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Report No: T7686-VN

TECHNICAL ANNEX

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR13.5 MILLION
(US\$20 MILLION EQUIVALENT)

TO THE

SOCIALIST REPUBLIC OF VIETNAM

FOR A

VIETNAM AVIAN AND HUMAN INFLUENZA CONTROL AND
PREPAREDNESS PROJECT

UNDER THE

GLOBAL PROGRAM FOR AVIAN INFLUENZA AND HUMAN PANDEMIC
PREPAREDNESS AND RESPONSE (GPAI)

FOR ELIGIBLE COUNTRIES UNDER THE HORIZONTAL APL

February 15, 2007

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CURRENCY EQUIVALENTS

(Exchange Rate Effective February 14, 2007)

Currency Unit = Vietnamese Dong (VND)
VND 15,977.50 = US\$1
US\$1.49 = SDR1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AHI	Avian and Human Influenza
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AFD	France Development Agency
AI	Avian Influenza
AIERP	Avian Influenza Emergency Recovery Project
APL	Adaptable Loan Program
APM	Administration for Preventive Medicine
APMB	Agricultural Project Management Board
VSF	Veterinarians without Borders
BSL	Biosafety Level
CAHW	Community Animal Health Worker
CTA	Chief Technical Advisor
CVB	Commune Veterinary Board
DAH	Department of Animal Health
DARD	(Provincial) Department of Agriculture and Rural Development
DLP	Department of Livestock Production
DOH	Department of Health
DPHC	District Preventive Health Center
DVS	District Veterinary Station
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ERL	Emergency Recovery Loan
FAO	Food and Agriculture Organization of the United Nations
GPAI	Global Program for Avian Influenza and Human Pandemic Preparedness and Response
HCMC	Ho Chi Minh City
HPAI	Highly Pathogenic Avian Influenza
IATA	International Air Transport Association
ICD	International Cooperation Department
IEC	Information, Education and Communication
IFR	Interim Financial Report
IS	International Shopping (procurement method)
JSDF	Japan Social Development Fund

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LS	Local Shopping (procurement method)
MARD	Ministry of Agriculture and Rural Development
MOH	Ministry of Health
MONRE	Ministry of Natural Resources and Environment
NAP	National Action Plan (for AHI control)
NGO	Non-Governmental Organization
NIAH	National Institute of Animal Husbandry
NIVR	National Institute of Veterinary Research
NSCAHI	National Steering Committee for Avian and Human Influenza Control
NSCAI	National Steering Committee for Avian Influenza Disease Control and Prevention
NVDC	National Veterinary Diagnostic Center
OIE	World Organization for Animal Health
OPI	Integrated National Operational Program for the Avian and Human Influenza 2006 – 2010 (<i>“The Green Book”</i>)
PAHI	Partnership for Avian and Human Influenza Control
PCU	Project Coordination Unit
PIA	Project Implementation Agency
PIP / PIM	Project Implementation Plan / Project Implementation Manual
PIT	Provincial Implementation Team (DARD, DOH)
PPC	Provincial Peoples’ Committee
PPE	Personal Protection Equipment
PPMU	Provincial Project Management Unit
PPR	Project Preparation Report
PSC	Provincial Steering Committees for Avian Influenza
RVC	Regional Veterinary Center
SDAH	(Provincial) Sub-Department of Animal Health
SDLP	(Provincial) Sub-Department of Livestock Production
SOE	Statement of Expenditures
SOP	Standard Operating Procedure
SBV	State Bank of Vietnam
VBARD	Vietnam Bank of Agriculture & Rural Development
VWU	Vietnamese Women’s Union
WHO	World Health Organization

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VIETNAM
VN Avian & Human Influenza Control & Preparedness Project

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VIETNAM

VIETNAM AVIAN & HUMAN INFLUENZA CONTROL & PREPAREDNESS PROJECT

TECHNICAL ANNEX

EAST ASIA AND PACIFIC

EASRE

Date: February 15, 2007	Team Leaders: Severin L. Kodderitzsch, Samuel Lieberman
Acting Country Director: Laurent Msellati Sector Manager/Director: Hoonae Kim/ Fadia Saadah	Sectors: Health (50%);Animal production (50%) Themes: Other Communicable Diseases (P); Rural Services and Infrastructure (P); Natural Disaster Management (P)
Project ID: P101608	Environmental screening category: Partial Assessment
Lending Instrument: Emergency Recovery Loan	

Project Financing Data

Loan Credit Grant Guarantee Other:

For Loans/Credits/Others:

Total Bank financing (US\$m.): 20.00

Proposed terms: Standard, with 40 years maturity

Financing Plan (US\$m)

Source	Local	Foreign	Total
BORROWER/RECIPIENT	3.00	0.00	3.00
INTERNATIONAL DEVELOPMENT ASSOCIATION	18.00	2.00	20.00
JAPAN: MINISTRY OF FINANCE - PHRD GRANTS	4.70	0.30	5.00
FOREIGN MULTILATERAL INSTITUTIONS (UNIDENTIFIED)	9.00	1.00	10.00
Total:	34.70	3.30	38.00

Borrower:

Ministry of Agriculture and Rural Development and Ministry of Health

2, Ngoc Ha (MARD)

138A, Giang Vo (MOH)

Hanoi

Vietnam

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Responsible Agencies:

VAHIP will be an integrated operation implemented over a three year period. The Ministry of Agriculture and Rural Development (MARD) will be responsible for implementation of Component A (HPAI Control and Eradication in the Agricultural Sector) and the Ministry of Health (MOH) for Component B (Influenza Prevention and Pandemic Preparedness in the Health Sector). MARD also will take lead responsibility to initiate the implementation of subcomponent C (Integration and AHI Coordination, Results M&E, and Project Management).

Estimated disbursements (Bank FY/US\$m)

FY	2007	2008	2009	2010	2011				
Annual	0.50	4.00	7.50	6.00	2.00				
Cumulative	0.50	4.50	12.00	18.00	20.00				

Does the project meet the Regional criteria for readiness for implementation? Yes No
Ref. Technical Annex E.8

Project development objective *Ref. Technical Annex C.1*

The project's development objective is to increase the effectiveness of Government services in reducing the health risk to poultry and humans from avian influenza in eleven high priority provinces and thus contribute to addressing HPAI at the national level by controlling the disease at source in domestic poultry, by early detection and response to poultry and human cases, and by preparing for the medical consequences of a human pandemic, if it occurs, over the next five years. This is in line with and supports the implementation of Vietnam's plans for the medium to long-term control of avian and human influenza as outlined in its National Strategy, and is fully consistent with the approach envisaged under the Global Program for Avian Influenza and Human Pandemic Preparedness and Response (GPAI).

Project description *Ref. Technical Annex C.2 and Appendix 2*

VAHIP will be implemented in eleven provinces and comprising three components:

Component A: HPAI Control and Eradication in the Agricultural Sector – will strengthen veterinary services; enhance disease control, undertake surveillance and epidemiological investigations, support the Ministry of Agriculture in analyzing and preparing for the restructuring of the poultry sector; and develop and implement emergency outbreak containment plans.

Component B: Influenza Prevention and Pandemic Preparedness in the Health Sector - will improve the technical quality of the surveillance and response systems; improve the technical quality and efficiency of curative care preparedness; strengthen behavior change and communication (BCC) in health facilities and the community; and strengthen the preventive health system at local level.

Component C: Integration and OPI Coordination, Results M&E, and Project Management - will support the integration and coordination of the National Avian and Human Influenza Program, undertake monitoring and evaluation of project but also national results, and undertake project management at the central and provincial level.

Which safeguard policies are triggered, if any? *Ref. Technical Annex E.7; Appendices 6&7*

Among the Bank's safeguards policies, the Environmental Assessment (OP4.01), Indigenous Peoples (OP4.10) and Involuntary Resettlement (OP4.12) are triggered. The project design incorporates the necessary mitigation measures for the potential adverse impacts associated with the activities involved in responding to HPAI outbreaks.

Significant, non-standard conditions, **if any**, for: *Ref. Technical Annex D.5*

Conditions of Effectiveness include:

1. The AHI Facility Trust Fund Grant Agreement and the PHRD Grant Agreement have been executed and delivered and all conditions for their respective effectiveness or the right of the Recipient to make withdrawals under both of them have been fulfilled;
2. At least one of the MARD or MOH PCUs has:
 - (i) been established and staffed with at least the following key staff: PCU director, procurement officer, accountant, technical managers for each sub-component of the Project Component under the responsibility of the PCU; the PCU managers and staff should have qualifications, experience and terms of reference acceptable to the Association;
 - (ii) adopted its respective Project Implementation Manual (PIM), which includes, among others, financial management guidelines, an Ethnic Minorities Communication Plan and guidelines for the implementation of environmental management procedures; as well as the Resettlement Policy Framework and the Resettlement Action Plan; acceptable to the Association;
 - (iii) set up a computerized accounting system consistent with the financial management guidelines of the PIM, satisfactory to the Association;
 - (iv) developed and implemented a comprehensive training and capacity building program for its financial management staff, in a manner satisfactory to the Association; and
 - (v) adopted its respective Procurement Plan for the first 18 months of Project implementation acceptable to the Association.

Conditions of Disbursement

1. For disbursement of the proceeds allocated to Components A and C (under the responsibility of MARD), the MARD PCU has:
 - (i) been established and staffed with at least the following key staff: PCU director, procurement officer, accountant, technical managers for each sub-component of the Project Component under the responsibility of the PCU; the PCU managers and staff should have qualifications, experience and terms of reference acceptable to the Association;
 - (ii) adopted its respective Project Implementation Manual (PIM), which includes, among others, financial management guidelines, an Ethnic Minorities Communication Plan and guidelines for the implementation of environmental management procedures; as well as the Resettlement Policy Framework and the Resettlement Action Plan; acceptable to the Association;
 - (iii) set up a computerized accounting system consistent with the financial management guidelines of the PIM, satisfactory to the Association;
 - (iv) developed and implemented a comprehensive training and capacity building program for its financial management staff, in a manner satisfactory to the Association; and
 - (v) adopted its respective Procurement Plan for the first 18 months of Project implementation acceptable to the Association.

2. For disbursement of the proceeds allocated to Component B (under the responsibility of MOH), the MOH PCU has:
 - (i) been established and staffed with at least the following key staff: PCU director, procurement officer, accountant, technical managers for each sub-component of the Project Component under the responsibility of the PCU; the PCU managers and staff should have qualifications, experience and terms of reference acceptable to the Association;
 - (ii) adopted its respective Project Implementation Manual (PIM), which includes, among others, financial management guidelines, an Ethnic Minorities Communication Plan and guidelines for the implementation of environmental management procedures; acceptable to the Association;
 - (iii) set up a computerized accounting system consistent with the financial management guidelines of the PIM, satisfactory to the Association;
 - (iv) developed and implemented a comprehensive training and capacity building program for its financial management staff, in a manner satisfactory to the Association; and
 - (v) adopted its respective Procurement Plan for the first 18 months of Project implementation acceptable to the Association.

3. For disbursement of the proceeds allocated to the disbursement category corresponding to payments of compensation to farmers in the event of an outbreak and culling: studies on improving the compensation mechanisms have been completed and a Compensation

Manual has been adopted by MARD, satisfactory to the Association.

Other Covenants and Conditions (Non-Standard)

1. The Recipient shall maintain, throughout the period of implementation of the Project, the National Steering Committee for Avian Influenza to provide overall guidance and direction in the implementation of the Project.
2. The Recipient shall appoint a Project Director from MARD and a Project Vice Director from MOH, under TOR satisfactory to IDA;
3. Each Project Province shall establish, staff and maintain throughout project implementation, its PPMU under the Provincial People's Committee; until the PPMU has been established with adequate resources, staffing and TOR satisfactory to IDA, the Recipient shall not provide funding from the Credit for Project activities in the Province.
4. By no later than April 15, 2007, the Recipient shall have completed an environmental assessment of the Project and an environmental management plan, satisfactory to the Association and publicly disclosed the assessment and the plan.
5. The Recipient shall implement environmental measures acceptable to the Association and monitor and report on the implementation of those measures.
6. In connection with activities to control market-based avian influenza, the Recipient shall implement the Resettlement Policy Framework and the Ha Vi Resettlement Action Plan.
7. By no later than December 31, 2007, the Recipient shall have designed a results-based monitoring and evaluation system acceptable to the Association; and MARD PCU and MOH PCU shall have completed a baseline survey of Component A and Component B, respectively, and published the results of that survey.
8. The two PCUs shall prepare annual work plans including budget and disbursement estimates for their respective components and, by November 1 of each year, provide them to the Association for discussion. These annual work plans will consolidate the annual work plans submitted by the Project Provinces.
9. The two PCUs shall prepare semi-annually progress reports, including quarterly interim financial reports, and provide them to the Association no later than 45 days after the end of the quarter.
10. The Recipient shall discuss with the Association any proposed modification or amendment of the Green Book before undertaking such modification or amendment.
11. A Project Mid-Term Review will take place 12 months after Effectiveness.

A. STRATEGIC CONTEXT AND RATIONALE

1. Introduction

1. Highly pathogenic avian influenza (HPAI) viruses of the H5N1 subtype continue to be endemic and have caused widespread, severe disease in poultry and fatal disease in humans in Vietnam. The disease in chickens is almost uniformly fatal with infected birds dying within a few days of infection. Humans are infected occasionally through direct or indirect contact with infected poultry. When disease occurs in humans it is often fatal, has a relatively long incubation period and late appearing distinguishing symptoms, making diagnosis and treatment particularly challenging.

2. Vietnam has made great strides in fighting HPAI the presence of which was first confirmed on January 8, 2004. Since then, Vietnam has experienced three successive but diminishing waves of infection in poultry, with outbreaks mainly occurring in the cooler winter months of the year. This coincides with the annual Tet festival, during which poultry sales and consumption are at peak levels. In each case the epidemic has been contained, but only through the application of stringent containment measures including the imposition of strict poultry movement controls, closure of all live-poultry markets, the rapid culling of sick and unaffected birds, and the application of biosecurity measures in de-stocked commercial, smallholder and breeding operations. Importantly, while the virus is known to circulate widely in the environment no cases in humans have been reported since December 2005, and the first poultry outbreak of avian influenza reported since December 2005 occurred on December 6, 2006 1.

3. Avian and Human Influenza (AHI) infection has been extremely costly for Vietnam in terms of human life and economic impact. To date, Vietnam has reported 93 human cases, including 42 fatalities. This record places Vietnam second only to Indonesia in the number of human fatalities. Vietnam has experienced over 2,000 outbreaks – the most of any country in the world – and control measures have resulted in the destruction of over 40 million poultry or about 15 percent of the national poultry population. The direct cost of avian influenza in Vietnam is estimated at over US\$200 million, which reduced the 2004 GDP by 1.5 percent. The unexpected and massive HPAI epidemic initially overwhelmed Vietnam's veterinary services system. Lacking a strategic fine-tuned field disease surveillance infrastructure and sufficient laboratory capacity for large-scale diagnosis and monitoring, massive culling of sick and healthy birds was undertaken in an effort to stamp out the disease during the initial outbreaks. Additional measures were introduced in the second half of 2005, and these combined approaches have been successful in stemming the disease, and the epidemic presently appears under control. However, continued vigilance is essential as long as the risks of further outbreaks remain (especially those that might result from the reintroduction of the disease into Vietnam from beyond its borders).

4. **Regional Dimension.** The HPAI epidemic that struck Asian countries in mid-2003 has so far resulted in 244 human cases world-wide, of which 144 have been fatalities ². The human toll has been especially heavy in Asia. Avian influenza has now spread to 14 Asian countries,

¹ WHO Avian Influenza Update (H5N1). Vietnam. February 1, 2007.

² WHO World Human Case Statistics, October 2006

resulting in 214 human cases (89% of world cases) of which 132 were fatalities (92% of world fatalities)³. Vaccination of poultry is underway in four Asian countries (China, Vietnam, Indonesia and Pakistan), albeit with mixed results, depending on vaccination strategies, the efficacy of vaccine coverage and response, and the degree of post-vaccination monitoring which governs the decision-making of vaccination strategies.

5. **Global Response.** The global response to AHI in humans and domestic poultry comprises four key strategies: (a) progressively controlling and eradicating the spread of the disease in animals by reducing the animal-origin virus in poultry flocks, thereby reducing the risk of human infection; (b) preventing and limiting the spread of the disease in humans, thereby reducing the chances of the virus acquiring human transmissibility; (c) assisting human populations to cope with the eventuality of a possible pandemic; and (d) minimizing the social and economic impacts from the threat of H5N1. A global response to this global threat is essential, and requires multisectoral and multinational interventions in supporting the agriculture and health sectors, natural disaster planning, and financial, technical and physical assistance to enhance medical and veterinary services. The World Bank and its principal international technical partner agencies -- the Food and Agriculture Organization of the UN (FAO), the World Organization for Animal Health (OIE), and the World Health Organization (WHO) -- and a host of other national and international agencies have responded to this challenge by establishing global networks. NGOs and development assistance organizations are contributing to the coordinated response.

2. Country and Sector Issues

6. Using its own resources, and supported by assistance from the international donor community⁴, Vietnam has addressed the avian influenza epidemic in ways that offer a model for other countries that are responding to or are threatened by HPAI. On the technical side in both the veterinary and human health sectors, Vietnam has expanded its laboratory diagnostic capacity, improved epidemiological expertise and disease reporting, enhanced management capacity, improved its capacity to identify outbreaks rapidly and effectively, and organized emergency outbreak containment. In the animal health sector, it has undertaken targeted and risk-based poultry vaccination, introduced effective movement controls on poultry and contaminated materials during outbreaks, and initiated an investigative research program.

7. Vietnam has been successful in containing the AHI problem among humans so far by applying the different lessons and assets obtained from elimination and controlling vaccine-preventable diseases and micronutrient deficiency diseases. The results have contributed to lessening the national disease burden and reaching or surpassing targets for designated Millennium Development Goal (MDG) indicators. These achievements were facilitated by the multi-tiered network of facilities and cadres of staff with different skills deployed to provide curative care and preventive services. On the other hand, Vietnam still faces threats from communicable disease such as tuberculosis, malaria, and dengue fever while it is clearly vulnerable to emerging infectious illnesses, notably AHI, Severe Acute Respiratory Syndrome (SARS), and HIV/AIDS. Here, Vietnam also offers lessons on readiness and capacity to react to

³ FAO Aide Report, September, 2006

⁴ Some 26 agencies and NGOs work in Vietnam on various aspects of avian influenza.

program weaknesses, notably its willingness to rethink and make adjustments in policy design and implementation modalities. This reflective and resourceful approach is seen in recent government master plans and vision statements setting in motion a recasting of preventive health, redesign of surveillance, and other achievements.

8. Vietnam's response as regards institutional change and resource mobilization also deserves commendation. The government established an inter-ministerial steering committee at the central level; developed national plans and instituted a number of projects for AHI prevention and control and for pandemic preparedness; and adopted the 'Integrated Operational Program for Avian and Human Influenza' (the OPI, or *Green Book*) in May 2006. Following donor pledges of US\$60 million for 2006-2008 to support the OPI, the 'Partnership for Avian and Human Influenza Control' (PAHI), which coordinates donor support for Vietnam's health and agriculture sectors was officially established on November 1, 2006.

9. Despite the measures outlined above, the Government's response has largely focused on short-term emergency preparedness measures, and the response has largely been a reactivation of the emergency system established during the SARS outbreak of 2003, and directed by AHI steering committees. The province-level steering committees have been guided by top-down directives from the central level and made use of mass organizations and other well-tested social mobilization instruments and mechanisms. They report directly to the Provincial People's Committees and by so doing, they have effectively coordinated action across animal and human health sectors, mobilized budgetary resources for AHI activities and promoted accountability of the involved sectors to the highest provincial authority. Yet despite the seeming success of these emergency measures in the control of AHI, they will be difficult to sustain beyond the short term and in the absence of an emergency atmosphere. Similarly, interest among the public, vigilance and adherence to regulations and recommended preventive measures will diminish, as the public may be lured into a false sense of security by the diminishing number of outbreaks.

10. The ongoing presence of a circulating virus and the fact that HPAI is unlikely to be Vietnam's last emerging communicable or zoonotic disease threat point to the need to deal with HPAI by addressing system constraints in order to institutionalize preparedness. The mechanisms and resources for practical implementation of the numerous orders and procedural guidelines issued from the central level by the lower levels remain limited. At present there are large gaps in national and provincial planning and preparedness, communication and coordination between responsible agencies are inadequate, and the overall awareness of both the general public and staff are not satisfactory to meet the growing threat of AHI pandemic.

11. The AHI experience in Vietnam has also shed light on serious human resource constraints within preventive medicine. This may be due to the limited financial incentives relative to those within the curative care system, though there may also be other factors at play. Human resource capacity must be addressed for this and other communicable diseases to be successfully controlled over the long term. Efforts need to be piloted to increase the recruitment, retention and motivation of preventive medicine staff at all levels.

3. Rationale for Bank Involvement

12. The Bank has been involved in assisting the Government with the avian influenza crisis since the early stages of the first outbreak. In March 2004, at the request of the Government, the Bank assisted in reviewing the National Action Plan for the Control and Eradication of Avian Influenza, and subsequently prepared the Avian Influenza Emergency Recovery Project (AIERP) to directly assist with overcoming the crisis. FAO, the Government of Japan, the Vietnam Woman Union (VWU) and Veterinarians Without Borders (AVSF) also supported the Ministry of Agriculture and Rural Development (MARD) in the implementation of AIERP through a series of strategic studies and poultry restocking in ten of the country's worst affected provinces. The Bank led a multi-donor mission to assist with preparation of the OPI, and then coordinated in the multi-donor conference in Hanoi which raised more than US\$60 million for animal and human influenza control. As a senior partner, the Bank also plays a significant part in PAHI. With VAHIP, the Bank will continue to assist Vietnam enter a consolidation phase for avian influenza control, in which gains from previous experience are broadened and a gradual restructuring of the poultry industry towards disease-free production is undertaken.

13. The 'Integrated National Plan for Avian Influenza Control and Pandemic Influenza Preparedness and Response' (*Red Book*) which was presented at the International Pledging Conference co-organized by the Government of China, the European Commission and the World Bank in Beijing in January 2006; and the 'Integrated Operational Program for Avian and Human Influenza' or OPI (*Green Book*) of May 2006, establish the framework for AHI activities and outline wide-ranging goals, but not the discrete incremental steps necessary to achieve them. This is mainly due to the emergency scenario which underpins the OPI, and it will be important to identify priorities as the emphasis shifts from emergency actions to the institutions and responses required to maintain the response in the medium term. In so doing, the project will support integration of AHI surveillance, response and preparedness activities into the normal functions of the health sector, thus increasing flexibility and allowing a sustainable and adaptable level of readiness, regardless of perceived risk among policy makers and the general public. Examples of this assistance include developing an intervention-driven approach to communicable disease surveillance and creating flexible methods for managing intensive care resources or introducing bio-security guidelines along the value-chain, including poultry farms, live-bird markets and slaughterhouses.

4. Country Eligibility under GPAI ⁵

14. The project fully conforms to the eligibility criteria of the GPAI, approved by the Bank's Board of Directors on 16 January 2006. GPAI support is to be provided under the horizontal Adaptable Loan Program (APL) financial instrument, within the global coordination framework. Under the global APL, individual countries may obtain separate loans, credits and grants as they become available, to finance their own national projects, up to the global aggregate limit of US\$500 million. Since the GPAI is designed to provide emergency financing to participating countries to contain outbreaks of avian influenza through early detection and rapid response measures, the country-specific operations will be processed under the Bank's emergency policy OP/BP 8.50. GPAI treats specific emergency response projects in each country as phases of a

⁵ Global Program for Avian Influenza and Human Pandemic Preparedness and Response.

horizontal APL, much like the Multi-Country HIV/AIDS Programs for the African and Caribbean Regions. Vietnam clearly meets the eligibility criteria specified in the GPAI document, given that, (a) the disease is now endemic and has resulted in 93 human cases with 42 fatalities and the death or destruction of over 40 million poultry, (b) the OPI or *Green Book* – considered a best practice world-wide – has been endorsed by Government, integrating the human health and animal health and production sectors into the medium-term roadmap towards the eventual control of the disease, and (c) the activities included in this proposal are fully consistent with the provisions and objectives of GPAI.

B. NATIONAL AVIAN INFLUENZA CONTROL AND HUMAN PANDEMIC INFLUENZA PLAN FOR VIETNAM

1. General Objectives

15. As stated in the OPI, the overall objectives of Vietnam's plans for the medium to long-term control of avian influenza is to reduce the health risk to humans from avian influenza by controlling the disease at source in domestic poultry, by early detection and response to human cases, and by preparing for the medical consequences of a human pandemic if it occurs over the next five years. The proposed project will contribute to this overall objective by enhancing Government effectiveness in veterinary and public health services across eleven priority provinces.

2. Components of the National Plan

16. **Agricultural Sector.** For the animal health sector, the overall goal is to progressively control and eradicate HPAI from poultry in Vietnam. The specific short to medium-term objectives are:

- (a) to strengthen veterinary services in order to control HPAI and other potential zoonotic disease threats;
- (b) to control HPAI using a cost-effective phased approach that addresses each poultry production sector⁶; and
- (c) to plan poultry sector restructuring so that it enables better control of HPAI while minimizing the loss of livelihood and environmental pollution.

17. The OPI outlines the strategy the Government of Vietnam will adapt to control and progressively eradicate H5N1 HPAI in poultry. This will occur in three phases:

- a control phase, in which the incidence of outbreaks is reduced by the stamping out of outbreaks, mass vaccination, and the commencement of improvements in biosecurity of poultry production and marketing practices. It is expected that the Control Phase will continue throughout 2007, with some reduction in the scope of the national mass vaccination in 2007 and further reductions planned for 2008 and beyond;

⁶ The poultry sector is classified into four production systems: Sector 1 – private sector vertical integrators; Sector 2 – independent private producers; Sector 3 – small-scale private producers; and Sector 4 – free-ranging backyard poultry.

- a consolidation phase, in which gains are maintained, further restructuring of the industry is undertaken, farms in the industrial sector demonstrate freedom from HPAI, and disease-free compartments are expanded. The Consolidation Phase will occupy the remainder of the VAHIP project horizon (to 2010). National eradication programs will be built on gains made in the consolidation phase supported by VAHIP; and
 - an eradication phase, in which freedom from disease is achieved on a national or sectoral basis
18. **Health Sector.** The specific objectives for the health sector's response to HPAI are:
- (a) to minimize the incidence of, and mortality caused by, avian influenza;
 - (b) to reduce the risk of an influenza pandemic occurring; and
 - (c) to take steps to reduce the impact of a possible influenza pandemic.
19. The principle underlying the health sector's response is to link activities targeting HPAI to a broader agenda of strengthening the capacity of the sector to detect, control, and respond to emerging infectious diseases, especially zoonotic diseases.

3. Institutional Aspects

20. Vietnam has set up coordination mechanisms at the central level, which are also replicated at the province, and in many cases, at the district level. At the central level, inter-ministerial coordination has been functioning through the National Steering Committee for Avian Influenza Disease Control and Prevention (NSCAI). The NSCAI was established in January 2004 (Decision No 13/2004/QD-TTg, dated 28/1/2004) as the national coordination mechanism for HPAI planning and supervision. NSCAI is chaired by the Minister of MARD, with the Vice Ministers of MARD and MOH as vice chairs. The official members are the Ministry of Finance, Ministry of Trade, Ministry of Public Security, Ministry of Transport, Ministry of Natural Resources and Environment, Ministry of Culture and Information, and the Ministry of Foreign Affairs. The Department of Animal Health (DAH) in MARD and the Administration for Preventive Medicine (APM) in MOH are also formal members.⁷ This Committee meets on a weekly basis to brief the Government on the evolution of the disease situation and report on the implementation of the control measures. The Prime Minister and Deputy Prime Minister have chaired several of these meetings. NSCAI's primary focus has been on poultry, but it has also addressed wider questions of coordination. In addition, as per Prime Minister's Decision No 348/2006/QD-TTg, dated 21/2/2006, the National Steering Committee on Influenza Pandemic Prevention and Control in Human evolved from the National SARS Steering Committee established in 2003. This Committee is chaired by the Minister for Health, with participation of other concerned ministries and sectors. At the provincial and in some cases the district levels, Steering Committees for Avian Influenza have also been established under the People's Committees. They play an important role in local coordination, but this role varies from locality to locality.

