TOT courses on IC for their teachers.
- 3.1.15 After the first provincial TOT course on IC held in Nghe An from June 10 to June 15, a second similar training course was organized from June 24 to 29 by Nghe An's DOH with co-financing support from USAID/APII. To date, 60 participants from 35 healthcare facilities, including 14 provincial hospitals, 19 district hospitals and two private hospitals, have been able to update their IC knowledge and skills in the class, and to learn about HAI surveillance and IC practice compliance in Nghe An's General Hospital. The IC training materials for the course were supported by USAID/APII.
- 3.1.16 Thirteen training institutions, including Soc Trang Medical Secondary School, Duy Tan University, Ha Noi Medical College, Thanh Tay University, Vinh Medical University, Hue Medical College, Hai Duong Medical Technical University, Nam Dinh Nursing University, Quang Nam Medical College, An Giang Medical Secondary School, Binh Dinh Medical College, Thanh Hoa Medical College, and the Nguyen Tat Thanh University in Ho Chi Minh City, sent official letters to VNA on revising their IC training programs to adapt the IC training curriculum and materials developed with support from USAID/APII in June. This brings the number of institutions to have attended TOT courses in 2012-2013

and since issued official documents on integrating USAID/APII's IC training materials into their training programs to 19. The revised training programs will be begin to be implemented in school year 2013-2014 for about 16,500 students.

- 3.1.17 With technical support from VNA, Hanoi Medical College developed detailed IC fundamentals with 10 lesson plans on IC training for nursing and midwifery students in June, to be applied for more than 700 students from school year 2013-2014.
- 3.1.18 In June, seven DOH shared their provincial action plans on strengthening IC activities at healthcare facilities, including diffusion training plans with technical support from MOH and VNA. To date, 37 provinces throughout the country have shared their provincial IC action plans.

3.2 Challenges and Solutions

- 3.2.1 This year, USAID/APII required subcontractors to submit all reports in English; as a result, VNA took longer than previously to write, revise and translate deliverables before submitting.
- 3.2.2 Ministry of Education and Training (MOET) issued an outline of the training curriculum for nursing training with two credits on IC, however as yet there is still no requirement for IC training in the curriculum for medical students. In addition to working closely with MOH, VNA and other partners to introduce and integrate the IC training model into the nursing training program, the human health team introduced USAID/APII materials to medical schools for reference in IC lessons in other subjects and suggested to the schools develop an optional IC subject for medical students.

4. Pandemic Preparedness Planning (PPP)

USAID/APII's PPP goals for Year four were to introduce PPP packages to other provinces, and to advocate for wider adoption of PPP throughout Vietnam.

4.1 Achievements

- 4.1.1 With the commitment of Hung Yen People's Committee on revising the provincial plan on pandemic preparedness, on April 5 a PPP training workshop was conducted for about 30 participants from various provincial authority agencies and mass organizations. Participants learned about the new concepts of a Whole-of-Society approach and Business Continuity Planning, and how to apply them in their PPP. Following this event, the first draft of PPP for Hung Yen was prepared and shared with relevant sectors in Hung Yen for comment.
- 4.1.2 On April 25, the First PPP Review Workshop was conducted in Hung Yen with 25 participants from various provincial agencies and mass organizations in order to obtain feedback on the first draft of the Hung Yen PPP. New approaches introduced in the draft plan include (i) preparedness planning covering diseases in both humans

and animals, (ii) multi-sectoral involvement and (iii) inclusion of livelihoods, food security and business continuity planning for both pre-pandemic and post-pandemic periods. The second draft of the PPP reflecting comments and inputs from Review Workshop participants was sent to WHO, FAO, and national and provincial agencies and mass organizations for feedback.

- 4.1.3 On May 14, the Second PPP Review Workshop was organized with participants from 20 agencies and organizations in Hung Yen province, including government management offices, the propaganda agency, the provincial Police Department, mass organizations, media agencies and local staff, with the goal of reviewing the second draft of the provincial PPP. Participants discussed and provided comments on completion of the plan. Additional inputs from API partners were collected in order to finalize the PPP. After revision, the plan was submitted for approval by the People's Committee of Hung Yen province.
- 4.1.4 On May 22, Hung Yen People's Committee approved the Hung Yen PPP.
- 4.1.5 On June 11-12, Hung Yen People's Committee organized a provincial PPP dissemination workshop in Hung Yen, with the participation of 33 leaders of 24 agencies including provincial departments, nine district People's Committees, and mass organizations. Participants discussed how to disseminate the provincial plan to their departments, organizations and district networks. As required by the Vice Chairman of Hung Yen People's Committee, all related departments and districts in Hung Yen province will have to develop or revise their individual PPPs before July 15, 2013.
- 4.1.6 During June, USAID/APII closed out the contract with Hung Yen Red Cross after successfully implementing the planned PPP activities in Hung Yen for 2013.

4.2 Challenges and Solutions

- 4.2.1 This was the first time that Hung Yen Red Cross had implemented this kind of complex activity with the involvement of multiple sectors at provincial level. A plan with detailed activities indicating persons in charge, expected outputs, and timeline was prepared with support from USAID/APII's human health team. The commitment of Hung Yen's People Committee and the effective activities of the provincial Editing Team including Hung Yen Red Cross as well as the human health, AH and communication sectors played an important role in the success of this activity. In addition, USAID/APII always worked closely with Hung Yen Red Cross to strengthen their capacity during the period of the PPP revision.

5. Animal Health (AH) Surveillance

During the 3rd quarter of Year four, USAID/APII's AH activities focused on supporting national/provincial policies that would facilitate community-level surveillance and on replicating the relevant models in both the initial focus provinces and new provinces.

5.1 Achievements

- 5.1.1 We conducted meetings and workshops with relevant partners to discuss AHW network development and roles (including animal disease surveillance at grassroots level):

Under the Quang Tri livestock and husbandry contract, APII supported Quang Tri Sub-Department of Animal Health (SDAH) to review the current animal disease surveillance in line with local network development policy. A set of animal disease reporting forms has been issued by Quang Tri SDAH to harmonize the reporting forms and enhance the passive surveillance system of the province.

- 5.1.2 We continued to advocate at regional and provincial levels for the adoption of a formal AHW Terms of Reference (TOR):

A report on the improvement of the AHW network of Quang Tri province, including the adoption of formal Village Animal Health Worker (VAHW) TORs specifically including the surveillance task (to detect and report suspected cases) and a presentation has been developed and is ready for sharing. A local consultant was invited to make a study of this provincial case, and his report with detailed recommendations for an animal disease surveillance training curriculum is expected to be introduced to DAH as a reference document to aid in identifying gaps in animal disease surveillance and a model example for provinces on AHW network development. Official adaptation for diffusion training is expected from DAH.

A regional TOT training course (5 days) was conducted in Dong Ha on Animal Disease Surveillance at Community Level for 6 provinces in the central region (provinces covered by RAHO 3) with 30 participants (10F:20M). RAHO 3 trainers and the Head of DAH's Epidemiology Division were invited as lecturers, and the Quang Tri example was discussed during the course.

- 5.1.3 USAID/APII models of AH surveillance and AHW network improvements were replicated using the existing provinces as models for introduction into new provinces:

A draft of the Policy Brief on the Quang Tri Case Study and successes in AH surveillance and AHW Network improvement has been developed and is planned for publication in July 2013.

A documentary on the Quang Tri model in AH network development has been developed by the local Quang Tri Livestock and Veterinary Association in collaboration with the SDAH, and was shared with 26 participants (4F:22M) from RAHO 3 and central provinces at a regional Technical Dissemination Workshop for RAHO 3 provinces

on AHW network development conducted in Hue on 21 May 2013. As a result of the workshop, the formal VAHW TOR, including the specialized surveillance task of detecting and reporting suspected disease events, has also been reviewed with comments from participants.

5.2 Challenges and Solutions

- 5.2.1 Animal disease surveillance improvement for the grassroots level continues to present challenges due to lack of official legislation supporting local network development and lack of commitment by local authorities of allocated funds from limited annual provincial resources. The new veterinary law that is expected to be issued in the coming year and the new national proposal for Animal Health Sector Development can be considered good initial steps by DAH and MARD to cover gaps in the regulatory framework and policy directions, but they will require long-term strategy and commitment from stakeholders at all levels if success is to be achieved given current weaknesses in the overall veterinary service network.

6. AHW Capacity Building and AEW Biosecurity Training

The goals of the Animal Health Worker (AHW) Capacity Building and Agricultural Extension Worker (AEW) Biosecurity Training activities are to:

- Introduce the AHW training package to new provinces and seek other educational training opportunities
- Introduce the AHW networking model that will be adopted by relevant public-private agencies at national and local levels.
- Introduce the AEW training materials to the National Agriculture Extension Center (NAEC), the new Provincial Agriculture and Fishery Extension Centers (PAFECs) and the private sector and enable them to apply them throughout the AEW system.

6.1 Achievements

- 6.1.1 AHW Networks - Expanding the AHW capacity building model:

Responding to requests from Mekong SDAHs and RAHO 3, USAID/APII scaled up the use of AHW training modules through the introduction of materials in the RAHO 3 dissemination workshop and regional TOT courses for RAHOs 3, 6 and 7. A total of 81 local trainers have been trained in the 3rd quarter (21F:60M) in those TOT for AHW courses with a total of 15 new replication provinces covered.

Taking advantage of the enthusiasm and strong interest of the Farmers' Union vocational training system, USAID/APII's subcontractor Australian Foundation for Peoples of Asia and the Pacific (AFAP) conducted a TOT course in Hai Duong from 29-31 May, reaching seven provincial Farmers' Union Vocational Training

Centers with 25 local trainers. It is promising to note that these vocational training centers are expected to conduct their own training courses for local AHW using provincial funding resources.

- 6.1.2 We supported NAEC to officially adopt the AEW training manual and training materials and to promote their use within the national agricultural system:

NAEC has completed the review and approval of the Biosecurity Training package as well as the formal dissemination of the package to 159 participants (45F:114M) from 14 provinces through three national and regional biosecurity forums in Quang Ninh (May 17), Ha Nam (June 6) and Khanh Hoa (June 15).

In addition, NAEC has integrated the Biosecurity Training package into two national projects providing training for farmers. Together with the VIPA farmer club training courses, a total of 719 farmers (193F:526M) have been reached with good farming practices and biosecurity training in the 3rd quarter.

- 6.1.3 We explored possibilities using NAEC's online training programs to disseminate the training package:

NAEC and its counterparts have developed a DVD for on-line training, as recommended by USAID/APII. The final draft version was completed in late June and is planned to be posted on the NAEC website following final approval, which is expected in July 2013.

6.2 Challenges and Solutions

- 6.2.1 Figures on replication training conducted in additional provinces may not be made available in a timely manner where these activities are being funded from local, national or other resources not sourced by USAID/APII. USAID/APII has endeavored as much as possible to introduce and train local trainers as well as to distribute the AHW and Biosecurity training packages widely with the expectation that diffusion training will then be taken up by local authorities once they appreciate the value of these approaches and the related tools and supporting materials.

7. Supply Chain (Poultry Supply Network) Strengthening

USAID/APII's Supply Chain Strengthening goals in Year four are to advocate and encourage adoption, adaption and replication of the models. We are working with public agencies, private partners, other development projects and programs of USAID/APII to provide them with biosecurity/biosafety demonstration models, especially in key (high-risk) nodes along the poultry supply chain, together with related documents (such as protocols, guidelines and training materials).

7.1 Achievements

The key activities and achievements of the supply chain work during the 3rd quarter of Year four focused on the following activities and nodes:

- 7.1.1. Monitoring behaviors in markets and slaughterhouses and conducting limited follow-up refresher trainings in necessary biosecurity practices:

Quang Tri:

Periodic review meetings were conducted almost monthly with the participation of market management boards, slaughterhouse/slaughter point owners, SDAH Inspectors, and BCC trainers to observe and record behaviors as well as to encourage the maintenance of good practices at Dong Ha market and the model slaughtering facilities. This effort aims to maintain good models and to support their use as a training platform to encourage wider replication.

During this quarter, USAID/APII and local counterparts focused on encouraging the replication of the model by other slaughterhouses in Dong Ha city and Quang Tri town, through provision of training on good poultry slaughtering practices, household visits, consultations and provision of model equipment. At the same time, Quang Tri SDAH enhanced the application of veterinary certification by increasing awareness of the value of certification among producers, vendors and consumers. Certification by stamping of poultry products slaughtered with the application of good slaughtering practice commenced in USAID/APII model slaughtering facilities in June 2013. This government effort encouraged immediate replication of the model; as a result, 9 out of 12 slaughter points have registered for facility upgrading following technical recommendations from Quang Tri SDAH. Some small slaughtering operations will be re-grouped and relocated to selected bigger facilities. To date, two slaughtering facilities have completed upgrading activities. Three others will complete their upgrading by September, with the remainder continuing with technical support from the SDAH. Fifty-three pieces of equipment with a total cost of 183,340,000 VND (~8,700 USD) including tables, ozone generators, drum pickers, high pressure cleaners and sets of bleeding cones for safer slaughtering practices have been delivered to 11 potential replication slaughterhouses in Quang Tri.

Quang Tri Department of Agriculture and Rural Development (DARD) issued the following legal documents during this period: Decision No. 286/QĐ-SNN dated May 29, 2013 on Temporary Regulations for poultry slaughtering and poultry production trade in Quang Tri, and Official Letter No. 494/SNN-CN directing the management of poultry slaughtering and poultry production trade in Quang Tri.

The Mekong region (RAHO 6 and RAHO 7):

Following up training provided in December 2012 as well as requests submitted by 12 SDAHs for case assessment and recommendations for upgrading 50 small slaughterhouses, USAID/APII experts worked

with technical staff from RAHOs and SDAHs to assess operations in slaughtering facilities using the checklist and risk assessment matrix issued with Circular 14. The purpose of this assessment was to identify communicable disease and food safety risks and to propose prioritized upgrading options for the slaughtering facilities. These recommendations are considered to be the most appropriate, practical and feasible for facility owners to easily learn from and follow in both short-term and long-term periods. Of 50 slaughterhouses registered in these provinces, 27 facilities in 10 provinces under RAHO 6 and RAHO 7 were selected for field assessment. Most of these facilities were found to have common errors in terms of processing flow (not one-way), processing on the floor, and no separation of dirty and clean areas. A summary report on risk assessment with detailed recommendations was given to the SDAH of each related province and to RAHO staff. In consultation with the RAHOs and SDAHs, it was decided that facilities that completed upgrading before July 2013 would be eligible to receive some equipment and technical assistance from the project as an incentive and support for their improved operations. For facilities that did not upgrade before July 2013, only technical recommendations would be given, and facility owners could decide by themselves when to upgrade. However, recommendations and reports provided by USAID/APII suggest that local authorities will follow up on the upgrading of these slaughterhouses following the completion of the USAID/APII project. A total of 23 pieces of equipment with a combined cost of approximately 7,000 USD was purchased by USAID/APII for handover in July to 13 facilities in eight provinces. This equipment will provide an example for the facilities to replicate in their other processing lines and will contribute to improving good slaughtering practices, including veterinary sanitation, risk reduction in disease transmission and cross-contamination, and improving poultry food safety.

7.1.2. Providing technical assistance to DAH through development of a strategy and accompanying package of how-to guides/protocols for provinces on making upgrades to markets and slaughterhouses:

As part of the strategy of DAH and MARD's Legislation Department to review and develop a framework of veterinary technical documents, on May 21, 2013 USAID/APII supported DAH to conduct a Food Safety Workshop on Sharing Experiences and Veterinary Technical Documents in Hanoi. More than 70 participants from national and international agencies and projects working in this field came together to share their experiences on improving veterinary hygiene and food safety in animal and animal product production, storage, processing and trading. In addition to 32 documents and BCC materials from USAID/APII, a further 50 books, booklets, posters, training materials, protocols and reports were shared. DAH also took advantage of the workshop to share with provincial participants their new proposal to strengthen government capacity in food safety, zoonotic disease and environmental

protection, and the functions and roles of the veterinary public health services system.

A local consultant was recruited to review tools and protocols and to develop draft Guidelines on Good Hygiene Practices and Good Manufacturing Practices for Slaughtering (GHP/GMP) for general application and advocacy by DAH. The draft version has been finalized with inputs from Dr. Henry Yap, USAID/APII's International Consultant on Biosecurity, and shared with DAH's Division of Veterinary Public Health. A meeting with this Division is planned in July to gather comments. The document will then will be handed over to DAH as an input to their development of the legal framework and policy guidance.

For the market models, most of the provinces are facing the problem of controlling and managing live poultry trading in urban areas. Challenges include the need for farmers to sell their poultry products, traditional cultural and religious practices, and consumers' habit of buying live poultry. Many provinces are struggling with management and control of live poultry selling, since it is impossible to maintain a taskforce capable of checking all markets during the time of live poultry trading. Some provinces have their own ways of managing and organizing live poultry trading. Most of the provinces have agreed to have a managed poultry market rather than attempt to issue and enforce a total ban on sales of live poultry in markets.

USAID/APII continued to share experiences in developing poultry market models and activities in Quang Tri and Ha Nam on several occasions during the 3rd quarter, such as in training courses and workshops. The World Bank-supported VAHIP project is planning to cooperate with USAID/APII to conduct a study tour for around 40 stakeholders to visit USAID/APII's Quang Tri model on July 22-23. Preparations are in place for this event, including sharing of presentations and a field visit.

Responding to requests from three provinces (Bac Lieu, Hau Giang and Ba Ria-Vung Tau), the project visited existing markets in these provinces where live poultry are sold. None of the market models were developed due to time constraints, but a dissemination workshop was organized for local authorities in Hau Giang province with 18 participants. The local authority stated that this experience sharing was a first step towards developing live poultry market models in Hau Giang. Technical documents from the Dong Ha and Hoa Mac models have been shared accordingly.

- 7.1.3. USAID/APII had planned to provide technical assistance to DAH to develop checklists on food safety for markets and management protocols for management boards to implement. However, due to a lack of clarity in the division of tasks between national agencies, it is not clear whether DAH is responsible for this or not.

Checklists from Dong Ha and Hoa Mac markets were shared as references for DAH's Division of Public Health in case they wanted

to prepare a proposal for MARD to add these issues into Decree 14 later as separate forms focused on markets.

7.1.4. Supporting DAH/RAHOs/Provinces to develop and implement training courses for inspectors on good slaughtering practices and certification stamp requirements:

In cooperation with the RAHOs and DAH, USAID/APII organized seven training courses for 288 inspectors from 17 provinces, as follows: Thanh Hoa (53); Hue (14); Quang Tri (11); Quang Binh (3); Da Nang (12); Quang Nam (9); Binh Dinh (1); Khanh Hoa (1); Phu Yen (1); Quang Ngai (2); Tien Giang (39); Ben Tre (20); Dong Nai (7); An Giang (36); Soc Trang (34); Hau Giang (40); and Can Tho (5).

The RAHO applied DAH's training contents to provide basic knowledge for inspectors, then requested DAH to grant professional certificates to the trainees. The training contents included updated legislation on veterinary inspection, basic symptoms of diseases, animal inspection, and practical exercises. USAID/APII provided knowledge on good slaughtering practices including risk identification in slaughterhouses, technical requirements for facilities upgrade and operation procedures, and waste management in small and medium poultry processing units.

Documentation on how the USAID/STOP AI project's lessons learned have been and are being incorporated into USAID/APII's models was completed.

7.1.5. Working with DAH in coordination with VIPA to develop a roadmap for improving food safety at market places, providing input into its design, and sharing lessons learned from the slaughterhouse and slaughter point models:

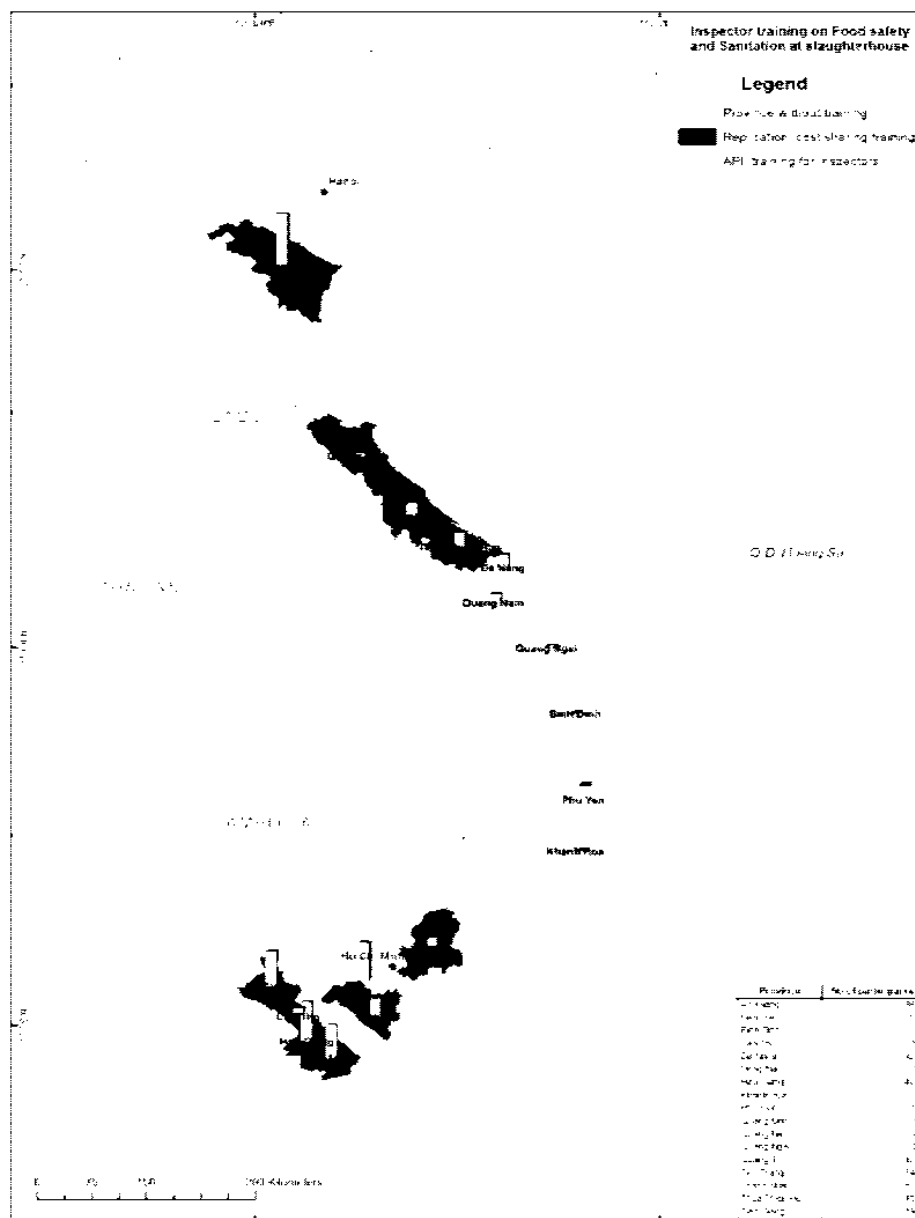
In order to finalize the next draft of the National Proposal on Ensuring Food Safety in Livestock Slaughtering and Transportation and to develop a roadmap to 2012-2020 on improving food safety in transportation and slaughtering, on June 14 and 21 two consultation workshops were organized in Ha Noi and HCMC, facilitated by DAH. Ninety-six participants from provincial SDAHs and functional divisions from DARDs from northern and southern regions shared experiences on the current complex situation of food safety in relation to slaughterhouses and markets, and gave specific comments on the previous draft. DAH plans to incorporate these comments into the final version to be submitted for approval in late July 2013.

7.1.6. Mapping of poultry slaughter points in the Mekong region: locations and owners' names of slaughtering facilities were collected and included in the reports from the field trips to the Mekong regions that were shared with the SDAHs and RAHOs. However, due to time and resource constraints and limitations on the total number of selected small slaughtering facilities available for visits, the idea of regional mapping was cancelled.

- 7.1.7. Encouraging technical groups, provincial authorities, LIFSAP and VAHIP representatives, and local investors and owners to scale up and replicate models:

As mentioned above, checklists, protocols and technical documents were shared widely in the Technical Document Sharing Workshop in May 24, 2013. Others documents have been shared with FAO, VAHIP, LIFSAP and other agencies and projects on request. In collaboration with VAHIP, USAID/APII is preparing for a study tour planned for July 2013 for 40 VAHIP PMU members and stakeholders from provinces in the north of Vietnam.

Model pictures, video clips and presentations were shared widely in national and regional dissemination workshops and inspector training courses.



7.2 Challenges and Solutions

7.2.1. Market model replication: upgrading of poultry markets to provide better control and risk mitigation of poultry sections within markets is showing promise. There are a number of issues, such as determining a suitable location and land availability, local policies, and priority given by local civic leaders to this project. To support the advocacy we targeted local authorities and provided a technical brief to help them plan the development. We recognize that it will take more time to see additional replication.

- 7.2.2. Training inspectors: the training for veterinary inspectors was assigned by DAH to regional AH offices. However, further review showed that the training modules and duration of the training courses vary among regions. USAID/APII worked with RAHOs 3, 6 and 7 on these particular issues and shared a fully developed training curriculum of risk reduction within markets and slaughterhouses with these RAHOs. In reality, the SDAHs are interested in organizing more training for inspectors, but it is not always a priority for RAHOs to implement the course at a time that works for the SDAHs. Coordination may need to come back through USAID/APII via DAH and hence to the RAHOs and SDAHs. This can be considered a lesson learnt for implementation of such courses. In addition, although too many provinces requested cost sharing training for inspectors at short notice, due to time constraints, USAID/APII was unable to organize advance TOT courses for RAHO trainers in good slaughtering practices, nor could we help DAH to consolidate requests for a standard course.
- 7.2.4. Slaughterhouse upgrades: a great deal of work must be done before facilities and slaughtering operations of small slaughterhouses in the Mekong region meet hygiene standards. Training and study tours can help owners learn how to adapt good slaughtering practices to their own slaughterhouses. However, the costs of upgrading are high, while the benefits from poultry slaughtering are few and illegal slaughtering still persists, presenting significant obstacles to upgrade decisions.

8. Behavior Change Communication (BCC)

In line with the Year four goal, in this reporting quarter we utilized BCC trainer teams established in Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri, to not only continue communication programs in their provinces, including by strengthening their supply chain models, but also to roll out the BCC trainers' capacity building model to new provinces, including Ha Tinh, Quang Binh and Thua Thien Hue, for promotion of new desired behaviors. We also worked with selected BCC trainers from Ha Nam and Quang Tri and from the national level on the development of a BCC module for Vietnam Farmer's Union (VFU) to integrate BCC theory and methodology into the training curriculum for their vocational training system.

8.1 Achievements

- 8.1.1 The BCC curriculum developed by VFU with livestock and culture teachers from five provincial Vocational Training Schools/Centers in Hai Duong, Hung Yen, Thai Binh and Ha Nam and Ha Noi was field pre-tested. Additional comments were solicited through a final review workshop and from communication specialists from national communication and training bodies such as the Academy of Journalism and Communication and the National Center for Health Education and Communication (NCHEC).
- 8.1.2 The BCC curriculum for the Vocational Training Schools/Centers was finalized with official approval from VFU for it to be used by all vocational schools nationwide. The curriculum was printed for use

during three BCC TOT courses for northern, central and southern Vocational Training Schools in order to solicit a final round of comments before official printing and distribution to all VFU Vocational Training Schools in 63 provinces and cities throughout Vietnam.

- 8.1.3 Three regional TOT courses on BCC and the participatory training approach were organized for 80 teachers from 28 provincial Vocational Training Schools and Centers in Bac Ninh, Ha Nam, Ha Noi, Hai Duong, Hoa Binh, Hung Yen, Nam Dinh, and Thai Binh in the northern region; Da Nang, Dac Lac, Hue, Khanh Hoa, Ninh Thuan, Nghe An, Quang Binh, Quang Nam, Quang Tri, and Phu Yen in the central region; and An Giang, Ba Ria Vung Tau, Binh Duong, Binh Phuoc, Binh Thuan, Ca Mau, Kien Giang, Lam Dong, Long An and Tien Giang in the southern region. After each course, the trainer team took away experiences to use in improving the following course.
- 8.1.4 The project supported USAID and Vietnam Television Channel 2 (VTV2) to develop and air a feature story about the Hoa Mac market model. The feature story introduced the changes in infrastructure and meat vendors' behaviors at Hoa Mac Market and a nearby slaughter point towards reducing risks in relation to potential infectious diseases and enhancing veterinary hygiene and food safety.
- 8.1.5 The project supported BCC trainer teams in Quang Binh, Ha Tinh and Thua Thien Hue with coaching from Quang Tri BCC trainer team to conduct nine diffusion training courses for communicators. A total of 224 participants from the Women's Union (WU), the AH and human health sectors and population and family planning services have learned about BCC theory and techniques and how to use discussion guides on selected behaviors on food safety, life skills, and reproductive health care to facilitate small group discussions in their communities.
- 8.1.6 During the April–June period, 3,751 women in 114 communes in Quang Binh, Ha Tinh and Thua Thien Hue attended 243 small group discussions (from 15 to 20 persons per group) on prioritized behaviors selected by each province. Understanding the target audience and their motivators and barriers to adopting the targeted behaviors helped communicators to facilitate discussions focused on their incentives to change.
- 8.1.7 Quang Tri BCC trainers modified training materials and developed a discussion guide on food safety promotion to conduct two TOT courses on the application of BCC to food safety in Quang Tri for 52 participants from different departments and organizations in the province, including the Farmer's Union, Food Safety, Animal Health, Women's Union, Police, and Defense. Participants learned communication skills, adult learning methods, and food safety. These trainers are expected to go on to provide diffusion training for communicators in their own communities and networks. Participants selected key food safety related behaviors to prepare for

communication sessions with their target audiences who are members of food safety clubs.

- 8.1.8 The project organized a National Training Workshop to disseminate two BCC documents – the BCC Training Manual and the BCC Strategy Development Guide. Thirty-two participants including members of BCC trainer teams, communication officers and leaders from 12 provinces as well as national bodies including VFU and MOH's NCHEC. Participants learnt how to use the documents mainly through practicum sessions in which they played the roles of trainers or trainees. They were also guided to use the BCC Strategy Development Guide to develop their own provincial BCC programs.
- 8.1.9 Three posters were pre-tested with meat vendors and market management board members of Hoa Mac market. Final review and printing for installment of these posters at the market are planned for early July 2013.
- 8.1.10 The project led a two-day training course on BCC and application for promoting change at Ha Vi market for 21 AH officers from Ha Noi and Thuong Tin district and members of Ha Vi market management board. As planned, the Ha Noi SDAH and VAHIP project will follow up with these participants on planning and implementing BCC activities at Ha Vi market.
- 8.1.11 The project supported Quang Tri BCC trainer team to organize training for 30 heads of food safety clubs. These communicators then facilitated group meetings with their food safety members and also facilitated eight community-based events on selected desired behaviors with their local resources.
- 8.1.12 In collaboration with the National Agriculture and Extension Centre (NAEC), the project organized a TOT course for 32 participants from 7 provinces covered by an NAEC project (Ha Noi, Hai Duong, Bac Ninh, Thai Binh, Thanh Hoa, Vinh Phuc and Bac Giang) to apply the BCC techniques and approach in extension work to promote changes toward more biosecure production. Participants gained updated knowledge on zoonotic diseases and BCC techniques and methods in class. They also made a field visit to a private sow farm to analyze the risks of zoonotic diseases as well as solutions for changing behaviors toward good biosecurity practices.
- 8.1.13 Replication and sustainability with local funds and resources from other projects:
 - Quang Tri WU organized three training courses on communication skills for 141 chairwomen of commune WU chapters in Dong Ha Town to improve their communication skills and understanding of BCC theory.
 - BCC trainers from Quang Tri Center for Health Communication and Education, in collaboration with World Vision in Quang Tri, organized two training courses on BCC for promotion of water sanitation and environmental hygiene for 61 participants from selected district environmental bureaus,

education and training departments, health centers, commune health stations, and ward People Committees.

- BCC trainers from Quang Tri Center for Health Communication and Education, in collaboration with Plan International in Quang Tri, organized two training courses on BCC for safe motherhood promotion for 30 participants from commune health stations and villages health workers at their project sites.
 - The BCC trainer team from Can Tho Center for Health Communication and Education organized three training courses on “Article Writing and Photo Shooting Skills”, “Development of Radio Spots in Health Facilities”, and “ Health Education Skills” for 95 communication officers from all district and city hospitals in Can Tho.
 - In June, the BCC trainer team from Can Tho Center for Health Communication and Education conducted two workshops on BCC for promoting cancer prevention for 200 women in Thot Not and Phong Dien districts.
 - In June, the BCC trainer team from Can Tho Center for Health Communication and Education conducted one training course on “Advances on Development of Radio Spots in Health Facilities” for 38 outreach network staff from city hospital and provincial Centers for Health Communication and Education in Vinh Long, Hau Giang and Ben Tre.
 - In May, the BCC trainer team from Can Tho Center for Health Communication and Education provided technical support to 30 students of the K36 Public Health Department of Can Tho Medical and Pharmaceutical University on their summer program to develop communication plans and activities, and to develop materials such as leaflets, posters and radio spots.
 - The BCC trainer team from Can Tho SDAH monitored behavior changes at Ngoc Xuan Centralized Slaughterhouse. They also worked together to develop communication materials on disease prevention among poultry and cattle including printing of leaflets to distribute to district AH stations. The topics of these leaflets include H5N1 and H7N9 prevention, FMD prevention in cattle, and PRRS prevention in pigs.
 - BCC trainers from Can Tho Red Cross Association organized one training course on “First Aid and Communication Skills” in May for 40 participants from the Red Cross network in districts and communes.

8.2 Challenges and Solutions

- 8.2.1 Within the limited five month period, USAID/APII supported VFU to develop a BCC curriculum for teachers with a guide for application in designing and delivering training plans for farmers. It was a real challenge to design and deliver three regional TOT courses on BCC within this timeframe. The USAID/APII BCC team

had to work closely with the drafting team and provide intensive technical support to edit the curriculum. However, this task met with some small delays.

- 8.2.2 Applying the BCC training model within the WU system, especially to other provinces, is a real challenge in terms of timing and scheduling in harmonization with their other activities. That is why some activities, such as diffusion training and small group discussion in communities, have been delayed. This led to the delay of the project review workshop, which could not be organized in June as planned.
- 8.2.3 A TOT course for seven provinces supported by NAEC successfully replicated the BCC training model into extension work. This training was highly appreciated by participants. However, the quality of the training could be improved if NAEC had more personnel and more time to spend on preparation prior to the training.

9. Monitoring and Evaluation (M&E)

USAID/APII's M&E work aims to strengthen existing systems in the provinces, and help close existing gaps between grassroots level M&E and provincial and national level M&E and reporting. It also aims to facilitate and guide project implementation towards achievement of desired project impacts and hence the objectives articulated in USAID's Avian and Pandemic Influenza (API) Performance Management Plan (PMP). In addition, USAID/APII acts as the repository for PMP indicators collected under USAID's API initiatives, taking the lead in providing analysis and reporting on this data.

9.1. Achievements

- 9.1.1. Developed a reporting template and guidelines for updating and sharing information on what is replicated and maintained after the project has ceased its financial support.
- 9.1.2. SDAHs in Ha Nam and Hung Yen compiled and shared reports to provide information on the maintenance and expansion of project models within the province as well as on limitations and obstacles to the continuation of those interventions. These reports served as helpful references for decision-making and in planning support for the continuation and expansion of the project interventions and their future activities.
- 9.1.3. Monitored changes in IC activities at selected hospitals which had sent their staff to attend TOT training courses in 2012. The monitoring team consisted of staff from MOH's Administration for Medical Service Management, VNA and USAID/APII. The team visited eight DOHs and 13 district hospitals. The monitoring team acknowledged positive changes in attitude and behavior towards IC management and practices in health facilities.

9.2. Challenges and Solutions

- 9.2.1. It was recognized that almost all IC health staff were working part-time and many did not receive sufficient and systematic training in IC. There were differences in the level of changes in IC practices from one health institution to another within the same province, possibly leading to differences in level of care provided to patients of these facilities.

10. Finance and Administration

10.1 Achievements

- 10.1.1 Managed all aspects of finance and administration (F&A) and all subcontracts and consultant agreements effectively. Procedures were streamlined during the course of the year.
- 10.1.2 USAID/APII continues to submit routine deliverables to USAID, including quarterly progress reports, quarterly financial reports, semi-annual and annual reports, etc. The F&A team support the technical teams in managing all subcontracts and consultants.
- 10.1.3 A better tracking system has been set up for the last year of the project, covering expenditures, travel, supplies, inventory, procurement, staff leave, subcontractors, and consultants.
- 10.1.4 Throughout the 3rd quarter, the project has been in the process of training newly recruited F&A staff.

10.2 Challenges and Solutions

- 10.2.1 Year four brings a unique set of challenges in implementing our contractual requirements and preparing for close-out in September. We will continue to work to disseminate USAID/APII programs and activities to new provinces and districts until July, at which time our focus will shift to close-out activities. This indicates a compressed timeline in which to complete all program activities.
- 10.2.2 F&A and technical teams work closely to submit SOW for approval and to negotiate with subcontractors/consultants for them to start at the earliest possible time so that we can achieve close-out in July 2013.
- 10.2.3 With new staff on board, the project will continue to spend time training them and getting them up to speed.
- 10.2.4 To mitigate delays and ensure efficiency, the COP continues to meet with all subcontractors and TDs.

11. Success Stories

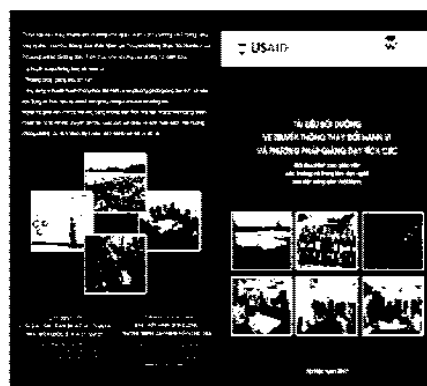
11.1 Replication of our BCC model in 86 vocational training colleges nationwide

All Vietnam's Vocational Training Colleges Adopt USAID/ APII BCC Training Model

Vietnam Farmer's Union (VFU) has a network of 69 National, Regional and Provincial Vocational Training Schools and Centers with a cohort of 140 teachers teaching livestock production and development to farmers. The VFU Board of Directors sought to update these teachers and enable them to apply active training approaches in their training courses for farmers.

Active training approaches are covered in the USAID/APII's behavior change communication (BCC) training model which was successfully piloted in five focus provinces, as well as in BCC materials as disseminated and shared in a diffusion workshop during December 2012 in Ha Noi. The representative of VFU's Board, Ms. Le Thi Thanh Huong, Vice-Dean of National Vocational Training School, attended the diffusion workshop, expressed their willingness to adopt this model and has requested the USAID/ APII to support VFU to develop a BCC curriculum their network of Vocational Training Schools and Centers teachers. Through an intensive five months, a curriculum was

developed by a multi-disciplinary team of BCC experts including the USAID/ APII BCC trainers from Ha Nam, Quang Tri and the Ministry of Health and with technical inputs from experienced BCC experts from various Vietnamese institutions, including professors at the Academy for Journalism and Communication and experts from



Ministry of Agriculture and Rural Development. In May of 2013 the curriculum was officially endorsed by VFU for its Schools/ Centers nationwide to use in their daily training tasks. Ms. Le Thi Thanh Huong expressed her appreciation of this document saying *"This is the first time we have*

developed a document on BCC and participatory training approaches for our teachers. This will help them share new knowledge and skills and have more attractive and engaging lessons...The document was also highly evaluated from Vietnam Farmer's Union, an official letter of Vice-President of VFU was issued which required all schools and centers to officially use it in their training vocation for farmers".

Endorsement letter from Vice chairman of National Farmers' Union to nationally apply the BCC

In addition to leading the development of the curriculum, the USAID/APII implemented a five-day training of trainers course for 80 teachers from 28 provincial Vocational Training Schools from Northern, Southern and Central regions of Vietnam on BCC theory and participatory approaches. During these courses, participants learned to apply BCC theory and participatory

training approaches during micro-training sessions, they apply in developing lesson plans and delivering trainings on livestock production and culture to farmers who they understand more on their determinants of changes and follow up at household level.

TRƯỜNG GIÁO VIÊN

**THÔNG THAY ĐỔI HÀNH VI
PHÁP GIẢNG DẠY TÍCH CỰC**

6 Ch Minh, ngày 24/06/2013



photo taken by Ms. Bui Thi Oanh,
Vietnam Farmer's Union's
National Vocational Training
School

VFU is distributing the BCC curriculum to all remaining schools/ centers. During their periodic meetings, this curriculum will also be presented to the remaining 60 teachers to bring them up to date in the training. Furthermore, VFU committed to coach their teachers from livestock production and culture department to apply BCC and participatory approaches when preparing lesson plan in more interactive and audience-centered manner. They planned to have 60 training courses on livestock production and culture to about 1,800 farmers under the Vocational Training

Project 1956 funded by Vietnamese Government during 2013-2014.

11.2 Application of our poultry slaughtering model in 14 small-scale facilities in the Mekong region

11. USAID/APII Improved Poultry Slaughtering Practices Replicated in the Eight Provinces of the Mekong Region

Between February and June of 2013, USAID/APII used experience and lessons learned from developing poultry market and slaughter point models in Dong Ha city (Quang Tri), Hoa Mac (Ha Nam), Ngoc Xuan (Can Tho) to support thirteen selected poultry slaughter points in the eight Mekong Region provinces to adopt and adapt the slaughter point model to their facilities at their own cost in order to supply safer poultry products to their local markets. This provides evidence that the model is replicable.

At the request of 12 Sub-Departments of Animal Health (SDAH) following the training on good slaughtering practices and promotion of food safety and HPAI prevention measures for animal health workers and slaughter point owners in December 2012, the USAID/APII's Animal Health team worked with the Regional Animal Health Offices (RAHO) 6 and 7 and the SDAHs conducted visits to 27 facilities in the 10 RAHO 6 and 7 provinces. During these visits, the USAID/APII, RAHO and SDAH staff assessed operations in slaughtering facilities using the checklist and risk assessment matrix issued with Circular 14.

The USAID/APII staff, in collaboration with key officers from RAHO 6 and RAHO7, visited each slaughter point to review their knowledge on AI and EIDs prevention. They discussed food safety risks and worked together to prioritize a list of upgrade options. These included one-way processing flow, off-floor

slaughtering and separation of dirty and clean areas. At each household visit, the team provided technical recommendations with explanations of the rationale and suggested facility design change ideas. The owner then made his own decision about which recommended changes to make based on his local resources and personal experiences.

In consultation with the RAHOs and SDAHs, the USAID/APII offered to provide some essential equipment and technical assistance for projects as an encouragement and support them in improving their facilities to include upgrades that were completed before July 2013. As a result 23 items of slaughtering related equipment were donated to the 13 slaughter points by mid-July. The equipment will enable the owners to replicate upgrades to additional processing lines and will contribute to improving good slaughtering practices including veterinary sanitation, risk reduction in disease transmission and cross-contamination and improving poultry food safety.

In light of the implementation of Decision #20 from the Prime Minister dated January 4, 2012 on National Strategy on Food safety, the remaining visited facilities in these provinces who had not yet made plans to upgrade before the close of the USAID/APII activities, will receive technical support and guidance from provincial SDAHs to improve their facilities, taking into consideration of USAID/APII's recommendations.

The slaughter points upgraded with the USAID/APII technical assistance will serve as a training platform and example of feasible changes that can be made by small scale slaughter point owners. Other owners can learn from their peers in order to develop their own safer poultry production.



Renovated facility in Kien Giang, 4/2013:
Renovation of floor, wall, roof...,
one way process, separation of clean
and dirty areas, photo taken by Nhu
Van Thu, Abt Associates,
USAID/APII



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AVIAN AND PANDEMIC
INFLUENZA INITIATIVE

Avian and Pandemic Influenza
Initiative

GHS-I-08-07-00003-00

Quarterly Report – Q1

29 January 2010



Abt Associates Inc.

In association with:

Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross

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Achievements this quarter

The Avian and Pandemic Influenza Initiative (APII) commenced activities on October 1, 2009. The first quarter of implementation focused on getting the project up and running – and activities largely centered on hiring staff, establishing the contract, and developing Memoranda of Understanding (MOUs) with focus provinces to establish permission to work in each of them. Below specific activities undertaken during Quarter 1 have been outlined by technical area.

1) Coordination and Collaboration

- MOUs were signed with five focus provinces in November and December 2009 - Hung Yen on November 10, Ha Nam on November 11, Kien Giang on November 25 and Can Tho on November 25, and Quang Tri on December 4. The process for attaining the MOUs was satisfactory for all parties due to the following:
 - Based on experiences and lessons learned during the implementation of the AI Mekong Initiative, the team laid a clear step-by-step process for working with the provinces to develop the MOUs.
 - There was good team work with the provinces during the preparation process, consultations to improve the documents and finalizations of the MOUs.
 - Furthermore Professional presentations introducing project to provincial authority started the relationship off on the right foot.
 - Constructive dialogue with appropriate persons at province who were able to influence the provincial leaders assisted in making the process smooth, as did the reputation and trust created by the AI Mekong Initiative in Can Tho and Hung Yen.
- Provincial organizations, other sectors and various stakeholders were brought into the dialogues with the provinces on the content of MOU, leading to their preparation and commitment to working with APII in the future.
- Detailed activity and implementation plans for the province levels were developed with provincial counterparts.

2) Avian Influenza Preparedness and Response Plans

- Attended IOM's Table-top exercise on Preparedness and Response Plans in Tay Ninh, at USAID/Vietnam's suggestion, to gain experience for future activities.
- Met with USAID/Vietnam and representatives of the International Federation of the Red Cross (IFRC) to come to agreement on how to assign the Vietnam Red Cross' (NVRC) activities in order to maximize USAID-funding and avoid overlap between APII and Humanitarian Pandemic Preparedness (H2P) projects.

3) Early Warning systems for Human and Domestic Poultry Surveillance

- Reviewed the Community-Based Surveillance (CBS) model developed under AI Mekong Initiative and Quang Tri, Ha Nam and Kien Giang's provincial surveillance processes to inform the development of APII's CBS approaches and plan.

- Provided technical assistances for the Centre for Community Health and Injury Prevention to implement CBS approaches in Thai Binh and Long An Provinces under funded by VAHIP project of MoH.
- Met with FAO to discuss and work towards aligning surveillance approaches and to develop joint plans for implementation in animal health surveillance.
- Finalized the APII CBS approach taking into consideration the sustainability of the program.
- Planned and organized with FAO a national workshop to introduce the APII CBS model to national and provincial counterparts. This workshop is scheduled for February 5, 2010.
- Developed a Training of Trainers course for provincial health and animal health counterparts in APII CBS model implementation. The training course is scheduled for the end of January.

4) Case management and infection control procedures for health facilities

- Organized and conducted a national workshop to share the lessons learned in infection control and case management by the AI Mekong Initiative and plans for future case management and infection control activities. Participants from national and provincial level health offices of the five focus provinces attended along with international partners.
- Subcontract negotiations were initiated with Hanoi and Ho Chi Minh Infection Control Societies for implementation of activities in this technical area.

5) Animal Response Efforts

- Reviewed the data collected in 2009 by the AI Mekong Initiative (Hung Yen and Can Tho) and by AED (Kien Giang, Ha Nam and Kien Giang) to provide baseline information on poultry production, AI virus outbreaks and some figures related to animal health workers and extension worker networks to inform workplans for the provinces.
- Designed data collection forms to assess current needs and gaps in understanding of Agriculture Extension Workers and Animal Health Workers. These were sent to the Sub-departments of Animal Health and Province Centers for Agriculture and Forestry Extension.
- Subcontract negotiations were initiated with the Veterinary Association - developed proposal and budgets – for their work in animal health network improvement.

6) Biosecurity

- Prepared for Supply Chain Risk Assessment – developed technical assistance scopes of work and began setting up field visits.
- In collaboration with FAO, the Poultry Association, and the Veterinary Association, collected current training materials related to biosecurity for review.
- Met with and discussed opportunities to coordinate and collaborate with RUDEC, FEEDS and the Poultry Association.
- Met with FAO to discuss and agree upon biosecurity approaches and to develop joint plans for implementation of supply chain activities.

7) Behavior Change Communications

At the national level:

- Organized a one-day training course on the theory and application of behavior change communication (BCC) on Dec. 15, 2009 in Hanoi with participation of 20 people from AFAP, VNRC, NAFEC, NCHEC, the Veterinary Association and all APII technical staff.
- APII BCC staff attended the first BCC working group and acted as the focal point person for BCC material cataloguing. A list of collected materials and legislative documents and strategy from all agencies in the working group, including MARD, has been developed and will be uploaded onto PAHI's website. Hard and soft copies were collected and will be filed in PAHI's library. Updates will be shared during the next BCC group meeting in January 2010.

At the local level:

- To continue BCC activities supported under AI Mekong Initiative and AI BCC projects during the pre-Tet period (Dec. 2009 to Feb. 2010), the following activities were undertaken:
 - The team reviewed all BCC activities under AI Mekong Initiative and AI BCC project through a review of project documents and a number of meetings with AED, AED's partners, local counterparts of the five focus provinces of Can Tho, Ha Nam, Hung Yen, Kien Giang and Quang Tri (most of which occurred during November 2009).
 - A quick needs assessment of avian influenza BCC gaps in the five focus provinces was done during November and December 2009 through a desk review of KAP surveys with related local authorities (Provincial Sub-Department of Animal Health or Provincial AI Steering Committee).
 - Agreements were made with the five focus provinces on avian influenza BCC activities implemented under the pre-Tet Campaigns, and BCC planning workshops / meetings were organized at provincial and district levels of the five provinces in December 2009.
- The following BCC materials were reproduced:
 - 300 sets of outdoor posters (900 posters) for Hung Yen and Can Tho;
 - 150 flipcharts for Can Tho;
 - 1,100 bags and 750 T-shirts for Kien Giang, Ha Nam and Quang Tri;

8) Other Cross Cutting

- The APII workplan was submitted to USAID on October 30, 2009.
- Gender Specialist, Virginia Lambert, traveled to Hanoi to develop a gender strategy and plan, and trained APII and counterpart staff in gender awareness. The strategy will be submitted to USAID in February, 2010.
- Abt Associates headquarters' staff and Environmental Compliance Advisor developed an environmental compliance plan. The plan will be submitted to USAID in February, 2010.
- A project PMP was submitted to USAID on November 24, 2009. An update is expected to take place in March 2010 to align it with USAID/Vietnam's new PMP.

- Development of a training manual was begun which will include forms and guidelines to strengthen training quality across components.
- Developed and began implementation of a Training Needs Assessment for Trainers in all five provinces to feed into the development of the Training of Trainers scheduled to take place in late February/ early March.

Challenges and Solutions

Several challenges faced the implementation of the APII project in Quarter 1. These centered around establishing relationships and modes for collaboration with partners and sub-contractors, recruiting new staff for the project and the time of year in which implementation began.

1) Coordination and Collaboration

- The Project Director was not available for the MOU signing ceremonies in Kien Giang, Can Tho and Quang Tri. Acting Project Director, Timothy Irgens attended the ceremonies in Han Nam and Hung Yen. The ceremonies may have benefitted from the presence of an international Abt staff member.
- The MOUs signed with the provinces were umbrella MOUs that did not include Year 1 implementation plans and budgets, creating a possible confusion about next steps. Meetings with provincial authorities following the signature of the MOUs are clarifying the next steps and outline the plan for moving forward during Year 1.
- The schedule for MOU signings was very tight - Hung Yen on November 10, Ha Nam on November 11, and both Can Tho and Kien Giang on November 25. Advanced planning and coordination made this possible, and the team was able to make the three hour trip from Ken Giang to Can Tho in one day, and all ceremonies took place without incident.
- To maximize resource investment and avoid overlap of activities, collaboration with the FAO is essential for all shared activities. To date details of this collaboration have been a challenge to determine, and discussions have focused on national level collaboration. The development of detailed plans for biosecurity collaboration in each province will assure this management of resources and investment.

2) Avian Influenza Preparedness and Response Plans

- The VNRC, a subcontractor for this activity, already receives USAID funding to implement the IFRC's H2P project which also works on pandemic preparedness and response. In order to avoid duplication of efforts the APII project, USAID and IFRC will coordinate closely to determine which activities will be funded through the VNRC's subcontract on the APII project and which will be funded through the H2P project.

3) Early Warning systems for Human and Domestic Poultry Surveillance

- Both the APII project and the FAO have developed CBS approaches that are similar, but not identical. In order to provide consistent assistance to the GVN, USAID, FAO and APII will need to continue to negotiate the parameters of the CBS model that will be implemented in Vietnam.

4) Animal Response Efforts

- Most of the activities related to Animal Health and Agriculture Extension Workers training are planned to be led by APII proposed sub-contractor AFAP. During Quarter 1, permission to subcontract with AFAP had not yet been granted,

directly affecting the component's progress, specifically delaying the training needs assessment. Pending this approval, APII plans to recruit short term consultant(s) to conduct the assessment, and AFAP will begin activities after approval, based on the consultants' findings.

5) Biosecurity

- National level supply chain management occurs through several points, and is not the responsibility of a single ministry or institution. Policy dialogue will help address this, but working with policy makers at national level on supply chain issues will require coordination. Successful recruitment of the Partner Coordination Manager Position will assist APII in addressing this.

6) Behavior Change Communications

- Coordination with the AI BCC project to transfer materials - radio spots, the "Three Good Things" template etc. – took more time than expected. Therefore reproduction of bags and t-shirts was delayed.
- It took a long time for provinces to establish Project Steering Committees and to authorize a focal point agency (for example the Women's Union) with which the APII project will sign a professional services agreement to implement pre-Tet BCC campaigns. Therefore many BCC activities did not start this quarter, and are instead beginning in January, 2010.
- The fall and early winter seasons proved to be a challenge for this component. The first BCC working group meeting was held in late December, and holidays kept many organizations from turning in their BCC materials as planned.
- Similarly, because of the pre-Tet season, provinces had to prioritize and scale down BCC interventions. For example there were no radio spots in Kien Giang and no road shows in any of provinces.

7) Other Cross Cutting

- Quarter 1 was implemented in absence of several important staff members. A search was conducted in October and November and a Project Director was identified and submitted to USAID for approval at the end of November 2009. The acting Project Director, Timothy Irgens, led the team through the end of November, at which time Susan Scribner the Portfolio Manager from Abt Headquarters managed any approvals and other responsibilities of a Project Director remotely. Similarly the Partner Coordination Manager, M&E Manager and Human Health Officer were recruited for throughout this quarter. Because of the importance of these positions, it was very important to wait for the right person to be found for each position. A candidate for the Partner Coordination Manager has been selected, has accepted an offer and is expected to join the team in Quarter 2. The M&E Manager and Human Health Officer are expected to be identified and recruited in Quarter 2. Furthermore, the Deputy Director for Provincial Implementation was unable to join the team until early December. As a solution the Technical Directors for Human Health and Monitoring and Evaluation, Animal Health and Behavior Change Communication coordinated provincial MOU signing activities until he was able to come on board. Quarter 2

will be implemented with a more complete staff, leading to better allocation of responsibilities.