⁷ Although DAH is supporting NSCAI with secretariat functions, this is not part of the official Decision regarding the NSCAI.

21. The continued risks of a pandemic demand the further strengthening of overall coordination and collaboration. To this end, the OPI envisages that NSCAI would become the National Steering Committee for Avian and Human Influenza (NSCAHI) and be the primary forum to enhance cross-sectoral pandemic preparedness and response. NSCAHI would include MOET, MPI, other key ministries, the People's Army, as well as representatives from the Vietnam Red Cross and mass organizations.

22. **Donor Coordination.** NSCAI has effectively been entrusted with responsibility for government-donor coordination and meets on a regular basis with the International Community. In particular, the Department of Animal Health (DAH), with the help of MARD's International Cooperation Department (ICD), has played a central role in government-donor coordination in recent months, especially for the Joint Government-UN Program to Fight Avian Influenza, which receives funds from seven bilateral donors. The Administration for Preventive Medicine in the Ministry of Health (MOH) and other departments and institutions are also engaged. In 2005, the European Union, represented by the Netherlands and the United Kingdom and with support from FAO and WHO, organized technical meetings as well as briefings for the donor community, NGOs, and representatives of the private sector. The Joint Government-UN Program has supported government-donor coordination meetings since October 2005. It has also mobilized a donor coordination specialist who has brought together information on all donor and international NGO assistance and has started to support NSCAI and particularly MARD and MOH in working with several other donors. In July-September 2006, the preparation of a Phase 2 of the Government-UN Joint Program (JP-2) took place. This included the identification of a follow-up operation to the on-going AIERP and the drafting of Memorandum of Understanding on a Partnership for Avian and Human Influenza Control (PAHI) to coordinate donor-government activities more effectively in the longer term. VAHIP is fully coordinated with all these initiatives.

23. **Financing Requirements.** The total cost of the OPI is estimated to be US\$250 million for the period 2006-2010. This comprises public sector and ODA support of US\$31 million for enhanced coordination activities (Part 1), US\$116 million for HPAI control and eradication activities in the agricultural sector (Part 2), and US\$102 million for influenza prevention and pandemic preparedness in the health sector (Part 3). Additional private sector finance of about US\$225 million is expected for poultry industry restructuring. Similarly, MOH anticipates additional needs of about US\$222 million for a range of other second-level priority activities for influenza preparedness and response in the human health sector.

C. PROJECT DESCRIPTION

1. Project Development Objective

24. The project's development objective is to increase the effectiveness of Government services in reducing the health risk to poultry and humans from avian influenza in eleven high priority provinces and thus contribute to addressing HPAI at the national level by controlling the disease at source in domestic poultry, by early detection and response to poultry and human cases, and by preparing for the medical consequences of a human pandemic if it occurs over the next five years. This is in line with and supports the implementation of Vietnam's plans for the

medium to long-term control of avian and human influenza as outlined in the OPI, and is fully consistent with the approach envisaged under GPAI.

2. Project Components

25. The Project comprises three components and it will be implemented in eleven provinces: Lang Son, Ha Tay, Thai Binh, Thanh Hoa, Ha Tinh, Thua Thien-Hue, Binh Dinh, Tay Ninh, Long An, Tien Giang, and Dong Thap (see IBRD Map 35196). Selection criteria are provided in Appendix 9, Technical Note 4. Through implementation of these components, VAHIP will help consolidate the gains made under the AIERP and under various health sector programs to date by (a) further strengthening veterinary and human health services, (b) improving the quality and scope of disease control and surveillance and public awareness, and (c) supporting integration of animal and human health activities and OPI coordination. The proposed project will focus on support for activities not already covered by other donors and financiers.

26. **Project Cost and Financing.** Total project costs are estimated to amount to around US\$38.0 million. Component A is estimated to cost around US\$17.2 million, Component B US\$16.0 million and Component C US\$4.8 million. The project will be funded through (i) an IDA Credit in the amount of US\$20.0 million equivalent; (ii) a grant from the AHI Facility Trust Fund in the amount of US\$10.0 million, (iii) a PHRD grant from the Government of Japan amounting to US\$5.0 million; and (iv) Government contributions in the range of US\$3.0 million. See Appendix 3 for details.

27. **Component A – HPAI Control and Eradication in the Agricultural Sector** (US\$17.2 million). Component A will be implemented in each of the eleven project provinces listed above and will comprise five subcomponents:

28. **Subcomponent A1: Strengthening of Veterinary Services** (US\$2.6 million). This subcomponent has 3 activities. (a) A needs and capacity assessment of veterinary laboratories undertaking avian influenza testing for this project (namely, the National Institute of Veterinary Research (NIVR), National Center for Veterinary Diagnosis (NCVD), five Regional Veterinary Centers and the Lang Son Provincial veterinary laboratory) will be conducted to evaluate their capacity to undertake the incremental diagnostic workload required by project activities and to ensure that the necessary manpower, equipment and consumables are provided. In addition, quality management systems will be strengthened to enable the laboratories to operate to ISO 17025 standards. A cost recovery mechanism through revolving funds acquired from fees-for-services will be developed and instituted selectively to ensure the operational sustainability of diagnostic laboratories. (b) A portable BSL-3⁸ unit will be established at the Regional Animal Health Office No. 6 in Ho Chi Minh City to enable laboratory workers to isolate viruses under biosafe conditions. (c) Commune-based disease reporting by community animal health workers (CAHWs) will be expanded from 30 project districts under AIERP to include some 90 project districts. The project will provide equipment, technical assistance, training, consumables, contracted laboratory staff and other operational support.

⁸ BSL-3 Biosafety level 3 is a level of biosafety required for safe isolation of H5N1 avian influenza virus.

29. **Subcomponent A2: Enhanced Disease Control (US\$3.5 million).** This subcomponent comprises five activities conducted in live-bird markets, slaughterhouses, poultry farms and border areas to consolidate gains already made in avian influenza control. (1) As a first activity, market-based avian influenza control will be introduced at the Ha Vi live-poultry market in Ha Tay province, which supplies around 50 percent of consumer demand for poultry to Hanoi. The feasibility of upgrading additional markets in the other project provinces will be assessed and appropriate renovations and changes to market procedures will be implemented. (2) A second activity will develop procedures to break the infection chain between farms and slaughterhouses by developing appropriate, science-based testing, inspections and pre-movement certification for poultry, providing advice and training to slaughterhouse inspectors, management and staff in 12 poultry slaughterhouses on facilities and procedures required for the cleaning and disinfection of transport cages and vehicles before leaving the slaughterhouse, and by developing manuals on recommended Standard Operating Procedures for the entry and exit of poultry transport vehicles and pre-sale testing and poultry monitoring for live bird markets and slaughterhouses. (3) A third activity will develop pilot disease monitoring systems for large, commercial poultry farms to demonstrate sustained freedom from infection with H5N1 avian influenza, thereby moving towards the creation of avian influenza-free farms and compartments. (4) The fourth activity supports five vaccination related activities (covering grazing meat ducks; field trials of vaccination of minor poultry species; training of animal health workers in ring vaccination to be used in the event of localized disease outbreaks; feasibility of local vaccine production for H5N1 HPAI for poultry; and upgrading of the vaccine cold chain). (5) The fifth activity will strengthen animal quarantine activities in the border province of Lang Son, a major route for illegally smuggled poultry into northern Vietnam.

30. **Subcomponent A3: Surveillance and Epidemiological Investigations (US\$1.5 million).** This subcomponent focuses on disease surveillance, which is necessary to determine where and how avian influenza viruses are circulating, and is an essential element of avian influenza control. Without surveillance, the extent of infection is unknown and control programs are based on incomplete field intelligence, limiting the applicability of risk-based interventions recommended in the OPI. (a) Disease surveillance will support all project elements in subcomponent A2 (above), providing data to support M&E of these activities. It will be conducted in live-bird markets to demonstrate improvements arising from changes in market practices and related market-driven disease control measures; in slaughterhouses and farms to assist in determining the effectiveness of measures to break the infection chain and the disease status of poultry; in duck flocks following vaccination, and in border areas to assess the infection status of smuggled poultry. (b) Additional surveillance will be conducted in wild birds in areas deemed to be at high risk of infection. (c) Intensive rapid assessments of 4 project provinces not previously included in AIERP (Thanh Hoa, Ha Tinh, Tay Ninh, Lang Son) will also be undertaken to develop risk profiles and review current surveillance activities so as to develop plans for sustainable HPAI control in these provinces. Lastly, (d) strengthening of data management capacity. The project will provide consumables, equipment, travel, contracted surveillance staff, office support, and technical assistance in data collection, consolidation, management and analysis.

31. **Subcomponent A4: Preparing for Poultry Sector Restructuring (US\$1.3 million).** Consolidation of gains made in the control of avian influenza requires improvements in farm level disease prevention through implementation of appropriate biosecurity measures and

restructuring of the poultry sector. This subcomponent will facilitate this process by (1) providing the Department of Livestock Production (DLP) with the analytical and planning capacity for restructuring the poultry sector, (2) planning and demonstrating biosecure poultry farm models, and (3) upgrading the biosecurity of existing small scale poultry farms in selected project areas. As outputs, guidelines for planning the restructuring of the poultry sector with the objective of increased biosecurity will be developed, and biosecure poultry farm models that are equitable, economically viable and environmentally sound, will be demonstrated. The project will provide equipment, technical assistance and training allowances. See also Technical Note 1, Appendix 9.

32. Subcomponent A5: Emergency Outbreak Containment Plan (US\$8.3 million). This subcomponent will implement six activities: (a) Enhancing early reporting of disease outbreaks by villagers to animal health authorities to ensure effective outbreak control, which depends on the rapid detection and reporting of disease. Villagers and smallholders must notify authorities if there is disease in their farm but do not always do so in a timely manner. To facilitate timely reporting, villagers will be provided, through a broad BCC campaign, clear information on the trigger points for reporting, what to expect when they report outbreaks (including compensation arrangements), and how to handle dead or sick poultry (this will be led by, and integrated with, efforts undertaken in Component B summarized below). This activity will be initially introduced to five project provinces and then subsequently extended to cover all project provinces. Telephone hotlines will be established to allow villagers and smallholders cost-free access to report disease outbreaks, overcoming a currently existing communications constraint. (b) Simulation exercises in avian influenza outbreak containment will be conducted to ensure that veterinary authorities, including CAHWs, district, provincial and regional staff respond rapidly to contain disease outbreaks once disease is reported by villagers or smallholders. (c) Protective gear and consumables will be stockpiled in strategic locations in order to allow teams of first responders to mobilize rapidly so as to investigate suspected outbreaks. These teams will also have access to financial resources to employ contract staff to assist in emergency disease containment operations, including stamping out. Emergency equipment and PPE, vaccines and disinfectants will be stockpiled at the six DAH Regional Veterinary Centers for immediate distribution and use in their service regions. (d) Emergency contingency to cover the cost of large scale vaccination in case of widespread outbreaks. In the event of outbreaks of avian influenza all provinces potentially affected in Vietnam, not just those associated with the eleven Project Provinces could benefit from the two aforementioned activities (i.e. A5(c) and A5(d)). (e) Studies on streamlining compensation payments for rapid disbursement in the event of avian influenza outbreaks will be undertaken to enhance cooperation from farmers affected by stamping out exercises. For compensation to be most effective it should be provided rapidly and close to the time of culling (this has been a constraint in past outbreaks). (f) A compensation contingency for smallholders and villagers who have had poultry culled after reporting outbreaks of avian influenza to authorities under this subcomponent will be established to pay compensation. The project will finance disinfectants, disinfection equipment, protective clothing, training, emergency contingency funds, simulation exercises, telephone hotline charges, vaccination consumables and equipment, vaccine pools, contract services to support emergency workers and vaccinators, technical assistance, and compensation funds.

33. **Component B – Influenza Prevention and Pandemic Preparedness in the Health Sector** (US\$16.0 million). Component B will be implemented in the following eight project provinces: Lang Son, Ha Tay, Thai Binh, Thua Thien-Hue, Binh Dinh, Long An, Tien Giang, and Dong Thap. The government has mobilized a robust and generally effective response from authorities at each level to respond to the AHI problem, drawing on the exceptional ability of the Vietnamese system to address public health emergencies. Given the endemic nature of this pathogen in Vietnam and the near certainty that that this threat will remain present into the future, new and longer term approaches must be developed to meet the needs of a prolonged epidemic. Weaknesses in Vietnam’s preventive and curative health systems — most notably in infectious disease surveillance and response, laboratory testing, infection control, health communications, human resources, and coordination with other relevant sectors — expose Vietnam to great risk from epidemics. This component will address the different system constraints (management, human resources, infrastructure and logistics) within an institutional framework which can provide the “glue” to maintain the response when the sense of emergency wanes. Providing a framework that allows provinces, districts and perhaps even communes, to develop their own plans and establish mechanisms to implement them may not only lead to better overall preparedness, but may also help to develop essential planning capacity at the local level that will be critical should a pandemic occur.

34. **Subcomponent B1: Improving the Technical Quality of the Surveillance and Response System** (US\$2.9 million). This subcomponent will support the government in improving surveillance for AI, integrating this into the regular surveillance system and in so doing, strengthening the routine surveillance system in general. This subcomponent will finance staff training, selected equipment items, stockpiles of protective material, simulation tests and technical assistance. It will comprise: (1) an assessment of the current surveillance system, its performance at different levels (from the community to the provincial levels) and comparisons with other countries’ systems, (2) piloting interventions geared towards improving the surveillance systems in the project provinces, based on the above-mentioned assessment, (3) improving the quality of reporting and management of data to enhance its use for decision making, (4) implementing an Early Warning and Response System (EWARS) with extensive penetration to the community through the VHWs, (5) selection and training of a Rapid Response Team that effectively responds to suspected outbreaks and collaborates with other sectors, (6) building Capacity for surveillance and adequately equipping and protecting staff involved in investigations, and (7) fostering coordination and collaboration with other key sectors such as animal health workers in surveillance.

35. **Subcomponent B2: Improving the Technical Quality and Efficiency of Curative Care Preparedness** (US\$5.3 million). This subcomponent will provide support to MOH to: (a) develop the strategy (and action plans) to respond to an overwhelming epidemic or public health emergency; (b) review the curative care sub-sector’s strategy to respond to HPAI, focusing on the roles and responsibilities of the central and provincial authorities, as well as of health care facilities operating at each level; and (c) provide an estimate of the baseline demand for intensive care services and mechanisms to reduce the mismatch between supply of and demand for these services across the project provinces. On the basis of these reviews, the subcomponent will support staff training, acquisition of medical equipment, rehabilitation of isolation facilities, and revision of clinical care and infection control guidelines. It will also support the revision of epidemic response action plans at the central and provincial levels, set up of an emergency

hospital management structure linked to the PPC and the DOH, complete the stockpile of personal protective equipment and supplies and materials for establishing field hospitals, and a contingency budget in the case of an outbreak. Finally, it will finance epidemic simulation exercises to test preparedness measures and coordination structures.

36. Subcomponent B3. Strengthening Behavior Change Communication (BCC) in Health Facilities and the Community (US\$2.7 million). The subcomponent will help to bring about behavior change in the target population through strengthening of BCC skills of health workers at all levels (provincial, district, commune and village), and supporting activities to promote the adoption of AI prevention and control behaviors. The project will provide training and supervision to improve the health workers' BCC skills, and IEC aids to assist them in this work. The project will also help to mobilize the community through support for community-based and mass media awareness-raising activities, which can incite the adoption of preventive and control measures by the target audience both as a community and as individuals.

37. Subcomponent B4: Strengthening the Preventive Health System at Local Level (US\$ 5.1 million). This subcomponent will support efforts by MOH to operationalize new preventive health strategic direction and policies in practical and locally relevant ways. These efforts are critical in order to more effectively prepare for and respond to recently emerging complex communicable diseases at the local level. This subcomponent will seek to test and refine new approaches based on comprehensive appraisals of the current constraints and challenges facing the health care system. Innovative preventive health pilot efforts will be designed with strong local participation, implemented and rigorously evaluated. Special attention will be placed on understanding barriers and critical pathways to surmounting them in the local health system restructuring process. New coordination modalities will be forged with DARD to promote better integrated and more timely responses to potential avian and human disease outbreaks. In addition, this subcomponent will address underlying weaknesses in current human resource capacity and systems at the local level. The preventive health pilots will be supported through sub-grants, and the Project Implementation Manual (PIM) will establish eligibility criteria and review and approval procedures for this purpose.

38. Component C – Integration and OPI Coordination, Results M&E, and Project Management (US\$4.8 million). Component C will support the integration and coordination between MARD, MOH and other concerned ministries and agencies in implementing the OPI. It will also support the design, establishment and implementation of a result-based M&E system to evaluate the project's (and to the extent possible, OPI's) progress, performance, and impact at the sector and regional levels. Lastly, this component will strengthen institutional capacity in order to undertake project management in terms of planning, coordination, and actual implementation of the overall project at the national, provincial, district, and commune-levels. As such, Component C envisages three subcomponents.

39. Subcomponent C1: OPI Integration and Coordination (US\$0.2 million). The subcomponent will provide support for (a) the establishment of a Secretariat under the nascent National Steering Committee for Avian and Human Influenza (NSCAHI, see Section B3 above); (b) development of coordination mechanisms between the animal and human health sectors at various levels (for instance, undertaking coordination meetings, joint programs, national HPAI outbreak simulations, and the like); and (c) conducting regional outreach activities beyond

Vietnam (for instance, leading regional and international policy coordination and knowledge-sharing initiatives, including workshops, training, information sharing, increased surveillance, laboratory networking, sample exchanges, joint supervision, etc.) bilaterally with China, Thailand, Cambodia, and Laos but also multilaterally with the Greater Mekong Region and APEC at large. During implementation, specific activities will be identified, prepared and undertaken by the NSCAHI Secretariat. The Secretariat will also periodically prepare OPI implementation reviews, and suggest policy lessons for further refinement of the Green Book. The subcomponent will finance technical assistance, field activities, incremental operating costs, training and workshops, equipment and facilities to carry out the activities.

40. **Subcomponent C2: Results M&E** (US\$1.0 million). The subcomponent will provide support for the detailed design, establishment and implementation of a result-based M&E system to (1) evaluate the project's progress, performance, and impact at the sector and regional levels. It will also (2) be an integral part of GOV efforts at monitoring results and evaluation impacts under the OPI. To that effect, the results M&E system should enable monitoring of the effectiveness of implementation processes and incorporation of lessons learned into future planning of and linked to MARD and MOH's monitoring system. The subcomponent will finance consulting services needed to carry out base-line studies; short-term technical assistance for the design; establishment and testing of the M&E system; training and workshops; M&E-related equipment, travel costs of project staff and incremental staff and operating costs of the M&E efforts.

41. **Subcomponent C3: Project Management** (US\$3.6 million). This subcomponent will provide the institutional capacity necessary to plan, coordinate and manage the implementation of the overall project at the national, provincial, district, and commune-levels. In doing so, resources to establish and operate two Project Coordination Units (PCU), one each under MARD and MOH, respectively, will be provided. This involves the development of planning, technical, and management skills to be able to produce quality and timely annual work plans and budget; anticipate and resolve implementation problems quickly; and make adjustments based on implementation progress and feedback. The project management would also monitor activities in the provinces to ensure they are in compliance with the safeguards (i.e. environment, ethnic minority development, involuntary resettlement, and gender) by preparing a safeguard action plan satisfactory to the Bank during the first six months of project implementation and subsequently undertaking this action plan during the remainder of the project. The subcomponent will finance incremental operating costs; contractual staff; project management-related technical assistance; training and workshops; renovation of project office and office equipment and furniture; and project vehicles.

3. Lessons Learned and Reflected in the Project Design

42. Previous World Bank/IDA supported emergency recovery operations provide a number of relevant lessons for project design. Lessons learned of particular relevance to an emergency AHI project include: (a) emergency projects should avoid policy conditionality, (b) project design must be kept simple and in accordance with borrower and other stakeholders' capacity, (c) speedy appraisal and approval are crucial to providing a timely response and contribution to project success, (d) procurement arrangements need to be flexible and should be finalized at an early stage, (e) counterpart's absorption capacity should be realistically assessed, and (e)

effective communications and project monitoring should be in place to avoid implementation delays as the result of delayed identification and resolution of problems.

43. Implementation of AIERP over the last two years has also yielded some important lessons:

- **Integration.** Strong coordination mechanisms and collaborative working arrangements between the human and animal health sectors are critical for the success of an Avian and Human Influenza Control and Prevention Program. AIERP was designed and implemented by MARD through three technical departments. Although the responses to outbreaks so far have been effective, VAHIP in turn should involve MOH and employ a joint approach, especially at the provincial level.
- **Two-pronged Strategy.** VAHIP should include the dual approach of: (1) controlling avian influenza at its source in high-risk regions (through aggressive measures including culling, movement control and vaccination campaigns for poultry and ducks); and (2) simultaneously preparing short and medium-term measures to minimize the risks to humans and prepare for an eventual pandemic.
- **High Level Government Commitment.** It is important to have a coordination structure which has the capacity to undertake multisectoral responsibilities. This coordination structure would have to be established at a high level of government, such as at the Prime Minister's Office level. Moreover, this high level coordination structure should foster a coordinated and integrated national response, involving all technical ministries in charge of agriculture, animal health and human health, as well as other relevant sectors, at the national and sub-national level.
- **Effective Implementation Mechanisms at Local Levels.** Human resources shortages, inadequate skills, and the lack of incentives and decentralized authority pose fundamental challenges to implementation. Therefore, implementation procedures and funding mechanisms should be designed flexibly and decentralized to provincial level to ensure the responses to epidemics more timely and effectively.
- **Linking HPAI Control Strategy and Preparedness Plans with Broader Agenda of Regulatory and Institutional Reforms.** A revised compensation framework is an important element to obtain real cooperation from affected stakeholders (farmers and producers) and to ensure the efficacy of the surveillance and diagnosis mechanisms. Other long term reforms include the restructuring of the poultry industry and the development of food safety regulations. The link with the broader agenda of regulatory and institutional reforms equally applies to the health sector.
- **Strengthening Technical, Scientific and Operational Capacity of Participating Agencies,** and especially national veterinary services, but also for preventive and curative health care. The AI crisis highlighted several weaknesses in the animal health as well as public health services systems, including: poor surveillance at the local level, weak diagnostic capacity, lack of epidemiological expertise and information system, and

inadequate operating budget to bear the additional costs of physical and human cost to contain the spread of the disease.

- **Inclusion of Awareness Raising and Public Information Campaigns in Control Strategies.** Information, education and communication (IEC) represents an essential element in the response to HPAI. Awareness raising campaigns should be developed to assist in the coordination of the response and the implementation of necessary technical responses in the areas of animal and human health. Campaigns – using a variety of appropriate communications media – should address the public and private sectors and the general population and should place particular emphasis on groups at particular risk of infection.
- **Regional Collaboration.** Attention should be given to support the integration of each country within a regional and global HPAI control framework so that the response to HPAI and to emerging infectious and transboundary diseases can be addressed in a consistent and cost-effective manner. The response in Vietnam should seek to be consistent and supportive of regional programs implemented by FAO, WHO and OIE, as well as with similar operations in neighboring countries, mainly Cambodia, Lao and China.

44. VAHIP's components and overall design reflect the lessons learned from AIERP and other emergency recovery operations. It also reflects the experience gained by MOH in responding to HPAI in the health sector. Further information on lessons learned in addressing HPAI in Vietnam is presented in Appendix 9, Technical Note 3.

C. IMPLEMENTATION

1. Partnership Arrangements

45. Partnerships between the Bank and Vietnam's donor community in the fight against avian influenza are longstanding, and developed shortly after the first avian influenza outbreaks began in late 2003. The response by the international community to the epidemic has been substantial. FAO, OIE and WHO each sent teams and experts to assist the government in containing the outbreak, and several bilateral assistance agencies and NGOs donated protective clothing, disinfectants and other goods and services. The FAO Resident Office in Hanoi estimated that, by end-February 2004, some 160 person-months of expert input had been provided to deal with the outbreak. As the HPAI epidemic spread across Southeast Asia, FAO, OIE and WHO called two regional emergency meetings to discuss control strategies, share information, and forge linkages between the affected and non-affected countries in the region. FAO approved regional and country-focused emergency assistance to assist MARD/DAH with disease containment strategies and strengthening of the diagnostic system, and a follow up FAO Technical Cooperation Program is under implementation.

46. The World Bank responded to a request by the Government to prepare an emergency recovery project in February 2004. The Bank team collaborated closely with a mission from Agence Française de Développement (ADF), and the resulting project, AIERP, began implementation in July 2004. In 2006, the Bank led a multi-donor mission to assist with

preparation of the OPI, and then participated in the multi-donor conference in Hanoi which raised funding for animal and human influenza control. As a senior partner, the Bank also plays a significant part in PAHI. With VAHIP, the Bank will continue to assist Vietnam with the consolidation phase of avian influenza control. VAHIP is being prepared under the aegis of the Bank's Global Program for Avian Influenza (US\$15 million IDA credit through GPAD), and will be supported by grants from the multi-donor AHI Facility Trust Fund and the Government of Japan (through a PHRD Grant). Several bilateral donors have indicated their interest in the parallel financing of specific project activities.

47. On June 2, 2006, the Ministry of Agriculture and Rural Development and the World Bank hosted a Joint Government-Donor Meeting in support of the Vietnam Integrated Operational Program for Avian and Human Influenza for the period 2006-2010 (the *Green Book*). At the meeting, high-level representatives from the Government of Vietnam, 23 donor countries, 7 international agencies, and 3 international NGOs discussed challenges in controlling Avian and Human Influenza and commended the Government for the preparation of the Green Book. With an estimated budget of US\$ 250million, the Green Book sets aims to progressively control and eradicate HPAI from poultry in Viet Nam; minimize the incidence and mortality of human avian influenza infections; reduce the risk of the occurrence of a human influenza pandemic; and take steps necessary to reduce the impact of a pandemic, if it does occur. The Government expects to finance up to half of the total estimated cost for its implementation and donors have thus far committed more than US\$ 60 million.

48. The Green Book provides the overall framework for donor support and the establishment of the Partnership for Avian and Human Influenza Control (PAHI) contributes to enhancing ODA efficiency and mutual accountability. The proposed VAHIP, co-financed with other agencies mainly the European Commission and the Government of Japan, and the Phase 2 of the Government-United Nations Joint Program, with US\$35 million and US\$16.5 million respectively, represent the main financial instruments to support the implementation of the Green Book. In addition, ADB is providing funds mainly through the regional support to Prevention and Control of Avian Influenza in Asia and the Pacific and the Transboundary Animal Disease Control in the Greater Mekong Subregion Projects. Other agencies are providing bilateral assistance, consistent with the Green Book, including: USAID which is supporting directly FAO, WHO and NGOs, Government of Japan, which is supporting UNICEF, FAO and OIE, as well as the MOH in the construction of an advanced bio-security laboratory, and AFD which is supporting the regional networks of Pasteur Institutes in Cambodia, Lao and Vietnam.

2. Institutional and Implementation Arrangements

49. VAHIP will be an integrated operation implemented over a three year period. MARD will be responsible for implementation of Component A and MOH for Component B. MARD also will take lead responsibility to initiate the implementation of subcomponent C1. Implementation arrangements aim to anchor policy coordination, program management and component implementation of VAHIP (i.e. a key building block for the implementation of the Green Book) within the relevant Government Ministries while simultaneously ensuring effective execution of fiduciary (i.e. procurement, financial management) and safeguard functions.

50. A Project Mid-Term Review will take place 12 months after Effectiveness. This will allow MARD, MOH and IDA to review and correct possible deficiencies in implementation performance and arrangements early on. It will also provide an opportunity to critically revisit (and possibly restructure) the project's fit with the OPI and changing circumstances in addressing HPAI and other zoonosis and/or contagious diseases in Vietnam.

51. **Central Level.** Overall strategic guidance will be provided by the existing National Steering Committee for Avian Influenza Control (NSCAI). This Committee will evolve to become the National Committee for Avian and Human Influenza Control (NSCAHI). A Secretariat will be established under NSCAHI (with support provided by VAHIP) to assist the Committee in coordinating and managing the overall implementation of the OPI. To that end, the NSCAHI Secretariat will also periodically prepare OPI implementation reviews, suggest policy lessons for its further refinement, and take the lead in Vietnam's regional outreach on HPAI. This Secretariat will be responsible for implementing activities under C1, as well as guide and support implementation of activities under C2 and C3.

52. MARD and MOH will jointly implement VAHIP, and the Vice Ministers of the respective ministries will report to NSCAHI on project implementation. MARD and MOH will be responsible for policies guidelines, the review of annual work plans, ensuring coordination among relevant agencies and the overall monitoring and evaluation of results under VAHIP. Project entities (outlined in more detail below) at the ministerial, provincial, and district levels (i.e. PCU, PPMU, PIT) will be responsible for day-to-day project implementation, supervision, and monitoring of VAHIP components, subcomponents, activities including fiduciary and safeguard functions. The International Cooperation Department (ICD) in MARD and the Vietnam Administration for Preventive Medicine (APM) in MOH will assist in coordinating with other Government ministries and with donors in the implementation of VAHIP.

53. There will be two Project Coordination Units (PCUs): one each in MARD and MOH for coordinating project activities under Components A (and C2a and C3a) and B (and C2b and C2c), respectively. The PCU under Component A will also be responsible to initiate and launch activities under Subcomponent C1. The PCU for Component A will be placed with the Agricultural Project Management Board (APMB) under MARD. The PCU for Component B will be in the Administration for Preventive Medicine (APM) under MOH. The Director of the VAHIP PCU with the APMB / MARD and the Director of the APM at MOH will be the Project Director and Vice Director, respectively, accountable to their respective Vice-Ministers. Two Designated Accounts (DAs) will be opened for each PCU to receive funds from (a) the blended IDA and AHI Facility funds, and (b) the PHRD grant.

54. **For Component A,** on the part of MARD, DAH will take overall responsibility for Component A (and C1, C2a and C3a). DLP will be responsible for Subcomponent A4. The PCU for Component A will be placed with the APMB under MARD. The Deputy Director of DAH will be assigned (part time) as Senior Technical Advisor to the PCU. The DAH will also second a senior staff member as Deputy Director to this PCU. Four Technical Managers (TMs) will be externally recruited (senior national consultants) to assist the Project Director in implementing the subcomponents A1, A2, A3, A4 and A5. An international Chief Technical Advisor (CTA) would advise and support the Project Director on all matters related to the management and implementation of Component A (and C1). The PCU will also hire one national specialist for

monitoring and evaluation to partially coordinate and partially directly undertake activities under Subcomponent C2a. DAH and DLP will support the implementation of VAHIP with its technical staff as required to ensure integration of activities under Component A with the overall OPI program. The PCU will provide adequate procurement and financial management and safeguard capacity in sufficient number for the duration of project implementation.

55. The PCU, DAH and DLP will be supported through technical assistance and services in the management, coordination and implementation of Component A (and C). An experienced Chief Technical Advisor for Component A will also be recruited. OIE will undertake the vaccine production assessment on the basis of their unique experience in this area.

56. **For Component B**, the PCU would be with the APM at MOH. The PCU would include technical staff appointed by (a) APM for subcomponents B1 and B4 and for M&E, procurement, and financial management, (b) the Department of Therapy for subcomponents B2, and (c) APM in close coordination and cooperation with the Center for Health Communication and Education for B3 . In addition, core staff including two accounting and six project officers will be either seconded from the current departments or newly recruited. A local full time Project Coordinator and an international Project Advisor (consultant) will also be recruited over the project lifespan. In addition, Technical Managers (TMs) will be mobilized from the concerned departments of MOH to assist the PCU Director in implementing the four subcomponents. The PCU will also recruit one national specialist for monitoring and evaluation to partially coordinate and partially directly undertake activities under Subcomponent C2a.

57. **For Component C**, MARD's PCU will also take lead responsibility for launching activities under subcomponent C1, which includes, but is not limited to, the development of coordination mechanisms between the animal and human health sectors at various levels (for instance, undertaking coordination meetings, joint programs, national HPAI outbreak simulations, and the like) and conducting regional outreach activities beyond Vietnam (for instance, leading regional and international policy coordination and knowledge-sharing initiatives). Component C2 (C2a and C2b) and C3 (C3a and C3b) will be implemented by the PCUs under MARD and MOH, respectively.

58. The two PCUs will be responsible for:

- overall project implementation of Component A, B and C -- including coordination of subcomponents and activities at central level and across provinces, the procurement and financial management, supervision of project activities and results monitoring and evaluation – which it will carry out in accordance with the agreements between GOV and IDA and under the guidance of MARD or MOH, respectively.
- developing and implementing mechanisms to ensure coordination with other concerned agencies on policies, program and projects (both funded by Government but also by other donors) in support of the OPI;
- providing guidance and support to the Provincial Project Management Units (PPMU) in establishing annual work plans including realistic and feasible targets, in implementing work plans, in monitoring PPMU progress as well as in ensuring compliance with safeguard policies through the PPMU;

- preparing, issuing and communicating internal project implementation guidelines for the provincial, district, and commune levels and supervising their respective operations;
- consolidating work plans and budgets, including procurement plans from PPMUs for the project for submission to the respective line ministry for approval and to IDA for review and no-objection;
- developing and maintaining sound project accounting systems, in accordance with the procedures required by government and IDA, including the financial management of the Designated Accounts (DAs);
- handling all ICB and NCB procurement packages and the selection of international consultants, as well as all other procurement matters for which central management is more efficient compared to provincial level management.; and
- Setting up project management and reporting systems, including M&E at all project levels, and managing the decision making flow in accordance with project requirements.

59. **Provincial Level.** The existing Provincial Steering Committees for Avian Influenza that government established under the Provincial People’s Committees (PPCs) will provide general policy guidance for all activities to be implemented in the eleven project provinces and ensure strong coordination among the relevant line agencies. The Provincial Steering Committees are also responsible for reviewing and approving all activities that have been decentralized to the provincial level, including the provincial work plans, budgets and procurement decisions.

60. At each of the participating provinces there will be one Provincial Project Management Unit (PPMU) which will be responsible for managing and implementing project activities associated with Components A, B and C which are carried out at the provincial level. The PPMU will report to the Provincial Steering Committee. The Vice-Directors of DOH and DARD will be the PPMU Director and Vice Director, with the relative scale of project activities under Components A and B determining whether the PPMU will be located in DOH or DARD. The PPMU will have the following key positions: PPMU Director, Accountant(s), Procurement and M&E Officers, and senior technical staff from DARD, DOH, DOF, DPI, and the Provincial Treasury. A single Project Account (PA) will be opened at each PPMU to receive advance funds from the PCUs’ Designated Accounts (both IDA/AHI Facility blended funds and PHRD funds) to facilitate timely project implementation in the province.

61. The functions and responsibilities of the PPMU are as follows:

- under the guidance of the PPC and in coordination with the PCUs as well as the provincial departments, implement components A, B and C in the respective province;
- develop and implement mechanisms to ensure coordination with other concerned agencies on policies, program and projects (both funded by Government but also by other donors) in the respective province;
- prepare, issue and communicate internal guidelines for district and commune level project activities; and guide, support and supervise the districts and communes in carrying out project activities;
- prepare work and budget plans as well as implementation and monitoring reports for submission to the PCUs for consolidation and PPC approval, and to IDA for review and no-objection;

- manage and carry out procurement activities that have been decentralized to the province; prepare and submit procurement decisions to the PPC for approval;
- develop and maintain a sound project accounting system in accordance with the procedures required by government and IDA, including the financial management of the project account (advance funds); and
- set up project management and reporting systems, including M&E at the provincial, district and commune levels, and manage the flow of information for decision making in accordance with project requirements.

62. Under the PPMU two Provincial Implementation Teams (PIT) will implement activities at the provincial, district and commune level: one in DARD, responsible for the implementation of Component A, and one in DOH for Component B. For Component A, the PIT will consist of technical staff from the sub-departments of Animal Health, Livestock, and Agricultural Extension. For Component B, the PIT will include technical staff from DOH and the Provincial Center for Preventive Medicine. The PITs will function independently and report directly to the Director and Vice Director of their PPMU, and will cooperate and coordinate their activities in the field.

63. The functions and responsibilities of the PITs are as follows:

- under guidance of their PPMU, be responsible for project implementation, management and supervision of the activities in the respective component;
- coordinate with other implementation agencies to ensure effective project implementation;
- ensure that realistic targets are set and met, and be responsible for the implementation of safeguard policies in their respective components;
- prepare work plans and budgets for their component for submission to the PPMU for consolidation; set up component management and reporting systems at the provincial, district and commune levels; and manage the flow of information for decision making in accordance with project requirements; and,
- be responsible for the technical implementation and reporting to the PPMU to make decisions on procurement and financial-related matters.

64. **District and Commune Level.** A number of project activities envisage implementation at the District and Commune level. Specific implementation and coordination arrangements aiming to reflect local conditions and needs will be established during project start-up by the provincial, district and commune authorities with support from the respective PPMU and PITs.

65. **Project Implementation Manual.** To guide the implementation of the Project, the MARD PCU and MOH PCU will prepare and adopt a Preparation Implementation Manual (PIM) acceptable to the Association. These PIMs will set forth: (i) the implementation arrangements at the central, provincial and local levels; (ii) guidelines for the preparation and technical review of provincial annual work plans; (iii) in respect of Part A.4(c) of the Project, eligibility criteria and review and approval procedures for small grants to undertake basic biosecurity improvements; (iv) in respect of Part B.4(b) of the Project, eligibility criteria and review and approval procedures for sub-grants to support pilot approaches and systems for district preventive health centers; (v) detailed guidelines for financial management and

procurement, including procedures and requirements for disbursements of funds, internal control arrangements, record keeping, reporting and auditing of Project records and accounts; (vi) guidelines for the implementation of environmental management procedures; (vii) the Ethnic Minorities Communication Plan; (viii) in case of Part A.2 of the Project, the Resettlement Policy Framework and the Resettlement Action Plan; and (ix) the work plan for the calendar year 2007. The Borrower will not amend or waive any part of the PIM without prior concurrence of the Association.

66. **Fund Flows.** There will be two main sources of funds, namely: (i) blended funds from the AHI Facility and IDA credit; and (ii) the PHRD Grant. The PHRD Grant will finance mainly technical assistance activities in the subcomponents. The AHI Facility and IDA Credit will be blended to finance the remaining project activities on a percentage share basis. The project will use traditional disbursement methods as per the IDA's disbursement guidelines.

67. At the central level there will be a total of four Designated Accounts (DAs). Each PCU will have two DAs – one for PHRD funds and the second for the blended IDA credit and AHI Facility funds. DAs will be opened in a commercial bank with terms and conditions satisfactory to IDA.

68. At the provincial level, each PPMU will have one project account in VND opened in a commercial bank to receive advances from the four PCUs' DAs for project expenditures. The accounting system and records will account for the expenditures by component and source of funds. The advance amount to the PPMUs' project account will follow the 90 day-advance account procedure and will be determined based on the approved quarterly work plan of the province, the progress of field implementation, and the reimbursement. Each quarter, the PPMU would send an advance request with summary and detailed reconciliation of: (i) the value of the next quarter's planned activities; and, (ii) the unspent balance of the previous advance (that is, the opening balance less the amount spent in the last quarter).

3. Monitoring and Evaluation (M&E) of Project Outcomes and Results

69. Project monitoring and evaluation activities will track and measure the project's results at various levels of the results chain. These activities will also support monitoring of results and evaluation of impacts for the overall implementation of the OPI. Intended results, results indicators and specific arrangements for project results monitoring are specified in the Results Framework (see Appendix 1). Baseline surveys will be undertaken early during project start-up. Monitoring and evaluation activities are envisaged across the various subcomponents and designed to provide the information necessary to both routinely manage the project effectively and to assess project impact.

70. **Animal Health Component.** Proactive monitoring, problem identification and resolution will be strengthened by incorporating these activities within the respective Subcomponent activities. The M&E schedule (Appendix 1) provides verifiable indicators towards this goal. Project Officers with the PCU will be assigned to each subcomponent to ensure that monitoring of all component activities takes place, and that problems are identified, reported and addressed in a proactive and timely manner. The CTA will backstop decisions involving technical issues associated with the M&E approach. The PCU will actively coordinate with MARD in

incorporating M&E arrangements under this component with those established by MARD for the overall OPI.

71. Monitoring results will be reflected and reviewed in semi-annual project progress reports to (a) alert implementing agencies, the government and the Bank to actual or potential problems so that adjustments can be made, (b) determine whether the relevant stakeholders are responding as expected, and (c) allow the respective agencies to review and improve on their performance. M&E reports will form a standard part of the biannual project supervision reports, and will be presented in standardized format. The monitoring findings will cover civil works, procurement, institutional activities, training and studies, performance indicators and FMRs. They will also cover issues identified during implementation, and strategies and actions undertaken. The fourth quarterly progress report of each year will be an annual report, covering progress made during that year. In addition to the Mid-Term Review, a First Year Progress Review will be scheduled to assess a review of early project implementation and make adjustments where needed. This will provide a joint opportunity by Government, specialized agencies, implementers and donors/financiers the opportunity to review progress and discuss adjustments, where necessary. An Implementation Completion Report will be prepared by the specialized agencies and the Bank within six months of the project closing date.

72. **Human Health Component.** At the outset of the project, a monitoring and evaluation plan will be developed based on the project's results framework. This plan will amplify the results indicators and arrangements for results monitoring. It will also include the development of project assessment and supervision tools to be used during monitoring and supervision visits over the life of the project. The PCU will actively coordinate with MOH in incorporating M&E arrangements under this component with those established by MOH for the overall OPI.

73. Monitoring and supervision field trips will be conducted routinely by project management staff at provincial and central levels. Semi-annual management reviews will be conducted by the World Bank in conjunction with implementing partners. At provincial level, annual project implementation review workshops will be organized. These meetings will serve as a forum to assess project progress, share lessons learned and prepare project annual plans for submission to CPMU. CPMU staff will participate in these annual workshops to ensure that cross-provincial information is shared and good practices promoted. Annual workshops may be coordinated within regions for enhanced project learning and wider dissemination of successful approaches.

74. The project will use outbreak simulations as both a diagnostic and a monitoring approach to assess the readiness of systems and personnel at each level and to gain insights into the linkages and coordination between levels and between sectors. This will provide a better understanding of the impact of project capacity building activities and the effectiveness of coordination and management functions supported by the project.

75. Several important features of the project will be separately studied and evaluated. Due to the significant scale of project training interventions, a training evaluation will be conducted to assess training content, methodology, follow up and impact in each of the relevant subcomponent technical areas. Project surveillance and DPHC pilots will also be separately evaluated so as to provide a strong evidence base for guiding MOH policy and systems

strengthening. Evaluation findings will serve as a key input to MOH in determining national surveillance guidelines. Likewise, the evaluation of pilot DPHC's will assist the MOH in providing effective national leadership and guidance on the roll out of this new system.

76. An external technical agency will support M&E planning and tools development and will carry out specialized project assessments and evaluations. This agency will also be responsible for designing and assisting with a project Mid-Term Review to be conducted in conjunction with Component A.

4. Sustainability, Critical Risks and Possible Controversial Aspects

77. **Sustainability.** Sustained ownership of project objectives and activities, coupled to strong government commitment, implementation incentives and the timely flow of financial resources, will be critical factors in assuring effective project implementation. The consolidation of project activities is designed towards this goal. The project will benefit from experience already gained from AIERP, fortified by the need to expand avian flu control measures to prevent further outbreaks and the resulting damage to the poultry sector and human safety. The sustainability of laboratory services, which will increase as the result of increased operating costs to maintain new equipment, provide consumables, and pay additional staff, will be supported by introducing regulatory measures to allow veterinary laboratories to charge fees for services to commercial clients to defray operating costs. Provincial budgets to support Regional Veterinary Centers (RVC) will also be increased. Project Officers assigned to the PCU will ensure that the project activities targeted at improving the quality assurance of veterinary services will be effectively implemented. Market-driven poultry marketing and slaughtering will provide incentives along the market chain to improve farm biosecurity, slaughter hygiene and marketing, to break the infection chain.

78. As regards human health, what drives this project is the need to maintain a sustainable level of vigilance and establish mechanisms for surveillance and response that can be sustained through and beyond the natural life cycle of this particular virus. It is relatively easy to identify the activities necessary to address a resurgence in sporadic human cases resulting from poultry exposure. However, achieving the right balance in pandemic preparedness is more challenging, since the timing or severity of the next pandemic, or even if it will be due to this or any other influenza virus, is not known. In the absence of a predictable scenario to plan for, it is only appropriate to set up reasonable contingencies, understanding that, in the event of a severe pandemic, no amount of preparations will ever be adequate. The hope instead is that those that are made will also be applicable to other emergency scenarios.

79. Critical Risks

Risk	Rating	Mitigating Measures
From Components to Outputs		
Ebbing government commitment to control	S	Continued discussions with government on OPI objectives and continued support from PAHI
Slow approval process for procurement and disbursement.	S	Decentralization to the provinces of funds for selected activities; proactive attention by PCU staff
Lack of FM capacity at central and provincial level including: inexperienced financial staff, lack of computerized accounting system, clear FM guidance to coordinate, lack of internal audit mechanism.	S	Appoint acceptable financial staff at central and provinces; development FM guidance in the PIM; provide training on FM disbursement; establish effective internal control/audit function
Limited capacity by central and provincial DOH, DAH and DLP to take leading role in managing project activities on a sustained basis	S	Ensure that incremental project support scheduled for these agencies is at hand, and train DLP staff in management skills
Inadequate coordination between MOH and MARD may undermine effective leadership and management of the project.	S	Promote appropriate operational coordination mechanisms at each level with strong People's Committee engagement; strong program implementation & management linkages in key areas such as training, IEC, surveillance, planning and supervision
Human health components have been designed to build AHI capacity within a broader system's framework. It will be difficult to achieve, sustain and scale up lasting integration of various components.	M	Project activities are designed to reinforce the role of AI prevention and preparedness within a larger public health context.
Innovation may be resisted by MOH and other authorities.	H	Design and implement pilots that are closely monitored and well evaluated with results widely disseminated; identify and involve innovation champions within the MOH, DOH's and other key stakeholders.
Volume of in-service training may overload capacity of trainers and trainees; in absence of strong health training system, training quality and necessary follow up is difficult to ensure.	S	Detailed implementation planning at local level; provision of TA in design of training; close monitoring and discrete evaluation of training strategies and activities

Disease surveillance results do not cause improvements in control measures	S	Surveillance data is properly analyzed, transferred and acted upon; Surveillance sampling is correctly done and processed.
Commune-based disease reporting and other surveillance mechanisms are not responding satisfactorily	S	Provide close M&E on the relevance and presentation of training activities; conduct simulation exercises to identify problems; provide reporting incentives.
From Outputs to Objectives		
Resources cannot be moved easily from one area to another. Should a major outbreak occur in a non-project province, project resources may not be available to respond adequately	S	Contingency funds and stockpiles of key equipment and materials available at central level for immediate deployment as needed in the event of an outbreak
Harmonization with the diverse stakeholders now working at scale with MOH is difficult	S	WB and MOH participation in key coordination meetings, AHI networks, and joint missions as appropriate will mitigate duplication and facilitate value added linkages
Inadequate implementation of poultry farm surveillance for certified disease-free status, combined with weak enforcement of same, fails to improve the marketing of avian flu-free poultry	M	Strong support is incorporated into project activities for DAH and SDAH to undertake adequate poultry farm auditing for disease, and for behavior changes in market operations
The surveillance program fails to decrease circulating virus in poultry	S	Project support for DAH-initiated surveillance is comprehensive and provides the necessary inputs to effectively carry out the program
Poultry sector restructuring is constrained by weak DLP planning capacity and implementation of guidelines at the District level	S	Human capacity strengthening at DLP, combined with the provision of planning and guidelines, ensures adequate restructuring oversight and assistance
Overall Risk Rating:	S	

risk rating: H (high risk); S (substantial risk); I (modest risk); N (negligible or low risk)

5. Credit Conditions and Covenants

80. Conditions of Effectiveness:

- a. The AHI Facility Trust Fund Grant Agreement and the PHRD Grant Agreement have been executed and delivered and all conditions for their respective effectiveness or the right of the Recipient to make withdrawals under both of them have been fulfilled;
- b. At least one of the MARD or MOH PCUs has:
 - (i) been established and staffed with at least the following key staff: PCU director, procurement officer, accountant, technical managers for each sub-component of the Project Component under the responsibility of the PCU; the PCU managers and staff should have qualifications, experience and terms of reference acceptable to the Association;

- (ii) adopted its respective Project Implementation Manual (PIM), which includes, among others, financial management guidelines, an Ethnic Minorities Communication Plan and guidelines for the implementation of environmental management procedures; as well as the Resettlement Policy Framework and the Resettlement Action Plan; acceptable to the Association;
- (iii) set up a computerized accounting system consistent with the financial management guidelines of the PIM, satisfactory to the Association;
- (iv) developed and implemented a comprehensive training and capacity building program for its financial management staff, in a manner satisfactory to the Association; and
- (v) adopted its respective Procurement Plan for the first 18 months of Project implementation acceptable to the Association.

81. Conditions of Disbursement

- a. For disbursement of the proceeds allocated to Components A and C (under the responsibility of MARD), the MARD PCU has:
 - (i) been established and staffed with at least the following key staff: PCU director, procurement officer, accountant, technical managers for each sub-component of the Project Component under the responsibility of the PCU; the PCU managers and staff should have qualifications, experience and terms of reference acceptable to the Association;
 - (ii) adopted its respective Project Implementation Manual (PIM), which includes, among others, financial management guidelines, an Ethnic Minorities Communication Plan and guidelines for the implementation of environmental management procedures; as well as the Resettlement Policy Framework and the Resettlement Action Plan; acceptable to the Association;
 - (iii) set up a computerized accounting system consistent with the financial management guidelines of the PIM, satisfactory to the Association;
 - (iv) developed and implemented a comprehensive training and capacity building program for its financial management staff, in a manner satisfactory to the Association; and
 - (v) adopted its respective Procurement Plan for the first 18 months of Project implementation acceptable to the Association.
- b. For disbursement of the Credit proceeds allocated to Component B (under the responsibility of MOH), the MOH PCU has:
 - (i) been established and staffed with at least the following key staff: PCU director, procurement officer, accountant, technical managers for each sub-component of the Project Component under the responsibility of the PCU; the PCU managers and staff should have qualifications, experience and terms of reference acceptable to the Association;
 - (ii) adopted its respective Project Implementation Manual (PIM), which includes, among others, financial management guidelines, an Ethnic Minorities Communication

- Plan and guidelines for the implementation of environmental management procedures; acceptable to the Association;
- (iii) set up a computerized accounting system consistent with the financial management guidelines of the PIM, satisfactory to the Association;
 - (iv) developed and implemented a comprehensive training and capacity building program for its financial management staff, in a manner satisfactory to the Association; and
 - (v) adopted its respective Procurement Plan for the first 18 months of Project implementation acceptable to the Association.
- c. For disbursement of the proceeds allocated to the disbursement category corresponding to payments of compensation to farmers in the event of an outbreak and culling: studies on improving the compensation mechanisms have been completed and a Compensation Manual has been adopted by MARD, satisfactory to the Association.
82. Other Covenants and Conditions (Non-Standard)
- a. The Recipient shall maintain, throughout the period of implementation of the Project, the National Steering Committee for Avian Influenza to provide overall guidance and direction in the implementation of the Project.
 - b. The Recipient shall appoint a Project Director from MARD and a Project Vice Director from MOH, under TOR satisfactory to IDA;
 - c. Each Project Province shall establish, staff and maintain throughout project implementation, its PPMU under the Provincial People's Committee; until the PPMU has been established with adequate resources, staffing and TOR satisfactory to IDA, the Recipient shall not provide funding from the Credit for Project activities in the Province.
 - d. By no later than April 15, 2007, the Recipient shall have completed an environmental assessment of the Project and an environmental management plan, satisfactory to the Association and publicly disclosed the assessment and the plan.
 - e. The Recipient shall implement environmental measures acceptable to the Association and monitor and report on the implementation of those measure.
 - f. In connection with activities to control market-based avian influenza, the Recipient shall implement the Resettlement Policy Framework and the Ha Vi Resettlement Action Plan.
 - g. By no later than December 31, 2007, the Recipient shall have designed a results-based monitoring and evaluation system acceptable to the Association; and MARD PCU and MOH PCU shall have completed a baseline survey of Component A and Component B, respectively, and published the results of that survey.
 - h. The two PCUs shall prepare annual work plans including budget and disbursement estimates for their respective components and, by November 1 of each year, provide them

to the Association for discussion. These annual work plans will consolidate the annual work plans submitted by the Project Provinces.

- i. The two PCUs shall prepare semi-annually progress reports, including quarterly interim financial reports, and provide them to the Association no later than 45 days after the end of the quarter.
- j. The Recipient shall discuss with the Association any proposed modification or amendment of the Green Book before undertaking such modification or amendment.
- k. A Project Mid-Term Review will take place 12 months after Effectiveness.

D. APPRAISAL SUMMARY

1. Economic and Financial Analysis

83. The measures proposed under this project will reduce the risk of AHI outbreaks and thereby help to prevent an emergence of a pandemic strain of human influenza. The benefits of preventing a pandemic and avoiding its potentially severe economic impacts are not confined to Vietnam. If action is not taken in Vietnam to control infection, the risk to the rest of the world's population increases. The project thus provides a global public good. Even though the level of risk of emergence of a human pandemic influenza virus from currently circulating H5N1 viruses in poultry is unquantifiable and the timing of such an event is unknown, the costs of such an event, if it were to occur, are so high that actions to control H5N1 HPAI can be justified on this basis alone. Therefore, a traditional economic analysis of the project's costs and benefits is not particularly useful.

84. Control and eradication of HPAI can only be achieved by using a combination of measures. The composition of measures must be chosen and adapted according to the conditions in the country and its disease status, and must be phased. The aim is to ensure a minimum cost composition of control measures to achieve this objective.

85. The suite of control measures employed in 2005 provides a baseline cost for the control of avian influenza in Vietnam. For example, the cost of vaccination alone amounts to some \$20 million per annum. No outbreaks have been reported in Vietnam since the introduction of the 2005 suite of measures (although H5N1 viruses are still present in the country). However, concerns have been expressed that in the long term the current government driven mass vaccination of smallholder and village poultry is not sustainable given the significant time and effort required to implement this properly. The resources allocated in VAHIP to control HPAI should therefore be assessed against their contribution in reducing the overall costs of HPAI control in a sustainable way in the long term. To achieve this, sustainable changes in existing marketing and production practices must be implemented and veterinary institutions strengthened.

86. In Vietnam, where the bulk of poultry production is still undertaken by backyard producers, the costs of controlling for avian influenza have fallen mostly on individual rural households. Survey data show that the poorest quintile of households relies more than 3 times as

much on poultry income than does the richest quintile, so there are also adverse distributional effects. Reductions in poultry income due to avian flu or to potentially ill-designed avian flu control strategies will thus tend to worsen income distribution in Vietnam. Project subcomponents proposed in this project aim to ensure that the effects on the poor of this disease and the control measures implemented are minimized through activities such as use of ring vaccination, studies on streamlining of compensation and finding ways to allow smallholders to keep accessing markets.