Plan for Quarter 2

1) Gantt Chart

Table 1. Quarter 2 Gantt Chart which follows displays the expected activities during Quarter 2 of APII Implementation.

Table 1. Quarter 2 Gantt Chart

AIMEBA Code		Activity	Timeline		
			Jan	Feb	Mar
Pandemic Preparedness					
Avian Influenza Preparedness and Response Plans	PP1	Develop Pandemic Preparedness Plans	x	x	x
	PP1.1	Review Current Pandemic Preparedness Plans and Begin Gap Analysis in Hung Yen, Kien Giang and Quang Tri			x
	PP1.3	Provide input to revising and modifying the National Strategic Plan for Pandemic Response as appropriate and invited.	x	x	x
Coordination and Collaboration	PP2.1	+ Submit provincial workplans to USAID	x		
	PP2.6	Participate in USAID API meetings	x	x	x
	PP2.7	Convene TAG		x	x
		+ Share draft ToR with potential TAG members			x
	PP2.8	Participate in Working Groups	x	x	x
		+ Request/support changes to strengthen as needed and accepted	x		
		+ As appropriate conduct activities in GETS provinces		x	x
	PP2.10	Create Quarterly API Update Newsletters		x	x
	PP2.11	Participate in Professional Associations/Agency Meetings, Trainings, and Demonstration events	x	x	x

AIMEBA Code		Activity	Timeline		
			Jan	Feb	Mar
Human Surveillance					
Early Warning systems for Human Surveillance	HS1.1	Develop sustainability plan for CBS	x		
		+ Consultation with stakeholders to review and develop options to improve financial sustainability of CBS model(s)	x		
		+ Develop methodologies for roll out of CBS model to test/assess impact of new design on financial sustainability	x		
	HS1.2	Continue to Implement CBS Model in the Current District and Commune in Can Tho and Hung Yen	x	x	x
		+ Maintain monthly meeting and reporting mechanism			x
		+ Continue monitoring and support for CBS networks			x
		+ Evaluate model to inform future roll out	x	x	x
	HS1.3	Replicate Model in 2 More Districts Per Province in Can Tho and Hung Yen	x	x	x
		+ Provide ongoing technical mentoring and oversight for the current local trainers			x
	HS1.4	Introduce CBS Model to Quang Tri, Ha Nam, and Kien Giang	x	x	x
		+ Assess the current surveillance systems	x	x	x
		+ Conduct ToT training	x	x	
		+ Roll out training			x
Human Response					
Case management and infection control procedures for health facilities	HR3.2	Conduct Formative Research/Needs Assessment			x
	HR3.3	Standardize Protocols and Training	x	x	x
		+ Adapt the updated national guidelines for district and commune levels	x	x	x
		+ Consult with WHO and MoH on guideline adaptation	x	x	x
		+ Adapt/revise both infection control and case management training materials		x	x
		+ Hold planning meetings to introduce infection control and case management activities to new provinces			x
		+ Conducting ToT training			x

AIMEBA Code		Activity	Timeline		
			Jan	Feb	Mar
Animal Surveillance					
Surveillance of Domestic Poultry	AS1.1	Develop sustainability plan for CBS	x	x	x
		+ Consultation with stakeholders to review and develop options to improve financial sustainability of CBS model(s)	x		
		+ Develop methodologies for roll out of CBS model to test/assess impact of new design on financial sustainability	x		
		+ Continue to Implement CBS Model in the Current District and Commune in Can Tho and Hung Yen	x	x	x
	AS1.2	+ Maintain monthly meeting and reporting mechanism			x
		+ Continue monitoring and support for CBS networks			x
	AS1.3	Replicate Model in 2 More Districts Per Province in Can Tho and Hung Yen	x	x	x
		+ Provide ongoing technical mentoring and oversight for the current local trainers			x
	AS1.4	Introduce CBS Model to Quang Tri, Ha Nam, and Kien Giang	x	x	x
		+ Assess the current surveillance systems	x	x	x
		+ Conduct ToT training	x		
		+ Roll out training			x

AIMEBA Code		Activity	Timeline		
			Jan	Feb	Mar
Animal Response					
Animal response efforts	AR2.1	Implement Participatory Training Needs Assessment of AHW 5 Provinces and Refine as Needed		x	x
	AR2.2	Role Out Model in 5 Provinces		x	x
		+ Curriculum developed and agreed upon with DAH/ sub-DAH		x	x
		+ ToT training course			x
	AR2.3	Include Veterinary Association in AHW Network Development			x
		+ Assist the Vet. Assoc. to expand their networks in Hung Yen and Can Tho			x
		+ Cost Share training of AHWs through the Vet. Assoc.			x
		+ National /provincial Workshop on the AHW capacity building and training through the Vet Assoc.			x
	AR2.4	Conduct Technical Workshop at District and Province Level			x
	AR2.5	Policy Dialogue for Certification of AHW/Paravet			x
	AR2.6	Develop the AEW Capacity Model and Role Out the Model in 5 Provinces		x	x
		+ Implement participatory training needs assessment of AEW and identify the model in collaboration with AHW model		x	x
		+ ToT training course			x
		+ Curriculum developed and agreed upon with NAFEC and sub-AFEC		x	x
Biosecurity	AR3.1	Study Tours to Biosecurity Pilot Sites			x
	AR3.2	Conduct Supply Chain Risk Assessment and review/evaluate pilot biosecurity model for farms and hatcheries and identify intervention	x	x	
	AR3.3	Risk Reduction Training for Sector 3 Farmers		x	x
		+ review and revise existing training modules		x	x
		Risk Reduction Training for stakeholders at hatcheries, slaughterhouses and markets			x
		+ Review and revise existing training modules		x	x
	AR3.4	Biosecurity Improvement Model for Sector 3 Farmers, Hatcheries, Slaughterhouses, and Markets		x	x
		+ Review, revise and maintain established model village in Hung Yen		x	x
		+ Develop biosecurity guidelines for hatcheries in collaboration with FAO			x
		+ Review government regulations and develop biosecurity/biosafety guidelines for small - medium scale slaughterhouse and markets			x
	AR3.5	Supply Chain Strengthening and Certification			x
		+ Identify the pilot supply chain nodes and location to approach			x
		+ Discussion with province's and select			x

		+ Develop certification process			x
		+ Design SOPs and training			x

AIMEBA Code		Activity	Timeline		
			Jan	Feb	Mar
Cross Cutting					
Behavior Change Communication	CC1.1	Continue Existing BCC Campaigns until Tet	x		
		+ Resume implementation of BCC campaign launched under AI Mekong Initiative for pre-Tet period in Can Tho and Hung Yen	x	x	x
		+ Take over implementation of AI-BCC communications activities in Ha Nam, Quang Tri and Kien Giang	x	x	x
	CC1.2	Evaluate Pre-Tet Campaign and Conduct Situation Analysis of existing API research studies, communication strategies, training modules, messages and materials	x		x
		+ Develop framework for guiding analysis	x		
		+ Multi-day workshop to introduce the review and analysis process			x
		+ Conduct qualitative review of all materials used during pre-Tet communication campaign to assess gaps			x
	CC1.3	Conduct assessment of existing provincial level communications plans in five focus provinces.			x
	CC1.5	National Level BCC Training		x	x
		+ Conduct training needs assessment for National Level BCC trainings (NAFEC, CEC, Women's Union, Vietnamese Red Cross, Farmer Association)		x	
Other Cross Cutting	CC2.2	ToT to build training capacity	x	x	x
		+ Develop list of trainees and send out invitations	x		
		+ Revise curricula	x	x	
		+ Host training in Hanoi			x
	CC2.4	Monitor Performance and Quality of Project Implementation	x	x	x
		+ Continue to collect data for performance monitoring as required	x	x	x
		+ Educate government partners and other stakeholders on PPI and M&E processes			x
		+ National Level M&E training with key stakeholders and counterparts in Hanoi			x
		+ Setting up a Database for performance monitoring and quality assurance		x	x
	CC2.8	Submit Semi-annual Performance Management Report			x
CC2.10	Submit Quarterly Financial Report	x			

2) Upcoming Travel and Concurrence Request:

Table 2. Q2 Travel delineates the expected travel for this quarter. With submission of this report we are also seeking USAID concurrence for the travel listed below.

Table 2. Q2 Travel

Traveler	Destination	Dates	Summary of Activities
John Holtzman Agriculture Supply Chain Specialist	Hanoi, Vietnam	January 31- February 12, 2010	<ul style="list-style-type: none"> Prepare for Supply Chain Risk Assessment – development of tools and assessment of current training materials
Truong Bui	Vientiane, Laos	January 27 - 29	<ul style="list-style-type: none"> Present the CEBS lessons learned from USAID/JAI Mekong Initiative at the national WS Participate in a panel discussion of CEBS dissemination workshop in Laos
Teow Chong Yap Veterinary Technical Advisor	Hanoi, Vietnam	January 20- February 5, 2010	<ul style="list-style-type: none"> Prepare for Supply Chain Risk Assessment – development of tools and assessment of current training materials
	Hanoi Vietnam	March 2010	<ul style="list-style-type: none"> Review GVN Biosecurity Guidelines Develop and identify location for Biosecurity model Develop certification pilot
New Project Director – TBD	Hanoi, Vietnam	March 1-12, 2010	<ul style="list-style-type: none"> Introduction and Orientation with Team/Abt Participation in Policy and Stakeholder Analysis
	Hanoi, Vietnam	March 31, 2010	<ul style="list-style-type: none"> Fielding to Hanoi
Lara Hensley Technical Coordinator	Hanoi, Vietnam	March 1-12, 2010	<ul style="list-style-type: none"> Stakeholder analysis for Policy Assist in handover issues with new PD Assist with any finalization of PMP revisions
Kathryn Banke M&E Specialist	Hanoi, Vietnam	March 15-27, 2010	<ul style="list-style-type: none"> Participate in development of training for staff in M&E Participate in development of training for GVN partners in M&E
Stephen Rahaim BCC Advisor	Hanoi, Vietnam	February 22 - March 5, 2010	<ul style="list-style-type: none"> Assist in design next generation BCC campaign
Susan Coffin Infection Control and Case Management Advisor	Hanoi, Vietnam	March 2010/April 2010	<ul style="list-style-type: none"> Adapt national guidelines for district and commune levels ToT training Comment and finalize the Infection Control and case management protocol for districts and commune level healthcare setting

Success Stories

Signature of Memoranda of Understanding Allows for Prompt Initiation of Activities

The Avian and Pandemic Influenza Initiative signs MOUs with all five provinces within just two months of project award.

A key factor to working successfully in Vietnam is acquiring permission from local governments to conduct activities in their respective geographic jurisdictions. The USAID-funded Avian and Pandemic Influenza Initiative used lessons learned implementing previous influenza prevention projects in Vietnam to attain Memoranda of Understanding (MOU) with each of the five provinces in which it will conduct activities within just two months of commencing the project.



Project and Provincial Staff gather for Signing Ceremony in Quang Tri

The Avian and Pandemic Influenza Initiative project, which began in October 2009, is a three-year initiative aiming to build the capacity of the Government of Vietnam and its counterparts to identify, prevent and control influenza and similar disease outbreaks in both animals and humans. The team understood that a slow process for attaining MOUs would lead to delays in implementation of project activities. To mitigate this concern the project initiated a step-by-step process to fully introduce the new project to provincial officials and ensure their complete understanding of the work to be done, building

relationships of trust which facilitated the process of attaining all the proper signatures. This process included starting with introductory letters explaining the parameters of new project, followed by a visit to each of the provinces - Can Tho, Ha Nam, Hung Yen, Kien Giang, and Quang Tri – to formally introduce the project and share proposed MOU language for feedback and inputs. After these meetings the project and provincial staff continued negotiations by phone and email. By the third week in November two of the MOUs were signed, and the other three provinces followed quickly, with the last signing taking place on December 4, 2009.

In all five provinces, the MOUs were signed by either the vice chairman of People's Committee or the authorized provincial Departments of Agriculture and Rural Development. After signature, the project staff met with each province to discuss and develop detailed implementation plans for year one, allowing work to commence in the provinces by the end of the first quarter of project implementation. Open and early communication with local counterparts in Vietnam proved to be the key to success in starting the Avian and Pandemic Influenza Initiative project efficiently.

"Through the last project's (USAID-funded AI Mekong Initiative) activities, cadres from workers from animal health and human health, the women's union and related agencies clearly saw the effectiveness of the models that the project had been developing and implementing over time. Those project activities have contributed to our efforts to prevent avian influenza. That's why the People's Committee of Can Tho has decided to continue with this phase two project" -- Mr. Nguyen Thanh Son, Vice chairman, Can Tho People's Committee



USAID
FROM THE AMERICAN PEOPLE

AVIAN AND PANDEMIC
INFLUENZA INITIATIVE

Avian and Pandemic Influenza
Initiative

GHS-I-08-07-00003-00

Semi-Annual Report
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Abt Associates Inc.

In association with:

Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross

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Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AEW	Agricultural Extension Workers
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
API	Avian & Pandemic Influenza
APII	Avian & Pandemic Influenza Initiative
AVSF	Agronomists and Veterinarians Without Borders (Agronomes et Veterinaires Sans Frontieres)
BCC	Behavior Change Communication
CA	Consultant Agreement
CBS	Community Based Surveillance
CDC	Centers for Diseases Control
COP	Chief of Party
DARD	Department of Agriculture and Rural Development
DEEFS	Department of Economics, Environment and Farming Systems
DLP	Department of Livestock Production
FAO	Food & Agriculture Organization (of the United Nations)
GETS	Generating Evidence for a Transitional Strategy
GMS	Greater Mekong Sub-region
GVN	Government of Vietnam
H2P	Humanitarian Pandemic Preparedness
IFRC	International Federation of the Red Cross
MARD	Ministry of Agriculture and Rural Development
MoH	Ministry of Health
MOU	Memorandum of Understanding
NAFEC	National Agriculture and Fishery Extension Centre
NCHEC	National Center for Health Education and Communication
NIHE	National Institute of Hygiene and Epidemiology
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PIP	Provincial Implementation Plan
PMP	Performance Monitoring/Management Plan
PPC	Provincial Peoples Committee
PSA	Professional Services Agreement

PTP	Project Training Profile
RUDEC	Rural Development Center
SDAH	Sub-department of Animal Health
TAG	Technical Advisory Group
TNA	Training Needs Assessment
TOT	Training of Trainers
USAID	United States Agency for International Development
VA	Veterinary Association
VNRC	Vietnam Red Cross
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
WHO	World Health Organization

1. Achievements

The Avian and Pandemic Influenza Initiative (APII) commenced activities on October 1, 2009. The first six months of implementation focused on getting the project up and running, hiring staff, establishing the contract and preparing sub-contracts, developing Memoranda of Understanding (MOUs) and building relationships with the five focus provinces (Can Tho, Kien Giang, Quang Tri, Ha Nam and Hung Yen), and preparing provincial work plans. Below is an overview of specific activities undertaken outlined by technical area.

1.1 Avian Influenza Preparedness and Response Plans

- Attended H2P's Table-top exercises in Ha Nam to gain experience for future activities and to see where and how to integrate behavior change communication into provincial pandemic response plans.
- Attended IOM's Table-top exercise on Preparedness and Response Plans in Tay Ninh, to gain experience for future activities.
- Met with USAID/Vietnam and representatives of the International Federation of the Red Cross (IFRC) to come to agreement on how to assign the Vietnam Red Cross' (VNRC) activities in order to maximize USAID-funding and avoid overlap between APII and the Humanitarian Pandemic Preparedness (H2P) projects.
- Initiated negotiations on the VNRC subcontract. The subcontract with VNCR is expected to be signed in the third quarter.

1.2 Coordination and Collaboration

- MOUs were signed with the five focus provinces between Nov. 10 and Dec. 4, 2009. Based on experiences and lessons learned during the AI Mekong Initiative, the team followed a clear step-by-step process for working with the provinces to develop the MOUs. There was a general feeling in the APII project of good teamwork and that the relationships with the provincial authorities generally got off to a good start. The process involved a broad range of stakeholders and interactive dialogue to help lay the foundation for future commitment and local ownership, which is so vital for sustainability and scaling-up.
- Provincial Implementation Plans (PIP) were developed with the provincial counterparts and received approval from Provincial People Committees. The PIP is considered an official project document attached to the MOU and to be used as a framework for the implementation of API activities.
- A Provincial Coordination Unit (PCU) was established in each province. The PCUs are chaired by provincial leaders, typically the Vice Chairman of the Provincial Peoples Committee or the Director or Vice Director of the Provincial Department for Agriculture and Rural Development. It has representatives from related organizations responsible for implementing project activities in the province. The PCU assumes the highest level of ownership and decision-making on project implementation in the province and is being assisted by a Provincial Coordinator funded by either FAO (Kien Giang, Quang Tri, Ha Nam) or APII (Can Tho, Hung Yen).

- Guidelines for Field Implementation and Monitoring were developed and agreed with provincial counterparts and sub-contractors. The guidelines provide steps and procedures for sub-contractors to execute their work in cooperation with the PCUs and provincial partners. At the same time, the guidelines provide PCUs with tools to coordinate and supervise all activities.
- Project Offices were set up in Can Tho and Quang Tri, each manned by an APII Project Manager. Together with the Head Office in Hanoi they provide logistical and financial management support to provincial activities.
- The Partner Coordination Manager joined the APII team during March 2010, and will support the establishment of the Technical Advisory Group (TAG) and help provide secretariat support to TAG from APII.

1.3 Early Warning systems for Human and Domestic Poultry Surveillance

- Conducted a rapid assessment on the status of surveillance systems in the three new focus provinces (Kien Giang, Quang Tri, Ha Nam) and proposed the Community-Based Surveillance (CBS) approach for the five focus provinces.
- Reviewed the CBS model developed under AI Mekong Initiative and the provincial surveillance processes in Quang Tri, Ha Nam and Kien Giang's to inform the development of APII's CBS approach and plan.
- Provided technical assistance to the Centre for Community Health and Injury Prevention to implement CBS approaches in Thai Binh and Long An Provinces funded by the VAHIP project of MoH.
- Discussed with FAO to work towards aligning surveillance approaches and develop joint plans for implementation in animal health surveillance. It was agreed that: APII and FAO will worked together in finalizing the districts and communes selection processes based on the risk-based approaches; APII and FAO will jointly organize the national workshop to introduce the CBS model; FAO will train commune chief AHWs and APII will train both village AHWs and human health workers, key informants and private sectors in 123 communes; APII and FAO will jointly launch and implement the CBS model in 5 focus provinces
- Finalized the APII CBS approach taking into consideration the sustainability of the program. The approach will use and strengthen existing animal and human health networks at commune and village level and link the disease information from the CBS into the existing surveillance in national human and animal health systems.
- Finalized the list of districts and communes (in collaboration with FAO) for CBS implementation using the risk based approaches. The total of selected communes is 123 in which Hung Yen is selected 24 communes in 4 districts, Ha Nam 16 communes in 2 districts, Quang Tri 26 communes in 4 districts, Can Tho 24 communes in 5 districts, and Kien Giang 33 communes in 4 districts.
- Organized with FAO a national workshop to introduce the APII CBS model to national and provincial counterparts. There were 78 participants from national level (MoH, MARD, NIHE, Public Health and Agriculture Universities, VA), focus provinces, representatives of USAID partners, and representatives of international organizations including CDC, WHO, CDC/GMS, CARE.

- Developed and organized a 5-day TOT course for provincial health and animal health counterparts in APII CBS model implementation. A total of 20 provincial human and animal health staffs (four per focus province) were trained. The local trainers will play a key role in the rollout of CBS training in five provinces.
- Worked with Can Tho and Hung Yen provinces to make detailed plans for CBS training for different elements of the model such as collaborators, key informants, and private sector agents in March. Similar plans will be made with Ha Nam, Kien Giang, and Quang Tri in April 2010.
- Prepared CBS materials to distribute to collaborators during the upcoming model launch.

1.4 Case management and infection control procedures for health facilities

- Organized and conducted a national workshop to share the lessons learned in infection control and case management by the AI Mekong Initiative and prepare plans for future case management and infection control activities. Participants from national and provincial level health offices of the five focus provinces attended along with international partners.
- Subcontract negotiations were initiated with Hanoi and Ho Chi Minh Infection Control Societies for implementation of activities in this technical area. The process of subcontracting Ha Noi Infection Control Society took longer than expected due to a shortage of human resources and lack of experience in contract development.

1.5 Animal Response Efforts

- During the last quarter of 2009 a review of the data collected in 2009 by the AI Mekong Initiative (and by AED in focus provinces) was conducted in order to provide baseline information on poultry production, AI virus outbreaks, and Animal Health Worker (AHW) and Animal Extension Worker (AEW) networks. This data helped inform work-planning in the five focus provinces.
- While preparing the main sub-contract on APII with the Australian Foundation for Peoples of Asia and the Pacific (AFAP), a temporary Letter of Agreement was signed with AFAP in February 2010 to help kick-start their work. During March AFAP initiated an extensive Training Needs Assessment (TNA) for AHWs and AEWs in the five focus provinces. The survey is set to be completed in mid-April with the analysis and results ready in early May. This will feed directly into a National workshop on strengthening health and extension workers networks at grassroots levels scheduled for late May 2010.
- A Professional Services Agreement (PSA) was entered with the Veterinary Association (VA) in February 2010. The contract enables VA to strengthen their own association network, support AHWs networks in selected pilot districts and explore opportunities to involve the private sector in this by tapping into networks of private AHWs ('Para-vets') through public private partnership activities. Soon after the contract signing VA launched their activities in the five focus provinces. So far technical magazines (Vietnam Veterinary Magazine, Poultry Magazine, Poultry Newsletter) have been distributed to 315 Animal Health Worker (AHW) commune boards in 21 districts in the five provinces. Together with private

companies (GreenVet, Nam Thai), VA has made plans to implement joint training courses for AHWs from 6 districts of Can Tho and Hung Yen starting in April 2010. Together with the Department of Animal Health (DAH) VA is also preparing a National Workshop on strengthening the network of AHWs at the commune and village levels. This will involve participants from provincial Sub-Departments of Animal Health (SDAH) and relevant NGOs such as AFAP and AVSF. Results are expected to be shared with central level Government agencies.

1.6 Biosecurity

- A Sub-contract with the Rural Development Center (RUDEC) under the Ministry of Agriculture and Rural Development (MARD) was prepared to enable RUDEC to conduct the Supply Chain Risk Assessment in five focus provinces. The contract is expected to be approved in April for the risk assessment to get underway in May 2010.
- A rapid risk assessment was conducted in the five focus provinces and Ha Tay where the largest live bird market of Ha Vy and several hatcheries are located. Findings were shared with the Department of Livestock Production and the Biosecurity Working Group. A Supply Chain Risk Assessment Tool was designed, tested and ready to use.
- In collaboration with FAO, the Poultry Association, and the Veterinary Association, current biosecurity training materials were collected for review.
- A plan for developing training materials for smallholder commercial (sector 3) farmers was prepared in collaboration with the National Agriculture & Fishery Extension Center (NAFEC) together with the Department of Livestock Production (DLP). A consultant agreement (CA) was prepared to engage representatives from the two organizations under MARD.
- Two draft proposals for biosecurity and certification model development for farmers sector 3 were developed together with RUDEC and the Department for Economics Environment and Farming systems (DEEFS) of the National Institute of Animal Husbandry together with the Poultry Association. This is expected to lead to the signing of Professional Services Agreements or Consultant Agreements with the organizations.

1.7 Behavior Change Communications

At the national level:

- Organized a one-day training course on the theory and application of behavior change communication (BCC) in December in Hanoi with 20 participants from AFAP, VNRC, NAFEC, NCHEC, the Veterinary Association plus all APII technical staff.
- Attended BCC working group meetings and acted as the focal point for BCC material cataloguing. A list of collected materials, including legislative documents and strategies from all agencies in the working group, including MARD, was developed for uploading to PAHI's website. Hard and soft copies were collected for filing in PAHI's library.

At the local level:

- To continue BCC activities supported under the AI Mekong Initiative and AI BCC projects during the pre-Tet period (Dec. 2009 to Feb. 2010), the following activities were undertaken:
 - Reviewed all BCC activities under the AI Mekong Initiative and the AI BCC project through document reviews and meetings with AED, AED's partners, and local counterparts from the five focus provinces.
 - Conducted a rapid needs assessment during November and December 2009 of avian influenza BCC gaps in the five focus provinces through a desk review of KAP surveys with related local authorities (Provincial Sub-Departments of Animal Health or Provincial AI Steering Committees).
 - Made agreements with the five focus provinces on avian influenza BCC pre-Tet Campaigns, and organized BCC planning workshops at provincial and district levels.
 - Implemented pre-Tet BCC campaigns in the five focus provinces including: BCC TOT refresher courses for 10 provincial and district animal and health officials (Can Tho); one-day refresher training for 32 commune and village communicators; 25 community events at commune level in Hung Yen (12), Can Tho (12) and Ha Nam (1) with drama, poems, songs related to API; displayed 300 sets of outdoor posters (3 different posters) in Hung Yen and Can Tho at strategic locations; distributed 1,100 bags and 750 T-shirts in Kien Giang, Ha Nam and Quang Tri to audiences participating in AI BCC market kiosks; organized 81 small group discussions with around 800 sector three farmers in Can Tho; aired radio spots on district radio and commune loudspeakers in parallel with updated local news written by local animal and health officials for 7-9 weeks in 12 communes/62 villages of Hung Yen, 7 districts/28 communes of Quang Tri, 12 communes/80 villages of Can Tho, and 6 districts radio stations of Ha Nam; organized 29 communication kiosks at the main markets of Quang Tri (10), Ha Nam (12), and Kien Giang (7); and distributed 3300 wall poster calendars to provinces (including target audiences in community events), national and international partners. Specific calendars were designed for each province focusing on three key messages and integrating the provincial hotline number from GETS project.
 - Organized six BCC review meetings/workshops in four focus provinces (except Kien Giang) for sharing of experiences and lessons learnt.
- Promoted an integrated approach to Human and Animal Health BCC through post-testing of CBS toolkits with village collaborators in Can Tho and Hung Yen. The plan is to similarly post-test the biosecurity booklet "Bac Mau nuoi ga" with sector three farmers, in Hung Yen in April. These post-test results will be taken into consideration when producing CBS toolkits and future bio-security training materials.

1.8 Other Cross Cutting

- A desk survey on TOT skills was conducted during February – March 2010. Data analysis will take place in April. The findings will provide an overview of potential local trainers and their capacity in TOT for the various components and help design upcoming training courses across APII.

- A Project Training Profile (PTP) outlining the training course process, standard forms for course planning and notification, monitoring and evaluation, checklists, participant's lists, and so forth, was prepared and shared between technical components in an effort to strengthen the project training database. This PTP will be updated regularly based on training experiences and outputs from the M&E database later on.
- Virginia Lambert, traveled to Hanoi to develop a gender strategy and plan, and trained APII and counterpart staff in gender awareness. The strategy was finalized and submitted to USAID in February, 2010.
- Abt Associates headquarters' staff and Environmental Compliance Advisor developed an environmental compliance plan. The plan was finalized in February, 2010.
- Revised the APII PMP first submitted to USAID in 24th of November to reflect the USAID PMP. The finalization of the PMP will be in April right after the USAID PMP is finalized with technical assistance of Abt home office M&E specialist, Dr. Kathryn Banke.
- Developed monitoring procedures/guidance/mechanisms for provincial counterparts who will conduct monitoring visits of APII activities. The procedures will be integrated into the routine monitoring work in the provinces. The finalization procedures are underway with plans to train the local counterparts in June when the new M&E manager is expected to be on board.
- Drafted ideas/solutions for a web-based M&E database system for the APII project and for M&E data from other USAID-supported AI initiatives. The M&E team plans to work with MEASURE to further develop the M&E system in the third quarter.
- Worked with FAO to prepare a joint training workshop to introduce the USAID PMP and APII PMP frameworks to provincial and national counterparts. The workshop is planned for April 2010.
- Finalized the selection of districts and communes for implementation of project activities in five provinces. Started collected basic information in targeted communes and districts.

2. Challenges and Solutions

Various challenges faced APII implementation during the first six months, notably establishing relationships and modes for collaboration with partners and sub-contractors, and filling gaps in staffing. Below is an overview of specific challenges and solutions outlined by technical area.

2.1 Avian Influenza Preparedness and Response Plans

- VNRC, the main subcontractor for this activity, already receives USAID funding to implement the H2P project of IFRC, which also works on pandemic preparedness and response. In order to avoid duplication of efforts the APII project, USAID and IFRC will coordinate closely to determine which activities will be funded through the VNRC subcontract with APII and which will be funded through the H2P project.

2.2 Coordination and Collaboration

- APII was without a resident Project Director from December 2009 to March 2010. This may partly explain some of the early coordination difficulties with key international partners such as FAO, e.g. in the appointment and work with Provincial Coordinators. Both parties are well aware of the issue and the dialogue has recently intensified in an effort to improve coordination and collaboration, in the interest of all. Joint Job Descriptions for Provincial Coordinators have been prepared and communicated to the provinces and there are plans for more joint field visits.
- The MOUs signed with the provinces were umbrella MOUs that did not include Year 1 implementation plans and budgets, creating possible confusion about next steps. Subsequent meetings with provincial authorities following the signings helped clarify next steps and outline the plan for moving forward during Year 1.
- One issue that probably will continue to cause some distortions and may adversely affect implementation and cooperation with local partners is the fact that APII and FAO follow different per diem and allowance schemes for local counterparts. There is little that the two parties can do about this, other than being mindful of the issue taking it into account for instance when planning provincial activities.
- To maximize resource use and avoid overlap or duplication of efforts, good collaboration with FAO remains essential. The design and implementation of CBS models in 123 communes is a case in point, where FAO focuses its inputs at upper (provincial, district, commune) levels, whereas APII targets village levels, thus complementing one another. Frequent email communications and sharing of Google calendars is helping to improve coordination, and with the new Partner Coordination Manager and the Project Director on board the situation is expected to further improve.
- At the national level, APII is behind schedule with the establishment of the Technical Advisory Group. Again, with the arrival in early April of a new Project Director and the recruitment in late March of the Partner Coordination Manager this situation is expected to improve significantly in the coming months.

2.3 Early Warning systems for Human and Domestic Poultry Surveillance

- Both the APII project and the FAO have developed CBS approaches that are similar, but not identical. In order to provide consistent assistance to the GVN, USAID, FAO and APII will need to continue to negotiate the parameters of the CBS model that will be implemented in Vietnam.
- The collaboration and coordination with FAO to implement the APII CBS approaches still need to improve. Sharing activity plans and ensuring mutual agreement and understanding will be the key to good collaboration.

2.4 Case management and infection control procedures for health facilities

- Lack of human resources and contracting capacity in Ha Noi Infection Control Society caused a slowdown in subcontracting process. Postponement of the trip of International consultant Dr. Susan Coffin may also cause a slow down the process of strengthening infection control procedures. If feasible it may be considered working with locally available consultants and/or extend the scope of work for Ho Chi Minh Infection Control Society to take over some of the intended work of Hanoi infection control society.

2.5 Animal Response Efforts

- The development of the (large) AFAP subcontract was more cumbersome than anticipated. Albeit a temporary Letter of Agreement was entered with AFAP, the work with them is behind schedule. With the new COP onboard in April it is expected that this process soon gain speed.
- The sub-contractors (AFAP and the Veterinary Association so far) generally needed more time than anticipated to familiarize themselves with APII procedures and to establish collaborative working relationships with provincial counterparts.

2.6 Biosecurity

- National level supply chain management occurs through several points, and is not the responsibility of a single ministry or institution. Cross-sector and policy dialogue will help address this challenge, but working with policy makers at national level on supply chain issues will require good coordination. The recent arrival of the both Partner Coordination and the new COP has helped to begin addressing this.

2.7 Behavior Change Communications

- Coordination with the AI BCC project to transfer materials – radio spots, the “Three Good Things” template etc. – took more time than expected. For the next campaign, however, we will now be in a much better to design our own campaign and BCC materials with local partners.
- Similarly it took longer than anticipated for provinces to establish Project Coordination Units (PCU) and to authorize a focal point agency (e.g. the Women’s Union) to implement pre-Tet BCC campaigns under professional services agreements with APII. This caused initial delays in BCC activities but

the situation has since improved and the process is expected to run more smoothly in future campaigns.

- The abovementioned delays moved some activities too close to Tet with some provinces having to scale down BCC interventions. For example there were no radio spots in Kien Giang and no road shows in any of the focus provinces. In future the project will know better what to expect and should be able to prepare well in advance.
- There was also a delay in the planned publishing of a quarterly API Newsletter. As a part of the capacity and leadership building, the intention is to involve two government communication bodies, namely NAEC and NCHEC under MARD and MOH respectively, for co-editing and reviewing of articles and news items. To agree on a possible cooperation mechanism between the three parties required adequate time and patience. The scope of work has now been agreed, a budget has been drafted, a list of audiences has been established, and we are nearing contract signing. We expect to have the first issue of the newsletter ready by late May/early June.
- Our posters (with the three key messages) which were hung at public places typically lasted for some months only. Villagers suggested that we instead promote key behaviors through wall calendars that they will see every day at home rather than, or as complementary to, only having posters in public places. The project subsequently transformed the posters into wall calendars, adding hotline numbers supported by the FAO GETS project in the process.

2.8 Other Cross Cutting

- Development of sub-contracts generally took more time than anticipated and is a new learning experience for all involved. It is anticipated that the performance on subcontract development and management will improve rapidly as the project gains first-hand experience and builds trust and positive relationships with subcontractors and partners.
- The development of an overall cross-component training plan is awaiting the recruitment of Training Manager. So far it has proven difficult to find a suitable candidate for this position, but the issue is being addressed by Senior Management and has high priority.

3. Success Stories

Early Memorandums of Understanding Allow for Prompt Initiation of Activities *The Avian and Pandemic Influenza Initiative signs MOUs with all five provinces within just two months of project award.*

A key factor to working successfully in Vietnam is acquiring permission from local governments to conduct activities in their respective geographic jurisdictions. The USAID-funded Avian and Pandemic Influenza Initiative used lessons learned implementing previous influenza prevention projects in Vietnam to attain Memoranda of Understanding (MOU) with each of the five provinces in which it will conduct activities within just two months of commencing the project.



Project and Provincial Staff gather for Signing Ceremony in Quang Tri

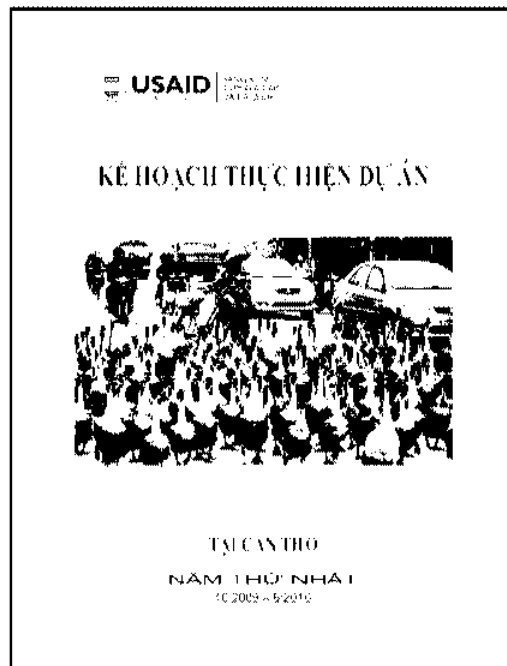
The Avian and Pandemic Influenza Initiative project, which began in October 2009, is a three-year initiative aiming to build the capacity of the Government of Vietnam and its counterparts to identify, prevent and control influenza and similar disease outbreaks in both animals and humans. The team understood that a slow process for attaining MOUs would lead to delays in implementation of project activities. To mitigate this concern the project initiated a step-by-step process to fully introduce the new project to provincial officials

and ensure their complete understanding of the work to be done, building relationships of trust which facilitated the process of attaining all the proper signatures. This process included starting with introductory letters explaining the parameters of new project, followed by a visit to each of the provinces - Can Tho, Ha Nam, Hung Yen, Kien Giang, and Quang Tri – to formally introduce the project and share proposed MOU language for feedback and inputs. After these meetings the project and provincial staff continued negotiations by phone and email. By the third week in November two of the MOUs were signed, and the other three provinces followed quickly, with the last signing taking place on December 4, 2009.

In all five provinces, the MOUs were signed by either the vice chairman of People's Committee or the authorized provincial Departments of Agriculture and Rural Development. After signature, the project staff met with each province to discuss and develop detailed implementation plans for year one, allowing work to commence in the provinces by the end of the first quarter of project implementation. Open and early communication with local counterparts in Vietnam proved to be the key to success in starting the Avian and Pandemic Influenza Initiative project efficiently.

"Through the last project's (USAID-funded Ai Mekong Initiative) activities, cadres from workers from animal health and human health, the women's union and related agencies clearly saw the effectiveness of the models that the project had been developing and implementing over time. Those project activities have contributed to our efforts to prevent avian influenza. That's why the People's Committee of Can Tho has decided to continue with this phase two project" -- Mr. Nguyen Thanh Son, Vice chairman, Can Tho People's Committee

Provincial implementation plans demonstrate the commitment and ownership of local partners in the USAID funded Avian and Pandemic Influenza Initiative



After having successfully signed MOUs with 5 provinces in late 2009, provincial Project Coordination Units (PCUs) have been proactive in developing their own provincial implementation plans, which are now with the Provincial Peoples' Committee for final approval.

The individual implementation plans involve multi-disciplinary/multi-sector teams including both animal health and human health sectors, preventive medicine centers, provincial information and health education centers, and mass organizations such as Women's Union, Farmer Association, the Horticulturist Association, etc. This participatory approach creates opportunities to prioritize activities of interest and needs in line with the function of each sector.

The ability of the PCUs to discuss and achieve consensus on project activity timelines and implementation plans minimizes intra- and inter-project scheduling conflicts and allows for better allocation of resources and staff time to implement and monitor activities.

These provincial implementation plans serve as a guiding document for the first year project activities in each province. Thanks to this document, local partners can actively coordinate with other API related projects including other USAID partners working in their provinces. The holistic view of a province-wide plan allows local partners to be more proactive in harmonizing different interests and promoting more systematic changes.

This is our plan that contains full participation and with detailed comments from all related stakeholders. I am confident to submit PCC for approval, and I think it will be approved very soon. We have had opportunities to discuss and talk through and walk through each content in the last three meetings. We are now very clear of what we each should do, what human health, animal health, women's union, etc should do. We understand our role, what we are expected to accomplish in each role -- being a focal point agency or participating agency. We are all clear of the mechanism of work and coordination. We are all happy with well informed, highly consent planning process and believe that we can do -
 Tran Quang Cui -- Vice Chairman Kien Giang PCU

Community-based surveillance model – a joint effort from the human health and animal health sectors



CBS collaborators make home visits as part of their role

Together with FAO, the Avian & Pandemic Influenza Initiative funded by the U.S. Agency for International Development (USAID) presented a community-based surveillance model to policy makers, provincial stakeholders, representatives from UN agencies and international organizations working on avian influenza at a one-day workshop Ha Noi in early 2010. The workshop allowed participants to share experiences in improved surveillance and develop consensus on lessons learnt. This feedback is now being incorporated into improved Community Based Surveillance (CBS) activities in the

five focus provinces.

The current CBS model promotes the role and strengthens the capacity of grassroots level collaborators, i.e. the village health workers and village animal health workers who are responsible for initial case detection, reporting, and for triggering community level responses to suspected cases. Efforts are being made to help ensure that their work feeds directly into community level CBS activities and from there upwards into the existing national surveillance system. FAO supports CBS activities from the community level upwards. The collaboration between the Avian & Pandemic Influenza Initiative and FAO has so far resulted in joint targeting and implementation of CBS activities in 15 districts/123 communes selected together with the local authorities on the basis of risk profiles.

By demonstrating the merits of an integrated approach, it is hoped that national and provincial counterparts will want to adopt the improved CBS model more widely and continue to work on its improvement. As remarked at the national workshop by Mr. Do Huu Dung, Deputy Head of the Epidemiology Division, Department of Animal Health, in his introductory speech:

'As we all know, there is the gap between the official surveillance system and the surveillance at community level. The Vietnamese Government is looking for a relevant community-based surveillance model that fills this gap and has the collaboration between animal health and health sectors. We expect that the joint effort between Abt and FAO will help to make this model available to be presented to Vietnamese Government in order that it can be replicated to other provinces than simply in project provinces'.



USAID
FROM THE AMERICAN PEOPLE

**AVIAN AND PANDEMIC
INFLUENZA INITIATIVE**

Avian and Pandemic Influenza
Initiative

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Year 1, Quarter 3 Report

July 30, 2010



Abt Associates Inc.

In association with:

Australian Foundation for the Peoples of Asia and the Pacific
Vietnamese Red Cross

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Acronyms

Abt	Abt Associates Inc.
AED	Academy for Educational Development
AFAP	Australian Foundation for Peoples of Asia and the Pacific
AHW	Animal Health Worker
AI	Avian Influenza
AI Mekong Initiative	Capacity Building to Prevent and Control Avian Influenza in the Greater Mekong Sub-Region Initiative
API	Avian and Pandemic Influenza
APII	Avian and Pandemic Influenza Initiative
BCC	Behavior Change Communication
CBS	Community Based Surveillance
COP	Chief of Party
DAH	Department of Animal Health
DARD	Department of Agriculture and Rural Development
DEEFS	Department of Economics, Environment and Farming Systems
FAO	Food & Agriculture Organization (of the United Nations)
H2P	Humanitarian Pandemic Preparedness
MARD	Ministry of Agriculture and Rural Development
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
NAFEC	National Agriculture and Fishery Extension Centre
NCHEC	National Center for Health Education and Communication
NGO	Non-government organization
PAFEC	Provincial Agriculture and Fishery Extension Centre
PAHI	Partnership on Avian and Human Influenza
PC	Provincial Coordinator
PCU	Provincial Coordination Unit
PMP	Performance Monitoring/Management Plan
PSA	Professional Services Agreement
RUDEC	Rural Development Center (under MARD)
TOT	Training of Trainers
USAID	United States Agency for International Development
VVA	Vietnamese Veterinary Association
VNRC	Vietnamese Red Cross
VAHIP	Vietnam Avian and Human Influenza Control and Preparedness Project
WHO	World Health Organization

1. Achievements

The sections below outline the activities and achievements of the Avian and Pandemic Influenza Initiative (APII) during the third quarter of year 1 (April-June 2010). Section 3 - 'Success Stories' – provides additional examples of the project's impact.

This quarter marked the arrival of the new Chief of Party (COP)/Project Director in early April, and the continuation of field activities under all components. The Animal Health component focused primarily on training grassroots level animal health workers (AHW) and trainers. The Human Health component's Community Based Surveillance (CBS) completed the roll-out of its training in all provinces except Ha Nam (deferred until July) and made preparations for the launch of CBS collaborator networks. The BCC component conducted a major assessment of earlier BCC activities under the AI Mekong Initiative, APII, and AED's AI-BCC projects. Under cross-cutting issues the establishment of a Technical Advisory Group (TAG) was explored with USAID and the Ministry of Agriculture and Rural Development (MARD). At this point in time it is not clear whether pursuing the establishment of a TAG is the most feasible option for doing advocacy work and aspiring for policy level impact. The following describes specific activities.

1.1 Avian Influenza Preparedness and Response Plans

- a. Continued to prepare and negotiate subcontracts with Vietnamese Red Cross (VNRC) to review the current status of pandemic preparedness plans in each of the five provinces.

1.2 Coordination and Collaboration

- a. The Provincial Coordination Units (PCUs) in the focus provinces continued to play active roles in planning and monitoring field activities (for example there were 75 CBS training courses conducted by provincial trainers and monitored by PCU members in four provinces between April and June.)
- b. Quarterly meetings were held in April with each PCU to finalize provincial implementation plans and introduce guidelines for monitoring procedures and forms that will be used by provincial partners. In June this turned into monthly PCU meetings to provide a more regular on progress update and strengthen forward planning as we approach the end of year 1.
- c. The new Project Director paid visits to and met with the PCUs in five focus provinces during May-June (PCU Quang Tri July 2) in order to get to know the PCUs better and listen to their concerns.
- d. Joint planning meetings were initiated with FAO, including a joint visit to and meeting with the Hung Yen PCU to review project implementation and improve provincial level coordination.
- e. Continued participation in Partnership on Avian and Human Influenza (PAHI) working groups on bio-security and Behavior Change Communication (BCC).
- f. Frequent meetings with partners in the Avian and Pandemic Influenza (API) community (UN Food and Agriculture Organization (FAO), World Health Organization (WHO), Vietnam Avian and Human Influenza Control and Preparedness Project (VAHIP), etc.).

1.3 Early Warning systems for Human and Domestic Poultry Surveillance

- a. Completed the roll-out of training for CBS network in the 83 communes of Hung Yen, Can Tho, Kien Giang and Quang Tri. CBS network training in Ha Nam is ongoing. All the training activities in Ha Nam will be completed by early August.
- b. The CBS materials for collaborators were produced and sent to provinces for distribution along with the CBS launches.
- c. The BCC team completed the design, revision and production of CBS promotional materials, guidelines for CBS radio spot airing at commune loudspeaker system, and the first draft of CBS radio spots.
- d. Regular network surveillance for suspected AI cases in the community and monthly network meetings in Hung Yen, Quang Tri and Can Tho were organized by commune health and animal health staff beginning in May, immediately following the trainings. Other provinces will begin similar activities after their CBS launches which are planned for July/August.

1.4 Case management and infection control procedures for health facilities

- a. Rapid assessments were conducted in 12 district hospitals in five provinces to inform the intervention.
- b. Continued to maintain the infection control activities in the four districts of instituted by the AI Mekong Initiative.
- c. Worked with Bach Mai hospital to negotiate a subcontract. Bach Mai hospital will take the place of the Hanoi Infection Control Society for infection control activities in Hung Yen, Ha Nam and Quang Tri.

1.5 Animal Response Efforts

- a. Subcontractor Australian Foundation for the Peoples of Asia and the Pacific (AFAP) completed the training needs assessment in five focus provinces in consultation with the Department of Animal Health (DAH)/Sub-DAHs/ and the National and Provincial Agriculture and Fishery Extension Centers (NAFEC and PAFEC). The BCC team gave inputs to the training need assessment questionnaire on BCC related-aspects of trainings. Final draft report is available in English and Vietnamese.
- b. Workshop conducted by Vietnamese Veterinarian's Association (VVA) on sustainable development of AHW networks with approximately 40 participants from the five focus provinces, other key provinces and sub-contractors conducted.
- c. The first meetings for AHWs at the District Veterinarian Stations were held in June to prepare for regular monthly meetings and refresher training for commune/village AHWs beginning in June in 15 districts of five provinces, with a total of more than 1,000 AHWs attending. Relevant training modules and curriculum are being adapted. A training of trainers (TOT) course for local trainers was prepared for implementation in Hung Yen and Quang Tri in July.
- d. VVA, partnering with other private companies such as GreenVet and Nam Thai, implemented joint training courses for public and private AHWs in six districts of Can Tho and Hung Yen from April. The training includes 12 courses on different veterinary topics. So far, a total of 200 AHWs have been reached.

- e. 2,173 technical magazines (Vietnam Veterinary Magazine, Poultry Magazine, Poultry Newsletter, etc.) were distributed to 315 AHW commune boards in 21 districts between March and late June.
- f. 2000 AHW logbooks were delivered to the five focus provinces for distribution.
- g. A post-test of the veterinarian tool kit distributed under AI Mekong was conducted and a new, improved tool kit (1,220 sets) is being prepared for distribution to AHWs. The veterinarian tool kit design was shared with VAHIP for replication in their 11 provinces.

1.6 Biosecurity

- a. A national workshop to review bio-security training materials for Sector 3 farmers was held at NAFEC in May with more than 20 participants from NAFEC, Agriculture Universities, National Poultry Institutions, FAO and international NGOs. The bio-security training material development is on-going.
- b. A subcontract with the Rural Development Center (RUDEC) under MARD was prepared and signed for RUDEC to conduct a comprehensive poultry supply chain risk assessment in the five focus provinces, in order to assess risks in major nodes along the different supply chains. The draft report was submitted in early July.
- c. The recruitment process for a local consultant to review the AED curriculum on training in risk reduction for supply chain vendors was initiated. The plan is for VVA to train vendors in the five focus provinces.

1.7 Behavior Change Communications

- a. Completed BCC campaigns assessment: tools development, tools pre-test, tools finalization, field work, final assessment findings.
- b. Collected and reviewed API BCC related research documents and working papers issued by different organizations/agencies including UNICEF, Care International, ASVELIS (Stop AI project), World Bank (VAHIP project); AED (AI-BCC project).
- c. Interviewed those responsible for BCC activities under the above mentioned projects to better understand the BCC activities implemented, successes and constraints related to the implementation of behavior change activities, and various perspectives on BCC activities in an API low risk context.
- d. Hosted a meeting with each of the five PCUs and local subcontractors to present all remaining BCC activities from July-September 2010, Personal Services Agreement (PSA) requirements, and to look for a qualified local subcontractor in each province to run those remaining BCC activities. This partnership approach with local counterparts was highly appreciated by all five PCUs.
- e. Chose local subcontractors in each province and completed PSA documentation, currently awaiting approval from home office and USAID for execution.
- f. Completed the tool/questionnaire for provincial communication plan assessments including communications during pandemics.
- g. Completed exploration, discussion, negotiation with the National Center for Health Education and Communication (NCHC) on the publication of the first

- quarterly API Newsletter in Vietnamese. Submitted all required papers for the subcontract to be approved by Abt home office and USAID.
- h. In the process of writing desk review part for the BCC assessment.
 - i. Started extracting BCC assessment findings to develop the menu for the coming BCC activities in Year 2.
 - j. The process of preparing press releases and fact sheets on CBS for the launch of the CBS networks in the five provinces in August begun this quarter. This will be done in close consultation with USAID's communication advisor in line with the APII press relations plan.

1.8 Other Cross Cutting Issues

- a. The first draft of an integration matrix for animal health and BCC activities was prepared in May. It is expected that this matrix will help outline year 2 activities, whereby BCC and human health activities are more closely integrated into animal health activities along the poultry supply chain.
- b. A generic training profile for APII was prepared to help provide a more uniform and coherent approach to training across components.
- c. The TOT survey for the five provinces, which was initiated in January under the former training manager, was completed by APII staff working together and shared across components and with sub-contractors.
- d. Revisions were made to the PMP in April to align it with the newly completed USAID PMP, and the final version was submitted to USAID.
- e. In collaboration with FAO, trainings were held for provincial counterparts on M&E concepts, and APII and USAID indicators
- f. Discussions were held with the Measure project on API M&E work. As agreed, Measure will work to develop a tool for APII project as well as for other API partners for data collection. APII will use this form for data collection the five focus provinces and provide feedback to Measure for finalizing the tool.
- g. Discussions were initiated and meetings held with USAID and MARD on the formation a TAG or a Policy Advisory Group (PAG) under MARD, the purpose of which would be to: Advance the inclusion of best practices and approaches in national policies, plans and programs and their replication in other provinces; Advise API partners to ensure that all donor-funded API initiatives support and comply with the Green Book (as well as its follow-on) and other national policies, plans, and programs relevant to avian and pandemic influenza. This was followed by meetings with PAHI suggesting that PAHI is already well positioned to facilitate and further policy-level discussions, potentially rendering the formation of a PAG superfluous. As a result of these talks with PAHI a closer working relationship has been formed. APII and PAHI also prepared a joint SOW for a stakeholder analysis to help inform the preparation of a successor document to the 2006-2010 Integrated National Operational Program for Avian and Human Influenza (the 'Green Book').

2. Challenges and Solutions

The sections below outline the challenges encountered during the third quarter of year 1 (April-June 2010) and proposed solutions.

The key challenges facing APII this quarter were the much longer than expected processes of preparing subcontracts (PSAs) with local partners. The processes are somewhat new to the APII component teams and an unfamiliar way of operating for many of the partners, with some learning and capacity building required to prepare the contracts. In addition to this it remained unclear to what extent APII under USAID rules can enter contracts with organizations whose status is somewhat ambiguous and may be considered civil society or quasi-government. It is expected that clarification of these issues will pave the way for much smoother and faster subcontract management in future.

2.1 Avian Influenza Preparedness and Response Plans

- a. VNRC, the main subcontractor for this component, is intensively working on finishing the Humanitarian Pandemic Preparedness (H2P) project. Therefore we have to wait till July to start to subcontract with VNRC for year 1 activities.

2.2 Coordination and Collaboration

- a. The MOUs signed with the provinces, while an early success because it allowed us to begin work quickly, also caused confusion and incorrect expectations in the provinces on the type of support APII would provide to PCU members. This was related to:
 - provincial expectations that things under APII would continue as they had under the AI Mekong Initiative, e.g. the PCU members expected allowances to cover meals etc. while monitoring APII activities irrespective of the actual activity levels;
 - lack of clarity in formulation of the MOUs leading PCUs to expect that they would receive and manage the US\$90,000 allocation for provincial activities, (rather than APII remaining in full control of the funds);
 - insufficient consultation between APII and USAID during the MOU design process on the commitment to support the operations and equipment for a coordination office in each province - a commitment that could not subsequently be fully met as USAID agreed to operate offices in two provinces only (Can Tho, Quang Tri);
 - a general assumption that this project would work as many other donor projects do and provide various allowances to help top up the salaries of PCU members and compensate for their time/inputs;
 - a subsequent decision, after the MOUs were signed, that FAO rather than APII would support PCs in three provinces (Kien Giang, Quang Tri, Ha Nam).
- b. As a result of the confusion over MOUs, the PCU's (particularly in Hung Yen) expressed frustrations and dissatisfaction. Specifically they complained that the project has not provided support to PCU operations, that it is difficult for the PCUs to report and remain accountable to the PPCs and that APII activities are stretching their fixed government provided budgets. During the provincial visits

and PCU meetings the APII team took note and promised to follow-up on these issues, including retroactively, where relevant and justifiable.

- c. Coordination with FAO has remained a challenge due to busy schedules, the complex nature of projects, and the different ways in which the projects operate (e.g. under different cost norms rules and policies). There were consistent attempts to improve on the coordination through more frequent meetings and communications, and on the whole APII feels that the coordination with FAO has improved. In the future, a clearer delineation of areas of responsibility would be helpful, as presently there is overlap, and in some cases duplication, e.g. provincial training and TOT activities. Despite having issued joint TORs for PCs, there remains a problem that PCs prioritize activities and demands of the party providing their salary. Because MOUs made no mention of coordination between FAO and APII supported activities in the provinces, PCUs act as a parallel structure that serves APII interests only. In some cases the PCs are not members of the PCUs and do not report to the PCUs. The current mode of implementation and coordination with PCs and PCUs needs to be carefully reconsidered as APII prepares to move into year 2.

In order to overcome these challenges it is very important that close consultation and clear communication lines are maintained with key partners, including:

- FAO - especially during the process of preparing and initiating the year 2 work plan and defining a more feasible modus operandi and cooperation mechanism in the provinces.
- Provincial authorities - in deciding on the most effective and efficient provincial set-ups and the best ways to build relationships and maintain good provincial partnerships (including contractual arrangements).
- USAID - to ensure that arrangements and commitments to partners have USAID's full endorsement from the onset.

2.3 Early Warning systems for Human and Domestic Poultry Surveillance

- a. The process to set up an agreement with a local partner is a lengthy one, and while, changing from direct implementation to using local subcontracts will be in the long run more sustainable and more efficient, in the short run it has delayed activities – please see 2.8a.