2. Technical

87. **Component A: HPAI Control and Eradication in the Agricultural Sector.** The design and implementation of Component A benefits from the experience and lessons learned from AIERP. Several of these are referred to in Lessons Learned (above) and in Appendix 9, Technical Note 1. Component A addresses the consolidation phase of Vietnam's fight against avian influenza, during which gains are maintained, voluntary restructuring of the poultry industry aiming to increase bio-security in a socially and environmentally sustainable manner is undertaken, poultry vaccination becomes more focused and cost effective, farms in the industrial sector demonstrate freedom from HPAI, and disease-free compartments are expanded. Several technical and institutional issues will impact on the successful implementation:

88. **Public and Private Sector Capacity of Veterinary Services.** Although substantially strengthened with support from the Government, the Bank, its GPAI partners and the donor community, veterinary services remain understaffed and short of the quality assurance in diagnostic and epidemiological outputs that is required to build confidence in decision makers. More focused and in-depth technical training through the institution of a laboratory quality assurance program -- that aims for accreditation of HPAI diagnosis -- will provide much of the impetus needed to achieve this goal. Private sector veterinary services remain on the sideline of public sector animal disease interventions, and need to be brought into the process by means of working partnerships that build trust and cooperation. Collaboration in poultry sector restructuring, market-based disease surveillance and general poultry surveillance, as planned, could do much to achieve this goal.

89. **Regulatory Framework.** Adequate enforcement of the existing regulatory framework that governs the implementation of veterinary services remains questionable. Despite repeated external and internal reviews and adjustments, enforcement of Decrees and Decisions continues to pose a significant constraint in ensuring that regulatory matters move from paper to farm and market. The introduction of pilot market-based disease control would provide a practical link between regulatory design and legal practice, by introducing incentives (i.e. the delivery of vaccinated poultry from health-certified farms as a point of entry) to comply with regulatory requirements. Similarly, guidelines prepared for poultry restructuring, backed up with on-the-ground models, would provide the incentive to gradually enforce regulations.

90. **Biosecurity Measures.** Biosecurity measures remain widely misunderstood and misapplied, as evidenced by the practice of routine spraying of poultry as a way of "disinfecting" them (the infective virus resides inside the birds, and is not killed by external disinfectants). Despite continuous messaging, many smallholders have only limited awareness of the principles of biosecurity and disinfection. Clearly, more well-targeted and designed messaging is needed,

albeit in the correct mode and manner, and to the right audience. A clear need exists to evaluate messaging and decide on what works and what does not -- quality assurance in Information, Education and Communication (IEC) is as important as it is in veterinary services provision.

91. **Standardized Disease Reporting.** Standardized disease reporting remains a wish rather than reality, and presents a major constraint in comprehensive disease reporting at all levels. The lack of a unified national reporting mechanism is related to the relative autonomy of the provinces, which devise their own measures and systems in coping with disease control. A major institutional constraint in maintaining a national reporting network has been the lack of epidemiology support staff at DAH, compounded by the lack of such staff and the SDAH level; a deficiency that will be corrected by project inputs. Linked to additional epidemiology training inputs, TA and enhanced DAH capacity, a harmonized reporting network is one of the objectives of Component A.

92. **Poultry Sector Restructuring.** Voluntary and private sector-led poultry sector restructuring is a significant challenge for the newly established Department of Livestock Production (DLP). A small, weak and poorly trained DLP is facing a national program well beyond its present capacity and capability. Lack of coordination between DLP and the provinces and the districts in which restructuring will actually take place has resulted in confusion, lack of clarity in restructuring guidelines, and lack of resources (land, capital, incentives) by the industry to effectively respond to restructuring. Component A will address some of these deficiencies by providing capacity building, guidelines and the development of pilot restructuring models. (However, the extrinsic factors to restructuring remain beyond the scope of the project. Further details are found in Appendix 9: Technical Note 3.)

93. **Component B: Influenza Prevention and Pandemic Preparedness in the Health Sector.** Consistent with successful AI control efforts globally, the human health component of VAHIP is designed to prevent or limit transmission from animals to humans, appropriately identifying, responding to and treating any human cases that do occur, and preparing for a potential pandemic. The approach being adopted in this project signals a strategic shift in two principal ways: The first is the shift from an emergency preparedness-only approach, to planning for the medium term. The second is by moving the interventions closer to the community and fostering local ownership by encouraging participation of the district and community levels. The subcomponents under this component include (1) strengthening routine surveillance, (2) building capacity of the district and provincial health centers, (3) enhancing positive behavior change through effective communication and knowledge dissemination, and (4) strengthening the preventive health care functions.

94. **Surveillance System.** A good surveillance system is fundamental to any effort to prevent, detect, and contain an outbreak of HPAI. A surveillance system for communicable diseases is in place in Vietnam providing information for 26 notifiable diseases. This system is not without its challenges. Reporting is still fragmented (in order to accommodate the requirements of different vertical programs), case definitions are not universally applied, and data generated is often neither accurate nor routinely used for decision making by those generating the information. These constraints are most severe at the lower levels from the district to the community. The surveillance system subcomponent will support MOH in the assessment and piloting improvement of the surveillance system in the project provinces involving all levels

from the community to the province. It will also support the implementation of an early warning system, the creation of rapid response teams, improved information management, capacity-building and supply of equipments to facilitate early detection and response to outbreaks.

95. **Curative Care Readiness.** Vietnam has had some experience with managing human AHI cases in hospitals. Reported cases were managed in very specialized hospitals in Ho Chi Minh City and Hanoi. Potential outbreaks still pose a credible threat to the hospital systems especially at the district level where patients are likely to present initially. Therefore, a more systematic approach for improving the capacities of these hospitals is crucial. The curative care readiness subcomponent will assist the hospitals through the development of preparedness plans, investment in the needed equipments and supplies, and training of staff in the hospitals.

96. **Behavior Change and Communication.** Given the likelihood of persistence of circulating influenza viruses (H5N1 and other subtypes), prevention of animal to human transmission is the bedrock of controlling AI in humans and preventing a pandemic. It is therefore critical that people are well informed and adopt practices (personal and environmental) that effectively mitigate this risk, and that they take part in the reporting and containment of outbreaks. The BCC subcomponent adopts a two-pronged approach of improving the BCC skills of health workers at all levels, and conducting community-based BCC activities, within the framework of appropriately designed provincial level BCC plans.

97. **Preventive Health System.** The newly introduced preventive health strategies of MOH will form the foundation for future comprehensive and systematic approaches to preventive health in Vietnam. Any effort to sustain preventive health interventions will need to build on this new framework or take it into account. This framework remains largely untested and has only been implemented in a few provinces. The preventive health system subcomponent will assist MOH in operationalizing this in the provinces and adapt it to local circumstances. It will support appraisals of the system, piloting of innovative preventive efforts with active local participation, coordination with DARD, and addressing HR constraints.

3. Fiduciary

98. An assessment of the project's financial management arrangements was conducted in October 2006 and updated in December 2006. Although this is a follow-up project to AIERP, there are significant changes in the implementation arrangements with implementation substantially decentralized to the provincial level, new coordination arrangements between two ministries, and new staff being appointed and responsible for financial management. The FM risk is assessed as substantial due to the: (i) lack of capable staff at the central level and especially at the provincial level when the functions of planning, budgeting, procurement and financial management are delegated to the provinces; (ii) lack of clear guidance on coordination between two implementing ministries to achieve consolidated and timely management of funds flows, budgeting and financial reporting; (iii) lack of practical and consistent computerized accounting arrangement to support accounting and financial monitoring; (iv) potential delays in the provision of counterpart funding from provincial government budgets; and (v) lack of an effective oversight mechanism such as an internal audit function. The above risks and mitigating measures have been analyzed by the mission and a detailed Action Plan to improve Financial Management has been prepared. It is concluded that with the completion of that Action Plan (see

Appendix 4), the Project will have capacity to meet the minimum requirements of the Bank's OP/BP10.02.

4. Procurement

99. **Procurement Methods.** The emergency nature of the project requires the use of methods that would allow procurement to be completed in the shortest possible time while still ensuring a reasonable degree of competition and transparency. Given the small value and nature of most of the procurement packages, the proposed methods include shopping, procurement from specialized UN agencies for vehicles, selection based on consultants qualification, individual consultants and single source selection in accordance with the provisions of the Bank Procurement Guidelines and Consultant Guidelines, April 2004.

100. **Procurement Plan.** A procurement plan was developed by MARD, MOH and Provincial People Committees (PPCs) (that is, the proposed project implementing agencies). In addition, the PIM to be prepared before project effectiveness will include a section on procurement. Technical assistance services from OIE will be procured using sole-source selection.

101. **Procurement Capacity Assessment.** An assessment of the procurement capacity of the proposed project implementing agencies was conducted as part of the appraisal mission and the capacity was found inadequate.

102. **Procurement Risks and Corrective Measures.** The overall project risk in respect of procurement is high. The procurement issues and risks for implementation of the proposed project are mainly related to: (a) inadequate procurement knowledge and experience of the project implementing agencies; (b) the potentially heavy workload due to the emergency nature of the proposed project in addition to the workload which might be required by other potential projects to be funded by other donors; (c) the possibly slow or delayed government internal procurement approval process; and (d) the potential abuse of shopping and statement of expenditures procedures. The main measures envisaged to address these risks under a Procurement Action Plan include inter-alia: (a) MARD/MOH/PCs to provide a simplified review procedure for internal approval; (b) a procurement consultant should be recruited for each central PIA; (c) each PIA will assign one procurement officer to work full-time at the CPU(s); (d) procurement training should be provided for project staff; (e) advertising for shopping packages above thresholds established for this project is mandatory; and (f) enhanced measures for monitoring and control of procurement which is undertaken on the SOE basis.

5. Social

103. The project is expected to contribute to minimizing the impact of avian influenza outbreaks and a human pandemic by having in place a surveillance and response system to minimize the potential impact of unreported outbreaks in poultry. Furthermore, the project will support a follow-up study on compensation policy implementation, including merits and sustainability. By minimizing the circulation of infective HPAI virus in the poultry population, the chances of the virus transmuting to humans is equally minimized. The project will focus heavily on further strengthening disease surveillance and reporting, combined with more finely

tuned awareness messages that result in public behavior change, especially of rural populations at the commune/village level. A preparedness plan, backed with contingency funds for incremental outbreak containment, is supported by the project. The project's support to improving surveillance, conducting public awareness campaigns (including translation of messages into ethnic languages), and putting in place a preparedness plan, could help to prevent or, in the event of a pandemic, reduce the impact on the population. The integrated surveillance system to be supported by the Project will reinforce the multi-sectoral character of project responses.

104. The Bank's two social safeguards policies - Indigenous Peoples (OP4.10) and Involuntary Resettlement (OP4.12) - are triggered. Although the Indigenous Peoples safeguard applies, the Project is expected to have no adverse impacts on ethnic minority groups. An Ethnic Minority Communication Plans will be developed to ensure that these ethnic minorities will benefit from the project in a way which is culturally appropriate and gender inclusive. To support this goal further, public information materials will be produced in local minority languages to ensure that all concerned ethnic groups are informed (see Appendix 7). The design of subcomponent B3 - Strengthening Behavior Change Communication (BCC) in Health Facilities and the Community will reflect the Ethnic Minority Communication Plan. The Involuntary Resettlement safeguard policy is triggered by the acquisition of about 1.7 ha of land under the project for the Ha Vi live-poultry market in Ha Tay Province. There is no housing on the land to be acquired. MARD has prepared and approved a Resettlement Framework Policy for Component A and a Resettlement Action Plan for the Ha Vi Market.

6. Environment

105. The project is not expected to have any large-scale, significant and/or irreversible impacts as activities focus largely on public sector capacity building and ensuring readiness for tackling outbreaks of HPAI in domestic poultry as well as preventing or reducing possible human infections by strengthening emergency preparedness and response. The project design envisages other beneficial measures on the animal health side such as improved biosecurity in farms, disease control and poultry industry restructuring. On the human health side, the preventive activities include enhanced surveillance, curative care preparedness and awareness raising. All measures are aimed at increasing the effectiveness and safety over the existing AHI practices and will have positive human health and environmental impacts. An outline of the Environmental Management Plan (EMP) is found in Appendix 6. This outline will be developed into a complete draft by MARD/MOH after consultation with various stakeholders. The EMP will be finalized and disclosed at publicly accessible locations in Vietnam and at InfoShop in Washington by April 15, 2007. The project Finance Agreement reflects implementation of the EMP.

7. Safeguards Policies

106. Among the Bank's safeguards policies, the Environmental Assessment (OP4.01), Indigenous Peoples (OP4.10) and Involuntary Resettlement (OP4.12) are triggered. The project design incorporates the necessary mitigation measures for the adverse impacts associated with the activities involved in responding to HPAI outbreaks.

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP 4.01)	[X]	[]
Natural Habitats (OP/BP 4.04)	[]	[X]
Pest Management (OP/BP 4.09)	[]	[X]
Cultural Property (OP/BP 11.03)	[]	[X]
Involuntary Resettlement (OP/BP 4.12)	[X]	[]
Indigenous Peoples (OP/BP 4.10)	[X]	[]
Forests (OP/BP 4.36)	[]	[X]
Safety of Dams (OP/BP 4.37)	[]	[X]
Projects in Disputed Areas (OP/BP 7.60)	[]	[X]
Projects in International Waterways (OP/BP 7.50)	[]	[X]

8. Policy Expectation and Readiness

107. Since the Project is being processed in accordance with emergency procedures (OP/BP 8.50 ERL), clearance has been received by the Regional Safeguard Advisor, EAPVP and OPCS VP to delay the preparation and disclosure of the EMP to April 15, 2007 (i.e. to around 120 days or four months after appraisal). This is consistent with the exemptions allowed under paragraph 12 of OP 4.01, referring to the Environmental Assessment of Emergency Recovery Projects. A dated covenant indicating when the EMP must be disclosed is included in the Finance Agreement. During appraisal the following filters on client project readiness have been discussed and reconfirmed: (a) Project Implementation Manual; (b) agreed upon implementation arrangements, complete with staffing and other gaps identified; (c) requirements for financial management, procurement and the M&E structure; (d) bidding documents for the first year of project implementation; and (e) audit arrangements.

Appendix 1: Results Framework and Monitoring

VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

Results Framework

PDO	Outcome Indicators	Use of Outcome Information
To increase the effectiveness of Government services at reducing the health risk to poultry and humans from avian influenza both in eleven selected provinces as well as country-wide by controlling the disease at source in domestic poultry, by early detection and response to poultry and human cases, and by preparing for the medical consequences of a human pandemic if it occurs over the next five years.	<ul style="list-style-type: none"> ▪ Increased number of annual suspected HPAI cases in poultry reported and fully investigated (both laboratory and field) in the eleven project provinces ▪ For both veterinary and health sector, reduced reporting time of new outbreaks and return of laboratory confirmation to the affected commune. ▪ Reduced fatality rate of human H5N1 cases reduced compared to 2004/05 in the eleven project provinces. 	To verify that the PDO for VAHIP was achieved.
Intermediate Results One per Subcomponent	Results Indicators for Each Subcomponent	Use of Results Monitoring
Component A: Animal Health		
A1. Veterinary services related to disease diagnosis and field surveillance are strengthened	<ul style="list-style-type: none"> ▪ Number of laboratories working at ISO10725 standards for AI testing 	<ul style="list-style-type: none"> ▪ Results will be used to increase the focus on laboratories not meeting standards so as to speed-up the improvement process.
A2. Disease control enhanced, and action based on surveillance data	<ul style="list-style-type: none"> ▪ Percent of positive samples for H5N1 virus in Ha Vi market over 3-month rolling average 	<ul style="list-style-type: none"> ▪ Results will be used to assess the effectiveness of measures and speed-up changes if progress is slow.
A3. Surveillance activities show improved disease status along the poultry marketing chain from processor to farm.	<ul style="list-style-type: none"> ▪ Number of commercial farms in which freedom from HPAI infection is demonstrated 	<ul style="list-style-type: none"> ▪ Surveillance data will be used to alter disease management strategies and ensure that appropriate samples are collected for future surveillance.
A4. Develop sustainable bio-security systems for small-scale poultry farms	<ul style="list-style-type: none"> ▪ Number of small-scale poultry farm models demonstrated 	<ul style="list-style-type: none"> ▪ Use for extension services to promote bio-secure small-holder poultry production.
A5. Emergency outbreak containment ready and effective	<ul style="list-style-type: none"> ▪ Number of rapid response teams demonstrating effective response to simulation or actual outbreaks 	<ul style="list-style-type: none"> ▪ If targets are not met training for response team will be enhanced.

Component B: <i>Human Health</i>		
Component B1: Improving the Technical Quality of Surveillance and Response System		
Intermediate Results One per Component	Outcome Indicators	Use of Result Monitoring
Improved surveillance system	% of reports that are accurately completed. % of reports that are received on time at the province.	To assess the effectiveness of disease surveillance system
Component B2: Improving technical quality and efficiency of curative care preparedness		
Pandemic preparedness planning	% of provinces with Pandemic preparedness plan developed and desk-top exercise implemented	To assess the progress of interventions & evaluate the effectiveness of intervention
Subcomponent B3: Strengthening BCC in health facilities and community		
Increased awareness and adoption of key preventive behaviors among the target population	% of target population that can accurately identify and have practiced at least one key preventive behavior.	To assess the impact of BCC activities
Subcomponent B4: Strengthening the Preventive Health System at Local Level		
New Preventive Medicine personnel policies are in place in at least 50% of project provinces	% of provinces with revised preventive medicine policies in place. % of staff satisfactorily performing tasks they are trained for.	To assess the effectiveness of new personnel policies in addressing HR problems
District Preventive Medicine Centers are improved and are able to fulfill their functions and responsibilities	No. of DPMC in 8 provinces are fully equipped and have adequate capacity to implement their responsibilities and functions in compliance with the Decision No. 26/2005/QD-BYT by MOH on Preventive Medicine at district and provincial city level	Reports by provinces on the activities of DPMC and project completion report

Arrangements for Results Monitoring

Project Outcome Indicators	Baseline	Data Collection and Reporting					Responsibility for Data Collection
		YR1	YR2	YR3	Frequency and Reports	Data Collection Instruments	
<ul style="list-style-type: none"> ▪ Number of annual suspected HP AI cases in poultry reported and fully investigated (both laboratory and field) per project province. ▪ For both veterinary and health sector, reduced reporting time of new outbreaks and return of laboratory confirmation to the affected commune. ▪ Fatality rate of human H5N1 cases reduced compared to 2004/05 in the eleven project provinces. 	<ul style="list-style-type: none"> • 0 • 10 days • 45 % 	10	10	10	Semi-Annual	MARD Surveillance Statistics	MARD DAH
		7	5	4	Annual	MARD & MOH Surveillance Statistics	MARD DAH / MOH APM
		40 %	38 %	[35 %		MOH Surveillance Statistics	MOH DTM
Intermediate Outcome Indicators Component A							
<ul style="list-style-type: none"> ▪ Number of laboratories (out of 8 major labs) working at ISO10725 standards for AI testing ▪ Percent of positive samples for H5N1 virus in Ha Vi market over 3-month rolling average ▪ # of commercial farms in which freedom from HP AI infection is demonstrated ▪ Number of bio-secure model small-scale farms established ▪ Number of provincial rapid response teams demonstrating effective response to simulation or actual outbreak 	0	2	6	Biannual	Biannual	Lab QA consultant reports, CTA assessment, DAH evaluation reports	Laboratory QA consultant, Technical Manager, A1
	Baseline TBE	10%	5%	<2%	Biannual	Lab result from market samples taken	Technical Manager, A2
	None	10	20	35	Biannual	Evidence provided in laboratory and farm inspection reports	Technical Manager, A3
	None	3	15	25	Biannual	DLP and PPMU reports	Technical Manager, A4
	Baseline TBE	5	8	10	Biannual	SDAH and simulation exercise reports	Provincial SDAH, Technical Manager, A3

Outcome Indicators	Baseline	Target Values				Data Collection and Reporting			Responsibility for Data Collection
		Yr 1	Yr 2	Yr 3	Yr 4	Frequency and Reports	Data Collection Instruments	Data Collection	
B1. Improving the Technical Quality of Surveillance and Response System									
% of reports that are accurately completed and sent on time.	TBD	40	60	80	Semiannually	Progress reports/ DPHC Records	PPIUs, MOH PCU		
% of reports that are received at the District Preventive Health Center on time.	TBD	40	60	80	Semiannually				
B2: Improving the technical quality and efficiency of curative care preparedness									
% of Pandemic preparedness plan developed and desk-top simulation exercise implemented	0%	50	50	100	Annually	Progress reports	MOH PCU		
B3. Strengthening BCC in health facilities and community									
% of target population that can accurately identify and have practiced at least one key preventive behavior.	TBD	+0%	+10%	+25%	+40%	At beginning and end of project	KAP survey	Contracted research firm/	
B4. Strengthening the Preventive Health System at Local Level									
% of provinces with revised preventive medicine policies in place.	0		50%	75%	Annual	Supervision checklist/ Proficiency assessments	PPMU Project Staff		
% of staff satisfactorily performing tasks they are trained for.	0		50%	75%	Annual				
No. of DPMCs in 8 provinces are fully equipped and have adequate capacity to implement their responsibilities and functions in compliance with the Decision No. 26/2005/QD-BYT by MOH on Preventive Medicine at district and provincial city level	0		8	16	Annual	Progress reports and project completion report	PPMU		

Appendix 2: Detailed Project Description

VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

Component A –HPAI Control and Eradication in the Agricultural Sector (US\$17.2 million)

1. The OPI outlines the strategy that the government will adopt to control and progressively eradicate H5N1 HPAI in poultry. This will occur in three phases:
2. A **Control Phase**, in which the incidence of outbreaks is reduced by the stamping out of outbreaks, mass vaccination, and the commencement of improvements in bio-security of poultry production and marketing practices;
3. A **Consolidation Phase**, in which gains are maintained, further restructuring of the industry is undertaken, farms in the industrial sector demonstrate freedom from HPAI, and disease-free compartments are expanded, and
4. An **Eradication Phase**, in which freedom from disease is achieved on a national or sectoral basis.
5. It is expected that the Control Phase will continue until end-2007. Some reductions in the scope of the national mass vaccination were introduced in 2006 and further reductions are planned for 2007 and beyond. The Consolidation Phase will occupy the remainder of the VAHIP project horizon (to 2010). National eradication programs will be built on gains made in the consolidation phase, supported by VAHIP and other programs.
6. The Animal Health Component has five subcomponents in line with the OPI: A1 – Strengthening of Veterinary Services; A2 – Enhanced Disease Control; A3 – Disease Surveillance and Epidemiological Investigations; A4 – Preparing for Poultry Sector Restructuring, and, A5 – Emergency Outbreak Containment.
7. **Subcomponent A1 – Strengthening of Veterinary Services (US\$2.6 million)**. This subcomponent contains three activities: (a) a needs and capacity assessment and developing quality management procedures in veterinary laboratories; (b) biosafe virus isolation capacity at HCMC Regional Veterinary Center, and (c) commune-based disease reporting.
8. **Activity A1a - Needs and Capacity Assessment, and Developing Quality Management Procedures.** Activity A1a serves to ensure that veterinary laboratories conducting avian influenza testing have the necessary capacity and resources to undertake the incremental workload generated by project activities related to avian influenza control at a level that will allow laboratory users and decision makers to have full confidence in the results. To accomplish this, a needs and capacity assessment, dedicated to HPAI diagnostic work, will be carried out at the NIVR, NCVD, the five Regional Veterinary Centers (RVC) located at Haiphong, Vinh, Da Nang, Ho Chi Minh City and Can Tho, and at the provincial veterinary laboratory in Lang Son border province. Based on recommendations from this assessment, extra laboratory staff will be contracted and additional equipment and consumables procured to meet the demands of the

incremental workload resulting from the increased surveillance and post-vaccination monitoring under this subcomponent. The needs assessment will ensure that appropriate procedures are in place for the proper and safe disposal of laboratory wastes arising from influenza diagnostic activities. Technical support will ensure that quality management of laboratory operations relating to avian influenza testing is appropriate. This will allow sustainable operation of these laboratories at a technical level commensurate with accreditation to ISO 17025 standards (the international standard required for laboratory accreditation). To support on-going operating costs, the possibility of developing a revolving fund to capture fees from diagnostic services will be investigated and, if feasible, will be implemented.

9. **Outputs** will include capacity to perform all required increased test demands, the use of standardized test regimes with appropriate quality management programs for the diagnosis of HPAI and a cost recovery mechanism through revolving funds, if feasible. The project will provide equipment, technical assistance, training, consumables, contracted laboratory staff and other operational support.

10. **Activity A1b – Isolation of Viruses under Biosafe Conditions.** A portable BSL-3 laboratory will be installed at the Ho Chi Minh City (HCMC) RVC to enable laboratory workers to isolate avian influenza viruses under biosafe conditions. A back-up generator will supply power in case of grid failure. A portable facility is preferred so that if the HCMC laboratory relocates, it can be moved (relocation is planned but will not occur during the life of this project and therefore will not incur project costs). With the BSL3 unit in place, veterinary laboratories in the south will be able to submit samples for virus isolation directly to the HCMC laboratory instead of to NIVR in Hanoi, thereby significantly shortening turn-around time. The Project will support procurement of the BSL3 unit, replacement HEPA filters⁹, the back-up generator, installation costs and training.

11. **Activity A1c – Commune-based Early Warning and Disease Reporting.** Activity A1c aims to improve disease reporting by CAHWs to veterinary authorities so as to enhance the quality and quantity of disease information collected at the commune level. This is achieved by training CAHWs in basic disease recognition and reporting disease when encountered in standard format to allow amalgamation of field information into national disease information databases. This information can then be used by provincial and central animal health authorities in planning disease control strategies and activities. This process has been seriously constrained by the limited data available from the commune level. This program began under AIERP and will be expanded from 30 Districts to include some 90 districts in the project provinces under VAHIP, with 30 districts added in each of three project years. District veterinary staff and selected CAHWs will be trained using a cascade system (“training of trainers”) by contracted NGOs in enhanced early warning, avian influenza recognition, disease reporting and proper procedures for sample collection, packing and transport. This information will cascade down to CAHWs and result in improved reporting of disease information (this links to Subcomponent A5 which promotes training of villagers on early disease detection and notification). Training programs will be carefully tailored to meet the trainees’ level of comprehension. Relevant training sessions on disease recognition will also include commune and village level human health workers to achieve better reporting and to facilitate information exchange between

⁹ Special filters able to trap virus particles used to filter air before it is expelled from the BSL-3 unit

medical and animal health workers. The program will be assessed to ensure its effectiveness by reviewing disease reporting before and after the training and making adjustments where necessary. Specimen transport containers complying with international transport regulations for infectious substances will be provided to all district offices and these will be used when submitting samples to veterinary laboratories. Operational support will also be provided to the 90 project districts to ensure adequate follow up on disease reports from CAHWs.

12. **Outputs** will include regular, reliable and rapid disease reporting by trained CAHWs, with data to be utilized centrally in disease management and planning. The Project will finance training, training resources and materials, NGO program management, consultants, and mobilization and implementation costs.

13. **Subcomponent A2 - Enhanced Disease Control (US\$3.5 million)**. This subcomponent comprises five activities conducted in live-bird markets, slaughterhouses, poultry farms and border areas to consolidate gains made already in avian influenza control.