2.4 Case management and infection control procedures for health facilities

- a. We have decided to switch from the Hanoi Infection Control Society to Bach Mai Hospital as the main subcontractor for this activity for capacity reasons. The process of initiating a new subcontract has therefore delayed some field activities.

2.5 Animal Response Efforts

- a. As with 2.3, please see 2.8a regarding concerns over challenges partnering with local organizations.

2.6 Biosecurity

- a. As with 2.5, please see 2.8a regarding concerns over challenges partnering with local organizations.

2.7 Behavior Change Communications

- a. The process of identifying suitable partner(s) to publish a quarterly API Newsletter started in January 2010. All required papers to sign a PSA were prepared, however we remain unclear as to whether or not we are allowed to partner/contract with a quasi-governmental organization like NCHEC. As of June, the API Newsletter is not yet published as we await subcontract approval via Abt Head Office and USAID.
- b. Partnership/contracting with provincial civil organizations/associations is highly valued by PCUs. However, the process for working with these organizations required open meetings with each province to select potential subcontractors, and subsequent approval by Abt Head Office and USAID, which is a lengthy process.

2.8 Other Cross Cutting

While APII made good progress in many areas we also faced some challenges which slowed down the pace of implementation and progress:

- a. Lengthy subcontractor identification processes: in order to help ensure local ownership and sustainability of interventions by anchoring them with a local partner, APII engages a mixture of partners as subcontractors, including national and provincial level agencies. The process of identifying the right partners and setting up the PSAs is often a lengthy and time-consuming procedure. PSAs are a new concept to APII subcontractors, but they are the required mechanism for subcontracting local partners. The process of establishing PSA with local partners this year required sustained efforts by project staff to explain PSA requirements and time for local civil society associations to familiarize themselves with the procedures of new development partners. As both we and the partners gain experience and feel more comfortable and confident with these contractual arrangements, these processes should run faster and more smoothly.
- b. Lengthy subcontractor approval processes: APII works through a broad range of subcontractors including mass organizations and quasi-government organizations. The status of many of these organizations vis-à-vis USAID subcontracting regulations remained unclear. Abt is in the process of seeking clarification with USAID, but in the meantime several potential subcontracts are on hold.
- c. Weak subcontractors: the capacity to implement and the quality of work varies across subcontractors but is generally lower than expected. This impacts the quantity and quality of the work. AFAP, which is APII's biggest single subcontractor faced personnel constraints after their team leader and country director resigned this quarter. AFAP is in the process of replacing key staff. The overall effect will be a delay in the implementation of APII activities under this subcontract, and therefore some activities will be carried over into year 2.
- d. Multiple level capacity building: the overall capacity building challenge may be greater than initially envisaged. Aside from capacity building the beneficiaries and target groups the project is also challenged by the need to build capacity among many of the subcontractors who implement activities under APII. As we

- move forward into year 2 implementation we will account for this in both timing and deliverables from sub-contractor
- e. Staff recruitment: identifying suitable candidates for the remaining vacancies (M&E Manager, Training Manager) has proven more difficult than anticipated. APII did recruit a highly qualified M&E Manager who unfortunately resigned within a week for unexpected reasons and decided to return to his old job. We are in the process of filling both these gaps.
 - f. Coordination: not only does APII work to coordinate (and integrate) its activities internally across technical components, the project also works to improve the coordination with other partners, notably FAO and WHO. This is a big challenge not least as these international partners work under different mandates, timeframes, and policies/guidelines. Frequent meetings are now being held with key partners for improved communication and coordination.
 - g. Provincial set-ups: the establishment of PCUs has proved a mixed experience. The expectations on the behalf of many PCUs members often do not match well what APII is proposing to deliver. This is partly to do with the way (other) donors and projects typically behave and what they can offer vis-à-vis what APII can offer and what motivates counterparts to engage in donor-funded activities. The value of having provincial coordinators is also questionable. Two of the PCs are paid by APII, whereas three PCs are funded by FAO, and naturally they prioritize APII and FAO activities and demands respectively. None of the five PCs see themselves as coordinators of all USAID API support to the province in the way APII would have hoped. The provincial set-ups will be reviewed and discussed with FAO and USAID and if necessary adjusted in year two.

3. Success Stories

Avian and Pandemic Influenza partners in Vietnam are using USAID program developed tools to reach more people with prevention messages.

The USAID-funded Avian and Pandemic Influenza Initiative and the World Bank-funded Vietnam Avian and Human Influenza Control and Preparedness Project (VAHIP), are two projects working in Vietnam to prevent Avian and Pandemic Influenza (API). This spring, the Avian and Pandemic Influenza Initiative increased its impact by sharing tools such as bio-security booklets for small commercial farmers with VAHIP for distribution to target audiences in their eleven supported provinces. VAHIP's dissemination of the materials increases the reach of USAID-funded materials three-fold.

The materials were developed by the previous USAID-funded AI Mekong Initiative to educate key audiences about behaviors to reduce the risk of spreading avian and other influenzas and were recently revised by the Avian and Pandemic Influenza Initiative. The package of tools included behavior change communication materials, community based surveillance tools, logbooks for animal health workers, and bio-security booklets for small commercial farmers. The bio-security education booklet, for example, outlines specific preventive behaviors that should be taken on farms to prevent the spread of influenzas and other diseases.

The VAHIP project has adopted the bio-security booklet and the veterinarian toolkit box for animal health workers in their eleven provinces. In addition, the Avian and Pandemic Influenza Initiative is currently working closely with the VAHIP project to modify the design of the logbooks for animal health workers for wider dissemination in the VAHIP provinces.



Hoai Nhon Elementary school students in Binh Dinh province read the biosecurity booklet. The booklet was shared with them as part of VAHIP's program in a series of workshops in Binh Dinh, Long An, Thua Thien Hue and Tien Giang in May 2010.

VAHIP was pleased to have access to additional tools to share with their target audiences. In a letter sent to the Avian and Pandemic Influenza Initiative on May 18, 2010, Mrs. Lai Thi Kim Lan, Deputy Director of the VAHIP project noted that: "...We had an impressive final annual ceremony (of Hoai Nhon elementary school), especially thanks to your significant and practical gift, booklets on bio-security. Through their speeches, Mr. John Weaver, representative of VAHIP project and the school principals also expressed their gratefulness to USAID and the Avian and Pandemic Influenza Initiative for sharing its materials..." This cooperation demonstrates one of many opportunities for API partners in Vietnam to increase their reach for preventing API.

The Avian and Pandemic Influenza Initiative (2009-2012), works specifically in five provinces in Vietnam to prevent and reduce the risk of avian and pandemic influenza, and

is implemented by Abt Associates Inc. It is preceded by the Capacity Building to Prevent and Control Avian Influenza in the Greater Mekong Sub-Region Initiative (AI Mekong Initiative) (2006-2009) which worked in Lao PDR and Vietnam, and was also implemented by Abt Associates Inc.

Annex 1

**Avian and Pandemic Influenza Initiative in Vietnam:
Updated Consultancy and Travel Schedule Oct. 2009 – Sep. 2010
(as of July 30, 2010)**

Traveler	Destination	Dates	Summary of Activities
Timothy Irgens Project Director	United States	November 23, 2009	<ul style="list-style-type: none"> Return to Home of Record
Jens Peter Tang Dalsgaard New Project Director	Hanoi, Vietnam	February 28 – March 13, 2010	<ul style="list-style-type: none"> Two week orientation
		April 4, 2010	<ul style="list-style-type: none"> Fielding
	Washington	June 6-12, 2010	<ul style="list-style-type: none"> COP orientation with Abt Headquarters
Susan Scribner Portfolio Manager	Hanoi, Vietnam	October 9-13, 2009	<ul style="list-style-type: none"> Participate in Start-up and work-planning
Lara Hensley Technical Coordinator	Hanoi, Vietnam	October 9-26, 2009	<ul style="list-style-type: none"> Participate in Start-up and workplanning
		Feb 28 – Mar 12, 2010	<ul style="list-style-type: none"> Stakeholder analysis for Policy Assist in handover issues with new PD Assist with any finalization of PMP revisions
	Hanoi, Vietnam	July 26 – Aug 6, 2010	<ul style="list-style-type: none"> Assist with BCC training series and in designing the next generation BCC campaigns in provinces Strategy development/Work-planning
	Hanoi, Vietnam	September 15-30, 2010	<ul style="list-style-type: none"> Assist with Design Workshops at provinces.
Stephen Rahaim BCC Advisor	Hanoi, Vietnam	December 14-18, 2009	<ul style="list-style-type: none"> Work BCC team to create and deliver a workshop on behavior change concepts and principles for all APII staff, including AFAP staff that will be working on the project. Assist BCC team in designing an evaluation plan and tools for the evaluation of the BCC campaigns ongoing from previous project - AI Mekong and AI BCC.
		April 5-16, 2010	<ul style="list-style-type: none"> Assist in designing BCC campaign qualitative assessment
	Hanoi, Vietnam	July 7-16, 2010	<ul style="list-style-type: none"> Assist in designing the next generation BCC campaigns Assist in technical integration and strategy development
Jim Setzer Surveillance Technical Advisor	Hanoi, Vietnam	November 30 – December 11, 2009	<ul style="list-style-type: none"> Work with Tech Dir for Human Health to develop and implement a sustainability plan for CBS
		January 18 – 30, 2010	

Annex 1

Traveler	Destination	Dates	Summary of Activities
Virginia Lambert Gender Specialist	Hanoi, Vietnam	December 7-18, 2009	<ul style="list-style-type: none"> Develop gender plan Develop training for staff in gender awareness Conduct training
Teow Chong Yap Veterinary Technical Advisor	Hanoi, Vietnam	January 19 – February 6, 2010	<ul style="list-style-type: none"> Supply Chain Risk Assessment, incl. field trip for rapid assessment
		March 1-6, 2010	<ul style="list-style-type: none"> Finalize the Risk Assessment Tool Brief with Abt staff on Risk Assessment Tool Meet with new COP and Policy analysis
		May 5-15, 2010	<ul style="list-style-type: none"> Review GVN Bio-security Guidelines Risk Assessment
	Hanoi, Vietnam	July 5-15, 2010	<ul style="list-style-type: none"> Supply Chain Risk Assessment findings and interventions Technical WS on Supply chain risk reduction
		July 26 – Aug 6	<ul style="list-style-type: none"> National Dissemination WS on Risk Assessment findings Develop and identify location for Bio security model
		Aug 23 – Sept 10, 2010	<ul style="list-style-type: none"> WS for Risk Reduction at provincial level Training Curriculum for local authority in Risk Reduction
Kathryn Banke M&E Specialist	Hanoi, Vietnam	April 2010	<ul style="list-style-type: none"> Participate in development of training for staff in M&E Participate in development of training for GVN partners in M&E
Neil Boisen BCC Specialist	Hanoi, Vietnam	Aug. 22 – Sept 6, 2010	<ul style="list-style-type: none"> National Level BCC Training, training for journalists, and ToT for provincial partners
John Holtzman Agriculture Supply Chain Specialist	Hanoi, Vietnam	January 31 – Feb 11, 2010	<ul style="list-style-type: none"> Supply Chain Risk Assessment
Susan Coffin Infection Control & Case Management Advisor	Hanoi, Vietnam	July 19-28, 2010	<ul style="list-style-type: none"> Adapt national guidelines for district and commune levels ToT training Comment and finalize the Infection Control and case management protocol for districts and commune level healthcare setting
Ed Keturakis Private Sector Specialist	Hanoi, Vietnam	July 7-16, 2010	<ul style="list-style-type: none"> Technical WS on Risk Reduction for Supply chain
		Sep 2010	<ul style="list-style-type: none"> Analysis of opportunities to partner with the private sector along the supply chain and with private veterinary services .

Annex 1

Traveler	Destination	Dates	Summary of Activities
Ha Nguyen Health Economist	Hanoi, Vietnam	July 28 – Sep 2, 2010	<ul style="list-style-type: none">• Costing of project activities and replications
Mursaleena Islam Health Systems Strengthening Specialist	Hanoi, Vietnam	Sep 5-18, 2010	<ul style="list-style-type: none">• Preparation of APII's impact on Health Systems Strengthening in Vietnam

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
Pandemic Preparedness						
Avian Influenza Preparedness and Response Plans						
PP1	Develop Pandemic Preparedness Plans		TDHH	December - September	June - Sep	All of the following activities will take place in collaboration with H2P project counterparts in Vietnam to avoid overlap and duplication
PP1.1	Review Current Pandemic Preparedness Plans and Begin Gap Analysis in Hung Yen, Kien Giang and Quang Tri	Situation Analysis Report	TDHH/ VNRC	December - March	June - Sep	
PP1.2	Plan for Simulation Exercises in Ha Nam and Quang Tri	Simulation Plans	TDHH/ VNRC	May - September	Year 2	Suggest moving to year 2 as VNRC still busy with USAID-funded H2P project
PP1.3	Provide input to revising and modifying the National Strategic Plan for Pandemic Response as appropriate and invited.		TDHH	December - September	December - September	In collaboration with H2P project. We will propose to the VNRC that we contribute through their steering committee

Coordination and Collaboration						
PP2.1	Attain Extensions in Hung Yen and Can Tho to Continue BCC campaign		TDBCC/ DDPI*	October-November	Completed	
PP2.2	Work with AED to Establish Permission to Continue AI BCC Campaigns in Quang Tri, Ha Nam and Kien Giang		TDBCC/ DDPI	October - November	Completed	
PP2.3	Attain MOUs in Provinces		DDPI*	October - December	November - December	
	+ Send letters to PPCs introducing new project and requesting meeting to discuss MOU		PMHY/HM	October		
	+ Meeting in Can Tho		PMCT/KG and TDHH	November		
	+ Meeting in Hung Yen		PMHY/HM	November		
	+ Draft MOU and continue discussions with PPC in Can Tho		PMCT/KG	November-December		
	+ Draft MOU and continue discussions with PPC in Hung Yen		PMHY/HM	November-December		
	+ Attain formal signature of MOU in Can Tho		PMCT/KG and TDHH	December		
	+ Attain formal signature of MOU in Hung Yen		PMHY/HM	November - December		
	+ Meeting in Quang Tri		TDHH	November		
	+ Meeting in Ha Nam		PMHY/HM	November		
	Meeting in Kien Giang		PMCT/KG	November		
	+ Draft MOU and continue discussions with PPC in Quang Tri		TDHH	November-December		

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
	+ Draft MOU and continue discussions with PPC in Ha Nam		PMHY/HM	November-December		
	+ Draft MOU and continue discussions with PPC in Kien Giang		PMCT/KG	November - December		
	+ Attain formal signature of MOU in Quang Tri		TDHH	December - February		
	+ Attain formal signature of MOU in Ha Nam		PMHY/HM	December - February		
	+ Attain formal signature of MOU in Kien Giang		PMCT/KG	December - February		
	+ Submit provincial workplans to USAID for approval		DDPI	January	TBD	To ensure that there is no overlap or duplication of activities
PP2.4	Establish Office in Can Tho		PD/DDFA	October	November	To house Project Manager for Can Tho/Kien Giang
PP2.5	Inception Workshop in Hanoi		PD	November	November	
PP2.6	Participate in USAID API meetings		PCM	Ongoing	Ongoing	
PP2.7	Convene TAG		PCM	November - June	TBD (with key partners)	
	Convene workshop to identify key stakeholders and policy strategy		COP	January	TBD	STTA = Lara Hensley (Abt HQ)
	Share draft Terms of Reference with potential TAG members and secure their agreement to participate		PCM	November - December	TBD	
	Convene initial TAG meeting to introduce project, select priority issues for year 1, and establish committee structure		PCM	January	TBD	
	Facilitate ad hoc committee meetings		PCM	February - September	TBD	
	Training session for TAG members (topic to be determined based on TAG member interests)		PCM	March/April	TBD	
	Semi-annual TAG meeting		PCM	June	TBD	
	Develop workplans to address issues picked.		PCM	April -June	TBD	
PP2.8	Participate in Working Groups		TDAH/ TDHH/ TDBCC	Ongoing	Ongoing	
	+ Review ToRs of Biosecurity, Infection Control Working Groups with convening authorities, esp. purpose, membership, functioning.		TDAH/ TDHH	November - December		
	+ Request/support changes to strengthen as needed and accepted		TDAH/ TDHH	November - February		
	+ Meet with UNICEF, NAFEC and NCHEC to brainstorm ways to support the reconvening of the BCC Working Group		TDBCC	November - December	done	

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
	+ Participate regularly in BCC Working Group, providing necessary and appropriate support.		TDBCC	Ongoing	Ongoing	Attended Nov, Jan, and Mar meetings. APII has been taking the lead to collect BCC materials and worked with PAHI to upload in the website for wider reference. However, the question of who and how to maintain this source will be discussed in the next group meeting. From now on APII will take the lead in drafting the agenda to send to PAHI for inviting people. To date, there have been only been representatives from international organizations attending - we will an item on the agenda to address increasing local participation. We will proposal that Neil Boisen (BCC consultant), be a guest.
PP2.9	Engage other API projects in Vietnam for collaboration and transition		All staff as appropriate	November - December	Ongoing	
	+ Engage with STOP AI project to transition activities		TDAH	November - December	Ongoing	
	+ Engage with AI BCC project to transition activities		TDBCC	November - December	Completed	
	+ Engage with partners on GETS to determine role and activities		TDAH	November - December	Ongoing	
	+ Meet with other API projects in country (for example VAHIP)			Ongoing	Ongoing	Plan to follow-up on model slaughterhouse and market approaches

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
PP2.10	Create Quarterly API Update Newsletters for Partners	Two newsletters quarterly	TDBCC	January, April, July	PSA on hold for higher-level approval	Vietnamese version for VN partners and English version for international partners See CC2.5 for Success Story submission A series of meetings have occurred since last December with both NAFEC and NCHCE to collaborate on the Vietnamese newsletter, as well as utilize their experience and build the capacity within their networks. Agreement has been reached with NCHCE and a consultant from NAFEC, but because both are quasi-government approval is pending from USAID before implementation.
PP2.11	Participate in Professional Associations/Agency Meetings, Trainings, and Demonstration events		All staff as appropriate	ongoing	Ongoing	e.g. Hanoi and Ho Chi Minh City Infection Control Societies
PP2.12	Participate in International and Regional Conferences to Disseminate and Leverage Project Lessons Learned		All staff as appropriate	ongoing	Ongoing	Dates and participants to be identified on an ongoing basis
PP2.13	Conduct activities in non-focus provinces as appropriate		All staff as appropriate	January - August	Ongoing	In consultation with USAID. Activities could relate to supply chain, cross border, special studies, replication testing.

Total Budget:

\$601,608

Human Surveillance						
Early Warning systems for Human Surveillance						
HS1.1	Develop sustainability plan for CBS		TDHH	December - March	December - March	STTA = Jim Setzer (Abt HQ)
	+ Consultation with stakeholders to review and develop options to improve financial sustainability of CBS model(s)		TDHH	December-March	December-March	Operations research/financial sustainability framework for CBS implementation in project districts
	+ Develop methodologies for roll out of CBS model to test/assess impact of new design on financial sustainability		TDHH	December-March	December-March	
	National workshop to introduce the APII CBS approach to national and provincial audiences.		TDHH	January	January	STTA = Jim Setzer (Abt HQ)

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
HS1.2	Continue to Implement CBS Model in the Current District and Commune in Can Tho and Hung Yen		DDPI	January - September	April - September	
	+ Maintain monthly meeting and reporting mechanism		PMCT/KG and PMHN/HY	December-September	April - September	
	+ Continue monitoring and support for CBS networks		PMCT/KG and PMHN/HY	December-September	April - September	
	+ Evaluate model to inform future roll out		DDPI and TDHH	December-September	August	STTA = Jim Setzer (Abt HQ)
HS1.3	Replicate Model in 2 More Districts Per Province in Can Tho and Hung Yen		DDPI and TDHH	November - September	November - September	
	+ Review previous activities and plan for roll out of new networks		DDPI and TDHH	November	November	STTA = Jim Setzer (Abt HQ)
	+ Provide ongoing technical mentoring and oversight for the current local trainers		DDPI, TDHH and TM	March	April	
	+ Roll out training for CBS networks		TM	April - May	April - May	
	+ Provide the surveillance materials	Surveillance toolkits	TDHH	April	June	
	+ Launch the model		DDPI, TDHH and TM	May	June	
	+ Monitor and support new CBS networks		POHH	May - September	May - September	
HS1.4	Introduce CBS Model to Quang Tri, Ha Nam, and Kien Giang		DDPI and TDHH	January - September	January - September	
	+ Assess the current surveillance systems: existing surveillance elements and their capacity	A Key Findings Report	TDHH	January	January	
	+Conduct ToT training (adapted as necessary) for the provincial health and animal health staff	Training package	TM	March	January	
	+ Roll out training for human and animal health collaborators, private sector, and key informants		TM	March - June	May- June	
	+ Provide the surveillance materials	Surveillance toolkits	TDHH	June	June	
	+ Introduction and launch CBS to the provinces and communes		DDPI/TDHH	June	July	
	+ Implement, monitor and provide ongoing support for surveillance and collaborator network activities		TDHH	June - September	June - September	
Total Budget:		\$166,254				
Human Response						
Case management and infection control procedures for health facilities						

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
HR3.1	Review and Share the Experiences and Lessons Learned in Hung Yen and Can Tho	Case Management and Infection Control Briefs	TDHH	November - December	November	Lessons from AI Mekong Initiative Bach Mai Hospital invited to participate
	+ Conduct workshop on experiences and lessons learned at Dissemination Meeting in Hanoi		TDHH	November	November	Workshop audience: national stakeholders
HR3.2	Conduct Formative Research/Needs Assessment of Infection Control and Case Management in Quang Tri, Ha Nam and Kien Giang		TDHH	December - February	June - July	STTA = Dr. Susan Coffin (include evaluation of training model used in Hung Yen and Can Tho)
HR3.3	Standardize Protocols and Training on Infection Control and Case Management Activities at District and Commune Levels	Standardized protocols	TDHH	December - May	May - September	Activities subcontracted with Infection Control societies Protocols to be based on the National Decree
	+ Adapt the updated national guidelines for district and commune levels		TDHH	December-January	July - August	STTA = Dr. Susan Coffin
	+ Consult with WHO and MoH on guideline adaptation		TDHH	December - January	July - August	
	+ Adapt/revise both infection control and case management training materials	Revised Infection Control and Case Management Training Materials	TDHH	February - March	May - August	
	+ Hold planning meetings to introduce infection control and case management activities to new provinces		TDHH	February - March	May - June	
	+ Conducting ToT training		TM	March	July	
	+ Roll out training for health workers from commune and district health settings		TM	March - May	July - September	Trainings will occur in all Provinces. In Hung Yen and Can Tho the trainings will occur only in new project districts.
HR3.4	Introduce Infection Control and Case Management Activities at District and Commune Health Settings based on standardized protocols		DDPI	May - September	July - September	Activities subcontracted with Infection Control Societies Activities will take place in all five provinces
	+ Provide TA to hospitals to establish infection control administrative bodies, assurance teams and networks		DDPI and TDHH	May - June	June - July	Providing direct support to district level hospitals to do this based on the new protocols
	+ Monitor and support implementation of infection control and case management		TDHH	July	August	Based on the new protocol

**Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010)
- as of July 30, 2010**

Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
	+ Continued monitoring and mentoring implementation		POHH	August - September	August - September	
	+ Provide communication and basic infection control materials		POHH	July	July - August	Using existing materials

Total Budget:

249,787

Animal Surveillance						
Surveillance of Domestic Poultry						
AS1.1	Develop sustainability plan for CBS		TDHH	December - March	December - March	STTA = Jim Setzer (Abt HQ)
	+ Consultation with stakeholders to review and develop options to improve financial sustainability of CBS model(s)		TDHH	December - March	December - March	Operations research/financial sustainability framework for CBS implementation in project districts
	+ Develop methodologies for roll out of CBS model to test/assess impact of new design on financial sustainability		TDHH	December - March	December - March	
	+ Evaluate model to inform future roll out		DDPI and TDHH	December - September	Yr2 Q1	STTA = Jim Setzer (Abt HQ)
	National workshop to introduce the APII CBS approach to national and provincial audiences.		TDHH	January	Yr2 Q1	STTA = Jim Setzer (Abt HQ)
AS1.2	Continue to Implement CBS Model in the Current District and Commune in Can Tho and Hung Yen		DDPI	January - September	April - September	
	+ Maintain monthly meeting and reporting mechanism		PMCT/KG and PMHN/HY	December - September	April - September	
	+ Continue monitoring and support for CBS networks		PMCT/KG and PMHN/HY	December - September	April - September	
AS1.3	Replicate Model in 2 More Districts Per Province in Can Tho and Hung Yen		DDPI and TDHH	November - September	November - September	
	+ Review previous activities and plan for roll out of new networks		DDPI and TDHH	November	November	STTA = Jim Setzer (Abt HQ)
	+ Provide ongoing technical mentoring and oversight for the current local trainers		DDPI, TDHH and TM	March	April	
	+ Roll out training for CBS networks		TM	April - May	April - May	
	+ Provide the surveillance materials	Surveillance toolkits	TDHH	April	June	
	+ Launch the model		DDPI, TDHH and TM	May	June	
	+ Monitor and support new CBS networks		POHH	May - September	May - September	
AS1.4	Introduce CBS Model to Quang Tri, Ha Nam, and Kien Giang		DDPI and TDHH	January - September	January - September	

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
	+ Assess the current surveillance systems: existing surveillance elements and their capacity	A Key Findings Report	TDHH	January	January	
	+Conduct ToT training (adapted as necessary) for the provincial health and animal health staff	Training package	TM	March	January	
	+ Roll out training for human and animal health collaborators, private sector, and key informants		TM	March - June	May- June	
	+ Provide the surveillance materials	Surveillance toolkits	TDHH	June	June	
	+ Introduction and launch CBS to the provinces and communes		DDPI/TDHH	June	July	
	+ Implement, monitor and provide ongoing support for surveillance and collaborator network activities		TDHH	June - September	June - September	
Total Budget:		\$179,572				
Animal Response						
Animal response efforts						
AR2.1	Implement Participatory Training Needs Assessment of AHW 5 Provinces and Refine as Needed	Training Need Assessment Report	TDAH / AFAP	November - January	Mar-May	Activity delayed due to the AFAP Sub-contractor approval; TNA report available early June 2010;
AR2.2	Roll Out Model in 5 Provinces		TDAH	April - September	Apr - Sep	
	+ Curriculum developed and agreed upon with DAH/ sub-DAH		TDAH / AFAP	February - April	Jun - Jul	Activity delayed due to the AFAP Sub-contractor approval
	+ ToT training course		AFAP	February - April	Jul - Aug	Activity delayed due to the AFAP Sub-contractor approval and staffing problems;
	+ Refresher training for commune level AHW at the district		AFAP	April - September	Jun - Sep	Districts to be determined with Province.
	+ Support AHWs and network by monthly meetings and material including the AHW Toolkits	Updated AHW logbook and small animal tool kit (1200)	AFAP	April - September	Jun - Sep	Lead = AFAP sub-contractor
	+ Develop and launch AHW Trainings in collaboration with implementing partners		TDAH/ AFAP	April - September	Jun - Sep	Lead = AFAP sub-contractor Additional partners could include NAFEC, Can Tho University, Hanoi Agriculture University, Veterinary Association

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
AR2.3	Include Veterinary Association in AHW Network Development and prepare them to undertake follow-up trainings at commune and district level		TDAH, Vet Association	January - September	January - September	Subcontract with Vietnam Veterinary Association
	+ Assist the Vet. Assoc. to expand their networks in Hung Yen and Can Tho		TDAH	January - September	January - September	Additional 3 provinces will be addressed in year 2.
	+ Cost Share training of AHWs through the Vet. Assoc.		TDAH	January, April and July	Apr - Sep	Activity delayed a month due to PRRS disease situation in Hung Yen province.
AR2.4	Conduct Technical Workshop at District and Province Level		TDAH	January - September	January - September	As needed
AR2.5	Policy Dialogue for Certification of AHW/Paravet		TDAH	January - September	May - Jun	In collaboration with DAH and SDAH Possible implementation with RUDEC
	+ AHW service and Private Sector service analysis		TDAH	TBD	Aug - Sep	STTA = Ed Keturakis to replace Francoise; activity planned for Sep 2010.
AR2.6	Develop the AEW Capacity Model and roll out the model in 5 Provinces		TDAH/ AFAP	November - September	June	Delays in approval to subcontract with AFAP delayed these activities.
	+ Implement participatory training needs assessment of AEW and identify the model in collaboration with AHW model	Training Needs Assessment Report	TDAH/ AFAP	November - January	Mar - May	TNA report available
	+ ToT training course		AFAP	February - April	Jul - Aug	In combination with AHW TOT training by AFAP.
	+ Curriculum developed and agreed upon with NAFEC and sub-AFEC		TDAH / AFAP	February - April	Apr - May	Training will include BCC components, and inputs from the TDBCC and POBCC
	+ Develop and launch AEW trainings in collaboration with implementing partners			April - September	Yr 2	Postponed due to AFAP staffing difficulties.
	+ Refresher training for commune level AEW at the district.		AFAP	April - September	Yr 2	Posponed due to AFAP staffing difficulties.
AR2.7	Provide AHW/AEW Technical Documents and Subscription to Technical Journals		TDAH	TBD- following MOU signatures	Feb - Sep	Provision of an information desk at the District Station.
	Biosecurity					

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
AR3.1	Study Tours to Biosecurity Pilot Sites		POBAH	April - June	Aug - Sep	Within Vietnam - government and provincial staff involved in model design and policy development, and will be implemented in consultation with DLP, following the Dissemination Workshop in July.
AR3.2	Conduct Supply Chain Risk Assessment and review pilot biosecurity model for farms and hatcheries and identify intervention		TDAH	December - February	Mar - June	STTA = Henry Yap (international consultant) and John Holtzman (Abt HQ)
AR3.3	Risk Reduction Training for Sector 3 Farmers		TDAH	March - June		In selected districts within all 5 provinces
	+ review and revise existing training modules		TDAH	February - April	Aug - Sep	On-going; final product expected end of Aug;
	+ conduct training of farmers		TM	May - June	Yr 2	Training rescheduled based on finalization of the curriculum.
	Risk Reduction Training for stakeholders at hatcheries, slaughterhouses and markets		POBAH	March - June	May - Jul	
	+ Review and revise existing training modules		TDAH	February - April	Apr - Jul	
	+ Conduct training		TM	May - June	Aug - Sep	VVA in consultation with SDAH
AR3.4	Biosecurity Improvement Model for Sector 3 Farmers, Hatcheries, Slaughterhouses, and Markets		TDAH	December - September	May - Sep	Lengthy subcontract preparation process with DEEFS; now awaiting higher level approval
	+ Review, revise and maintain established model village in Hung Yen		TDAH	December - August	May-June	STTA = TBD Subcontract with DEEFS for maintenance activities
	+ Develop biosecurity guidelines for hatcheries in collaboration with FAO		POBAH	March - July	Aug - Sep	STTA = Dr. Henry Yap and local consultants; delayed due to the postponement of Risk Assessment.
	+ Review government regulations and develop biosecurity/biosafety guidelines for small - medium scale slaughterhouse and markets	Biosecurity and Biosafety Guideline (Draft)	TDAH	March - May	July - Aug	STTA = Dr. Henry Yap and local consultants
	+ Develop biosecurity training curriculum for slaughterers and market vendors		TDAH	April - June	May - Sep	STTA = Dr. Henry Yap and local consultants; delayed due to the postponement of Risk Assessment.
	+ In partnership with local authorities determine the pilot model sites and the mechanism for implementation.		TDAH	June - July	July - Sep	STTA = Dr. Henry Yap and local consultants; delayed due to the postponement of Risk Assessment.
AR4.5	Supply Chain Strengthening and Certification		TDAH	January - September	Apr - Sep	
	+ Identify the pilot supply chain nodes and location to approach		TDAH	January - February	Apr - May	Subcontract with RUDEC for implementation

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
	+ Discussion with province's and select		TDAH	January - February	Apr - May	Subcontract with RUDEC for implementation
	+ Develop certification process	Certification Process (Draft)	POBAH	March - May	Yr 2	Risk assessment and dissemination workshop required for this activity, so it was postponed while these are being completed.
	+ Design SOPs and training	SOP and training document (Draft)	POBAH	March - May	Yr 2	Not ready yet to implement due to the Risk Assessment delay.
	+ Pilot certification system		POBAH	May - June	Yr 2	Not ready yet to implement due to the Risk Assessment delay.
	+ Organize training of processors/producers		POBAH	June - July	Yr 2	Not ready yet to implement due to the Risk Assessment delay.
	+ Develop a monitoring system to track and enforce certification		POBAH	May - August	Yr 2	Not ready yet to implement due to the Risk Assessment delay.
	+ Host workshop on lesson learned from pilot certification sites		POBAH	August - September	Yr 2	Not ready yet to implement due to the Risk Assessment delay.

Total Budget:

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Cross Cutting						
Behavior Change Communication						
CC1.1	Continue Existing BCC Campaigns until Tet		TDBCC	November-January	Nov-March	
	+ Resume implementation of BCC campaign launched under AI Mekong Initiative for pre-Tet period in Can Tho and Hung Yen		TDBCC	November-January	Nov-March	
	+ Take over implementation of AI-BCC communications activities in Ha Nam, Quang Tri and Kien Giang		TDBCC	December-January	Completed	Exact timing to be determined with AED during transition discussions
CC1.2	Evaluate Pre-Tet Campaign and Conduct Situation Analysis of existing API research studies, communication strategies, training modules, messages and materials	Situation Analysis Report	TDBCC	January-March	April-June	STTA = Stephen Rahaim (Abt HQ)
	+ Develop framework for guiding analysis		TDBCC	January	April	
	+ Review recent KAP done by other USAID projects the five provinces		TDBCC	February	April-May	
	+ Multi-day workshop to introduce the review and analysis process		TDBCC	March	Cancelled	After meeting with USAID in Dec 2009, a BCC assessment strategy developed and submitted, omitting this workshop

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
	+ Conduct qualitative review of all materials used during pre-Tet communication campaign to assess gaps		TDBCC	March	April - June	
CC1.3	Conduct assessment of existing provincial level communications plans in focus provinces.		TDBCC	January	Aug-Sep	Delayed due to lengthy sub-contracting processes
CC1.5	National Level BCC Training		TDBCC	February - August	July - Aug	STTA = Neil Boisen (international consultant). Delayed due to consultant availability and then delayed consultant agreement process.
	+ Conduct training needs assessment for National Level BCC trainings (NAFEC, CEC, Women's Union, Vietnamese Red Cross, Farmer Association)		TDBCC	February	July - Aug	Training will be focused on raising awareness and understanding of key BCC concepts. Delayed due to consultant availability.
	+ Develop and produce national level BCC training module		TDBCC	March	July - Aug	delayed due to Neil Boisen's availability on scope of work
	+ Conduct National Level BCC training		TDBCC	March and July	Aug-Sep	STTA = Neil Boisen (international consultant). Delayed due to consultant availability.
	+ Evaluate National Level BCC Training		TDBCC	April and August	Aug-Sep	Will be done during the training.
CC1.4	ToT for Province Level Trainers in BCC Skills		TDBCC	March	Aug	Training will include gender strategy. STTA = Neil Boisen
CC1.6	Provincial Level BCC trainings		TDBCC	April - May	September	Delayed due to lengthy sub-contracting processes, and the delay of CC1.4
	+ Support trained district level trainers in preparation for Provincial based trainings in BCC		TDBCC	April	September	Trainers implementing trainings, trained in ToT for district level trainers
	+ Produce and provide training materials for provincial based trainings		TDBCC	April	September	
	+ Attend and monitor trainings, and analyze training evaluations (pre-post tests, training reports, evaluations)		TDBCC	April-May	September	
CC1.7	Conduct Formative Research to Inform Design of Next BCC Campaigns				July - Sept	STTA = Stephen Rahaim (Abt HQ). Delayed due to the development of an integrated risk reduction approach along supply chain.
	+ Review quantitative data from AI Mekong and AI BCC surveys.		TDBCC	April	July	

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
	+ Analyze data collected through situation analysis, pre-Tet evaluations, KAPs, baselines and audience segmentation.		TDBCC	May-June	July	As a part of CC1.2, will be included in the desk review part of the final assessment report.
	+ Convene workshop to design BCC campaign.		TDBCC	May	September	Delayed due to the development of an integrated risk reduction approach along supply chain, to which BCC campaign should be bound in
CC1.8	Develop Next Generation Campaign Materials		TDBCC		September	STTA = Stephen Rahaim (Abt HQ). Delayed due to the delay in CC1.7.
	+ Establish subcontract with marketing agency to develop and print materials		TDBCC	June/July	September	Materials could include: radio/TV spots, drama scripts, posters, flip chart, booklets etc.
	+ Pre-test the materials with target audiences in each province		TDBCC	August	September	
	+ Redesign materials as necessary	Communications Materials for API	TDBCC	August	September	
	+ Develop press and media relations kit	Kit	TDBCC	Aug/September	September	
CC1.9	Launch Next Generation Communication Campaign		TDBCC		Y2	STTA = Lara Hensley (Abt HQ). Delayed due the delay in CC1.8
	+ Reproduce new campaign materials		TDBCC	September	Y2	Delayed due the delayed CC1.8
	+ Conduct refresher trainings with Trained trainers in new campaign strategies		TDBCC	September	Y2	Delayed due the delayed CC1.8
Other Cross Cutting						
CC2.1	Develop Gender Strategy		PD	December	December	
	+ Develop and finalize Gender Strategy and Plan	Gender Strategy	PD	December	December	STTA = Virginia Lambert (consultant)
	+ Develop curricula based on gender strategy with international consultant		PD	December	December	STTA = Virginia Lambert (consultant)
	+ Host training in Hanoi office with senior staff.		PD	December	December	STTA = Virginia Lambert (consultant)
CC2.2	ToT to build training capacity		TM	November - January	Jun - Jul	Generic training for all partners in adult learning and other training skills rather than technical areas
	+ Develop list of trainees and send out invitations		TM	November	Jul - Aug	In combination with AR2.2 and 2.6
	+ Revise curricula		TM	November - December	Jun - Jul	
	+ Host training in Hanoi		TM	January	Jul - Aug	In combination with AR2.2 and 2.6

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
CC2.3	Develop Environmental Compliance Plan	Environmental Compliance Plan	PD	November	November	STTA = Carey Yeager (Abt HQ)
CC2.4	Monitor Performance and Quality of Project Implementation		TDHH	November - September	On-going	STTA = Kathryn Banke (Abt HQ) and virtual TA = Lara Hensley (Abt HQ)
	+ Submit final PMP for Approval	Approved PMP	TDHH	November	April	Draft submitted in November, revisions were dependent on finalization of USAID PMP.
	+ Continue to collect data for performance monitoring as required		MEM	ongoing	Ongoing	
	+ Conduct an internal training workshop on data collection practices, reporting requirements and quality assurance.		MEM	December	April	Review PMP Subcontractors included in workshop Delayed so that we could also train on USAID PMP
	+ Educate government partners and other stakeholders on PPI and M&E processes		PDHH	December - January	April	STTA = Kathryn Banke (Abt HQ) Delayed so that we could also train on USAID PMP
	+ National Level workshop on M&E processes in Hanoi		PDHH	December	April	Co-host with FAO Delayed so that we could also train on USAID PMP
	+ National Level M&E training with key stakeholders and counterparts in Hanoi		MEM	January	April	Co-host with FAO Delayed so that we could also train on USAID PMP
CC2.5	Develop paper on Health Systems Strengthening as related to AI interventions	Concept Paper	TDHH	May	September	STTA = Abt Mursaleena Islam, HSS Specialist (Abt HQ) Delayed due to consultant availability and staff time to work with consultant. Report will include analysis of how APII interventions will feed into exist GVN systems
CC2.6	Submit Success Stories, Press Releases and/or other external relations materials	Success Stories	TDBCC	May and August	August - September	virtual TA = Lara Hensley (Abt HQ) See PP2.10 for Partner Newsletter Success stories have been included in quarterly reports in addition to weekly success to USAID. A Press Release on project inception was developed in November 2009.
CC2.7	Submit Semi-annual Performance Management Report		TDHH/PD	March and September	April	virtual TA = Lara Hensley (Abt HQ)
CC2.8	Submit Quarterly Performance Report		TDHH/PD	January and July	January, July	

Updated Work Plan for APII Year 1 (Oct 2009 - Sep 2010) - as of July 30, 2010						
Code	Activity	Product	Responsible Staff(s)	Original Timeline	Revised Timeline	Remarks
CC2.9	Submit Quarterly Financial Report		DDFA	January, April, July	January, April, July	
CC2.10	Submit Annual Workplan for Year 2		PD	August	August	STTA = Lara Hensley (Abt HQ)

Personnel Key:

Project Director- PD
 Tech. Director Human Health - TDHH
 Tech. Director Animal Health - TDAH
 Tech. Director BCC - TDBCC
 Deputy Dir. for Provincial Implementation - DDPI
 Deputy Dir. for Finance and Administration - DDFA
 Proj. Officer for Biosecurity and AHW Capacity - POBAH
 Training Manager - TM
 M&E Manager - MEM
 Proj. Officer for CBS and Human Health - POHH
 Proj. Manager BCC - PMBCC
 Partner Coordination Manager - PCM
 Proj. Manager for each region - PMQT, PMHN/HY, PMCT/KG

Note- Tet is Feb 14, 2010



USAID
FROM THE AMERICAN PEOPLE

VIETNAM

USAID Avian and Pandemic Influenza Initiative



USAID supports hygienic models of meat markets like the one at Hoa Mao in Ha Nam to curb spread of disease

Photo by Richard Nyberg, USAID

The USAID Avian and Pandemic Influenza Initiative (October 2009 – September 2013) strengthens the capacity of the Government of Vietnam and its counterparts to identify, prevent, and control outbreaks of avian influenza and other emerging infectious and zoonotic diseases in animals and humans. Implemented by Abt Associates, the project activities began in the focus provinces of Can Tho, Ha Nam, Hung Yen, Kien Giang, and Quang Tri. The focus has expanded along poultry supply and value chains into other provinces for wider regional effects. Collaborating closely with the Food and Agriculture Organization and World Health Organization (WHO) of the United Nations and the Partnership on Avian and Human Influenza in Vietnam, the project leverages village, commune, district, and provincial experiences and outcomes to provide evidence for planners and policy makers. By sharing lessons learned and advocating for wider adoption of innovative approaches, the project supports Vietnamese authorities and partners in adopting and scaling up models in the following areas:

Animal Health Worker Capacity Building: Based on the manual for veterinarians issued by the Department of Animal Health in 2010, the project has developed a capacity building package for grassroots animal health workers, serving both public and private agents. In addition to its replication to Moc Chau farm in Son La and Ninh Binh provinces, the package has been promoted for wider adoption through the public animal health system and through private associations.

Agricultural Extension Worker Capacity Building: The training package for improved biosecurity among small commercial poultry producers was recently completed. With An Giang and Can Tho provincial agricultural and extension centers to integrate into their annual training plan in 2012, the project continues to support several provinces wanting to adopt and roll out the package through the public extension system, notably in/around the Mekong Delta.

Poultry Supply Chain Strengthening & Risk Reduction: Together with FAO, the project has identified key supply chain nodes for risk reduction and development of replicable demonstration models. Upgrades of the poultry sections in Dong Ha central market (Quang Tri) and a commune market in Ha Nam have been undertaken, and slaughterhouse upgrades were implemented through public-private-partnerships in Quang Tri and Can Tho. Veterinary inspectors and private stakeholders (traders, slaughterers, and vendors) were trained and targeted for improved behaviors on bio-security and food safety. The demonstration models are now being used to educate other partners in Vietnam on making similar upgrades in other locations.

Community-Based Surveillance (CBS): The CBS-model has already been instrumental in the early detection and control of HPAI outbreaks in Quang Tri province, and will be promoted for wider adoption through provincial, regional and national events. The model covers both human and animal health sectors.

Infection Control/Case Management (IC/CM): A refined training package and strengthening approach for district level implementation of Circular 18 has been introduced into eight district hospitals and in June 2012 the Ministry of Health adopted the training materials. The project is supporting the Ministry of Health to roll out training nationwide.

Pandemic Preparedness Plans (PPP): In partnership with Vietnam Red Cross, the project supported Kien Giang to develop their PPP and is promoting this PPP model for wider adoption elsewhere. The PPP work is coordinated with WHO and other international partners.

Behavior Change Communication (BCC): BCC is integrated into all the above-mentioned innovations. The project implemented a transition strategy enabling selected provinces to plan and carry out their own future BCC campaigns and BCC interventions. The project is working with Vietnam Farmer's Union to integrate a BCC training model into their vocational training and to replicate to other Northern Central provinces including Ha Tinh, Hue, and Quang Binh.

For further information, contact:

USAID Vietnam
Office of Health
Tel: (84-4) 3935-1260
<http://vietnam.usaid.gov>

USAID Avian and Pandemic
Influenza Initiative (USAID/APII)
Implemented by Abt Associates
Inc.

2nd Floor, 72 Xuan Dieu street,
Tay Ho district, Hanoi
Tel: (84-4) 3719 31 39
Fax: (84-4) 3718 25 31

TERMINAL PROJECT REPORT

Project Code & Title: 00064004 - Support to Knowledge Management and Policy Dialogue through the Partnership on Avian and Pandemic Influenza (KMP-API)

1. General Information

1.1. General information on the project

- Title and code of the project (in Vietnamese): Hỗ trợ Quản trị Tri thức và Đối thoại Chính sách thông qua Đối tác Phòng chống Cúm Gia cầm và Cúm ở Người (KMP-API) / Award ID: 00064004 / Project ID: 80865
- Title and code of the project (in English): Support to Knowledge Management and Policy Dialogue through the Partnership on Avian and Pandemic Influenza (KMP-API)/ Award ID: 00064004 / Project ID: 80865
- Programme/ project location(s): Ha Noi, Ho Chi Minh, Can Tho, Hue, Lang Son.
- Donor(s): United Nation Development Program (UNDP) through the funding source of USAID
- National Implementing Partner: International coordination Department, Ministry of Agriculture and Rural Development
- Project Owner: Ministry of Agriculture and Rural Development
- Duration: May 2012- September 2013
- Investment Decision: No.1137/QĐ-BNN-HTQT, dated 18th May 2012
- Funding sources: 314,285 USD, including:
 - + Total grant ODA: 300,000 USD
 - + Counterpart funding: 300,000,000 VND (= USD 14,285)

1.2. Project description

- Avian influenza viruses of the H5N1 subtype emerged as a serious cause of disease in poultry and humans in Viet Nam in late 2003. Following on from the previous National Integrated Operational Program for Avian and Human Influenza (OPI), 2006-2010, the Government of Viet Nam, represented by the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Health (MOH), has worked closely with international partners to develop the new Integrated National Operational Program on Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases (AIPED), 2011-2015. The AIPED 2011-15, approved by the National

Steering Committee for Avian Influenza Control and Prevention under the Decision No. 2735/QĐ-BNN-HTQT dated on 08/11/2011. AIPED was built on the OPI and expanding the focus of capacity-building to apply a One Health approach to avian influenza and other emerging diseases in animals and human

- The period of the project was expected to be a significant transition period for the avian and pandemic influenza (API) work in Viet Nam. Moving from the OPI 2006-2010 to AIPED 2011-2015 represents a key step in the consolidation and institutionalization of API activities, applying lessons and models from the previous period to the continuing challenge of HPAI in the country. Low risk perception, limited incentives for reporting disease outbreaks and competing demands coupled with the transition away from mass subsidized poultry vaccination represent the most significant change in the national context and control strategy since 2005, and require an important set of accompanying actions to manage disease risks and collect and analyze data to assess the ongoing impact of this transition.
- Results are becoming available through 2011 and early 2012 from a range of USAID and other applied research activities and piloting of models across a range of areas within the national API response. There has been a significant investment in these activities, responding to requests from national decision-makers and senior technical experts for a strengthened evidence-base and elaboration of options for national activities. A key focus for the project period was to support and ensure that these lessons are captured and shared in practical, accessible and appropriate ways with decision-makers, experts and other key stakeholders.
- The AIPED 2011-2015 calls for a range of related review activities for API coordination mechanisms of the overall national response, drawing on the lessons from the response to-date to HPAI as well as SARS and pandemic (H1N1) 2009 and considering how these (emergency) mechanisms could be strengthened and potentially restructured for a sustainable approach to national coordination of API and similar diseases.
- The period covered by the project also marks a key point in the ongoing practical transition for both national authorities and international donors from emergency resources to recurrent financing and longer-term capacity building activities on API. At the national level, the Partnership is expected to play a key role in considering the implications of this transition, with a focus on identifying national capacity to sustain and mainstream essential activities and on prioritizing activities and mobilizing local resources – both government and private sector – in the context of diminishing international resources. This transition will require mainstreaming of API activities where

possible into existing institutions and activities, while also advocating where appropriate for the development of new ongoing national activities and areas for new or enhanced international assistance, for example applying lessons to date to API and other emerging zoonotic infectious disease risks in livestock and wildlife diseases.

- According to the initial proposal developed by UNDP together with the national counterpart, this project was expected to commence in October 2011, following on from the Government of Viet Nam/United Nations Joint Programme on Avian Influenza. The Grant Aid agreement between USAID and UNDP for the KMP-PAHI project was signed on December 30, 2011.
- Following the signing of the Grant Aid agreement, UNDP took steps to carry out inception of the project according to the requirements of UNDP and the Government of Viet Nam, as outlined in the Vietnam-United Nations Harmonized Project and Programme Management Guidelines (HPPMG) and in line with the One Plan between the Government of Vietnam and the United Nations for the period 2012-2016. The Government of Viet Nam officially approved the project on May 19, 2012.

1.3 Project objectives and scope

Expected One Plan III Outcome:

Outcome 2.2: By 2016, increased quality and effective management of a comprehensive national health system, including health promotion and health protection, with a focus on ensuring more equitable access for the most vulnerable and disadvantaged groups

Expected One Plan III Output:

Output 2.2.1: Policy advice and technical support provided to strengthen the building blocks of human and animal health systems, including information systems and the generation of evidence, at national and sub-national levels

Based on Expected One Plan III Outcome and output, this project will provide support for launching the AIPED, 2011-2015 and will play a lead role in Avian and Pandemic Influenza (API) knowledge management and policy dialogue between national and international partners and their activities within the framework of AIPED, through the Partnership on Avian and Human Influenza (PAHI). The Project will be comprised of three interrelated objectives:

1. Launching and inception of the AIPED 2011-2015
2. Enhancing API knowledge management and policy dialogue
3. Support to the personnel and operations for KMP-API

1.4. Management arrangements

Project implementation modality: The project was implemented using the Nationally Implementation Modality (NIM) in accordance to the rules and guidelines laid out in the Harmonized Programme and Project Management Guidelines (HPPMG) and Programme and Operations Policy and Procedures (POPP) of UNDP Country Office in Vietnam.

The Ministry of Agriculture and Rural Development (MARD) is responsible for realizing the project outcomes and objectives within the project budget and time scale. The management structure is as follows:

Implementing Partner

As the National Implementing Partner (IP) for the project, MARD is accountable to the Government and UNDP for ensuring (a) the substantive quality of the project, (b) the effective use of both national and UNDP resources allocated to it, (c) the availability and timeliness of national contributions to support project implementation and (d) the proper coordination among all project stakeholders, particularly national parties.

As the day-to-day implementer of project activities, International Cooperation Department (ICD) of MARD is responsible for mobilizing all national and international inputs to support project implementation, organizing project activities in accordance with the agreed work plan, and reporting to MARD and UNDP on the progress as well as financial status of the project.

National Project Director

The National Project Director (NPD) is appointed by the Ministry of Agriculture and Rural Development (MARD) for project implementation and management. NPD is responsible for overall operations and accountable to MARD. NPD is a MARD ICD leader. NPD is responsible for overall implementation to achieve project objectives and is accountable to MARD and UNDP for effective utilisation of project resources. On behalf of MARD, NPD responsible for leading and supervising the project manager.

Project Management Unit (PMU)

The PMU will be responsible for the overall coordination, management, implementation, monitoring & evaluation and reporting of all project activities. The PMU will consist of the following positions:

- National Project Director (NPD, MARD appointed senior official, at directorial level, part-time, 30% of working time)
- Project Deputy-Director (senior International Cooperation Official assigned by MOH on a part-time basis)
- Project Manager (recruited, full-time)
- Knowledge Management Officer (recruited, full-time)
- Secretary (recruited, full-time)
- Project Accountant (recruited, full time)

Project Quality Assurance Role

UNDP Project Officer worked closely with PMU to develop quality criteria for project products/outputs. The PO is in charge of monitoring and evaluating products against the agreed quality criteria. Peer review panel is engaged to assess quality of products/results as required during the project implementation.

2. Results Achieved

2.1. Support to adoption and overall coordination of AIPED 2011-2015:

Official approval of AIPED by the Government of Viet Nam

To follow on from the successful OPI, the Government of Viet Nam, represented by the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Health (MOH), has worked closely with international partners to develop the AIPED 2011-2015. Through the support of PAHI Secretariat, AIPED 2011-2015 document has been approved by NSCAI under the Decree No. 2375/QĐ-BNN-HQTT dated November 08th, 2011 and widely disseminated to key international and national partners and the provincial People's Committee in 63 provinces

The AIPED is considered as the overall framework for national and international activities with the main purpose to sustain the national response to Highly Pathogenic Avian Influenza (HPAI) and to continue to strengthen pandemic preparedness, while beginning to expand the focus of activities to include other infectious disease threats arising at the human-animal-ecosystems interface, applying a One Health approach.

In line with AIPED, KMP-API project has facilitated the consultation on the review of the Partnership and support the approval process for the extension of PAHI and PAHI Secretariat officially extended till 2015.

Strategic framework for public awareness raising and behavior change communications for AIPED 2011-2015.

The AHI Behavior Change Working Group established for the OPI was reviewed the function and mandates and renamed into the One Health (OH) Communication Network (OHCN) to cover the scope mentioned in the AIPED with the chairing role handed over to Government's agency.

With the facilitation of the KMP-API Project, linkages between this group and key national authorities in MARD and MOH have been significantly improved. The chairing role handed over to Government of Viet Nam is considered as a big progress to gradually support the exit strategy. National Agriculture Extension Center chairs every meeting of OHCN with the strong involvement of Communication Subcommittee of NSCHP (MOH). During the period of the project, 04 OHCN meetings were conducted on quarterly basis.

The project cooperated with OHCN to develop a National Strategic Framework for One Health Communications for AIPED 2011-2015, taking into account the lessons from the previous period, low risk perception issues, limited incentives, funding gaps, the evolving context in terms of the disease situation and national response, and the expanded scope and objectives of AIPED 2011-2015 compared to the OPI to convey appropriate and effective messages and communication plans.

National AIPED M&E framework 2012-15 developed, approved & disseminated

The Project collaborated with MEASURE International (funded by USAID) to update and elaborate the national API monitoring framework, including clear definitions for each indicator and proposing national responsible agencies. One consultancy workshop on M&E framework was conducted. The National AIPED M&E framework 2012-15 has been approved by NSCAI under the Decision No. 602/QD-BNN-HTQT dated 25 March 2012 and widely disseminated to national and international partners.