14. **Activity A2a - Market-based Avian Influenza Control**. This subcomponent focuses on the upgrading of hygiene standards of live-poultry markets. It involves upgrading hygiene standards at large live-poultry markets and back along the market chain through the introduction of market-based avian influenza control, thereby interrupting infection along the market chain and preventing the spread of viruses. Activities will center initially on one large live poultry market (Ha Vi market in Ha Tay province) to form a pilot model for upgrading facilities and procedures in other live-bird markets. Plans are well advanced to relocate this market, including site selection and provincial approval for the project, and this opportunity will be taken to upgrade the facilities and design. Under this activity, procedures and rules for reducing the risk of spread of HPAI virus from farms, by transporters and within markets will be developed in conjunction with market stakeholders. This will commence even before the market is relocated. Implementation will be phased to minimize shifts of trade to unregulated markets. Several sub-activities will be undertaken to implement this activity, involving the upgrading of facilities and market procedures. Plans for the new relocated market will be developed and specific facilities relating to improved market hygiene such as holding cages, vehicle washing facilities and waste water treatment will be funded. A socio-economic study on the effects of market upgrading and its comparative advantages will be conducted. These interventions will foster appropriate behavioral change in poultry traders, farmers and transporters through specific, targeted training and BCC activities. Studies will be conducted on ways for smallholders supplying native (i.e. backyard, free-ranging) poultry to comply with new disease control measures, providing them continued access to the upgraded market and providing consumers with safe native poultry sold through regulated markets. To better assess the disease risk to market traders in handling poultry, stall owners and staff will be invited to participate in serological monitoring for evidence of exposure to AI virus. The feasibility of upgrading additional markets in the other project provinces will be assessed and appropriate renovations and changes to market procedures implemented. This will be linked to studies assessing the risk these markets pose in maintaining and spreading avian influenza viruses. This program will build heavily on the experiences from

the WHO 'Healthy Food Market'¹⁰ program with strong cross linkages to human health activities.

15. **Outputs** will include: an upgraded, pilot live-poultry market with enhanced hygiene measures; evidence of behavioral change in market staff, traders, poultry transporters and farmers using or supplying the market; reduced levels of AI infection in project markets, concrete plans and action for improved management and hygiene in other markets, and methods for the sourcing and supply of native poultry to markets that minimize the risk of infection with AI. The Project will finance civil works for market renovations, market equipment, training, studies, technical assistance and workshops.

16. **Activity A2b—Breaking Infection Chains between Farms and Slaughterhouses.** This activity will develop procedures to break the avian influenza infection chain between farms and slaughterhouses. Current pre-movement veterinary certification of poultry on farms does not guarantee freedom from infection with H5N1 avian influenza when these birds are sent for slaughter. This certification is often based on expensive laboratory tests performed on samples collected several weeks prior to sale. These tests provide no information on disease status when these birds are sent for slaughter, which wastes valuable resources and may provide a false sense of security. Workshops with Provincial SDAHs, DAH and international disease management experts will be held to develop and apply appropriate, science-based testing, inspections and pre-movement certification for poultry. This subcomponent will also examine the facilities and procedures required to prevent transfer of infection to farms via non-disinfected vehicles and transport cages that leave slaughterhouses. The activities will be carried out through selection and mobilization of 12 slaughterhouses that process poultry from project provinces. An assessment of existing hygiene procedures for transport vehicles and cages will be performed at these slaughterhouses and, as a result of this assessment, practical hygiene measures for slaughterhouse managers and workers will be recommended. Slaughterhouse inspectors and management will be trained in the new requirements, checking of poultry movement health certificates, ante mortem inspection of poultry, and procedures to adopt if dead poultry are found in consignments on arrival. Practical manuals of recommended standard operating procedures will be developed for DAH on the entry and exit of poultry transport vehicles and pre-sale testing and poultry monitoring for live-bird markets and slaughterhouses.

17. **Outputs** will include: 12 slaughterhouses provided with plans for upgrading facilities and procedures; lessons learned from these measures communicated via manuals of operating procedures to DAH for application in other slaughterhouses and farms, pre-entry testing requirements for on-farm poultry are science-based, and animal health staff at the provincial level fully understand the rationale for testing and interpretation. The Project will provide technical assistance, workshops, training and hygiene monitoring support.

18. **Activity A2c—Certified freedom of HPAI in Poultry Farms.** The aim of this activity is to develop and implement a pilot disease monitoring system to demonstrate sustained freedom from circulating AI viruses in large, commercial poultry farms, thereby creating avian influenza-free farms and compartments as an important step towards eventual eradication. This is one of

¹⁰ See WHO http://www.who.int/entity/foodsafety/publications/capacity/healthymarket_guide.pdf

the main objectives of the consolidation phase of the Animal Health component as described in the OPI. The SDAHs in each of 4 project provinces will engage ten large Sector 1 or 2 poultry

19. farms¹¹ to participate in this pilot. To accomplish these goals, proposals will be developed on appropriate biosecurity standards that these farms should achieve. In addition, methods will be developed for auditing biosecurity implementation on poultry farms along with systems for demonstrating disease freedom on poultry farms. Services will be contracted to conduct the necessary biosecurity auditing. SDAH and district staff will be trained to develop a sound understanding of the monitoring system's objectives and will implement it. Once the system is established in these farms the monitoring system will then be extended to 30 additional farms in other project provinces, based on lessons learned from the initial pilot farms.

20. **Outputs** will include: on-going demonstration of freedom of infection in a minimum of 40 poultry farms demonstrating through audit that they are meeting established farm biosecurity standards; a sound understanding by animal health staff at the provincial and district levels will be fostered of the rationale for and value of the monitoring system. The Project will support incremental laboratory services, training, studies, contracted services and technical assistance.

21. **Activity A2d – Poultry Vaccination.** This subcomponent supports five vaccination-related sub-activities, covering (1) development and introduction of appropriate methods for vaccination of grazing meat ducks; (2) field trials of vaccination of minor poultry species (quail, goose and pigeons) for which appropriate vaccination methods are not yet available; (3) training of animal health workers in ring vaccination to be used in the event of localized disease outbreaks; (4) assessment of the feasibility of local vaccine production for H5N1 HPAI for poultry, and (5) upgrading of the vaccine cold chain through supply of walk-in cold stores for vaccine storage managed by SDAH in project provinces. (for further details on vaccination-related activities see Appendix 9, Technical Note 2).

22. **Outputs** include: practical methods for meat duck vaccination are established and carried out in all grazing duck flocks in project (and other high-risk) provinces; guidance is provided to DAH on vaccination strategies for minor poultry; a demonstrated capacity exists to undertake ring vaccination quickly in the event of an outbreak in project provinces; the feasibility of local vaccination manufacture has been assessed and recommendations provided to MARD, and an effective cold chain has been set up for the storage of vaccine supplied to project provinces. The project will provide consumables, vaccines and vaccine equipment, other equipment, travel, contracted staff and technical assistance.

23. **Activity A2e - Enhanced Border Protection.** This subcomponent will support strengthening of animal quarantine in Lang Son province, a major route for illegally smuggled poultry into northern Vietnam. Such poultry present a potential infectious hazard that can precipitate new outbreaks. One of the main transit routes for illegal poultry from China into Vietnam passes through this province. The animal holding unit will be renovated, a vehicle and cages for collection of seized poultry will be purchased, and an incinerator for the proper

¹¹ FAO/OIE classification of poultry production sectors. Sector 1 farms are large fully integrated farms that practice high levels of biosecurity. Sector 2 farms are independent poultry farms that practice reasonable to high level biosecurity. The standards of biosecurity are not harmonized globally. One objective of this activity would be to define for Vietnam the standards of biosecurity that Sector 2 farms should achieve.

disposal of confiscated poultry will be installed. Contract staff will be employed to assist in these activities and trained in animal disposal in accordance with the National Emergency Disease Contingency Plan for Control of Highly Pathogenic Avian Influenza in Vietnam approved by MARD in 2005. Pressure sprayers, stocks of disinfectants and personal protection equipment will be provided to allow proper disinfection of vehicles. Cross-border meetings with Chinese counterparts will be arranged to facilitate discussion on ways to reduce the risk from illegal cross-border trade in poultry.

24. **Outputs** include safe handling and disposal of seized smuggled poultry using approved methods and reduced risks from the entry of illegally smuggled poultry. The project will support equipment, consumables, cross-border meetings, staff, training, technical assistance, and minor civil works for renovation.

25. **Subcomponent A3 — Disease Surveillance and Epidemiological Investigations** (US\$1.5 million). This subcomponent focuses on disease surveillance, which is necessary to determine the distribution and amount of circulating influenza viruses. It is an essential element of avian influenza control programs. Without surveillance, the extent of infection is unknown and control programs are based on incomplete field intelligence, limiting the applicability of risk-based interventions, as recommended in the OPI. This subcomponent will support all project elements in subcomponent A2 (above), providing data to support M&E of these activities. It will also provide much needed assistance in data analysis to DAH and undertake additional epidemiological studies on the poultry industry in selected provinces.

26. **Activity A3a – Market-based Surveillance.** Weekly surveillance for viruses will be conducted in the Ha Vi market to obtain on-going data on the amount of avian influenza virus circulating in the market (at least 200 samples per week). Samples from the first few months of the program will be used as base line data for subsequent monitoring and evaluation of the project and the effects of hygiene measures in the market. Similar testing will be implemented in markets in other project provinces on a monthly basis.

27. **Activity A3b – Slaughterhouse Surveillance.** Testing will be performed on samples collected in slaughterhouses to assist in determining the effectiveness of measures to break the infection chain between farms and slaughterhouses and, where appropriate, to assess the disease status of poultry from certified clean farms. This will include tests on poultry found to be dead on arrival at the slaughterhouse.

28. **Activity A3c – Surveillance for disease freedom on farms.** The appropriate samples to collect on farms under activity A2c that will allow demonstration of freedom from infection with H5N1 HPAI viruses will be collected and tested. The precise details of this testing program will be determined after workshops are held between consultants and national and provincial veterinary staff, but will likely include samples from “routine” dead poultry.¹² The testing will include government owned grandparent farms.

29. **Activity A3d - Duck Surveillance.** Samples will be collected from duck flocks to assess the response to vaccination. Unvaccinated sentinel ducks in some flocks will be kept and

¹² In all poultry flocks low level mortality is expected. Testing of these dead birds is recommended as one method for detecting low levels of infection with HPAI in vaccinated flocks

tested regularly for evidence of exposure to field virus. This information will be used to assess whether and, if so, how much virus is circulating in areas where ducks are vaccinated.

30. **Activity A3e – Border Security Surveillance** All intercepted consignments of smuggled poultry in Lang Son will be tested to assess whether the birds in the seized shipment are currently infected, or have been infected (or vaccinated) in the past.

31. **Activity A3f – Wild Bird Studies and Surveillance.** Additional surveillance studies will be conducted in wild birds in areas deemed to be at high risk of infection with HPAI viruses. These studies will focus on areas where HPAI has occurred, where wild birds can contact poultry (either directly or indirectly) or where no apparent source of the virus was established for outbreaks in poultry. These studies will assist in determining the possible role of wild birds in the spread and carriage of HPAI viruses.

32. **Activity A3g - Developing Risk Profiles for Project Provinces.** Intensive rapid assessments of the four project provinces not previously included in AIERP (Than Hoa, Ha Tinh, Tay Ninh, Lang Son) will be undertaken to develop risk profiles and review current surveillance activities so as to build plans for sustainable HPAI control in these provinces. This will include an assessment of the structure of the poultry sector including movement patterns, results from surveillance programs gaps in knowledge that need to be filled, and information on vaccination of poultry in the province.

33. **Activity A3h – Support for Data Management** At present there is insufficient capacity in DAH to analyze all data collected and this problem will be exacerbated as additional surveillance is performed. This activity will provide additional contract staff to undertake analysis of data. They will be supported by an international epidemiology specialist who will provide assistance and guidance on the collection and analysis of complex data.

34. **Outputs** of Subcomponent A3 include well structured surveillance data and other information, for use in developing and modifying disease control and hygiene programs and for monitoring and evaluating project activities under subcomponent A2; information on the role of wild birds in the persistence of spread of HPAI, and risk profiles of four provinces that did not participate in AIERP. The Project will support national and international technical assistance, consumables, equipment, travel and office support.

35. **Subcomponent A4 - Preparing for Poultry Sector Restructuring (US\$1.3 million).** This subcomponent has three activities that will prepare and strengthen the capacity of DLP and provincial agricultural authorities. This will allow DLP to address poultry sector restructuring in an environmentally compatible manner, taking into account farm biosecurity, production risk and the livelihood of stakeholders. See Technical Note 1, Appendix 9 for further details.

36. **Activity A4a - Capacity Building at DLP.** As the line agency responsible for poultry sector planning and restructuring, DLP requires well trained professional staff. Under this activity three DLP staff will receive postgraduate training in agricultural economics.

37. **Activity A4b - Planning and Demonstrating Biosecure Poultry Farm Models.** This activity will support the modeling of biosecure poultry farms by means of spatial planning,

training and workshops for stakeholders, technical assistance, and the establishment of pilot model farms in three provinces.

38. **Activity A4c - Biosecurity upgrading for existing small scale poultry farms.**

Guidelines will be developed to increase biosecurity on Sector 3 small-scale poultry farms, supported by small grants to undertake basic biosecurity improvements.

39. **Outputs** from this subcomponent will include: Sufficient capacity achieved in DLP and pilot restructuring provinces to plan and implement poultry sector restructuring; guidelines for planning the restructuring of the poultry sector with the objective of increased biosecurity will be developed; and, biosecure poultry farm models that are equitable, economically viable and environmentally sound will be demonstrated. The Project will support: technical assistance and training, training allowances, office support, small grants to eligible recipients, and postgraduate training.

40. **Subcomponent A5 - Emergency Outbreak Containment Plan (US\$8.3 million).** This subcomponent will implement six activities including enhancing early reporting of disease by villagers; simulation exercises of avian influenza outbreaks to test emergency response; availability of resources to employ contract staff for disease control activities; stockpiling of equipment, supplies and vaccines; studies on streamlining compensation payment, and compensation for smallholders and villagers who report cases of avian influenza.

41. **Activity A5a - Enhancing Early Reporting of Disease Outbreaks by Villagers to Animal Health Authorities to Ensure Effective Outbreak Control.** This activity depends on the rapid detection and reporting of disease. Villagers and smallholders must notify authorities if there is disease in their farm. However they do not always do so in a timely manner. To facilitate early reporting, villagers will be provided, through a broad BCC campaign, clear information on the trigger points for reporting, what to expect when they report outbreaks (including compensation arrangements and information on what will happen to neighboring poultry (i.e. ring vaccination), and how to handle dead or sick poultry (this will be led by, and integrated with, efforts undertaken in component B). This activity will be initially introduced to five project provinces and extended to cover all project provinces. Telephone hotlines will be established in all project provinces to allow villagers and smallholders cost-free access to report disease outbreaks, overcoming a currently existing communications constraint.

42. **Activity A5b - Simulation Exercises in Avian Influenza Outbreak Containment.**

These simulations will be conducted to ensure that veterinary authorities, including CAHWs, and district, provincial and regional staff respond rapidly to contain disease outbreaks once disease is reported by villagers or smallholders. This will be linked closely to activity A2d (training in ring vaccination)

43. **Activity A5c - Stockpiles of Emergency Supplies.** Protective gear and consumables will be stockpiled in strategic locations in order to allow teams of first responders to mobilize rapidly so as to investigate suspected outbreaks. These teams will also have access to financial resources to employ contract staff to assist in emergency disease containment operations, including stamping out. Emergency equipment and PPE, vaccines and disinfectants will be

stockpiled at the six DAH Regional Veterinary Centers for immediate distribution and use in the regions they service.

44. **Activity A5d - Stockpile of Emergency Vaccine.** A stockpile of vaccine will be established in case of widespread outbreaks. This will contain sufficient doses to vaccinate 15 million poultry (about 10% of the chicken population) in the event of widespread outbreaks of disease necessitating emergency. A stockpile is required because of the long lead time between orders for vaccine and delivery.

45. In the event of outbreaks of avian influenza all provinces potentially affected in Vietnam, not just those associated with the eleven Project Provinces could benefit from the two aforementioned activities (i.e. A5(c) and A5(d)).

46. **Activity A5e - Streamlining Compensation.** Studies into streamlining compensation payments for rapid disbursement in the event of avian influenza outbreaks will be undertaken to enhance cooperation from farmers affected by stamping out exercises. For compensation to be most effective it should be provided rapidly (close to the time of culling). This has been viewed as a constraint to reporting in past outbreaks.

47. **Activity A5f - Compensation for Smallholders in Project Provinces.** A compensation contingency for smallholders and villagers who have had poultry culled after reporting outbreaks of avian influenza to authorities under this subcomponent will be established. This will only be activated when farmers in project provinces targeted by the BCC campaigns report cases of disease that result in the destruction of their poultry. Disbursements for small holder compensation will be subject to the preparation and approval by MARD and IDA of a compensation manual reflecting also the review of streamlined compensation procedures above.

48. **Outputs** from this subcomponent will include enhanced early reporting by smallholders and villagers of disease outbreaks, proven capacity of appropriately resourced teams to respond to outbreaks, recommendations from a study on streamlining compensation. The project will finance disinfectants, disinfection equipment, protective clothing, training, emergency contingency funds, simulation exercises, telephone hotline charges, vaccination consumables and equipment, vaccine, contract services to support emergency workers and vaccinators, technical assistance, and compensation funds

49. Component B - Influenza Prevention and Pandemic Preparedness in the Health Sector (US\$16.0 million)

50. The project will assist the government to implement the OPI through providing support for three elements under the program for Influenza Prevention and Pandemic Preparedness in the Health Sector:

- strengthening surveillance and response;
- strengthening curative care capacity;
- public awareness and behavioral change.

51. In addition, the project will assist the MOH to achieve more flexible and better coordinated systems, and strong human resource capacity in order to be able to respond rapidly and effectively to AI and emerging diseases.

52. **Subcomponent B1 - Improving the Surveillance and Response System (US\$2.9 million)**. Vietnam already has in place a surveillance system for communicable diseases with 26 reportable diseases. Some reporting is carried out routinely, and some is specific to the requirements of certain vertical programs such as malaria control. Significant challenges persist and this project attempts to address some of these. Firstly, reporting is usually done only for diagnosed cases. There are no clear definitions for clinical case diagnoses available to health workers which limits the ability to detect certain clusters of symptoms and leads to variation in reporting based on individual clinician's skills and vigilance. Reported data are sometimes incomplete and inaccurate and are often times manually collated. Surveillance is often fragmented as some diseases are part of vertical programs with their unique reporting requirements that are not integrated. Data that are received are analyzed at the central level without timely feedback to the reporting entities to utilize in making decisions.

53. **Activity B1a - Review and Assessment of the National Surveillance System.** The specific needs of the surveillance system vary from province to province depending on available human resources, equipment and infrastructure and how these function together. To accurately determine what the needs are, this subcomponent will support a detailed review of the current surveillance system especially for infectious diseases, consulting previous evaluations of the system and with other partners working in this area such as WHO, CDC and ADB. This assessment will examine the structure of the system as well as how well it is functioning, using simulation exercises and other methodologies.

54. The assessment will entail a thorough review of the performance of the system at different levels from the community to the central level in the project provinces, including the data management and reporting processes, available resources, and equipment. The assessment will identify key aspects of the surveillance system requiring improvement.

55. To obtain comparisons and learn from experience from other countries in effectively incorporating AI surveillance into their systems, a study tour will be organized for key staff.

56. **Outputs:** A detailed assessment of the surveillance system in Vietnam which will be disseminated to key stakeholders in the country; a study tour for MOH personnel in charge of surveillance.

57. **Activity B1b - Piloting Improved Surveillance Systems in the Project Provinces.** Upon completion of the review, the provincial and district teams will prioritize the interventions necessary to improve the surveillance system in their respective provinces. This approach will ensure that flexibility is retained while addressing the unique needs of each province, within the overall OPI framework. Table-top and field-based simulation exercises, and training activities necessary to implement these interventions in project areas will be conducted. Investment in equipment will also be made. Evaluations to assess the impact of the interventions will be evaluated using comparison with baseline information obtained from the initial review of the surveillance system.

58. **Outputs:** Provincial action plans and strategies developed and implemented leading to improved surveillance systems at the provincial level.

59. **Activity B1c - Improving the Quality and Timeliness of Reports for Decision-Making.** Data management is fundamental to any effective surveillance system. Surveillance information is currently not properly reported, collated, analyzed and utilized, nor are these activities always carried out in a timely manner. This activity will use a review of data management (probably as part of the review of the surveillance system) to identify the type of data needed for making both short and long term decisions, how reporting occurs and the channels for dissemination. In addition, the timeliness of reporting, the quality of reports produced and the response time to reports will be assessed. This activity will identify any constraints in the different aspects of data management. Syndromic surveillance (e.g. for influenza-like illnesses) which is based on the use of case definitions and reporting of suspected cases is an important part of the system, but the current reporting methods do not adequately allow for this. There is a need to accommodate this within the reporting system and for revisions of the reporting template. Staff at the provincial and district levels will also need to be trained on how to use information systems to manage data. This component will in addition, support the provision of computers and access to information systems for the district and provincial preventive health centers. Finally, the technical capacity of the reporting staff will need to be strengthened through training.

60. **Outputs:** Improved reporting with a revised reporting template accommodating syndromic surveillance measures, new case reporting logs and templates, preventive health staff and staff managing data trained and provided with logistical support in their use.

61. **Activity B1d - Early Warning and Response Systems (EWARS).** An Early Warning and Response System (EWARS) is currently being piloted over a small area of the country. This activity will expand EWARS to the project provinces and integrate it into the routine surveillance system for AI and other communicable diseases, instead of making it a stand alone surveillance mechanism operating in parallel with other activities. The EWARS will be backed up by mobile rapid response teams. A baseline survey of the early warning systems will first be conducted which will identify needs and support required. The early warning and surveillance structure in place will be expanded to the level of the community, by actively involving frontline workers such as the VHWs who are in close contact with the people. These frontline, community-based workers will be trained to increase their vigilance, minimize reporting time and to alert the responsible authorities (including the DAH) early. The system will be tested through simulation exercises as described under Activity B1e. In addition, the current training materials for EWARS will be reviewed and updated.

62. **Output:** Functional early warning and response system and rapid response teams.

63. **Activity B1e - Rapid Response Mechanisms.** The benefit of an early warning system is enhanced when there is capacity to respond to a reported potential outbreak. Activity B1e is therefore a logical follow up to the above Activity B1d. Activity B1e aims to facilitate a rapid response to outbreaks through conducting rapid investigations and institutionalizing containment measures. It will involve establishing, training, equipping and operationalizing the rapid response teams. These teams will be set up at the provincial and district levels and are responsible for

investigating syndromic clusters and analyzing risks in order to address potential public health threats. Since the frequency of outbreaks and extent of investigations is unknown, these teams will be made up of existing preventive medicine staff at the district level designated for this role. They will require practical training and the use of simulation exercises to improve their skills, as well as access to some contingency funds during outbreak investigations in the field. The rapid response teams should also involve representatives from other sectors, such as veterinarians who will take part in investigating potential sources of outbreaks, sample collection and active surveillance for animal cases. This subcomponent will also finance selected equipment, stockpiles of protective material, and technical assistance.

64. **Outputs:** Rapid Response Teams identified, trained and equipped at provincial and district levels.

65. **Activity B1f - Capacity-building for Surveillance.** Staff at different levels, from the community to the central level, including staff at the provincial MOH levels, the members of the Provincial AI Steering Committee and key technical officers in MOH, will be given hands-on training and operationally-focused activities such as tabletop and field-based simulation exercises. Surveillance capacity building and training activities will also be extended to the frontline staff in the field such as VHWs on reporting, case identification, referrals and collaboration with veterinary sector. Evaluations of the competence of staff will be conducted after the training.

66. Guidelines will be developed for protecting and monitoring staff involved in investigating outbreaks, poultry culling, vaccination campaigns and other at-risk animal and human health care workers. Staff will be trained to use these guidelines and will be provided with the appropriate kits, PPE and vaccinations.

67. **Outputs:** Increased capacity of surveillance workers at all levels; guidelines for protecting workers established and used.

68. **Activity B1g - Coordination with Veterinary and Other Sectors on Surveillance.** This activity seeks to promote better coordination with the Veterinary Sector and other sectors on surveillance. There is a need for better coordination of surveillance activities and information sharing especially in the field which will reduce the time it takes for the sectors involved to receive information necessary for increasing vigilance. Initially, the coordination arrangements between health and other sectors will be reviewed to identify areas where there are gaps in coordination/communication. This will form the basis for interventions to foster more integration and better coordination. Activities will include developing a protocol for coordination, table top simulations, training of frontline staff such as VHWs and AHWs in application of the protocol.

69. **Outputs:** A protocol for multisectoral collaboration which has been tested in table-top and field-based simulation exercises, and used if the need arises.

70. **Subcomponent B2 - Improving the Technical Quality and Efficiency of Curative Care Preparedness (US\$5.3 million).** This subcomponent will help hospitals in the project provinces address two scenarios: (i) an influenza epidemic scenario with overwhelming patient demand for hospital care, and (ii) a continuation of the current situation of sporadic human HPAI

cases requiring intensive care treatment. It has four activities: (a) ensuring preparedness of health care facilities for a pandemic situation; (b) technical assistance to review and update guidelines, and develop training manuals on the preparedness and response to AI influenza/pandemic in curative care settings; (c) training of health care managers and workers on the operational and technical guidelines; (d) improving capacities of health care facilities at the provincial and district levels. The first activity addresses the response to a pandemic scenario while the last three activities address the status quo. These four activities will focus on selected issues in hospitals' HPAI response so far, namely the (a) lag in staff training to use recently acquired equipment items and the oversupply of some services in some provinces; (b) still largely undefined functioning of the inter-agency and hospital referral system under outbreaks of different scale; and (c) gaps in planning, staff skills, facilities, and materials that reduce the technical quality of services needed to respond effectively to HPAI and that would limit the response in a pandemic.

71. Activity B2a - Ensuring Preparedness of Health Care Facilities for a Pandemic Situation. The response to a pandemic scenario is contained in a facility preparedness plan. The response plan activities will be based on an estimate of the baseline demand for and maximum capacity to deliver intensive care and isolation services. The plan will include mechanisms to improve the match between supply of curative services and demand, such as the redeployment of stock between provinces, from provinces to the central level, or to a stockpile able to be deployed rapidly. This will guide the investment in medical equipment and supplies under the subcomponent.

72. In addition, alternative means to provide medical care to large numbers of patients in field settings once hospital capacity is overwhelmed will be included. This capacity depends upon rapid triage systems and delivery of relatively simple, cost-effective treatments backed up by staff already well versed in their roles and responsibilities and the command structure. The plan shall also contain flexible mechanisms to redistribute initial investments on high-tech equipment such as ventilators according to demand. Activities to promote cooperation in providing services between provinces and the central level will be considered especially in the redeployment of human resources. Lastly, case containment strategies and its implementation plan will become part of the health facility pandemic response plan.

73. The project will finance a review of options to respond to an overwhelming epidemic or public health emergency in the project provinces and the investments to make this operational. These will include revising action plans at the central and provincial levels, establishing an emergency hospital management structure linked to the PPC and the DOH, completing the stockpile of personal protective equipment and materials for establishing field hospitals, and allowing for a contingency budget in the case of an outbreak. A planning workshop will be designed to finalize a facility preparedness plan and obtain consensus from various stakeholders.

74. It will also finance epidemic simulation exercises to test preparedness measures. On-site simulation exercises will be developed and conducted at the provincial level while desk-top simulation exercises will be implemented at the district level.

75. **Outputs:** A facility preparedness plan with estimates of the requirements (equipment, supplies, drugs) for a pandemic situation at the project sites, stock piles and contingency funds, and alternative options for augmenting resources during a surge of demand.

76. Activity B2b - Review and Update Guidelines, and Develop Training Manuals on the Preparedness and Response to AI and an AI Pandemic in Curative Care Settings. This consists mainly of updating and clarifying roles and responsibilities, formulation of a functional structure, establishing a communication, coordination, funding and monitoring mechanism among national and provincial agencies involved in AI and AI pandemic prevention and control. Similarly, this activity will support provision of consultancy services to update and develop guidelines to clarify the roles and responsibilities among the MOH units involved in AI control and prevention such as the central command, expert panel, secretariat, communications unit, external affairs and logistics, surveillance and epidemiology, quarantine, field and hospital operations.

77. Managing an AI pandemic as well as eventually bringing AI under control and eradication will require inter-agency collaboration. Since health care facilities are potential entry points of AI cases, its managers both at the central and facility level would need to know clearly how to interact horizontally with other agencies and vertically with the MOH hierarchy. Operative guidelines will ensure the appropriate response of health facility managers in an expedient manner and documentation of these guidelines will serve as their reference material.

78. At the health facility level, technical guidelines covering clinical management of AI, infection control, management of respiratory failure and the operations of ventilators will be updated and/or developed. In the absence of a definitive treatment for AI, the most logical means to control its spread is to break the “chain of transmission.” These technical guidelines will ensure appropriate management of suspect and confirmed cases as well as protection of other patients and health care workers involved in the treatment.

79. Once the operational and technical guidelines are updated, a workshop will be organized to further refine its contents and obtain consensus from the involved stakeholders. These guidelines will then be consolidated into a training manual to be used as reference in the roll out activity.

80. **Outputs:** A training manual that contains operational and technical guidelines to be used as reference material for the training of health care managers and workers to ensure a standard and coordinated procedure for the management of human avian influenza in a curative setting.

81. **Activity B2c - Training of Health Care Facilities on the Operational and Technical Guidelines.** Recent efforts to strengthen hospital capacity have placed undue emphasis on acquiring equipment rather than on providing staff with the training needed to make full use of the equipment and to help develop a cadre of well-trained public health practitioners. Greater attention has been paid to acquiring equipment than to ensuring staff skills (both in using the equipment and in creating a cadre of well-trained public health practitioners) and, more broadly, to ensuring good quality preparedness and response plans which address the different dimensions of the response.

82. Activity B2c consists of developing the roll out strategy and training schedule for hospital managers and clinical and support personnel. It will need to take into account the most effective and efficient means to do this. The training program will be implemented in the eight (8) project sites covering the provincial and district levels. Its implementation nationwide may eventually be considered through other funding sources.

83. **Outputs:** A training strategy and roll out schedule for hospital facilities in the eight project sites at the provincial and district level, and completion of the training program within the first two years of the project.

84. **Activity B2d - Improving Capacities of Health Care Facilities at the Provincial and District Levels.** The more vulnerable level of the curative health care system will be the district and provincial levels. This will be the most likely entry points of AI patients and most often, patients with influenza-like illness (ILI) waiting for diagnosis confirmation. Considering the widespread distribution of these facilities and current capabilities of its health care workers, it is anticipated that there will be numerous breaks in the infection control protocol. This activity ensures that there are adequate and appropriate facilities to break the “chain of transmission” in the provincial and district hospitals.

85. This activity supports the development of a checklist to determine the readiness and capacities of the provincial and district hospitals. A subsequent survey will be done to determine these capacities. Facility gaps (comprising of equipment and infrastructure) will be identified and proposed for funding. The survey will be focused on gaps in the isolation rooms and wards and intensive care facilities, and laboratory equipment that support treatment of respiratory failure (that is, ABG machines). Equipment for the confirmation of the diagnosis (that is, Polymerase Chain Reaction equipment) is not included.

86. In addition, the survey will also include identification of gaps in the readiness of the facility to respond to a sudden surge in the demand for intensive care and isolation room services including their containment strategy and activation plan. This portion of the survey will feed into the component which is to ensure preparedness of health care facilities for a pandemic situation.

87. **Outputs:** A facility checklist developed and used for identifying gaps requiring remedial support for the isolation area, intensive care units and laboratory equipment to support management of respiratory failure in the provincial and district hospitals.

88. **Subcomponent B3 - Strengthening Behavior Change Communication (BCC) in Health Facilities and the Community (US\$2.7 million).** Prevention is key to the long term solution for the AI problem. Personal and environmental hygiene, poultry handling and raising, and care seeking practices will need to change among the population. In the short-term, BCC can also encourage voluntary participation of the population in containment of the disease during animal and human outbreaks, such as in reporting, culling and using protection. These behavioral changes require concerted efforts to persuade people to adopt and sustain desired behaviors using mass media and interpersonal communication channels, and community mobilization. The importance of BCC has been recognized and programs have received inputs from the government and donors notably USAID, DANIDA and the UN Joint Programme.

89. This subcomponent will enhance the results of past efforts and expand BCC activities to the target provinces using a two-pronged, mutually reinforcing approach: (a) improve the BCC skills of health workers at all levels, and (b) conduct community BCC activities.

90. **Activity B3a - Knowledge, Attitudes and Practices (KAP) Survey.** A population-based knowledge, attitudes and practices (KAP) survey on AI will be conducted at the beginning of the project to provide baseline data against which impact on knowledge levels and behavior change can be measured. Although some surveys have been conducted in the past, the situation is rapidly changing so that a survey of current KAP will provide up-to-date information. The survey will identify knowledge gaps and gaps between current and desired attitudes and practices which BCC activities can target. Results will be disseminated to the decision makers and technical personnel for use in planning and message development, and for M&E.

91. **Output:** A baseline and an evaluation KAP survey on AI prevention and control.

92. **Activity B3b - Development of Provincial BCC Action Plans.** A comprehensive BCC strategy is being developed at the national level with the support of the UN Joint Programme and the participation of the various ministries, donor agencies and NGOs involved in AI-BCC activities. The strategy is to be finalized by early 2007. The strategy covers the non-pandemic and pandemic scenarios and proposes short, medium and long term objectives. This project will implement the BCC strategy at the provincial level.

93. The project will begin by developing a provincial action plan to implement the BCC strategy in the health sector from the provincial to the community level. Decision makers and representatives of stakeholders will be brought together to develop the action plan which will outline actions to achieve the goal and objectives, timeline, resources required and assign implementation responsibilities. Having the plan will provide direction for and help the implementers of the activities to plan ahead.

94. The action plan will be reviewed at mid-term by the same group of stakeholders to assess progress and identify problems and solutions in implementation.

95. **Output:** A provincial BCC action plan for each of the 8 provinces.

96. **Activity B3c - Training.** The health worker is an important and trusted source of health information for people and can often influence the personal decision-making process. Health workers, however often do not possess the skills to be effective in bringing about behavior change. Training of health workers involved in carrying out BCC to the population will be provided to up-grade their BCC skills. The training will assist these health workers to change from the traditional top-down approach in communication to a more participatory one. They will learn to provide guidance to their clients to identify and adopt solutions to their problems and encourage them to take the desired actions rather than give directives which often end up not being followed. This participatory approach has been found to be more effective in bringing about behavior change. These BCC skills are not just applicable to the AI situation but can be applied to the prevention of other health problems requiring behavior change, so that the training will help to build the capacity of health workers for BCC in all areas.

97. Due to their heavy workload, the ability of the health facility workers to provide outreach is very limited at present. This role is fulfilled by village health workers (also called health motivators) who are volunteers providing primary health care and health education to the community. Vietnam has an extensive network of village health workers with at least one in each village which forms an important communication channel.

98. Training will be provided for two different groups of health workers: (a) health workers at the health facility, and (b) village health workers. A training needs assessment will first be conducted on health workers in the health facilities at the provincial, district and commune levels, and on village health workers (VHWs). The training needs assessment will provide both quantitative and qualitative information on health worker AI knowledge and their attitudes towards the problem, training they have received on AI and BCC, their BCC skills, their AI-related tasks and responsibilities, constraints and problems they face in their AI-related work, and their proposals for solving these problems. Based on the assessments, a training curriculum and materials will be developed for each group of health workers. An AI-BCC training manual and materials have already been developed under another project which can be adapted for this project.

99. A cascade training approach will be used. Training of trainers (TOT) will first be conducted for a team of provincial trainers with the participation of a trainer from the central level. The team will then proceed to train health workers from the provincial and district levels. Another team of trainers will be formed with trainers from the provincial and district levels who will train the large number of health workers from the commune level. The trainees at the provincial and district levels will come mainly from the Provincial and District Preventive Medicine Centers. Staff from the Centers for Health Communication and Education as well as selected curative health staff who have responsibility for health communication in the hospitals and clinics will also participate. At the commune level, the trainees will be health staff from the commune health stations who have responsibility for health communication and education. Curative staff will be provided with a set of key messages for AI prevention and control to communicate to their patients when appropriate, and training on these messages will be part of their training in other subjects under this project.

100. Follow-up supervision of the trainees after they return to their workplace will be conducted by the trainers, and each will be visited at least once. The project will provide support for the logistics to carry out this supervision. During the supervisory visit, the trainer will observe the trainee during his/her work, provide feedback and hands-on training to reinforce the initial training, and assist the trainee to problem-solve as required. Information gathered on these visits will also be used to plan for refresher training, and for monitoring and evaluation.

101. The trainees will attend a refresher training workshop around one year after the initial training, where they will be given an up-date on AI, and exchange experiences and ideas on how to improve their work in AI-BCC. Such gatherings serve to not only maintain the workers' skills but also to motivate them.

102. The trainees will also be provided with IEC materials and aids for them to use in their work (e.g. flip charts, flash cards).

103. Training of health facility workers will be organized and conducted by APDM, while the training of VHW will be conducted by the Center for Health Communication and Education (CHED). CHED has already conducted this training in 3 of the 8 project provinces with USAID and UNICEF support. The project will cover the provinces which have not received this support.

104. An evaluation of the training will be conducted during the last year of the project, the results of which will be fed into the overall evaluation as well as provide lessons learnt for future training activities.

105. **Outputs:** Provincial, district and commune health facility workers and village health workers trained and carrying out AI-BCC activities effectively.

106. **Activity B3d - Community Mobilization.** Community involvement is vital to successful AI prevention and control. The VHW will be the pivotal person to mobilize the community. She/he will need the collaboration and support of other groups in the community such as the mass organizations (Women's Union, Farmers' Union and Red Cross). Together with community leaders, they will identify and organize awareness-raising activities for AI prevention and control to be supported by the project. Ideas and initiatives may be discussed with, reviewed and approved by the local People's Committee and other community leaders. Some activities may reinforce and integrate AI prevention and control activities by other sectors such as animal health and education. Examples of awareness-raising activities may include a local campaign on a specific behavior or behaviors, campaign for an "AI-free village," clean farmyard competition, demonstration farm with safe poultry-raising practices, community theatre on AI prevention themes, etc. Such activities can help to not only increase public awareness but demonstrate actions that can realistically be undertaken by the community and by the individual.

107. Due to the community-based nature, complexity and scope of this activity, responsibility for the implementation of this activity will be given to one of the mass organizations.

108. An evaluation of these activities will be conducted after 2 years of project implementation which will provide findings and lessons learned to be used by other communities during the third year of the project. Successful pilot BCC activities can be replicated in other communities.

109. **Outputs:** Awareness-raising activities organized by the community in each commune.

110. **Activity B3e - IEC Materials and Mass Media Campaigns.** The project will not need to develop new IEC materials (leaflets, booklets and posters) for the general public. These materials have already been developed under other donor-funded projects but distribution has been limited. The project will reproduce selected existing materials which may be adapted if necessary, and disseminate them widely in the project provinces. Generic materials have also been developed by UNICEF for a pandemic situation which can be quickly adapted and produced if a pandemic were to begin. IEC materials targeting special groups such as market traders will be developed in this project as described in Component A.

111. TV has been found to be the most widely cited source of AI information by people and a number of TV spots have been produced for mass media campaigns. They have been broadcasted mainly on national TV channels but have not reached some of the target audiences

in the provinces whose preference is for the local provincial channel. The project will fund the re-broadcast of selected TV spots on the provincial channels where they have not been aired before. The spots may be dubbed in local languages where necessary.

112. **Outputs:** IEC materials reproduced and distributed to the village level. TV spots re-broadcasted on provincial channels.

113. **Subcomponent B4 - Strengthening the Preventive Health System at the Local Level (US\$5.1 million)**. This subcomponent will support critical efforts by MOH to operationalize new preventive health strategic directions and policies in practical and locally relevant ways. It will also seek to test and refine new approaches based on comprehensive appraisals of the current constraints and challenges facing the health care system. Innovative preventive health pilot efforts will be designed with strong local participation, implemented, and rigorously evaluated. Special attention will be placed on understanding barriers and critical pathways to surmounting them in the local health system restructuring process. New coordination modalities will be forged with DARD to promote better integrated and more timely responses to potential avian and human disease outbreaks. In addition, this subcomponent will address underlying weaknesses in current human resource capacity and systems at the local level.

114. Together, these activities will both address and mitigate the immediate threat of HPAI in project provinces while also undertaking to strengthen preventive health systems in a sustainable and replicable fashion. It is expected that the project will provide the evidence base and key guidance for national scale improvements in the Preventive Health system during the 2010-2015 government planning and budgeting cycle.

115. The following three aspects of the preventive health system will be addressed at the local level:

116. **Activity B4a - Strengthening Preventive Health Human Resource Capacity, Policies and Structures.** A public health system that does not address problems with its staff levels, quality and retention will be unable to effectively address significant public health issues and respond appropriately to new challenges as they arise. As Vietnam prepares to launch its new DPHC system nationally, it faces daunting human resource concerns. Little understood and with neither the status nor income generating potential of the curative care profession, the preventive health field faces major challenges in attracting and retaining talented young professionals.

117. The project will make important investments in human resource development. In addition to the extensive in-service training package in each of the project's subcomponents, graduate training in public health and preventive medicine for more than 100 professionals will be supported by the project. VAPM is committed to attracting talented young professionals and to diversifying the current preponderance of medical doctors in the preventive medicine field in Vietnam. Under current MOH policy, beneficiaries of graduate studies scholarships will be required to serve two years for each year of study, thus ensuring that this investment is not lost. This activity represents a critical medium-long term investment in building a stronger cadre of qualified young preventive health professionals in Vietnam.

118. Existing personnel policies within the MOH structure are widely believed to disfavor preventive over curative health care. In addition, they may inhibit preventive health staff from performing essential field monitoring, outreach and surveillance functions. The human resource component of the DPHC assessment will be designed to shed further light on the nature of these suspected problems and point the way towards viable solutions. MOH will form a Human Resource Working Group whose task it will be to review the assessment findings and formulate them into recommendations for MOH personnel policy changes. The Working Group will examine good global practice in HR management and consider how these might be adapted for use in Vietnam. It is also anticipated that new personnel policies will be tested and evaluated as part of the DPHC pilot initiatives.

119. **Outputs:** At least 100 professionals with graduate training in public and preventive health; an active MOH Personnel Human Resource Working Group; formal recommendations to MOH for personnel policy changes that strengthen preventive medicine in Vietnam and support new Government Preventive Health Policy Directives made by the Working Group.

120. **Activity B4b - Testing Models that Apply and Adapt the 2005 Preventive Health Decision No. 26.** As the HPAI response moves from an emergency mode to one which must be sustainable into the medium term, improvements in Vietnam's preventive health system will prove critical. With technical support from the MOH PCU, project provinces will develop and pilot locally relevant approaches to improving the performance of key systems and structures. Pilot projects will be guided by new MOH policy directives that set forth the future framework for Vietnam's preventive health system. The framework addresses standards and norms for DPHC facilities, equipment, staffing, training and core functions. Project pilots will enable one or two districts in each province to adapt and apply this framework to its unique context. Pilot designs will be informed by a comprehensive assessment of the current preventive health system covering all three regions of Vietnam. The assessment will include a training needs appraisal for preventive health staff. This appraisal will guide the development of a new core training package for preventive health staff and shape final training plans for the project as a whole. It will also look carefully at existing personnel policies and how they impact on the preventive health care system. Finally, the assessment will contribute to the development of key performance indicators that will be used for standardized monitoring of new DPHC's during this transition period.

121. Pilot efforts at the district level will address well known system-level constraints including staff motivation and performance management, participation of private sector doctors in the surveillance system, information sharing between the preventative and curative sectors, and management of important hospital initiatives such as nosocomial infection control. They will take into account the role of the district preventive health centers (DPHC) as newly created entities within the health system. Their roles vis-à-vis district hospitals, how they can reduce redundancy and increase efficiency, and how they can support commune level health centers and surveillance activities at all levels will be major design features of the pilots. It is expected that provinces will suggest original ideas for pilot projects to address the key constraints they face, and that they will develop them with a view toward long-term operations of successfully piloted activities. Pandemic simulations will be used as a pilot monitoring and evaluation methodology. An independent evaluation of the pilots will be undertaken to better understand these central issues and to guide the future expansion of the DPHC network nationally.

122. **Outputs:** Comprehensive district preventive health system assessment conducted; DPHC key performance indicator framework developed; DPHC core training package designed, tested, produced and disseminated; DPHC pilot initiatives undertaken in each of 8 provinces; Pandemic simulations conducted; and independent evaluation carried out of district pilots.

123. Activity B4c - Developing and Piloting New Models for Effective Local Coordination and Management of AHI and Other Complex Public Health Threats. As with any complex health and development problem, a multisectoral approach that ensures effective coordination, communication and integrated action is essential. Achieving meaningful integration within Vietnam's highly verticalized and centralized structures is an enormous challenge. However, opportunities for sustained integration or preparedness and response are widely believed to be most feasible at local level where institutional stakeholders share resources and live in close proximity to each other.

124. The main focus of this subcomponent will be developing and testing novel approaches to coordinated activities with animal health and other community stakeholders so as to reduce overall community vulnerability to AHI and other similarly complex public health threats requiring new modes of cross-sectoral collaboration. It will provide seed money for local human and animal health authorities, together with local People's Committees, mass organizations and other authorities, to fashion new coordination mechanisms that can function in the medium term as Vietnam seeks to institutionalize disease control structures at local levels, including hamlet, commune, district and provincial levels.

125. Project staff will assist local authorities in designing new coordination structures for planning and oversight of integrated AHI activities locally, including development of standardized mechanisms for communicating across sectors, joint planning and monitoring, and responding as an integrated team.

126. **Outputs:** Innovative integrated and community based approaches to AHI preparedness, coordination and management will be developed, tested and evaluated for their effectiveness, sustainability and replicability.

127. Component C: OPI Integration & Coordination, Results M&E, and Project Management (US\$4.8 million)

128. This component will support the integration and coordination between MARD, MOH and other concerned ministries and agencies in implementing the OPI. It will also support the design, establishment and implementation of a result-based M&E system to evaluate the project's (and to the extent possible, OPI's) progress, performance, and impact at the sector and regional levels. Lastly, this component will strengthen the institutional capacity to undertake project management in terms of planning, coordination, and actual implementation of the overall project at the national, provincial, district, and commune-levels. As such, Component C envisages three subcomponents.

129. **Subcomponent C1: OPI Integration and Coordination** (US\$0.2 million). The subcomponent will provide support for:

130. (a) the establishment of a Secretariat under the nascent National Steering Committee for Avian and Human Influenza (NSCAHI, see Green Book, page 8, para 34);

131. (b) development of coordination mechanisms between the animal and human health sectors at various levels (for instance, undertaking coordination meetings, joint programs, national PHAI outbreak simulations, and the like); and

132. (c) conducting regional outreach activities beyond Vietnam (for instance, leading regional and international policy coordination and knowledge-sharing initiatives, including workshops, training, information sharing, increased surveillance, laboratory networking, sample exchanges, joint supervision, etc.) bilaterally with China, Thailand, Cambodia, and Laos but also multilaterally with the Greater Mekong Region and APEC at large.

133. During implementation, specific activities will be identified, prepared and undertaken by the NSCAHI Secretariat. The Secretariat will also periodically prepare OPI implementation reviews, and suggest policy lessons for further refinement of the OPI document (that is, the Green Book). The subcomponent will finance technical assistance, field activities, incremental operating costs, training and workshops, equipment and facilities to carry out the activities.

134. Implementation of subcomponent C1 is contingent on the establishment of the National Steering Committee for Avian and Human Influenza (NSCAHI). The purpose of this subcomponent is to support the far-reaching integration and coordination efforts envisaged by the OPI. It is also hoped that this Subcomponent would provide policy guidance and keep the OPI document up-to-date for future outbreaks of contagious diseases, HPAI or others.

135. A small permanent secretariat would be established that would maintain close contact with the expanded list of concerned ministries and agencies envisaged under the NSCAHI. The secretariat would also be responsible for conveying NSCAHI members to both policy and technical events (such as national simulation exercises). It would also help link Vietnam, on behalf of the NSCAHI, to regional and international efforts at addressing PHAI.

136. The initial setting-up of the NSCAHI secretariat would be supported by the MARD PCU for this project. The latter would oversee and manage the recruitment of key staff, and the procurement of office facilities and equipment until the time that the secretariat is capable of managing its own affairs.

137. **Subcomponent C2: Results M&E (US\$1.0 million).** The subcomponent will provide support for the detailed design, establishment and implementation of a result-based M&E system to (1) evaluate the project's progress, performance, and impact at the sector and regional levels. It will also (2) be an integral part of GOV efforts at monitoring results and evaluation impacts under the OPI. To that effect, the Results M&E should also (a) enable monitoring of the effectiveness of implementation processes and incorporation of lessons learned into future planning, and (b) be linked to the MARD and MOH's monitoring system. The subcomponent will finance consulting services needed to carry out base-line studies, short-term technical assistance for the design, establishment and testing of the M&E system, training and workshops, M&E-related equipment, travel costs of project staff and incremental staff, and operating costs of the M&E efforts.

138. Monitoring and Evaluation for Component A: HPAI Control and Eradication in the Animal Health Sector / MARD

139. Monitoring and Evaluation for Component B: Influenza Prevention and Pandemic Preparedness in the Health Sector / MOH.

140. In strengthening the M&E capacity at all levels of project implementation this subcomponent will draw on the lessons learned from AIERP in the case of Component A and on the lessons learned from other health projects in Vietnam in the case of Component B.

141. M&E will be the direct responsibility of the subcomponents' Technical Managers, who will supervise and conduct M&E as a routine part of their responsibilities, in accordance with pre-set indicators and performance criteria. M&E reports will be included in standard format project in all project implementation progress reports, clearly outlining issues and their state of resolution. M&E will become a proactive tool with which to identify and remedy implementation problems at an early stage. Financial management will be conducted by independent auditors in accordance with Bank guidelines for financial management. The Project will provide office support, contractual staffing, transportation, and budgets for operations, travel, supervision and M&E.

142. **Subcomponent C3: Project Management (US\$3.6 million)**. This subcomponent will provide the institutional capacity necessary to plan, coordinate and manage the implementation of the overall project at a national, provincial, district, and commune-levels. In doing so, resources to establish and operate two Project Coordination Units (PCU), one each under MARD and MOH, respectively, will be provided. This involves the development of planning, technical, and management skills to be able to produce quality and timely annual work plans and budget, anticipate and resolve implementation problems quickly, and make adjustments based on implementation progress and feedback.

143. The project management would also monitor activities in the provinces to ensure they are in compliance with the safeguard policies (i.e. environment, ethnic minority development, involuntary resettlement, gender, and others) by preparing a safeguard action plan satisfactory to the Bank during the first six months of project implementation and subsequently undertaking this action plan during the remainder of the project. The subcomponent will finance incremental operating costs, contractual staff, project management-related technical assistance, training and workshops, renovation of project office and office equipment and furniture, and project vehicles.

144. **Ministry of Agriculture and Rural Development - Project Management and Institutional Support**. This subcomponent provides resources to the PCU under MARD to carry out effective management of Component A. The MARD PCU will be located in DAH and will be provided with two office clerks, a financial officer and a procurement officer. The four Technical Managers responsible for implementing Subcomponents A1, A2, A3 and A4, and the Chief Technical Adviser will also be stationed in the PCU. The PCU will be responsible for reporting, project supervision, reporting, communications, transportation and office support. Four Technical Managers will be contracted full time, and will be responsible for the M&E of each of their subcomponents. A Chief Technical Adviser (CTA) will be contracted full time to provide overall technical guidance and vision to the successful implementation of Component A.

At the at the provincial level, the 11 PPMUs will be staffed by an office clerk, and accountant and procurement officers to handle project implementation. The Project will provide office support, contractual incremental office and technical staff, a PCU office vehicle and budgets for travel, supervision, workshops, M&E and meetings.

145. **Ministry of Health—Project Management and Institutional Support.** This subcomponent provides resources to the PCU under MOH to ensure effective overall management of Component B. The MOH PCU will be located within the VAPM and will be led by a dedicated Project Director, Vice Director and Project Coordinator. In addition, Project Officers will be newly recruited or appointed from relevant MOH departments to provide technical support to each subcomponent of the project. Further technical assistance is envisioned through an International Technical Advisor (9 months over life of project) and other short term international consultants. Two accountants, two secretaries a clerk and a driver will support PCU operation, finance and administration functions. This team will be responsible for project management, implementation, and supervision. It will provide critical coordination and leadership for the project with central level and provincial partners as well as liaising with external partners and stakeholders. At the provincial level, eight PPMU's will be established and staffed by Project Officers, Accountants and support staff. The PPMU will be led by a Project Director and Vice Director drawn from either the DOH or the DARD, according to the local situation.

146. **Safeguards Action Plan.** The project management would also monitor activities in the provinces to ensure they are in compliance with the safeguards (i.e. environment, ethnic minority development, involuntary resettlement, and gender).

Appendix 3: Project Cost

VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

TOTAL PROJECT COST PER ACTIVITY (US\$ MILLION)

Activity	Government	IDA	AHI Facility	PHRD	Project Total
Component A: Animal Health	1.23	9.53	5.28	1.14	17.2
Component B: Human Health	1.23	9.61	4.19	0.96	16.0
Component C: Integration	0.54	0.86	0.53	2.9	4.8
Project total:	3.00	20.00	10.00	5.00	38.00

TOTAL PROJECT COST PER EXPENDITURE CATEGORY (IN US\$ MILLION)

Expenditure Category	Government	IDA	AHI Facility	PHRD	Project Total
1. Civil Works	--	0.45	0.23	--	0.68
2. Goods	--	10.78	5.85	--	16.63
3. Training and Workshops	--	5.93	2.97	--	8.90
4. Consultant Services	--	0.92	0.46	5.00	6.38
5. Incremental Operating Costs	3.00	1.53	0.77	--	5.30
6. Farm Compensation Payment	--	0.03	0.07	--	0.10
Project Total	3.00	20.00	10.00	5.00	38.00

Note: Identifiable taxes and duties are US\$4.6 million and the total project cost, net of taxes, is US\$33.4 million. Therefore, the share of project cost net of taxes is about 88%. AHIF figures are net of taxes, as per AHIF rules.