2.2. Application of a One Health approach to emerging infections diseases in Viet Nam

The application of a One Health approach to the national API response was strongly and successfully promoted during the project period, recognizing that the

health of humans, the health of animals (including livestock and wildlife), and the environmental health of ecosystems are inextricably linked. The most achievement is the recognition by the relevant National Steering Committees of the value of applying a One Health approach, including enhanced animal health-human health coordination and alignment and recognition of the role of wildlife and the need for better institutional mechanisms. Key results in this area have been achieved as follows:

- PMAC follow up event on applied the results of the international conference A World United Against Infectious Diseases: Cross-Sectoral Solutions to be conducted in Bangkok, Thailand
- National Conference on applying a One Health approach to infectious disease risks at the human-animal-ecosystem interface held April 3-4, 2013
- Report on One Health stakeholder mapping in Vietnam prepared and presented at the National OH Conference.
- Conference Report developed including the elaboration of Draft National One Health Roadmap for applying a One Health in AIPED 2011-2015 implementation
- 03 briefings to international partners on the H7N9 situation and resource mobilization disseminated

2.3. Enhanced API knowledge management and policy dialogue

During the OPI period, international partners have a range of lessons and results from studies, applied research, pilots and models and other project activities. A range of key outputs including lessons and models are currently becoming available. Some projects are approaching (or potentially approaching) an end and it is an appropriate time to pay close attention to ways in which lessons, findings, results and recommendations need to be captured and shared in practical, accessible and appropriate ways with decision-makers, experts and other key stakeholders in order to ensure both sustainability of key activities and application of results in national institutional structures, systems, policies and plans.

The project closely coordinated with a policy coordination group comprising representatives of USAID and USAID partners as well as other key stakeholders. This group convened at the working level to bring together to share their policy & advocacy plans and activities, and to identify opportunities for exchange and coordination, support the identification of policy topics, experiences, lessons and policy recommendations as well as target audiences, documentation formats and policy advocacy channels and events to enhance API knowledge management and policy dialogue. At least 10 working meetings have been conducted throughout project period.

Information sharing, exchange and policy dialogue between national and international members of the Partnership were supported through meetings, briefings on the meetings of the National Steering Committees for Avian Influenza Prevention and Control and Human Pandemics, the PAHI Website and the PAHI Newsletter. PAHI continues an effective bridge between national and international API partners.

With the support of US Intern on Knowledge Management assigned for a period of 9 weeks plus home-country follow up, the project reviewed the existing API knowledge management and information sharing, collecting key materials from PAHI members to be synthesized and presented on e-library.

The project continued to use the website of the Partnership as a key repository of knowledge and analysis on HPAI, pandemic preparedness and zoonotic infectious disease threats related to the AIPED. Under this activity, the content management and presentation capabilities of the website were upgraded, drawing on effective examples from other networks in different fields in Viet Nam and from other countries. In addition to tapping into existing public and private systems for information dissemination, a supporting newsletter, google calendar and email network was maintained to alert members and stakeholders to new and existing resources and information. 04 edition of Partnership newsletters were developed printed and disseminated to partners on a quarterly basis.

2.4. API Policy Advocacy

In order to enhance knowledge management and policy dialogue, integrate lesson learnt from the previous period, Project worked closely with policy coordination group including representatives of USAID and USAID's partners as well as other key stakeholders to identify key issues for policy advocacy related to the consolidation and institutionalization of investment activities for API and replication of successful models to ensure sustainability of API prevention activities in Vietnam. 06 policy advocacy forums conducted (H5N1 control and

prevention plan 2013-2017(21 Feb 2013), PMAC follow-up event (21 Mar 2013), OH conference (3-4 Apr 2013), H7N9 conference (6 May 2013), Economic study consultation workshop (31 May 2013) and Enhanced coordination and stakeholder mapping workshop (15 July 2013))

Key products of the Project are as follows:

- Consultation input for the National Operation Plan on AI Control and Prevention for the Agriculture Sector, 2013-2017: the Project provides the consultation to support the national review of the HPAI prevention and control strategy in the agriculture sector to be conducted by the Department of Animal Health of the Ministry of Agriculture, and to support the development of the proposal for the strategy for HPAI prevention and control in the coming period 2013-2017.
- OH Conference Report: National Conference on applying a One Health approach to infectious disease risks at the human-animal-ecosystem interface in Viet Nam was conducted in Hanoi on April 3-4, 2013 by the Ministry of Agriculture and Rural Development (MARD) together with the Ministry of Health (MOH) and international partners. The overall purpose of the Conference is to provide an opportunity for the Government of Viet Nam and its partners to highlight national One Health initiatives and take stock of progress and achievements over the previous period as well as ongoing constraints and areas requiring further efforts. Followed up from the OH Conference, OH report together with National One Health Roadmap was prepared.
- Review of national API coordination mechanisms and recommendations for enhancing national coordination of Emerging Infectious Diseases. This review is one key activity of KMP-API Project. The primary focus of the report is on the national steering committees and the related PAHI partnership. Other related coordination mechanisms at the central and provincial levels are also considered, drawing on field trips to three locations in different regions of the country. Based on the review, the report on Enhancing Coordination on Emerging Infectious Diseases in Viet Nam was prepared, including a number of key recommendations and options for the

national coordination mechanism. In parallel, the proposal for future activities of the Partnership and enhancing One Health implementation in Viet Nam was reflected.

- Study on the economic impacts of emerging infectious diseases (EIDs) in livestock in Viet Nam: The report is intended to provide a basis for briefings to national leaders, decision-makers and senior technical and economic experts within relevant sections of the Government of Viet Nam, as well as international donors and technical agencies, contributing to effective prioritization, policy directions and resource allocations related to animal disease prevention, surveillance and response and other related areas.
- Report on mainstreaming and linkages of API activities to One Health and related sectors, activities and networks: This study has mapped out a number of groups of possible and potential stakeholders who have been working and/or willing to work in the concerned areas related to One Health perspectives.
- OH Stakeholder mapping in Vietnam: this report outlines a preliminary mapping of One Health issues, stakeholders and projects in Viet Nam, as presented at the National OH Conference in Hanoi on April 3-4, 2013 by the Ministry of Agriculture and Rural Development (MARD) together with the Ministry of Health (MOH) and international partners for clarifying roles and responsibilities for OH issues, building understanding of OH approach, identifying the key OH partners, the key outcomes and gaps.

3. Financial performance for KMP-API (Year 2012 & 2013)

Allocated resources	Approved Budget (as in the revised AWP)	Actual Expenditure	Delivery rate (%)
Contribution of UN agency (USD):			
Activity 1: Successful launching and rolling out of the AIPED 2011-2012	56,657	63,094	111
Activity 2: Enhanced API knowledge management and policy dialogue and an enabling	141,754	137,687	97

environment for API policy advocacy and strategic discussions			
Activity 3: Supported personnel and operations costs for coordination of national and international partners and activities under AIPED 2011-2015	81,963	79,143	97
GMS 7%	19,626	19,626	
Total 1	300,000	299,550	99.85
Government contribution:	14,285	14,285	100
Total 2	14,285	14,285	100
Subtotal (1+2)	314,285	313,835	99.85

4. Key coordination factors/challenges that affected the implementation of the project

- As in many countries, working between different sectors can be challenging and officials feel that it requires the involvement of senior leaders (PM, Ministers), who are very busy on many issues.
- Formal cross-sectoral collaboration outside of emergency periods remains difficult and lead/collaborating agency roles are not always clear. E.g. despite strong collaboration on AI, the new EID committee in MOH does not include animal health representation.
- While many senior MARD and MOH personnel have now been introduced to One Health concepts, and are open to applying a One Health approach in line with international directions, strong champions within ministries have not yet emerged.
- Taking concrete steps to incorporate issues such as wildlife health is still proving difficult despite initial engagement from MARD leaders

- Involvement of related actors outside human and animal health is still very limited e.g. environmental health, non-health preparedness for public health emergencies, national disaster mechanisms.
- Investments focus mainly on response rather than prevention.
- National resource allocations, particularly for surveillance and prevention, are very limited and usually only provided after a problem emerges.
- International resources are decreasing as attention shifts to other issues.
- Linkages between academia and policy makers remain relatively weak. Peer reviewed publications at an international standard are still very rare, meaning the national evidence base for policy makers is very limited.

5. Lessons Learned

5.1. Lessons Learned under scope of the project

- The approval process in line with the requirements of UNDP and the Government of Viet Nam, as outlined in the Vietnam-United Nations Harmonized Project and Programme Management Guidelines (HPPMG) and in line with the One Plan between the Government of Vietnam and the United Nations for the period 2012-2016 requires a lot of time and effort for advance planning and follow up.
- The project applies a new approach for the United Nations in Viet Nam together with the Government of Viet Nam, which led to some delays in official approval of the project. The KMP-PAHI project was the first new project of UNDP to be approved by the Government of Viet Nam under the new procedures. This new approach may need more support from UNDP and governmental administrative agencies for their guidance to project preparation and implementation.
- The areas of work covered by the Partnership related to different sectors, particularly agriculture and health. The overall supervision of the PAHI Secretariat is provided jointly by the International Cooperation Departments of MARD and MOH.
- Some difficulties and delays have been experienced collecting information and requirement from some of API and EID partners under the Partnership. This challenge indicated the need for greater effort to follow up with these agencies.

- PAHI Secretariat needs to maintain a flexible approach to planning and budgeting to respond to member requests and emerging issues in the context of a Partnership approach.
- Most of project activities should have the participation of API and EID partners therefore the implementation of planned activities depends on the availability of personnel in charge from agencies and related partners. Fixing the time for their participations and commitment is also a challenge.
- The consultancy process may take time for the common consensus, for example a lot of initiatives of project for policy advocacy cannot implemented as the consultancy process among policy advocacy coordination group (PACG) is difficult to reach the consensus as well as full attention.
- The length of project is 16 full months however the mobilization of a number of national and international consultants put a huge workload to project against time constraint. The support from API network to indentify the potential candidates is very helpful.
- The Partnership continues to be identified by members and others as a model for other sectors and areas. The extension of the Partnership in line with period of AIPED is important to support the implementation of AIPED. However, in the context of these different aspects of transition in the national response, there is also a need to review the scope, mandate, membership, name, future activities, levels of integration into national government structures and funding modalities and sources of the Partnership through the remainder of the AIPED implementation period.

Lessons Learned under coordination context in general but closely linked with the project

- Revision of the national coordination mechanism, to establish a unified permanent overall mechanism for prevention and control of zoonotic diseases; High-level chairing (PM/Deputy PM if possible); Clear assignment of roles and responsibilities;
- Strengthened involvement of sectors responsible for non-health preparedness, wildlife health, environmental health & civil society;
- Clear milestones and timeframes for One Health progress (“Roadmap”);
- New mandate for revised Partnership to address One Health coordination;

- Adequate resources, including through recurrent financing, targeted investments, private sector and ODA where necessary;
- Strengthened relationships between policy makers and technical experts, including national and international universities/institutes;
- Stronger focus on prevention, including biosecurity (in both livestock and wildlife value chains) and disease drivers/eco-health;
- Continued attention to avian influenza control and prevention;
- Incorporating specific zoonotic disease prevention and control programs into overall One Health coordination/efforts;
- Continuing and building on effective international cooperation established over the past decade, including IHR and WAHIS reporting and related capacity development activities on surveillance, etc.
- Continuing communication efforts, broadened to One Health, including risk communications capacity building and preparedness and targeted BCC.

PROJECT PROGRESS REPORT

Quarter 1/2013

Project Code & Title: 00064804 - Support to Knowledge Management and Policy Dialogue through the Partnership on Avian and Pandemic Influenza (KMP-API)
Implementing Partner: Ministry of Agriculture and Rural Development (MARD)

PROJECT INDICATORS AND QUARTERLY TARGETS	ACT. OR GROUP OF ACTIVITIES	PLANNED ACTIVITIES AND ACTUAL ACHIEVEMENT	DEGREE OF ACHIEVEMENT (DISBURSEMENT VS PLANNED BUDGET)				FUNDING ISSUES, reasons for adjustment, emerging issues and recommendations (Note)		
			Fully Completed	In Progress	Not Started	Shared Funding (%)	Planned Amount (USD)	Expended (act.) (USD)	Balance, rate (%)
1	2	3	4	5	6	7	8	9	10
Indicator 1: Mechanism for implementation of APIPD National Operational Programme on Avian Influenza Pandemic Preparedness and other Emerging Infectious Diseases, APIPD 2011-2015 developed	1	Result 1: Activity 1: Successful launching and rolling out of the APIPD 2011-2015	X						
2.1		Disseminate APIPD plan to national partners at the central level, to provincial steering committees, and to international partners and other stakeholders and support the roll-out of the national programme				APPR	-		Completed
2.2		Collect information on donor and national funding in a matrix for APIPD, and provide advice as required on potential funding needs and potential funding resources	X			APPR	-		Partly Completed
3		Review Communication Strategy Framework 2006-2016 and develop the Strategic Framework for public awareness raising and ECC for APIPD 2012-2015					2,000	2,000	100%
3.1		Support the organization of the following OHCN Meeting: online sharing			X	APPR	2,000		Not started. Meeting Ex Q2 with consultations of donors
3.1.1		Support the organization of the following OHCN Meeting: online sharing			X	APPR	2,000		Not started. Meeting Ex Q2 with consultations of donors
3.1.2		Support the organization of the following OHCN Meeting: online sharing			X	APPR	2,000		Not started. Meeting Ex Q2 with consultations of donors
3.1.3		Support the organization of the following OHCN Meeting: online sharing			X	APPR	2,000		Not started. Meeting Ex Q2 with consultations of donors
3.2		Support the organization of the following OHCN Meeting: online sharing			X	APPR	2,000		Not started. Meeting Ex Q2 with consultations of donors
3.3		Support the organization of the following OHCN Meeting: online sharing			X	APPR	2,000		Not started. Meeting Ex Q2 with consultations of donors
3.3.1		Support the organization of the following OHCN Meeting: online sharing			X	APPR	2,000		Not started. Meeting Ex Q2 with consultations of donors
3.3.2		Support the organization of the following OHCN Meeting: online sharing			X	APPR	2,000		Not started. Meeting Ex Q2 with consultations of donors
3.3.3		Support the organization of the following OHCN Meeting: online sharing			X	APPR	2,000		Not started. Meeting Ex Q2 with consultations of donors

1.3.4	Document to National CH communication strategic workshop	X			When		2,890		Due to the time limit for the inter-agency workshop to be available at Vietnam, this workshop was expected to be conducted on 28 February. The workshop activity has not yet been reflected in OWP 1201.2 and recorded as a payment taken from cost saving from the unimplemented activities of Quarter 1.
4	Support the development and approval of the National M&E Framework for APH 2011-2015					100	-		Completed
1.4.1	Conduct a workshop to update on inter-agency M&E framework for the approval of NSCA and communication to relevant GOV's agencies and PMU's partners	X				100			OWP Framework to be approved by the Decision No. 40/2007 QCVN, HCT dated on 23 March 2014. The Framework is required to be printed for the official dissemination.
1.5	Support the application of a One Health Approach to the implementation of APH 2011-2015					10,419	-		Completed
1.5.1	Conduct a workshop to update on inter-agency progress on One Health, take stock of progress in Viet Nam since the first national One Health workshop in October 2014, and provide a forum for updates on specific projects and programmes, e.g. HPT, and identifying practical ways to enhance One Health under APH 2011-2015		X			14,919			1. April: Conduct the meeting will be held in quarter 2. The workshop has been organized in much larger scale (higher level and number of participants, length of days) and full days, much larger and profound outcomes... The official title of the event is "National Conference on applying a One Health approach to measures, disease risks at the inter-agency level in Viet Nam". The main conference will be conducted on 25 April. All preparations and follow-up on the contents and logistics to be completed. As assigned at the beginning of the project, the topic on One Health is conducted as form of a workshop, small scale, however in the implementation period of the project, based on the request from PMU, this workshop is upgraded into much larger scale as a national conference. And One Health should be a topic of one policy advance forum. It is noted that session 1.5.1 content (quarter 2) is conducted a workshop... as we have to follow the meeting of original version of approved OWP 2011-2015. It is noted that specific policy area of the content based on the dissemination required by Policy. 1.5.1 content of the workshop is conducted in quarter 2. Completed in fully drive activity for the next quarter payment to be made partly in the following quarter.
1.6	Reporting and documentation (including translation, editing)	X			When	500	300	61.29	
1.7	Domestic travel for project staff					300	-		
1.7.1	Travel to Ho Chi Minh city to conduct the workshop to support the application of a One Health Approach for the implementation of APH 2011-2015			X	When	300			The OHA conference will be conducted in Hanoi. Therefore, no travel cost at Hanoi is required.
1.8	Develop and regularly update the Google calendar to update PAHI members and other related partners on the best events related APH in Vietnam and in the world	X				-			Completed
	Total for output 1					13,879	3,250	21.42	

Means of verification (M&E):
- Workshop proceedings - media coverage (press release circulated)

[illegible]

2.3.2	Translation of the national operational plan into a context and mechanism based on the discussion from the workshop review of M context and mechanism	X			588,440	470	2,800	62,778	Completed	
2.3.3	Preparation of the report/summary of the first national policy discussion forum		X						In progress	The report for "PMAT" Policy-up Review on Visa Entry is in progress for negotiation
2.4	Make the design, update, printing and subscription of FAH Newsletter				6,680,000	2,700	-		Completed	
2.4.1	Complete collection and preparation of the first issue design	X			3,000,000				Completed	
2.4.2	Complete translation and layout for the first issue review	X			3,680,000				Completed	
2.4.3	Approval for printing of the first issue newsletter		X						In progress	
2.4.4	Printing and distribution of the first issue newsletter		X		3,680,000	3,700			In progress	
2.4.5	Volunteering and maintenance of FAH Website Q1 13	X			3,000,000	5,000		-	Completed	The website is maintained and administrated regularly for the internet to be made in the following quarter
2.5	Carry out specific reviews and studies to enhance coordination, policy and strategic decision-making related to AIPP 2013-2015					230	315	136,596		
2.5.1	Develop the draft report together with the participation of the review of coordination mechanisms		X		3,000,000	-			In progress	The draft report and international consultation has come up with a set of preliminary facts and recommendations. The final report is expected to be submitted in the end of Q3.
2.5.2	Multilateral of the national involvement to conduct the mapping across the team meeting and linkages with related sector, activities and networks, and review of the Partnership for support AIPP 2013-2015	X				270	345	136,596	Completed	Terms of the first and secondment activities
2.5.2.1	Develop TCR for the support for the extension, make adjustment on TCR website and news paper, screening									
	Total for output 2					10,090	3,500	32,400		
3	Result 3: Activity 3: Supported personnel and operations cost for coordination of national and international partners and activities under AIPP 2013-2015									
3.1	Secretariat Personnel costs					12,615	8,422		In progress	
3.1.1	Personnel for Project Staff	X			6,000,000	12,615	8,422	66,260		The actual salary payment to be made in the early period of quarter 2 as the commitment to be change of this activity was indicated fully in support the logistic preparation for the conference to be conducted in Q3 April and Q4 May all to support this work was in progress
3.1	PAH Secretariat's Office expenses	X			2,000,000	2,796	1,123	40,885		Activity Completed
	Total for output 3					15,411	9,545	62,077		The total payment to be made in the early period of quarter 2 as the commitment to be change with this activity was indicated fully in support the logistic preparation for the conference to be conducted in Q3 April
	TOTAL					40,279	16,175	40,65		

(*) Please specify Other sources of funding if any, e.g. OPI, ADIB, WB, a bilateral donor, etc... Please keep each source on one line.

(**): This is the amount in the latest approved budget revision.

Award ID: 80865/KMP-API

Award Title: Partnership of Avian and Human Influenza (PAHI)

CASH RECEIPTS AND DISBURSEMENT JOURNAL (SECRETARIAT EXPENDITURES)

Currency: VND

Date	Description	Cheque No/BT	Payee	Voucher	Receipt (Debit)		Disbursement (Credit)		Balance	Debit	Credit	Allocation		
					Month	Cumulative	Month	Cumulative				Project ID	Activity ID	Account
1/1/2013	Quarterly Re-Opening													
3/28/2013	Payment stationery for meeting on 28 Feb. 13 on Fortuna Hotel	BT	CT TNHH DV Hung Nghia	136		556,990,538	1,791,515	246,573,086	592,845,514	1,791,515	-	80865	AIPEL inception	75705
3/20/2013	Payment for translation for meeting on 28 Feb. 13 on Fortuna Hotel	BT	Nguyen Van Y	138		556,990,538	2,438,631	251,149,766	588,268,834	2,438,631	-	80865	AIPEL inception	75705
3/20/2013	Payment for interpretation for meeting on 28 Feb. 13 on Fortuna Hotel	BT	Nguyen Van Y	141		556,990,538	4,220,100	310,964,366	528,454,234	4,220,100	-	80865	AIPEL inception	75705
3/20/2013	Payment for organizing the meeting on 28 Feb. 13 on Fortuna Hotel	BT	CT TNHH TV & TM V-LEAD	142		556,990,538	51,697,100	362,672,466	476,746,134	51,697,100	-	80865	AIPEL inception	75705

Nguyen Hong Thuy
Accountant

Dao Thu Trang
Secretariat Manager

Luong The Phiet
General Director

Fund	ODJPM	
	Donor	
30000	10480	1,3,5
30000	10480	1,3,5
30000	10480	1,3,5
30000	10480	1,3,5

Very similar to p. 2094. However this is Qtr 2 as opposed to Qtr 1

QUARTERLY PROJECT PROGRESS REPORT

Quarter II/2013

Project Code & Title: 00064004 - Support to Knowledge Management and Policy Dialogue through the Partnership on Avian and Pandemic Influenza (KMP-API)

Implementing Partner: Ministry of Agriculture and Rural Development (MARD)

PROJECT OUTPUTS, INDICATORS AND QUARTERLY TARGETS	ACT. OR GROUP OF ACTIVITIES	PLANNED ACTIVITIES AND ACTUAL ACHIEVEMENT	DEGREE OF ACHIEVEMENT			DISBURSEMENT VS PLANNED BUDGET				Pending issues, reasons for adjustment, emerging issues and recommendations /Note
			Fully Completed	In Progress	Not started	Source of funding (*)	Planned Amount (**) (USD)	Expenditure (USD)	Disburse. rate (%)	
1	2	3	4	5	6	7	8	9	10	11
	1	Result 1: Activity 1: Successful launching and rolling out of the AIPED 2011-2015								
	1.1	Disseminate AIPED plan to national partners at the central level, to provincial steering committees, and to international partners and other stakeholders and support the roll-out of the national programme	X			30000	-			Completed
	1.2	Collect information on donor and national funding in a matrix for AIPED, and provide advice as required on potential funding needs and potential funding resources	X			30000	-			Completed
	1.3	Review Communication Strategic framework 2008-2010 and develop the Strategy framework for public awareness raising and BCC for AIPED 2012-2015					23,386	20,024	85.62	
	1.3.1	Support the organization of the follow-up OHCN/SG Meeting: minute sharing			X	30000	2,226			Not started Normally, this is regular meeting to be conducted based on the request of the OHCN members and PAH Secretariat supports the facilitation of this kind of event. At this quarter, there was no requirement from the OHCN for this activity. It is suggested from the Project that in case there is the request from OHCN partners to conduct the meeting, we will use the meeting room of MARD to save the cost. The cost for this activity will be shifted to other activities that are required over the budget (for example cost of international consultants (2.1.2, 3.2 on ITN9 conference...))

1.3.2	Second draft for the One Health (OH) Strategic Communications Framework for Avian Influenza, Pandemic Preparedness and Emerging Infectious Diseases, 2012-2015 submitted by international consultant. Based on the review of the second draft by PAHI Secretariat, the payment to international consultant to be made.	X				19,360	19,360	10,560	100,700	Completed	
1.3.3	Share the second draft to OHCCN for final review and revision. Get consultation, edition and submit the OH Strategic Communication Framework for the approval of NSCAF.	X	X		30,000	1,000	464	29,400		Partly completed As planned the second draft of the report need to be shared with the members of OHCCN and NSCAF for final round of comments and feedback. To do this, the draft report was translated into Vietnamese to comment and review. Due to the late response from the members of NSCAF, the second draft has not been revised. Therefore the activities of editing is still pending until the second draft is synthesized from the feedback of NSCAF. After received the feedback from NSCAF, in general, we got no additional comment from NSCAF except for the Ministry of Trade and Industry. It is has considered how to integrate the comments.	
1.4	Support the development and approval of the National N&E Framework for AIPED 2011-2015					3,250	3,100		94,51		
1.4.1	The National N&E Framework to be approved by NSCAF, printed and dissemination to Vietnam GFV's agencies and PAHI's partners	X				3,250	3,100		94,51	Months completed. The document has been completed in printing and will be ready for dissemination.	
1.5	Support the application of a One Health Approach to the implementation of AIPED 2011-2015					24,959	25,015		100,24		
1.5.1	Conduct an OH conference to promote the application of a OH approach. Consider how the ongoing national One Health projects and activities in Viet Nam; to identify a key set of tasks, steps and a guideline to support the Government of Viet Nam in establishing a One Health road map and action plan (3-4 April)	X				24,959	25,015		100,24	Completed	
1.6	Reporting and documenting (including translation, editing)	X			31,000	700	608		86,86	Completed	
1.7	Domestic travel for project staff		X			650	-		-	Not conducted as there is no requirement from API and FHO partners for PAHI's staff to travel	
1.8	Develop and regularly update the timeline calendar to update PAHI members and other related partners on the key events related/on API in Vietnam and in the world	X				-					
	Total for output 1					53,405	48,750		91,97		

[illegible]

2.3	Organize national policy discussion forums for GAV and other PAHI members to discuss on specific policy areas and identify recommendations based on the work results and discussion from PAHI members.							17,343	35,478	86.36	Completed
2.3.1	Organization of national conference on National Conference on applying a One Health approach to infectious disease risks at the human-animal-ecosystem interface in Viet Nam. (3-4 April)	X					3,000				Completed
2.3.2	Payment for Organization of 81 national policy discussion forum for GAV and other PAHI partners. Specific policy area of the forum based on the discussion identified by Policy discussion coordination group (PAC-G) (PMAC follow up meeting on 21st Mar. 13)	X					3,000	2,518	2,518	100.02	Completed. Actually forum on "PMAC" follow-up forum in Viet Nam" was conducted on March 21, 2013 at Melia Hotel, 4th Ly Thung Kiet, Hanoi. The actual payment was delayed until the early period of quarter 2 as in the previous quarter, the accountant to be in-charge of this activity was not fully to support the logistic preparation for CHI conference to be conducted in 2-3 April
2.3.3	Preparation of the report/proceeding/reading based on the outcomes of the National Conference on applying a One Health approach to infectious disease risks at the human-animal-ecosystem interface in Viet Nam. Make translation, editing, printing and dissemination to the stakeholder				X			2,850		-	
2.3.4	Organization of national forum on briefing on the international conference on influenza (A/H7N9) disease situation and Vietnam's prevention, control and preparedness activities and announce mobilization on 6 May, 2013	X						8,000	10,108	125.96	Completed. The announced compared to the plan is attributed to some significant changes in logistic preparations for the conference. The actual number of participants is more than the number of person to be sent the invitation. There were more than 200 participants to attend the conference. The Manager sought the acceptance of the PMDP PO at the conference and then report on the actual figure through staff
2.3.6	Organization of a possible forum to support policy advocacy activity: Specific policy area of the forum based on the discussion identified by Policy Advocacy and Coordination group (PAC-G)	X						4,005	2,528	61.76	Completed. The workshop on the Policy Advocacy Findings on Estimating the Economic Impacts of Emerging Infectious Disease (EPI) in Animals to Vietnam was conducted successfully. Based on the rate for the hotel which has been approved at the QWP Q2, the workshop was conducted at Pullman Hotel, 40 Cat Linh on 31 May 2013 with participation of 15 persons
2.3.7	Develop and make the professional design of brochures/discussion on AHI-EPI partner's activities for Knowledge Management purpose (under the request of USAID)	X						362	236	64.92	Completed under the request of USAID
2.4	Make the design, update, printing and dissemination of PAHI Newsletter						5,000	7,400	7,360	99.46	Completed
2.4.1	Make payment for the second issue newsletter	X					3,000	3,200	3,104	98.89	Completed

2.4.2	Content collection and preparation of the third issue newsletter	X					-		Completed
2.4.3	Complete Content and Layout for the third issue newsletter	X					-		Completed
2.4.4	Approval for printing of the third issue newsletter	X					-		Completed
2.4.5	Printing and dissemination of the third issue newsletter	X					3,200	3,196	Completed
2.4.6	Administration and maintenance of PAH Website. Make response for Q1, Q2, and Q3	X					1,000	1,004	Completed
2.5	Carry out specific reviews and studies to enhance coordination, policy and strategic decision-making related to AIPFD 2011-2015						2,945	-	
2.5.1.	Complete the draft report together with the recommendation based on the review of coordination mechanisms	X					-		Completed
2.5.2.2	Consultation meetings with national and international agencies in Haiti working on AIP and related activities; HVA partnerships; international OVA partners; and civil society stakeholders working on possibly scheduled issues outside AIP; with private sector, business, academic and civil society stakeholders working on possibly scheduled issues outside AIP		X				2,945		Partly completed. The workshop was conducted on 15 July, incorporated with the Coordination mechanism review. The consultant has conducted a number of meetings with national and international stakeholders in Haiti during their interview period. For the big workshop with all relevant and key stakeholders based on the discussion between PAH's Secretariat and the consultant, the consultant expected to conduct the workshop to share the preliminary findings on OH main-streaming and linkage (it is not the workshop for gathering the information at the start of the consulting works as previous plans). Therefore, this activity is pending until the consultants completed the draft report to share with partners.
3	Total for output 2						85,841	82,578	37,94
3.1	Result 3: Activated personnel and operational costs for coordination of national and international partners and activities under AIPFD 2011-2015								
3.1.1	Secretariat Personnel costs						17,055	14,476	84,88
3.1.1	Payment to Project Staff	X					17,055	14,476	84,88
3.2	PAH Secretariat's Office expenditure	X					3,246	2,769	70,86
	Total for output 3						30,301	16,776	82,64
	TOTAL						159,147	98,096	61,64

(*) Please specify Other sources of funding if any, e.g. OEF, ADR, WB, a bilateral donor, etc... Please keep each source on one line.