COMPONENT A: HPAI CONTROL AND ERADICATION IN THE AGRICULTURAL SECTOR
PROJECT COST PER EXPENDITURE CATEGORY
(US\$ MILLION)

Expenditure Category	Government	IDA	AHI Facility	PHRD	Project Total
1. Civil Works	--	0.45	0.23	--	0.68
2. Goods	--	6.43	3.68	--	10.11
3. Training and Workshops	--	1.12	0.56	--	1.68
4. Consultant Services	--	0.92	0.46	1.14	2.52
5. Incremental Operating Costs	1.23	0.57	0.29	--	2.09
6. Farm Compensation Payment	--	0.07	0.03	--	0.10
Project Total	1.23	9.53	5.28	1.14	17.18

COMPONENT B: INFLUENZA PREVENTION AND PANDEMIC PREPAREDNESS IN THE HEALTH SECTOR
PROJECT COST PER EXPENDITURE CATEGORY
(US\$ MILLION)

Expenditure Category	Government	IDA	AHI Facility	PHRD	Project Total
1. Civil Works	--	--	--	--	--
2. Goods	--	3.99	1.99	--	5.98
3. Training and Workshops	--	4.55	2.27	--	6.82
4. Consultant Services	--	--	--	0.96	0.96
5. Incremental Operating Costs	1.23	0.67	0.33	--	2.23
Project Total	1.23	9.61	4.19	0.96	15.99

COMPONENT C: OPI INTEGRATION AND COORDINATION, RESULTS M&E, AND PROJECT MANAGEMENT
PROJECT COST PER EXPENDITURE CATEGORY
(US\$ MILLION)

Expenditure Category	Government	IDA	AHI Facility	PHRD	Project Total
1. Civil Works	--	--	--	--	--
2. Goods	--	0.36	0.18	--	0.54
3. Training and Workshops	--	0.27	0.13	--	0.40
4. Consultant Services	--	--	--	2.90	2.90
5. Incremental Operating Costs	0.54	0.30	0.15	--	0.99
Project Total	0.54	0.86	0.53	2.90	4.83

Note: Identifiable taxes and duties are US\$0.6 million

Appendix 4: Financial Management and Assessment Report

VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

1. An assessment of the project's financial management arrangements was conducted in October 2006 and updated in December 2006. Although this is a follow-up project to AIERP, there are significant changes in the implementation arrangements with implementation substantially decentralized to the provincial level, new coordination arrangements between two ministries, and new staff being appointed and responsible for financial management. The FM risk is assessed as substantial due to the: (1) lack of capable staff at the central level and especially at the provincial level when the functions of planning, budgeting, procurement and financial management are partially delegated to the provinces; (2) lack of clear guidance on coordination between two implementing ministries to achieve consolidated and timely management of funds flows, budgeting and financial reporting; (3) lack of practical and consistent computerized accounting arrangement to support accounting and financial monitoring; (4) potential delays in the provision of counterpart funding from provincial government budgets; and (5) lack of an effective oversight mechanism such as an internal audit function. The above risks and mitigating measures have been analyzed by the project team and a detailed Action Plan to improve Financial Management has been prepared. It is concluded that with the completion of that Action Plan, the Project will have capacity to meet the minimum requirements of the Bank's OP/BP10.02.

Country Issues

2. The 2001 Country Financial Accountability Assessment (CFAA) for Vietnam concluded that there is a certain degree of fiduciary risk in the use of public resources and the public financial management (PFM) system. Since 2001, a large number of recommendations of the CFAA have been implemented, or are in the process of being implemented. The 2005 Public Expenditure Review-Integrated Fiduciary Assessment (PER-IFA) also recognized improvements in transparency and accountability.

3. Despite progress made to date, the key challenges remain, including: (1) implementation of the legislative frameworks which are largely in place; (2) strengthening the effectiveness of the State Audit of Vietnam; (3) streamlining the internal control framework; (4) building financial management (FM) capacity, particularly at the sub-national level; and (5) adopting international public sector accounting standards. The implementation of the PER-IFA recommendations is being supported by the PRSC program and grant funds.

Risk Analysis and Mitigating Measures

4. The project inherent risk is assessed as substantial primarily due to: (1) the decentralized implementation arrangements for planning, budgeting, procurement and financial management being delegated to the provincial levels, (2) new Ministry (MOH) and provincial staff (PPMUs) involved in financial management who have not had experience with Bank FM requirements, (3) potential for delays in provision of counterpart funding from provincial government budgets, and (4) need for good coordination between two implementing ministries to achieve consolidated and timely management of funds flows, budgeting and reporting.

5. The project control risk is assessed as substantial primarily due to: (1) limited financial management capacity and inexperience in project planning and budgeting processes at provincial level which may result in delays in implementation and disbursement of funds; (2) risk of non-qualified or staff with inappropriate qualifications being appointed to FM positions; (3) different accounting softwares being used by different provinces may not satisfy all accounting and reporting requirements by the Bank and create difficulties in consolidation for project monitoring; and (4) the lack of an effective oversight mechanisms such as an internal audit function for managing and controlling project financial management systems for the project.

6. To mitigate the risks, the Bank will seek early commitment from MOF to make counterpart funds available throughout the implementation of the project. MARD and MOH's PCUs will take the leading role in coordinating and consolidating all components under the project. The Ministries and provinces will ensure adequate staffing especially at provincial level and a comprehensive training and capacity building program will be developed and delivered for all participating provinces and PPMU's staff in procurement and financial management. Full-time accountant(s) will be appointed at each PCU and PPMU. The current accounting software of the MARD's PCU may be upgraded and installed in all PPMUs to enhance provincial accounting and reporting and PCU's consolidation. The project will be required to implement internal control supervision (such as internal audit) for regular review of project activities and financial management.

7. The proposed mitigating measures, if successfully carried out, will reduce the project overall risk to moderate which is considered as acceptable to the Bank.

Implementation Arrangement

8. MARD and MOH will jointly implement the project, and Vice Ministers of the respective ministries will report to NSCAI or NSCAHI (the envisaged successor committee) on project implementation. There will be two Project Coordination Units (PCUs): one in MARD and one in MOH for coordinating project activities under Components A (and partially C), and B (and partially C), respectively. The PCUs will be responsible for budgeting, accounting and financial management for central level project activities, consolidation of reports from provincial level, funds flows to PPMUs, providing assistance and supervising procurement and financial management arrangements in the project provinces.

9. The PCU in MARD would include technical staff appointed by DAH and DLP and some core staff of the AIERP PCU as Accounting and Procurement Office staff. MARD's PCU will be responsible for consolidating total project budget and reports (including all components under the project) and submitting the budget and required reports to the World Bank for the overall project.

10. At the provincial level, the Provincial Steering Committee for Avian Influenza (PSC) will provide general policy guidance for all project activities to be implemented in the province and to ensure strong coordination among relevant agencies. The PSC also will be responsible for reviewing and approving all activities decentralized to the province including the provincial work plans, budgets and procurement.

11. Each province will establish a single Provincial Project Management Units (PPMU) to manage all project activities to be implemented in the province including Component A for Animal Health, Component B for Human Health, and Component C for Results M&E. The PPMU will report to the Provincial Steering Committee, which in turn reports to the Provincial Peoples' Committee (PPC). Depending on the avian influenza and human influenza risks in the province, the PPMU will be located either in the Department of Health (DOH) or the Department of Agriculture and Rural Department (DARD). The Vice-Directors of DOH and DARD will be the PPMU Director and Vice Director, with the relative scale of project activities under Components A and B determining whether the PPMU will be located in DOH or DARD. The PPMU will have the following key positions: PPMU Director, Accountant(s), Procurement and M&E Officers, and senior technical staff from DARD, DOH, DOF, DPI, and the Provincial Treasury. The PPMU will manage all sources of the project funds allocated to the provinces and be responsible for all procurement activities and financial management functions decentralized by the ministries to the province.

12. Full-time accountant(s) with qualification and experience acceptable to the Bank will be appointed for each PCU and PPMU.

Budgeting

13. The PPMUs will prepare provincial work plans and budgets which are to be approved by the PSC. The budgets will be based on the annual activity plan and procurement plan of the province. The PCUs will be responsible for coordinating and consolidating the budgeting process, for both funding from IDA and counterpart funding from the government, and from provincial level.

14. MARD's PCU will be responsible for consolidating total project budget for the whole project (including all components). The budgets will be used for monitoring financial progress of the project.

Accounting Policies and Procedures

15. The Project will use accounting policies and procedures acceptable to IDA. For reporting purposes, International Public Sector Accounting Standards (IPSAS) should be used by the Project. The current accounting and reporting systems and internal controls of the MARD's PCU for existing World Bank-funded projects will be used, and modified as necessary for this project.

16. It is proposed that the current accounting software used by the MARD's PCU be upgraded to cater for this project's requirements and be installed at each PPMU to provide a consistent accounting and reporting function.

Internal Control and Internal Auditing

17. **Internal Control.** The project's internal controls will be documented in the Financial Management Manual (FMM) which will be updated regularly to take into account any changes in procedures. The FMM will be prepared jointly by the two Ministries and is to be reviewed

annually to ensure it is up-to-date and relevant. The FMM must be prepared prior to effectiveness of the project (condition of effectiveness).

18. **Internal Auditing.** An effective oversight mechanism such as an internal audit function must be implemented for managing and controlling project financial management systems. It is proposed that the project develop an internal audit function which will have responsibility for ongoing review and reporting on the project internal control systems, implementation progress, administrative efficiencies and proper use of funds and assets. Internal audit positions may be placed in the PCUs and will report to the PCU Directors with copies of their reports to the PSC.

Reporting and Monitoring

19. **Quarterly IFRs.** The PPMU will be responsible for preparation of quarterly interim financial reports (IFR), by Component, for the province. The two PCUs will then consolidate provincial IFRs for their respective component. MARD's PCU will be responsible for consolidating total project IFRs for submission to the Bank on a quarterly basis. The IFR formats and contents will be agreed at negotiations. The IFRs should be part of the periodic Project Progress Reports submitted by the PCU and the PCU will submit the IFRs to the Bank within 45 days of each quarter.

20. **Annual Financial Statements.** MARD's PCU will prepare annual project financial statements in compliance with IPSAS. The Project Financial Statements will consist of (i) a Statement of Sources and Uses of Funds/Cash Receipts and Payments; (ii) the Accounting Policies Adopted and Explanatory Notes; and (iii) a Management Assertion that Bank funds have been expended in accordance with the intended purposes as specified in the relevant World Bank legal agreement.

External Audit Arrangements

21. Financial statements of the project will be audited on an annual basis in accordance with international auditing standards and in compliance with the independent auditing regulations of Vietnam and terms of reference acceptable to IDA. The audited financial statements and audit report must be submitted to IDA within six months of the end of each fiscal year. The auditor who is acceptable to IDA would express a single audit opinion covering the Project Accounts, the use of Statements of Expenditures and the Designated Accounts. A management letter addressing any internal control weaknesses of the implementing agencies (PCUs and PPMUs) will also be provided by the auditor together with the audit opinion report.

Funds Flows and Disbursement Arrangements

22. The project is being financed by a credit from IDA, grants from AHIF and the PHRD Fund and counterpart resources from Government.

23. The PHRD Grant will finance 100% of consulting services under Subcomponent A1, A3, and A5, and under Component B and C.

24. Other expenditure categories would be co-financed by IDA and AHIF (67% and 33% respectively of total costs including taxes). In line with the AHIF agreement, local taxes and

duties will not be financed from the AHIF. The financing shares of IDA and AHIF of 67% and 33% respectively have been determined factoring in that no taxes and duties should be financed from the AHIF (see computation in table below). All taxes and duties on these categories would be financed by IDA.¹³

Computation of Financing Arrangements for Expenditures co-financed by IDA and AHIF

	Total Costs funded by IDA and AHIF (US\$ mill)	Financing Arrangements			
		IDA (US\$ mill)	percent	AHI Facility (US\$ mill)	percent
Cost <u>excluding</u> taxes and duties	\$26.40	\$16.40	62%	\$10.00	38%
Estimated taxes (fully IDA funded)	\$3.60	\$3.60	100%	\$0.00	0%
Cost including taxes	\$30.00	\$20.00	67%	\$10.00	33%

25. The project financial statements and audit would confirm adherence to the stipulated financing shares, thereby also confirming that taxes and duties have not been financed from the AHIF.¹⁴

26. The following Table 1 indicates the amounts allocated and the percentage of project expenditures financed by expenditure category and financing source.

¹³ The Vietnam country financing parameters allow for IDA financing of all taxes and duties. IDA has appraised that taxes and duties do not constitute an excessive share of project costs (estimated at about 12% of project expenditures on these categories).

¹⁴ For clarity, the Notes to Project Financial Statements would state that the financing shares between IDA and AHIF financing stipulated at the beginning have been determined in a manner as to exclude any financing of taxes and duties from the AHIF; and confirm that these agreed financing shares have been adhered to, and therefore no taxes and duties have been financed from the AHIF.

Table 1 –Total Project Financing by Expenditure Category and by Source.

PROJECT TOTAL	Financing by Source					Percentage Financed (%)				
	Expenditure category	TOTAL	IDA	AHIF	PHRD	GOV	IDA	AHIF	PHRD	GOV
Civil works	0.68	0.45	0.23				67	33		
Goods	16.63	10.78	5.85				67	33		
Training and Workshops	8.9	5.93	2.97				67	33		
Consulting Services										
<u>Component A:</u>										
• Subcomponent A1, A3, A5	1.14			1.14					100	
• Subcomponent A2, A4	1.38	0.92	0.46			67	33			
<u>Component B</u>	0.96			0.96					100	
<u>Component C</u>	2.9			2.9					100	
Compensation Fund	0.1	0.07	0.03			67	33			
Incremental Operating Costs	5.3	1.53	0.77		3	30 (a)	15 (a)			55
Project Total Cost	38	20	10	5	3					

(a) Share of IDA / AHIF are 67/33 after deduction of Government funding for Incremental Operating Costs.

27. The table included in the Attachment 1 to this Appendix, present the allocation of funds from the three sources (plus Government counterpart funding) by Expenditure Category and by Component.

28. **Dedicated Accounts.** At the central level, there will be a total of four Designated Accounts (DAs). Each PCU will have two DAs – one for the PHRD funds and the second for the blended IDA credit and AHI Facility funds. DAs will be opened in a commercial bank with terms and conditions satisfactory to IDA. Authorized Allocations for the two DAs in MARD would be US\$ 1.6 million (for the blended IDA and AHI Facility funds) and US\$500,000 (for the PHRD funds). Authorized Allocations for the two DAs in MOH would be US\$ 1.6 million (for blended IDA and AHI) and US\$500,000 (for PHRD) respectively.

29. At the provincial level, each PPMU will have one project account in VND opened in a commercial bank to receive advances from the four PCUs' DAs for project expenditures. The accounting system and records will account for the expenditures by component and source of funds.

30. The advance amount to the PPMUs' project account will follow 90 day-advance account procedure and will be determined based on the approved quarterly work plan of the province, the progress of field implementation, and the reimbursement. For each quarter, the PPMU would send an advance request with summary and detailed reconciliation of: (1) the value of the next

quarter’s planned activities; and (2) the unspent balance of the previous advance (that is, the opening balance less amount spent in last quarter).

31. **Disbursement Methods.** The project will use traditional disbursement methods as per the Bank’s disbursement guidelines. Below is the table of project cost with disbursement percentage.

32. **Reporting on Eligible Expenditures Paid from the Designated Accounts.** Withdrawal applications reporting eligible expenditures paid from the designated account will be submitted monthly, with the following documentation:

- **Use of Statements of Expenditures.** For works costing less than US\$100,000 equivalent per contract, goods or non-consulting services costing less than US\$100,000 equivalent per contract, services provided by consulting firms costing less than US\$100,000 equivalent per contract and services provided by individual consultants costing less than US\$50,000 equivalent per contract, withdrawals under the Credit Agreement will be made on the basis of Statements of Expenditure. The related payment documents will be made available for the required audits, as well as to the Bank supervision missions upon request.
- **Other Expenditures.** All other expenditures above the expenditure thresholds will be submitted on the basis of full documentation which will include copies of receipts, supplier invoices, and bills of lading.

33. **Counterpart Funds.** Each PCU and PPMU will open a deposit account at the State Treasury to receive counterpart funds. The PPMU is responsible for annual budgeting of counterpart funds for the project activities within the province. The two PCUs will be responsible for coordinating and consolidating the budgeting process from provincial level for their respective component. MARD’s PCU will be responsible for consolidating total project budget for the whole project (including all components) for both donors funds and counterpart funds.

34. **Retroactive Financing.** Retroactive financing is allowed for payments made on or after December 15, 2006, up to an aggregated amount equal to the Retroactive Financing Amount of US\$300,000 from the IDA Credit / AHIF Grant.

Financial Management Action Plan

Actions	Responsibility	Date of Completion
Identify and appoint full time project accountant(s) at PCUs and PPMUs with qualifications and experience acceptable to IDA	MARD/MOH/PROVINCES	Effectiveness (1 st PCU) / Condition of Disbursement (2 nd PCU) / Condition of Disbursement PPMU (for each of 11 provinces)
Agree on the content and format of IFRs	MARD/MOH	During Negotiation

Finalize and adopt financial management section in the overall project implementation manual	MARD/MOH	Effectiveness
Establish a consistent computerized accounting system at PCUs and at PPMUs to provide a sound basis for accounting and reporting.	MARD/MOH/PROVINCES	Effectiveness (1 st PCU) / Condition of Disbursement (2 nd PCU) / Condition of Disbursement PPMU (for each of 11 provinces)
Develop a comprehensive training and capacity building program on project financial management to project accountants	MARD/MOH/PROVINCES	Effectiveness
Develop internal audit function in each PCUs (identify and appoint auditor staff; establish procedure, workplan, reporting and monitoring arrangements).	MARD/MOH	3 months after: i. Effectiveness (1 st PCU) / ii Condition of Disbursement (2 nd PCU)

Supervision Plan

35. Supervision of project financial management will be performed on a risk-based approach at least twice a year with field visits to selected provinces and PPMUs to review provincial financial management arrangements, funds flows, budgeting, accounting records and internal controls. The supervision will review the project's financial management system, including but not limited to the operation of Designated Accounts, Project accounts, internal control and financial reporting. The supervision visits to the project implementing agencies will be supplemented by reviews of the internal control supervision reports, review of the quarterly IFRs, and the annual audit reports of the project. Financial management supervision will be conducted by IDA's financial management specialist.

ATTACHMENT 1 – DISBURSEMENTS BY EXPENDITURE CATEGORY AND BY SOURCE

PROJECT TOTAL	Financing by Source					Percentage Financed (%)			
	TOTAL	IDA				IDA	AHIF	PHRD	GOV
1. Civil works	0.68								
(a) Component A	0.68	0.45	0.23			67	33		
2. Goods	16.63								
(a) Component A	10.11	6.43	3.68			67	33		
(b) Component B	5.98	3.99	1.99			67	33		
(c) Component D	0.54	0.36	0.18			67	33		
3. Training and Workshops	8.9								
(a) Component A	1.68	1.12	0.56			67	33		
(b) Component B	6.82	4.55	2.27			67	33		
(c) Component C	0.4	0.27	0.13			67	33		
4. Consulting Services	6.38								
(a) Component A	2.52	0.92	0.46	1.14		67 (A2, A4)	33 (A2, A4)	100 (A1, A3, A5)	
(b) Component B	0.96			0.96				100	
(c) Component C	2.9			2.9				100	
5. Farm Compensation Payment	0.1	0.07	0.03			67	33		
6. Incremental Operating Costs	5.3								
(a) Component A	2.09	0.57	0.29		1.23	30	15		55
(b) Component B	2.23	0.67	0.33		1.23	30(a)	15 (a)		55
(c) Component C	0.99	0.33	0.15		0.54	30 (a)	15 (a)		55
Project total Cost	38	20	10	5	3				

a) Share of IDA / AHIF are 67 / 33 after deduction Government funding for Incremental Operating Costs.

Appendix 5: Procurement Arrangements

VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

1. As described in OP 8.50 for Emergency Recovery Assistance (ERA), in addition to emergency assistance, the Bank may support operations for prevention and mitigation in countries prone to specific types of emergencies. This may comprise: (a) developing a national strategy; (b) establishing an adequate institutional and regulatory framework; (c) carrying out studies of vulnerability and risk assessment; (d) reinforcing vulnerable structures; and (e) acquiring hazard reduction technology. Given the threat that avian and human influenza may pose to the economic and social fabric of the country, as well as to the health of the population because of the risk of an influenza pandemic, the Project will be financed through IDA Grant to be approved following ERA procedures.

2. Procurement for the proposed project would be carried out in accordance with World Bank “Guidelines: Procurement under IBRD Loans and IDA Credits”, May 2004; and “Guidelines: Selection and Employment of Consultants by World Bank Borrowers”, May 2004 and the provisions stipulated in the Legal Agreement. The general description of various items under different expenditure categories are described below. For each contract to be financed by the Grant, the procurement methods or consultant selection methods, estimated costs, prior review requirements, and time frame are given in the General Procurement Plan covering the first 18 months of the project implementation provided by the Project Implementing Agencies (PIAs) prior to the negotiations. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

Civil Works

3. Civil Works estimated at an aggregate amount of US\$0.7 Million with contracts estimated to range from US\$10,000 to US\$250,000 per contract, include construction for upgrading markets, cold room stores, renovation of isolation rooms, and construction of quarantine rooms in the project provinces. All the works will be procured through the shopping procurement method. The Bank’s Sample Documents for procurement of very small work contracts will be used.

Goods and Non-Consulting Services

4. Goods estimated at an aggregate amount of US\$16.6 Million to be procured under the proposed project include, but are not limited to, laboratory equipment and consumables, vaccines, personal protective sets, computer and office equipment and supplies, training material printing and distribution, communication equipment, vehicles and motorcycles.

5. The amount of each contract, with the exception of vehicles and motorcycles, is generally expected to range from US\$10,000 to US\$150,000. Goods, including vehicles and motorcycles urgently required at the start-up of the Project, estimated to cost less than \$250,000 per contract may be procured through the Shopping method. This threshold is higher than the country threshold for shopping (\$30,000) normally used for conventional projects. This exception is justified due to the emergency nature of the project, and the same threshold was also used under

the earlier Avian Influenza Emergency Recovery Project (AIERP). Given that most of the procurement of goods under the Project would fall under the Shopping method, the invitation for quotations for each contract for goods and works procured under shopping procedures and estimated to cost more than US\$60,000 equivalent shall, in addition to any direct invitations, also be advertised in the Ministry of Planning and Investment's Procurement Newspaper and Website, and prospective bidders shall be allowed at least 10 days to submit quotations. Vehicles and motorcycles each estimated to cost less than US\$250,000 per contract may also be procured under the Procurement from United Nations Agencies method using IAPSO. Goods estimated to cost more than US\$250,000 per contract shall be procured under the International Competitive Bidding (ICB) method. The model Request for Quotation document agreed with the Bank will be used for procurement of Goods under the Shopping method, and the Bank's Standard Bidding Documents for Goods shall be used for all ICB procurement. Limited International Bidding (LIB) may be used for procurement of vaccines subjects to appropriate justification in accordance paragraph 3.2 of the Procurement Guidelines.

6. Direct contracting of television broadcasting of project education campaign would be used since this is the only option available given the Government monopoly of television broadcasting.

Consulting Services

7. Consulting Services estimated at an aggregate amount of US\$6.4 Million include but are not limited to, consulting services on various research and studies and specialized technical subjects, surveys, surveillance, simulation, education and training, and project management. With the exception of consulting services mentioned in the following paragraph which are to be procured on single source selection, the rest would mainly be of small-value services requiring hiring of individual consultants who would be selected in accordance with Section V of the Consultant Guidelines. Some consulting services requiring hiring of firms and estimated to cost up to US\$200,000 may be procured using the method of Selection Based on Consultant Qualifications (CQS). Services requiring hiring of firms and estimated to cost more than US\$200,000 shall be procured through the Quality and Cost Based Selection (QCBS) method. In addition, there may be a need to use, with the Bank's prior agreement, Single Source Selection (SSS) for consultancies of a specialized nature. Least Cost Selection (LCS) may be appropriate for contracting the audit firm. Quality Based Selection would also be appropriate in certain cases.

8. The project envisages one contract with OIE (US\$150,000) on the basis of single source selection to provide technical services and assistance under Component A. The World Organization for Animal Health (OIE) is the global regulatory and standard-setting authority for animal health and has worldwide expertise in disease reporting, animal health certification and regulatory matters related to national or world animal health. OIE is equally involved in the worldwide campaign against HPAI, through developing vaccination policy, disease-free certification and veterinary service assessments in countries requesting assistance from the international donor community in controlling or preventing avian influenza. OIE health certification is important in international livestock trade and the official declarations of freedom of disease, and has on staff and as consultant resources a number of livestock policy specialists.

Workshops and Training

9. An extensive training program including in-country workshops, training courses and study tours is estimated to cost about US\$8.9 Million. The Government's applicable procedures for carrying out training programs and workshops will be followed. Firms and individuals hired under contract for carrying out the training program and conducting workshops will be selected following the applicable methods of selection mentioned above under Consultant Services.

Operating Costs

10. Operating Costs estimated at an aggregate amount of US\$5.3 Million includes reasonable costs of incremental expenditures incurred by implementing the project, namely the costs of communication, travel and per diem expenses, office rental and consumables, and salaries for contracted staff, however, excluding salaries and salary supplements of civil servants.

11. The annual and/or semi-annual training program and operating costs expenditures plans, including in-country workshops, seminars, official travels, etc., shall be conducted in accordance with agreed procedures to be provided in the Project Implementation Manual based on programs with detailed itemized budgets approved by the appropriate government agencies and the Bank. The plans shall provide the objectives, criteria for selection of participants, number of participants, venues selected, timing of activity and detailed estimated costs including travel, living expenses, shopping list, unit costs, etc. Activities and expenditures incurred under these activities and included in the Statement-of Expenditures shall be supported by documentation evidences such as invoices, receipts, list of participants, per-diem received, etc., and signed by an official responsible and accountable for ensuring that the resources are spent strictly in accordance with the agreed plans with his/her statement confirming that this rule has been properly observed). These activities and documents shall be subject to regular and/or non-regular verification and inspection by the Bank staff and/or independent technical, financial, management inspectors.

Small Grants

12. Guidelines for accessing the grants will be designed during implementation and, subject to their acceptance by IDA, these guidelines will be included in the PIM.

Farmer Compensation

13. Guidelines for accessing farmer compensation will be designed during implementation and, subject to their acceptance by IDA, these guidelines will be reflected in a Compensation Manual.

The Bank's Procurement Review Requirements

14. The following contracts shall subject to the Bank prior review in accordance with the Procurement Guidelines or Guidelines for Selection of Consultants:

- a. The first contract for goods or non-consulting services procured by each

implementing agency regardless of value, and all subsequent contracts of US\$100,000 equivalent or more per contract.

- b. The first contract for works procured by each implementing agency regardless of value, and all subsequent contracts of US\$100,000 equivalent or more per contract.
- c. All contracts procured under direct contracting procedures.
- d. The first consultant contract with a firm and the first contract with an individual by each implementing agency regardless of value, and all subsequent consulting services of US\$100,000 equivalent or more per contract for firms and US\$50,000-equivalent per contract for individuals respectively.
- e. All single source selection contracts.

15. All other contracts shall be subject to post review in accordance with the Procurement Guidelines or Guidelines for Selection of Consultants:

B. PROCUREMENT CAPACITY ASSESSMENT

16. A procurement capacity assessment was conducted during the project appraisal. The procurement capacity of the proposed project implementing agencies (MARD, MOH and Project Provinces) was found to be inadequate. To be noted is the possibility of using staff from the existing MARD's CPU for the AIERP project. This CPU is fully functional and staffed with procurement staff with adequate procurement experience gained over the last 3 years implementation of IDA funded project, but this arrangement would need to be finalized, if indeed required.

17. The procurement issues and risks for implementation of the proposed project are mainly related to: (a) inadequate procurement knowledge and experience of the project implementing agencies; (b) the potentially heavy workload due to the emergency nature of the proposed project in addition to the workload which might be required by other potential projects to be funded by other donors; (c) the possibly slow or delayed government internal procurement approval process; and (d) the potential abuse of shopping and statement of expenditures procedures.

18. An action plan for strengthening the procurement capacity of the project implementing agencies was agreed during the appraisal mission and includes the following:

- a. PIAs will provide the updated Procurement Plan for the first 18 months of project implementation to the Bank prior to negotiations.
- b. PIAs, Line Ministries, and PCs will issue an instruction on the project procurement work including a simplified government approval procedure and measures to ensure transparency and economy of the shopping and statement of expenditures procedures by the project effectiveness.
- c. PIAs will select a qualified Procurement Consultant by the project effectiveness.
- d. PIAs will assign one Procurement Officer to work full time at the CPU(s) by the time of project effectiveness.
- e. Each participating agency will assign one staff with responsibility for providing the PCU (s) with technical support for procurement of their respective subproject components.