(**): This is the amount in the latest approved budget revision.

QUARTERLY PROJECT PROGRESS REPORT

Quarter III/2013

Project Code & Title: 00064004 - Support to Knowledge Management and Policy Dialogue through the Partnership on Avian and Pandemic Influenza (KMP-API)

Implementing Partner: Ministry of Agriculture and Rural Development (MARD)

PROJECT OUTPUTS, INDICATORS AND QUARTERLY TARGETS	ACT. OR GROUP OF ACTIVITIES	PLANNED ACTIVITIES AND ACTUAL ACHIEVEMENT	DEGREE OF ACHIEVEMENT			DISBURSEMENT VS PLANNED BUDGET				Pending issues, reasons for adjustment, emerging issues and recommendations (None)
			Fully Completed	In Progress	Not started	Source of funding (%)	Planned Amount (***) (USD)	Expenditure (USD)	Disburse. rate (%)	
1	2	3	4	5	6	7	8	9	10	11
	I	Result 1: Activity 1: Successful launching and rolling out of the AIPED 2011-2015								
	1.1	Disseminate AIPED plan to national partners at the central level, to provincial steering committees, and to international partners and other stakeholders and support the roll-out of the national programme	X			30000	-			Completed
	1.2	Collect information on donor and national funding in a matrix for AIPED, and provide advice as required on potential funding needs and potential funding resources	X			30000	-			Completed
	1.3	Review Communication Strategic framework 2008-2010 and develop the Strategy framework for public awareness raising and BCC for AIPED 2012-2015				30000	1,110	1,092	98.41	
	1.3.1	Revise the final draft based on the comment of NSCAI, Get edition and submit the OHI Strategic Communication Framework for the approval of NSCAI		X		30000	1,110	1,092	98.41	Mostly completed. The final draft has been shared to national and international partners, especially all members of NSCAI. The Government is under the internal review before official approval.
	1.4	Support the development and approval of the National M&E Framework for AIPED 2011-2015					180	158	88.05	
	1.4.1	The National M&E framework to be approved by NSCAI, printed and dissemination to relevant GOV's agencies and PAH's partners. (dissemination costs)	X			30000	180.00	158	88.05	Completed
	1.5	Support the application of a One Health Approach to the implementation of AIPED 2011-2015								
	1.6	Reporting and documenting (including translation, editing)	X			30000	220	117	53.18	Completed. Save the cost as much of translation requirement was carried by the secretary. The project only uses professional translation service if necessary.

1.7	Domestic travel for project staff	X				400	404	67.56	Completed The cost is based on the actual payment
1.8	Develop and regularly update the Google calendar to update PAHI members and other related partners on the key events related on API in Vietnam and in the world	X				-			Completed
	Total for output 1					2,110	1,772	83.95	
2	Result 2: Activists 2: Enhanced API knowledge management and policy dialogue and an enabling environment for API policy advocacy and strategic discussions								
2.1	Enhanced knowledge management and information sharing					19,480	19,480	100.00	Completed
2.1.1	Enhanced knowledge management and information sharing by combining 3x-reflected key materials from PAHI members to upload on PAHI website, upgrade the capacity, storage of PAHI website, collecting key facts/information to support the policy advocacy process					-			
2.1.2.1	2x1 postcard to the International Policy Advocacy was sent based on acceptance of the documentation of proceedings and papers of the National One Health Conference and the mapping of One Health stakeholders	X				9,740	9,740	100.00	Completed
2.1.2.2	Postcard payment to the International Policy Advocacy Council	X				9,740	9,740	100.00	Completed
2.2	Commission a specific study on policy coordination aspects (focusing on aspects not being directly covered by other partners in their policy activities), including policy recommendations					37,139	37,132	99.82	
2.2.1	Visit upon based on the feedback of API partners to be identified. Payment to International Coordinator on the Economic Study to be made	X				29,458	29,458	100.00	Completed
2.2.2	Payment to National Council on the Economic Study	X				6,681	6,678	99.96	Completed
2.2.3	Printing the report on Estimating the economic impact of emerging infectious disease (EID) on animals in Viet Nam	X				1,750	1,745	99.71	Completed
2.3	Organize national policy discussion forums for CoV and other PAHI members to discuss on specific policy areas and identify recommendations based on the work results and discussion from PAHI members					540	495	91.72	
2.3.1	Make Payment for the remaining cost on the organization of national forum on building on the international influence of API2019 disease situation and Vietnam's prevention, control and responses activities and resource mobilization on 6 May, 2019. (176,000,000 VND)	X				840	495	91.71	Completed
	3.01 specific study								

(*) Please specify other sources of funding if any, e.g. OPE, ADB, WR, a bilateral donor, etc. Please keep each source on one line.

Project Monitoring Sheet: **OSRO/VIE/801/USA**Project title: **Gathering Evidence for a Transitional Strategy (GETS) for Highly Pathogenic Avian Influenza (HPAI) H5N1 Vaccination in Viet Nam**Reporting period: **September 2010 to March 2011**

Country: Viet Nam
Project title: Gathering Evidence for a Transitional Strategy (GETS) for Highly Pathogenic Avian Influenza (HPAI) H5N1 Vaccination in Viet Nam
Code: OSRO/VIE/801/USA
Budget: USD 4 million
Effective starting date: October 2008
Planned end date: 30 June 2011
Context of the project Viet Nam has been carrying out vaccination of poultry twice a year (October and April) since autumn of 2005 to control epidemic HPAI H5N1 with some considerable empirical evidence of success. However, it has been recognized that this control strategy is not sustainable for the whole country in the long term. Mass vaccination entails a large amount of financial resources from the Government and ties up significant human resources in the agriculture sector. Therefore, an alternative or more likely a parcel of complementary alternative control strategies will have to be devised as Viet Nam moves from initial emergency measures to a period of consolidation and ultimately on to the stated aim of control/eradication beyond 2010 (Green Book). This project is investigating and gathering evidence on alternative vaccination strategies in provinces with high and low risk for HPAI H5N1 outbreaks.
Objective of the project The main objective of the project is to provide field data to the Ministry of Agriculture and Rural Development (MARD) by testing a number of alternative vaccination strategies and the complementary strategy of improved surveillance. This data will assist MARD in its selection of a future vaccination strategy.
Planned Activities for this Reporting Period: Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1), and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1) <i>Activity 1.1&2.1 Needs assessment undertaken and work plan finalized</i> <ul style="list-style-type: none"> Monitor field activities and make amendments to agreements as required. Test the market survey programme to determine suitability for use in other provinces throughout the country. Hold discussions with the Department of Animal Health (DAH) regarding the interim results and their value in future plans for vaccination. Organize a workshop for discussions regarding the future vaccination strategy for Viet Nam. Present the GETS interim results at this workshop. <i>Activity 1.2&2.2 Public awareness campaigns</i> <ul style="list-style-type: none"> Continue round III of the public awareness campaign with televised announcements via five provincial television stations to coincide with the vaccination campaign and ensure that the voices are dubbed in local dialects. <i>Activity 1.3&2.3 & 1.4&2.4 Farms identified/sampled</i> <ul style="list-style-type: none"> Continue monitoring of sentinel duck flocks to ensure commitment to the programme. Continue the serum sampling and revised swabbing component of the programme with samples taken and analysed each month. <i>Activity 1.5&2.5 Equipment procured including vaccine</i> <ul style="list-style-type: none"> Enquiries are being made regarding the procurement of a mobile real time – polymerase chain reaction (RT-PCR) machine to be used for analysis of the samples from the market survey. <i>Activity 1.6&2.6 Training undertaken</i> <ul style="list-style-type: none"> Plan market events at local poultry markets. Contract a training programme for animal health workers to a national partner. <i>Activity 1.7&2.7 Data gathering</i> <ul style="list-style-type: none"> Undertake 2010 Round II vaccination and Round II post-vaccination monitoring. Monitor data collection and data entry activities in each province to ensure that the Access database is being utilized efficiently.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

Activity 3.1 Component planning/oversight

- Perform data analysis during the first nine months of the intervention.

Activity 3.2 Team recruited

- No recruitment planned for this period.

Activity 3.3 Data gathering

- Ongoing data analysis activities.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

Activity 4.1 Component planning/oversight

- Undertake market surveys to identify other risk factors, such as traders, and include interviews as well as a collection of samples for analysis.
- Continue monitoring of high-risk mobile duck flocks in all communes in the GETS provinces and ensure vaccination of these flocks. These flocks present a high risk for disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated.

Activity 4.2 Training DAH-RAHO and MoH-Regional Health Office (RHO)

- Initiate training of village animal health workers.

Activity 4.3 Operational funds arranged/distributed

- Continue to support outbreak investigation activities, as well as supply chain analysis for risk factors.

Activity 4.4 Data gathering from outbreaks nationwide (64 provinces)

- Continue outbreak investigation activities with attendance at all outbreaks in the GETS provinces and neighbouring provinces by the GETS regional coordinators with the aim of providing accurate disease investigation reports.

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

Activity 5.1 Component planning/oversight

- Undertake further analysis of the behavioural component of the poultry industry survey and the Chief Animal Health Workers (CAHW).

Activity 5.2 Team recruited

- No recruitment will be undertaken during this quarter.

Activity 5.3 Data gathering

- Gather further data on the behaviour of the meat trader.

Output 6: Policy analysis of HPAI strategy including public/private sector collaboration and partnerships is undertaken

Activity 6.1 Component planning/oversight

- Undertake a study to determine the governance of the public/private partnerships including drug shops, meat traders and markets.

Activity 6.2 Team recruited

- Hold discussions with the Centre for Agricultural Policy (CAP) with a view of contracting their services.

Activity 6.3 Data gathering

- Gather data from the study to determine the governance of the public/private partnerships including drug shops, meat traders and markets.

Activities undertaken during the reporting period

Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1), and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1)

Activity 1.1&2.1 Needs assessment undertaken and work plan finalized

- Monitored field activities and made amendments to the following agreement: 1. 'Enhanced Reporting' to incorporate the revised cost of sample analyses, 2. 'Re-imbursement' to incorporate production losses in the sentinel duck programme. An agreement with DAH was signed to implement Round 2, 2010 Post Vaccination Monitoring. This monitoring programme was implemented and completed. An agreement was signed to implement the market survey programme. This programme was implemented and completed. Discussions were held with DAH regarding the interim project results and their value emphasized for their future plans for vaccination. A workshop was undertaken regarding the Government of Vietnam's (GoVN's) future vaccination strategy, and the GETS interim results were presented at this workshop. The GoVN draft

future vaccination strategy was announced at the meeting, and the GETS project results had a significant effect on this, as the draft was similar to the GETS intervention.

Activity 1.2&2.2 Public awareness campaigns

- Round III of the public awareness campaign was implemented and completed with televised announcements with voices dubbed in the local dialects via five provincial television stations that coincided with the vaccination campaign.
- A national partner (Communications and Rural Development-CRC) was recruited to undertake Training of Trainers (TOT) and Inter-Personal Communication (IPC) activities throughout the five GETS provinces to ensure the sustainability of the field activities following project completion. All the Department of Veterinary Services (DVS) staff and 86 IPC sessions for poultry farmers and hatchery workers and owners were carried out. Billboards and posters were set up throughout the five GETS provinces to promote the importance of disease reporting and disease control practices.

Activity 1.3&2.3 & 1.4&2.4 Farms identified/sampled

- Continued monitoring of sentinel duck flocks was undertaken to ensure commitment to the programme. The serum sampling and revised swabbing component of the programme with samples taken and analysed each month was completed at the end of Quarter I (Q1) 2011.

Activity 1.5&2.5 Equipment procured including vaccine

- The procurement of a mobile RT-PCR machine to be used for analysis of the samples from the market survey was not undertaken because the company could not provide validation data in time for the start of the survey. Samples were analysed using the regional laboratories as in the rest of the project.

Activity 1.6&2.6 Training undertaken

- Two TOT courses on communication skills for DVS staff were held in Nam Dinh on 4 Jan 2011 (with 28 participants, of which 18 were male and ten were female) and in Soc Trang on 7 Jan 2011 (with 20 participants, of which 16 were male and four were female). Some 86 Interpersonal Communication Sessions for high-risk poultry producers and hatchery workers were held in Quang Binh, Soc Trang, Hau Giang, Ninh Binh and Nam Dinh during January 2011. The total number of participants was 1 986, of which 1 668 were male and 318 female. Please refer to section Activity 1.2 & 2.2.
- FAO completed 43 training workshops for CAHWs on quality technical training for continued capacity building activities and sustainable and successful project implementation. The training for CAHWs was held in GETS provinces with 864 participants, of which 578 were male and 286 were female.

Activity 1.7&2.7 Data gathering

- 2010 Round II vaccination and 2010 Round II post-vaccination monitoring in the GETS pilot provinces were completed.
- Data collection and data entry activities were intensified in each province to ensure that the Access database is being utilized efficiently.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

Activity 3.1 Component planning/oversight

- Data analysis was completed for the first nine months of the intervention.

Activity 3.2 Team recruited

- An agreement was signed for implementation of Phase III of the Cost-effectiveness programme.

Activity 3.3 Data gathering

- Field data collection activities were completed for Phase III, and this data will be used to provide a full 12 month cost analysis of the GETS intervention compared to the 12-month period prior to the GETS intervention.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

Activity 4.1 Component planning/oversight

- Market surveys were completed in 100 markets across the five GETS provinces to identify other risk factors, such as traders, and included interviews as well as collection of samples for analysis. Laboratory results are available for Nam Dinh, Ninh Binh and Quang Binh. In Nam Dinh, a total of 1 600 ducks from ten districts were sampled and tested in pools of five, and none tested positive for H5N1. In Ninh Binh, 1 280 ducks were sampled in eight districts, all with negative results to H5N1. In Quang Binh, 800 ducks were sampled and tested in pools of five, and a total of ten pools (6.25 percent) tested positive for H5N1. All positive ducks in Quang Binh originated from districts where HPAI vaccination was not compulsory. The

data for the survey are currently being entered into the database prior to be fully analysed.

- The monitoring of high-risk mobile duck flocks was continued in all communes in the GETS provinces to assess vaccination status of these flocks. These flocks present a high risk for disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated.

Activity 4.2 Training DAH-RAHO and MoH-Regional Health Office (RHO)

- MARD and MoH district staff were involved in 42 joint training sessions.

Activity 4.3 Operational funds arranged/distributed

- Continue to support outbreak investigation activities, as well as supply chain analysis for risk factors.

Activity 4.4 Data gathering from outbreaks nationwide (64 provinces)

- Outbreak investigation activities continued with attendance of all outbreak sites in the GETS provinces and neighbouring provinces by the GETS regional coordinators with the aim of providing accurate disease investigation reports.

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

Activity 5.1 Component planning/oversight

- During the market surveillance programme, a survey was undertaken of the meat traders attending 100 markets throughout the five GETS provinces.

Activity 5.2 Team recruited

- A national partner was used to undertake the market survey of meat traders.

Activity 5.3 Data gathering

- Data on the meat traders was collected during the market surveillance programme.

Output 6: Policy analysis of HPAI strategy including public/private sector collaboration and partnerships is undertaken

Activity 6.1 Component planning/oversight

- A policy analysis study of the HPAI strategy was undertaken to determine the governance of the public/private partnerships including drug shops, meat traders and markets.

Activity 6.2 Team recruited

- A national partner, CAP, was contracted to undertake the study.

Activity 6.3 Data gathering

- The policy analysis study was implemented and completed.

Planned activities for the next three-month period

Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1), and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1)

Activity 1.1&2.1 Needs assessment undertaken and work plan finalized

- The vaccination intervention has been completed. Round II of the market surveillance programme will be contracted to a national partner for implementation and completion during the next quarter.

Activity 1.2&2.2 Public awareness campaigns

- Public awareness activities will be reviewed to determine further activities required.

Activity 1.3&2.3 & 1.4&2.4 Farms identified/sampled

Activity 1.5&2.5 Equipment procured including vaccine

Activity 1.6&2.6 Training undertaken

Activity 1.7&2.7 Data gathering

- Data analysis will be undertaken and completed and final project report prepared.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

Activity 3.1 Component planning/oversight

- Data analysis will be undertaken and completed and final project report prepared.

Activity 3.2 Team recruited

Activity 3.3 Data gathering

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

Activity 4.1 Component planning/oversight

- Data analysis will be undertaken and completed and final project report prepared.

Activity 4.2 Training DAH-RAHO and MoH-Regional Health Office (RHO)

Activity 4.3 Operational funds arranged/distributed

Activity 4.4 Data gathering from outbreaks nationwide (64 provinces)

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

Activity 5.1 Component planning/oversight

- Data analysis will be undertaken and completed and final project report prepared.

Activity 5.2 Team recruited

Activity 5.3 Data gathering

Output 6: Policy analysis of HPAI strategy including public/private sector collaboration and partnerships is undertaken

Activity 6.1 Component planning/oversight

- Data analysis will be undertaken and completed and final project report prepared.

Activity 6.2 Team recruited

Activity 6.3 Data gathering

Main challenges encountered and response provided

- As the project NTE is 30 June 2011, data analysis will be provided in the final report. However, the timeframe remaining does not allow for additional write up and submission for publication in the scientific journals. As it is desirable that results from GETS are provided in the public domain through scientific articles, it is herewith proposed that unspent funds remain with FAO to allow for preparation of manuscripts for submission in international peer review journals.
- Maintaining the commitment of the sentinel duck owners has been a challenge throughout the project. Regular visits by the veterinary authorities and the project regional coordinators have ensured that the majority of the flocks remained in the programme to provide valuable data on circulating virus levels.

Main progress made towards the achievement of project outcomes (from the start of the project activities)

Outputs 1&2: Feasibility and logistics to implement a Novel Vaccination Strategy (V2) compared with maintaining Standard Vaccination Strategy (V1), and to withdraw routine vaccination (V0) compared with maintaining Standard Vaccination Strategy (V1)

- Field missions to all provinces and the vaccine intervention plans were completed. The project work plan was completed and the agreement was reached with DAH/MARD for the intervention programme and the work plan.
- Implementation partners were chosen and guidelines for all field activities were completed. The Letters of Agreement (LoAs) were prepared and signed.
- The intervention was implemented to coincide with the second round of the Viet Nam Government's vaccination programme in October and November 2009.
- Implementation partners for the public awareness programme were contracted, and the initial capacity building training for over 900 district and commune veterinary staff, livestock extension officers and district public health officials was completed.
- "A New Stage" public awareness campaign with the production of audio-visual media products and leaflets was completed. The media release commenced with the local television advertisements starting in the last week of October 2009, which were aired four times per day until the end of December 2009 in the five pilot provinces. Implementation partners for the second stage of the public awareness programme were recruited. The media release products, in forms of three key audio spots, were aired across 717 commune loudspeaker systems, reaching an estimated three million people, and this activity was completed in May 2010.
- Enhanced surveillance, reporting and outbreak response activities, as well as sentinel duck monitoring and post-vaccination monitoring are ongoing in the field, and funds have been transferred to the provinces to support these activities. These activities were reviewed during field missions to each of the five GETS provinces in March 2010, and revised agreements were adopted to streamline project activities.
- Procurement and distribution to the provinces of five vehicles, 42 global positioning systems (GPS) and 714 fridges was completed. For the first time in Viet Nam, continuous vaccine cold chain storage was extended to the commune level throughout the five GETS provinces.
- Data collection activities are being streamlined with the introduction of an Access database in each of the Sub-Department of Animal Health (SDAH) offices in the GETS provinces, and training will be provided on the use of the database.

- During the International Ministerial Conference on Animal and Pandemic Influenza (IMCAPI) from 19 to 21 April 2010, the GETS team arranged a site visit for the United States delegation to IMCAPI and accompanied the delegation to the field. This included a presentation at the SDAH office in Ninh Binh, explaining project activities, as well as a field visit to a duck farm to view the vaccination process.
- Field data collection and data entry procedures were reviewed across the five project provinces, and a database was designed to assist in streamlining the data entry procedure. Refresher training was undertaken for data entry staff in the provinces and for the CAHWs who collect the data.
- Preliminary findings were presented to the Donor (USAID), DAH and other partners including the World Health Organization (WHO), Abt Associates Inc. and SCAPS at a meeting at the USAID office in June 2010. Input were provided by DAH as to their preferred format for the interim report. The interim report was completed and distributed to the DAH and the Donor. Presentation of preliminary results was undertaken at the regional USAID partners meeting in Bangkok. Discussions were held with DAH regarding the interim project results. A workshop was undertaken regarding the GoVN's future vaccination strategy, and the GETS interim results were presented at this workshop. The GoVN draft future vaccination strategy was announced at the meeting, and the GETS project results had a significant effect on this, as the draft was similar to the GETS intervention.
- The GETS project was presented to the Chinese Ministry of Agriculture in March 2011 during the Vietnam/Chinese collaboration meeting held in Beijing. An agreed recommendation from the meeting was that the Chinese MoA should undertake a similar GETS style targeted vaccination trial in China to explore the options for the current mass vaccination strategy.
- The market surveillance programme was implemented and completed across 100 markets throughout the five GETS Provinces. Results will supplement the sentinel duck survey results to provide a clearer picture of the circulating virus.
- A national partner was contracted to undertake TOT and IPC activities throughout the five GETS provinces to ensure the sustainability of the field activities following project completion. Billboards and posters were set up throughout the five GETS provinces to promote the importance of disease reporting and disease control practices.

Output 3: Cost-effectiveness of 'Novel versus Standard' (V2/V1) and 'Standard versus Withdrawal' (V1/V0) Vaccination Strategies undertaken

- The design of the cost-effectiveness component was subsequently reviewed and finalized with the assistance of an international rural economist. Discussions were pursued with a national partner to implement this component, and a work plan and budget were reviewed and finalized. Completion and signing of the LoA with the national partner, SCAPS, facilitated the commencement of field activities and data gathering. The SCAPS team, accompanied by the GETS regional coordinators, visited each of the five pilot provinces and commenced data collection activities. Phase I of the programme was completed.
- Phase II of the cost-effectiveness programme was implemented, and data collection is completed.
- Phase III of the cost-effectiveness programme was implemented, and data collection is completed. The data will be used to provide a full 12-month cost analysis of the GETS intervention compared to the 12 month period prior to the GETS intervention.

Output 4: Risk factors are defined for animal outbreaks via case series and/or case-control trial

- Outbreak response activities were finalized, and accompanying documents were completed.
- Training was undertaken for the GETS Regional Coordinators whose role includes attending all outbreaks within the GETS provinces and in bordering provinces to undertake disease investigation activities.
- An LoA with DAH was finalized and signed and funds were made available for provincial staff for outbreak activities.
- An agreement has been signed with DAH detailing the re-imbursement terms for poultry producers in the GETS provinces, following culling of their flocks for HPAI outbreaks. Funds were made available for provincial authorities to fund the re-imbursement for eligible flocks.
- Workshops detailing enhanced disease reporting activities were held at the 42 districts involved in the project, and these were attended by 713 chief animal health officers, 178 district veterinary officers,

39 agricultural extension officers and 38 district public health officers; 48 were from SDAH and 14 were from the Regional Animal Health Offices. Supply chain analysis was implemented and completed across four of the five GETS provinces, as well as GPS mapping using the GPS units supplied to each district veterinary station.

- Monitoring of high-risk mobile duck flocks is ongoing and is being undertaken by CAHWs throughout the GETS provinces, and vaccination of these flocks is being pursued. These flocks present a high risk for disease transmission because they shed virus with minimal clinical signs if they are not adequately vaccinated. Early results from Soc Trang have shown that 40 percent of these mobile flocks are unvaccinated.
- The market surveillance programme was implemented and completed using a national partner across 100 markets throughout the five GETS Provinces. Results will supplement the sentinel duck survey results to provide a clearer picture of the circulating virus.

Output 5: Sociological behaviours related to V2/V1 and V1/V0 are compared

- Data collection consisting of attitudinal questionnaires has commenced.
- A national partner was chosen to continue with the implementing of this component and assumed work in January 2010.
- Data collection commenced with an attitudinal questionnaire included in the CAHW post-training questionnaire, and an attitudinal component of the poultry industry survey will address reaction to changes in the vaccination programme in the GETS provinces.
- The poultry farmer survey and the CAHW survey was completed and results are being analysed. These survey results will be used to evaluate potential motivation factors and key determinants for animal health workers and producers, the barriers to behaviour change and the behavioural changes that have occurred as a result of the project intervention.
- The meat trader survey was undertaken by a national partner as part of the market survey covering 100 markets across the five GETS provinces, and this activity has now been completed.

Output 6: Policy analysis of HPAI strategy including public private sector collaboration and partnerships is undertaken

- The governance of private/public partnerships will be investigated and the effect of the interventions on this will be monitored.
- Supply chain analysis and mapping were completed in all of the GETS provinces, and the location of animal health product suppliers was identified. A study will be undertaken to determine the governance of their activities. Governance of the meat traders, as well as markets, will also be reviewed in this study.
- A national partner was selected to continue with the implementation of this component. Discussions were held with CAP in Hanoi regarding central policy decision making procedures, and further discussions will be held with a view to contracting CAP to undertake the governance study.
- A policy analysis study of the HPAI strategy was undertaken to determine the governance of the public/private partnerships including drug shops, meat traders and markets. A national partner, CAP, was selected to undertake the study, and the study was completed.