- f. PCU (s) will organize a procurement workshop with the Procurement Consultant as the main resource person and with assistance from the MARD/MOH within one month following project effectiveness.
- g. PCU(s) will establish the project procurement record and filing system by the time of project effectiveness or to comply with the Condition of Disbursement associated with the 2nd PCU.
- h. PCU(s) will explore possibilities of experience sharing with the on-going World Bank-funded project managed by MARD/MOH/PCs.

19. The overall project risk in respect of procurement is high.

C. PROCUREMENT PLAN

20. A general procurement plan was developed by Government to cover the first 18 months of project implementation. In addition, the PIM to be prepared before project effectiveness will include a section on procurement.

D. FREQUENCY OF PROCUREMENT SUPERVISION

21. In addition to prior reviews, the capacity assessment of the PIAs indicates that biannual implementation reviews should be undertaken in order to visit the field to carry out post-review of procurement actions.

E. DETAILS OF PROCUREMENT ARRANGEMENTS INVOLVING INTERNATIONAL COMPETITION

Goods, Works and Non-Consulting Services.

(a) List of contract packages which will be procured following ICB and Direct contracting:

1	2	3	4	5	6	7	8	9
Ref. No.	Contract Description	Estimated Cost (US\$1000)	Procurement Method	P-Q	Domestic Preference	Review by Bank	Expected Bid-Opening Date	Comments
	BSL3 Unit	650	ICB	na	yes	Prior	tbd	
	Vehicles	600	ICB	na	yes	Prior	tbd	
	Ambulances	1,600	ICB	na	yes	Prior	tbd	
	Motocycles	300	ICB	na	yes	Prior	tbd	
	HPAI Vaccines	3,000	LIB	na	no	Prior	tbd	
	IEC printing	450	ICB	na	yes	Prior	tbd	
	TV campaign	100	Direct Contracting	na	no	Prior	tbd	

(b) Contracts for goods and works estimated to cost more than \$100,000 equivalent and all contracts procured through Direct Contracting regardless of value will be subject to prior review by the Bank.

Consulting Services.

(a) List of Single Source Consulting Assignments

1	2	3	4	5	6	7
Ref. No.	Description of Assignment	Estimated Cost (US\$1000)	Selection Method	Review by Bank	Expected Proposals Submission Date	Comments
	Technical assistance by OIE	150	Single source	Prior	Tbd	

(b) Consultancy services by firms estimated to cost US\$100,000 or more per contract, all Single Source selection of consultants (firms) and consultant services by individuals costing \$50,000 or more will be subject to prior review by the Bank.

(c) **Short lists composed entirely of national consultants:** Short lists of consultants for services estimated to cost less than US\$200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Appendix 6: Environmental Analysis

VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

1. Background

1. The Highly Pathogenic Avian Influenza (HPAI) epidemic that struck Asian countries in mid-2003 has so far resulted in 244 human cases, of which 144 have been fatalities¹⁵. The human toll has been especially heavy in Asia. Avian influenza has now spread to 14 Asian countries, resulting in 214 human cases (89% of world cases) of which 132 were fatalities (92% of world fatalities)¹⁶. Vaccination of poultry is underway in four Asian countries (China, Vietnam, Indonesia and Pakistan), albeit with mixed results, depending on vaccination strategies, the efficacy of vaccine coverage and response, and the degree of post-vaccination monitoring which governs the decision-making of vaccination strategies.

2. Avian and Human Influenza (AHI) infection has been extremely costly for Vietnam in terms of human life and economic impact. To date, Vietnam has reported 93 human cases, including 42 fatalities. This record places Vietnam second only to Indonesia in the number of human fatalities. Vietnam has made great strides in fighting avian influenza since the World Organization for Animal Health (OIE) first officially declared the disease present in that country on 8 January, 2004. In the two and one-half years since that date, Vietnam has experienced three successive but diminishing waves of infection. Typically, outbreaks have struck the country during the rainy season that coincides with the annual Tet festival, during which poultry sales and consumption are at peak levels. In each case the epidemic has been contained, but only through the application of stringent containment measures including the imposition of strict poultry movement controls, closure of all live-poultry markets, the rapid culling of sick and unaffected birds, and the application of biosecurity measures in de-stocked commercial, smallholder and breeding operations.

3. Using its own resources, supported by assistance from the international donor community¹⁷, Vietnam has addressed the avian influenza epidemic in ways that offer a model for other countries that are responding to or are threatened by HPAI. On the technical side, Vietnam has expanded its laboratory capacity, improved epidemiological expertise and disease reporting, enhanced management capacity, improved its capacity to identify outbreaks rapidly and effectively, organized emergency outbreak containment, undertaken targeted and risk-based vaccination, introduced effective movement controls on poultry and contaminated materials during outbreaks, and initiated an investigative research program.

2. Environmental Policy

4. Vietnam's regulations for environmental review of investment projects are similar to the World Bank's requirements. However, three key differences are the lack of a formal requirement for public consultation and disclosure of potential environmental impacts, differences in how projects are categorized with respect to their potential impact, and the absence of an explicit

¹⁵ WHO World Human Case Statistics, October 2006

¹⁶ FAO Aide Report, September, 2006

¹⁷ Some 26 agencies and NGOs work in Vietnam on various aspects of avian influenza

requirement for an Environmental Management Plan (EMP). The 2005 Environmental Protection Law that came into effect on July 1, 2006 has substantially narrowed the gap between the World Bank requirements and Vietnam environmental regulations. Nevertheless, as there are still important differences between World Bank and Vietnam requirements on environmental review, the project will follow World Bank requirements.

3. Applicability of the Bank's Safeguards Policies

5. The project is not expected to have any large-scale, significant and/or irreversible impacts as activities focus largely on public sector capacity building and ensuring readiness for tackling outbreaks of AI in domestic poultry as well as preventing or reducing possible human infections by strengthening emergency preparedness and response. The project design incorporates other beneficial measures on the animal health side such as improved biosecurity in farms and live markets, disease control and poultry industry restructuring. On the human health side, the preventive activities include enhanced surveillance, curative care preparedness and awareness raising. All measures are aimed at increasing the effectiveness and safety over the existing AI practices and will have positive human health and environmental impacts. As such, the project is assigned an Environmental Category B.

6. The project triggers the Bank's safeguards policies on Environmental Assessment (OP 4.01), Indigenous Peoples (OP 4.10), and Involuntary Resettlement (OP 4.12). The project is being processed under OP 8.50, Emergency Recovery Assistance, and the task team is in the process of requesting concurrence from the EAP Vice President to delay preparation and disclosure of the Environmental Management Plan under the exception granted under OP 4.01, paragraph 12.

- Environmental Assessment (OP 4.01). The key environmental and human health issues include: (1) personal safety issues precluding disease transmission from animals to humans or between humans; (2) proper management of laboratory specimens and laboratory waste; (3) adverse impacts of construction activities; (4) humane culling of poultry; (5) safe disinfection of farm areas; (6) secure disposal of carcasses; (7) live market safety; (8) infection control at hospitals, inclusive of waste and wastewater management; and (9) responsible operation of an incinerator for confiscated poultry. All the above issues are important to prevent the inadvertent spread of Highly Pathogenic Avian Influenza virus, as this virus is harmful to human health. Furthermore, some activities can have an adverse impact on the environment through emissions to the atmosphere, wastewater discharge or groundwater contamination.
- Natural Habitats (OP 4.04). This Bank policy is not triggered because the project will not convert or degrade any protected areas, known natural habitats, or established or proposed critical natural habitats as defined under the policy.
- Pest Management (OP 4.09). This Bank policy is not applicable because the project will not procure pesticides nor will the use of pesticides increase as a result of the project. However, the chemicals to be used for the disinfection of farm facilities/personal protection equipment will be evaluated on a case-by-case basis for conformity with the OP 4.09 for Pest Management. The selected disinfectants will conform to the Bank's Pest

Management Policy. Use of hazardous disinfectants would necessitate providing training in safe transport, handling, and application.

- Physical Cultural Resources (OP 4.11). This Bank policy is not triggered because the project will not affect sites with archeological, paleontological, historical, religious, or unique natural values in the project area. However, appropriate clauses will be included in all construction contracts regarding the procedures to be followed in the event of chance find of culturally significant artifacts or sites.
- Indigenous Peoples (OP 4.10). It has been determined that this Bank policy does apply since ethnic minorities, who form the poorest sector of the population, are among the vulnerable to loss of poultry and the income derived from it. However, compensation of farmers for the loss of poultry has been incorporated into the project design. The project also ensures that ethnic minorities will benefit from the project in a way which is culturally appropriate and gender inclusive. An Ethnic Minority Communication Plan will be developed to support this goal. Public Information materials will be produced in local minority languages to ensure that all concerned ethnic groups are informed (see Appendix 7).
- Involuntary Resettlement (OP 4.12). This Bank policy is triggered by the acquisition of about 1.7 ha of land under the project for the Ha Vi live-poultry market in Ha Tay Province. There is no housing on the land to be acquired. As a condition of Negotiations, MARD will have prepared and approved a Resettlement Framework Policy for Component A and a Resettlement Action Plan for the Ha Vi Market.
- Forestry (OP 4.36). This Bank policy is not triggered because the project will not involve significant conversion or degradation of critical forest areas or related critical natural habitats as defined under the policy. The project will not involve significant conversion or degradation of critical forest areas or related critical natural habitats as defined under the policy.
- Safety of Dams (OP 4.37). This Bank policy is not triggered because the project will not construct or rehabilitate large dams as defined under this policy.
- International Waterways (OP 7.50). This Bank policy is not triggered because there are no known project components involving international waterways as defined under the policy.
- Disputed Areas (OP 7.60). This Bank policy is not triggered because there are no known project components involving international waterways as defined under the policy.
- Public Disclosure (BP 17.50). Because the project is being processed under OP 8.50, Emergency Recovery Assistance, safeguards issues will be addressed using accepted good practice and sound design principles. Safeguards documents will not be prepared prior to appraisal. The draft documents will be disclosed as they are prepared and again when they are finalized.

4. Environmental and Human Health Impacts and Mitigatory Measures to be Addressed under the Government's AHI Program and the Project

7. The potential environmental impacts and mitigation measures to be addressed under the Government AHI Program, including this project, are described below. All of these mitigation measures have been incorporated into the design of this program/project. This section is an outline of the Environmental Management Plan. This outline EMP shall be developed into a complete draft by MARD/MOH and finalized during the first six months of project implementation. The finalized EMP will then be disclosed within Vietnam and in Washington D.C. (at the InfoShop), and the project legal agreement will reflect implementation of the EMP.

8. **Impacts and Mitigatory Measures Common to both Components:** Some environmental and human health issues are common to both the Agricultural and Health Sector Components. These are associated with the following activities:

- A. Person Safety Issues
- B. Storage and Transport of Laboratory Specimens
- C. Management of Laboratory Waste
- D. Civil Works

A. Person Safety Issues. Due to the highly infectious nature of the HPAI virus to humans, particularly H5N1, training will be conducted for all people that are exposed to live virus. This will include field workers involved in identification of the disease, farm workers involved in culling, laboratory workers involved in virus isolation and diagnosis, and healthcare workers occupied with treatment of infected patients. All concerned persons will be trained and provided with PPE whenever required. Training will also cover on the use and disinfection of the PPE kits. Furthermore, guidelines will be developed and distributed to all persons involved in such activities.

B. Storage and Transport of Laboratory Specimens. The surveillance system has written procedures for storage, packaging with the appropriate information (laboratory forms), and shipment of the samples by motor vehicle. Specimen transport for all collected samples should follow national and international rules on transport of infectious substances, such as the UN Recommendations on the Transport of Dangerous Goods. Packing must be compliant with the ADR's packing instructions P650. The appropriate packing standard for diagnostic specimens that might contain a highly pathogenic avian influenza virus will be provided to all project provinces, so that all district offices have at least five suitable kits. Any international shipment of samples for analysis abroad are packaged, labeled and shipped in accordance with the requirements of the IATA regulations. Allowance has been provided for training of field staff in the above.

C. Management of Laboratory Waste. Appropriate methods will be used for handling and disposal of laboratory waste from the laboratories involved in testing samples for highly pathogenic avian influenza. These procedures are already in place in laboratories handling human and animal samples, as these follow national standards, IOE¹⁸ and WHO¹⁹ guidelines.

¹⁸ OIE Quality Standard and Guidelines for Veterinary Laboratories: Infectious Diseases

To further strengthen safety, the Ho Chi Minh Regional Veterinary Center in HCM City, which does the most diagnostic work in Vietnam, will be improved with the procurement of a BSL-3 laboratory. During project implementation it will be verified that all laboratories handling highly pathogenic avian influenza samples do have a written waste management plan covering the handling, segregation and treatment/disposal of wastes. Furthermore, it will be verified that the personnel operating the waste management system is trained.

D. Civil Works. The project may be involved with building isolation rooms at hospitals and/or market stalls. During any construction activity, the adverse impacts of construction such as dust and noise must be mitigated. These adverse impacts will be mitigated by including in the construction contract a clause regarding observation of standards for good construction practices. Construction will be supervised to observe compliance with these good construction practices.

9. Information and education materials for farmers and the public will be issued in minority languages where deemed necessary, so that all citizens are fully aware of how to minimize their exposure to the HPAI virus.

10. **Component A: Animal Health Sector**. The main environmental and human health issues under the Animal Health Component of the Government's AHI Program and the project are associated with the following activities:

- A. Compensation for Loss of Livestock
- B. Culling of Poultry
- C. Disinfection of Farm Surfaces, Equipment and Materials Disinfection
- D. Disposal of Culled Birds
- E. Improved Live Bird Market Hygiene
- F. Incinerator for Confiscated Poultry

A. Compensation for Loss of Livestock. For the past 12 months, there have been no reported outbreaks of HPAI in Vietnam. To ensure that any disease is reported promptly, the project contains a contingency fund for rapid compensation of farmers in the event that their flock has to be culled in the event of an outbreak.

B. Culling of Poultry. It is important that culling of poultry be conducted in a humane, safe, and efficient manner. The following methods for culling poultry are identified through in OIE/FAO guidelines: (a) neck breaking (manual), (b) neck cutting (using mechanical devices), (c) gassing with inhalation agents (e.g. carbon dioxide), (d) electrocution, or (e) poisoning. Based on consideration for humane, safe and efficient culling and experience from the previous AHI outbreaks in Vietnam, the most appropriate culling methods are identified as the manual breaking of the neck for small flocks and gassing for commercial farms. All culled poultry is placed in plastic bags for disposal. The procedures are described in Decision No. 3400 QD/BNN-TY.

¹⁹ WHO Laboratory Biosafety Guidelines for Handling Specimens Suspected of Containing Avian Influenza A Virus (12 January 2005)

C. Disinfection of Farm Surfaces, Equipment and Materials. The *Standard Operating Procedures for the Destruction and Disposal of Affected Poultry and Disinfection of HPAI Infected Places (Contingency Plan for HPAI in Vietnam)* will be followed and describe all required mitigating measures in detail. The SOP state the requirements for cleaning and disinfecting clothes, implements, facilities, vehicles, buildings, carcasses and any other parts of the surrounding environment that come into contact with AI pathogens. It is important that the disinfectants that the selected disinfectants do not have adverse impacts on the environment and human health. The selected disinfectant, which will be specified in the SOPs, will comply with the World Bank's Pest Management Policy (OP4.09).

D. Disposal of Culled Birds. The *Standard Operating Procedures for the Destruction and Disposal of Affected Poultry and Disinfection of HPAI Infected Places (Contingency Plan for HPAI in Vietnam)* will be followed and describe all required mitigating measures in detail. It is important that the selected disposal methods for animal carcasses do not have adverse impacts on humans and the environment. For example, improper burial practices may cause contamination of ground or surface water, and a poorly built pyre may result in incomplete combustion of the carcasses. The SOP is to cremate the carcasses on pyres or to bury them. If cremation or burial is not feasible on-site, the AHI infected animal carcasses and farm wastes will be transported for off-site treatment and disposal. In this case, all proper measures will be taken to ensure that the transportation does not spread the virus outside of the infected farm areas. Under this project, transportation of carcasses and farm wastes to another site for disposal will be avoided to the maximum extent possible. However, if transportation is required, then the SOPs will specify the specific requirements for vehicle design and operation as well as containment of carcasses and farm wastes for transportation. These SOPs will also include decontamination of vehicle surfaces (e.g. tires) prior to exiting the farm and after unloading the animal carcasses at the new site.

E. Improved Live Bird Market Hygiene. The project will support the Ha Vi live-bird market in Ha Tay province to produce a pilot model for replication elsewhere. Securing the market from infectious disease is a major step forward in controlling avian influenza, thereby protecting the public and poultry workers from this disease. Improved market design, proper hygiene, surveillance of poultry and fomites should protect both the public and poultry workers against the HPAI virus. The project will ensure that the market wastewater is disinfected prior to discharge. Markets staff and inspectors will receive training in disease control and market hygiene; SOPs will cover disease control, hygiene and wastewater disinfection.

F. Incinerator for Confiscated Poultry. The project will ensure that the incinerator's staff is properly trained, that a thorough Operating and Maintenance Manual is prepared and that sufficient funds are budgeted to cover all operation and maintenance costs. Discharged wastewater must meet environmental standards and all residues from then incineration process must be deposited in a landfill approved to receive incinerator ash.

11. **Component B: Human Health Sector**. Healthcare facilities treating humans infected with the avian influenza will follow MOH guidelines, as well as the WHO infection control guideline for health care facilities.²⁰ The principal environmental and human health issues under

²⁰ Avian influenza, including influenza A (H5N1), in humans: WHO interim infection control guideline for health care facilities (last revised 24 April 2006).

the Human Health Component of the Government's AHI Program and the project are associated with the following activities:

- A. Safe Infectious Waste Management at Hospitals
- B. Other Infection Control Measures at Hospitals
- C. Safe Wastewater Management at Hospitals

A. Safe Infectious Waste Management at Hospitals. Adverse impacts to human health can occur through the inadvertent spread of the HPAI virus, if the healthcare waste is not safely handled at hospitals treating patients infected with AHI. All Vietnamese medical establishments must follow the Decision No. 2575/1999/QD-BYT of August 27, 1999 promulgating the *Regulation on Medical Waste Management*. These regulations cover the separation of waste, packaging, handling, transportation and treatment. For any hospital receiving patients infected with AHI, it is essential that Decision No. 2575/1999/QD-BYT be properly implemented. The project will assist MOH review the clinical care and infection control guidelines; help ensure that staff is appropriately trained; ensure that sufficient materials (bags, disinfectant, etc.) are stockpiled to supply central and provincial level medical facilities in case of an outbreak. The project will also ensure that the MOH estimates the maximum infectious waste quantities in case of a pandemic. Should the existing treatment capacity be insufficient, contingency plans must be established, for example stipulating the disinfection and burial of the excess infectious waste that cannot be incinerated. In case of a pandemic field hospitals will be established; again SOPs and stockpiles must exist for the safe handling and disposal of infectious waste from these provisional facilities.

B. Other Infection Control Measures at Hospitals. During an AHI pandemic, it is essential that hospitals apply the utmost care in containing the disease. This includes handling of food (relatives should not be allowed to prepare food for patients), disinfection of linen and equipment, and safe procedures for the handling of any deceased patients. Based on the sound experience of the Bach Mai Hospital's Institute for Infectious and Tropical Diseases²¹ and the WHO infection control guideline;²² training plans and SOPs will be drawn up to assist all facilities that may receive AHI patients in case of an outbreak. It will also be made certain sufficient equipment and materials are stockpiled to supply medical facilities in case of a pandemic.

C. Safe Wastewater Management at Hospitals. Decision No. 2575/1999/QD-BYT covers the requirements to the treatment of wastewater from hospitals. As part of project assisted MOH review of clinical care and infection control guidelines, the status of the individual medical facilities' wastewater treatment will be established. Where required, materials and SOPs will be established to ensure that the wastewater is disinfected prior to discharge.

5. Consultation and Disclosure of the Project's Environmental Management Plan

²¹ See the Bach Mai Hospital's *Regulation on Infection Control* (2000)

²² Avian influenza, including influenza A (H5N1), in humans: WHO interim infection control guideline for health care facilities.

12. This outline Environmental Management Plan shall be developed into a complete draft by MARD/MOH after consultation with various stakeholders (e.g., the National Institute for Veterinary Research, MONRE and the commercial poultry associations) and non-governmental organizations (NGOs). The draft EMP will be issued to the stakeholders for comments prior to finalization. The EMP will be finalized during the first six months of project implementation and disclosed at publicly accessible locations in Vietnam and at InfoShop in Washington. The project legal agreement will reflect implementation of the EMP.

6. Reporting on the Implementation Progress of the Project's Mitigation and Monitoring Measures

13. Procedures for providing information on the progress of project implementation and results of mitigation and monitoring measures have been structured to facilitate project supervision and review. Accordingly, each national implementation agency will prepare and submit biannual progress report to their respective international agency. Each international implementing agency will submit a biannual report to the World Bank. The biannual reports will indicate the activities conducted, the remaining activities to be conducted, the products generated, the major issues encountered and how these issues have been resolved as well as the outstanding issues, the expenditures in comparison with the budget. Each international implementing agency will also submit a copy of the EMP-related specific activity reports (e.g. the waste management plan) to the World Bank for review, comments, and no objection (if satisfactory).

Appendix 7: Social Analysis

VIETNAM: VN Avian & Human Influenza Control & Preparedness

Project Beneficiaries

1. Project activities will cover eleven provinces in Vietnam, and will benefit commercial and backyard poultry farmers, traders, and processors in improving their poultry management practices to reduce the risk of an outbreak of avian influenza. Backyard poultry farmers are, in many cases, poor farmers living at subsistence levels, and include indigenous peoples. Women play a key role in the backyard poultry sector as they often are responsible for poultry production and obtain food products and income from their poultry flocks. A national campaign will provide information and educate farmers as well as the general public about the risks of avian influenza. This information and education campaign will be designed to take into account the diverse stakeholders and characteristics of the sectors covered (that is, commercial and backyard producers, traders and processors). Multiple media tools will be used and relevant campaign material will be translated into key indigenous peoples languages.
2. Since 2004, poultry farmers have received partial compensation in cases of avian influenza outbreaks that lead to deaths and/or culling of poultry. The Project will undertake assessments to evaluate the best options for compensation schemes and criteria.
3. Key beneficiaries of the Project will be government agencies and staff, particularly in the agricultural and health sectors. These will benefit from training exercises, institutional strengthening and enhanced management practices. The general population of Vietnam will benefit from enhanced institutional set-up, management practices and awareness concerning poultry production and the health sector. The risk for an outbreak of avian influenza and subsequent pandemic will be minimized and the ability of key stakeholders (e.g. health practitioners and poultry farmers) to address a possible outbreak and pandemic will be enhanced.

Consultation

4. Consultations have been held with a large number of government representatives in the respective sectors receiving support under the Project. These consultations have taken place at national as well as provincial levels. MARD has held consultations with commercial and backyard poultry farmers concerning measures to avoid and address outbreaks of avian influenza. Feedback from these consultations has been incorporated into the Government's strategy supported by the Project. Further consultations and information and education campaigns will be undertaken with various stakeholders during implementation, including commercial and backyard poultry farmers.

Beneficiary and NGO Consultation and Involvement in Project Implementation

5. Many development NGOs in Vietnam work with poor farmers, including activities supporting small livestock such as poultry. Several such NGOs, including VSF, have been consulted during Project preparation. These NGOs will be an important target group for increasing their awareness of national policy and measures to address the risk of avian influenza, and will continue to be consulted during implementation. Civil society organizations will

participate in project implementation, mainly concerning the public information campaign. District and commune facilitators will be trained and participate in implementing the public information campaign.

6. The Bank Involuntary Resettlement safeguard policy is triggered by the acquisition of about 1.7 ha of land under the project for the Ha Vi live-poultry market in Ha Tay Province. There is no housing on the land to be acquired. A Resettlement Policy Framework (RPF) and the Resettlement Action Plan for the Ha Vi Market were developed. As a condition of Negotiations, MARD will have approved the RPF and the Resettlement Action Plan for the Ha Vi Market.

7. Compensation for loss of poultry due to AHI may be provided under the Project, and the criteria and mechanism for providing such compensation will be designed during project implementation.

Impact on the Livelihoods of Ethnic Minorities

8. The Project does not adversely affect ethnic minorities. Instead, Project activities will take place in selected areas of the country and ethnic groups will benefit from an enhanced understanding of the AHI, of ways to improve biosecurity, of measures to be taken in case of outbreaks, and of the compensation for loss of poultry due to an outbreak. Ethnic Minority Communication Plans will be developed to ensure that ethnic minorities will benefit from the project in a way which is culturally appropriate and gender inclusive. To support this goal further, the public information campaign will be designed to ensure it is also appropriate for the ethnic minorities in Vietnam, and the materials will be produced in local minority languages to ensure that all concerned ethnic groups are informed. The design of subcomponent B3 - Strengthening Behavior Change Communication (BCC) in Health Facilities and the Community will build into the Ethnic Minority Communication Plan.

Resettlement, Land Acquisition and Livelihoods

9. The Bank Involuntary Resettlement safeguard policy is triggered by the acquisition of about 1.7 ha of land under the project for the Ha Vi live-poultry market in Ha Tay Province. There is no housing on the land to be acquired. As a condition of Negotiations, MARD will have prepared and approved a Resettlement Framework Policy for Component A and a Resettlement Action Plan for the Ha Vi Market.

10. Compensation for loss of poultry due to AHI may be provided under the Project, and the criteria and mechanism for providing such compensation will be designed during project implementation.

Appendix 8: Economic Analysis

VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

1. The costs to the economy of avian influenza fall into four main categories; the direct costs to the poultry sector of the disease and associated control measures, the indirect effects of losses as consumers shun poultry and markets for poultry collapse, losses to other sectors of the economy such as the tourism sector, and the public health costs, including those associated with the emergence of a human pandemic strain of influenza virus.
2. **Global Public Good.** The proposed measures to control AHI represent a global public good.
3. The threat of emergence of a human influenza pandemic is the main driver of global efforts to stem infection with H5N1 HPAI in poultry. The global community has concluded that the uncontrolled multiplication of H5N1 HPAI viruses in poultry represents an unacceptable risk and therefore measures must be put in place to control these viruses. If action is not taken in Vietnam to control infection, the risk to the rest of the world's population increases.
4. GPAI (see Annex 8 "Economic Analysis") concludes that "by definition, no single country can protect itself against an influenza pandemic, and the importance of actions taken in one country may well have implications for the well-being of the rest of the world's population that are incalculable." When actions are taken by a country in the wider context of the prevention or slowing down of a human influenza pandemic, the traditional "with and without project" type of cost-benefit analysis "begins to enter the realm of fantasy." In these circumstances, the most useful economic analysis will be the assessment of the relative cost efficiency of alternative measures to prevent or contain a pandemic.
5. Even though the level of risk of emergence of a human pandemic influenza virus from currently circulating H5N1 viruses in poultry is unquantifiable and the timing of such an event is unknown, the costs of such an event, if it were to occur, are so high that actions to control H5N1 HPAI can be justified on this basis alone. The cost estimates for the emergence of a human pandemic strain of H5N1 influenza vary considerably but losses in the order of hundreds of billions of dollars to the global economy have been proposed.²³
6. Locally, the emergence of a pandemic strain of human influenza (either emerging in Viet Nam or elsewhere with subsequent spread to Vietnam) would be accompanied by major disruptions and economic losses in line with those that would occur in all other countries. The Oxford Economic Forecasting Group conservatively estimated costs of US\$ 10-15 billion for East Asia as a whole, or about 0.3 – 0.5 percent of regional GDP. Helping to prevent such losses by controlling H5N1 HPAI in Vietnam (and therefore providing less opportunity for such a strain to emerge) would easily result in an acceptably positive cost-benefit ratio for activities proposed in VAHIP, even without taking into account the considerable benefits to the poultry industry.

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<http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20978927~menuPK:34472~pagePK:34370~piPK:34424~theSitePK:4607.00.html>

7. Measures to prepare for a pandemic and to improve surveillance in both animals and humans can still be justified even if a human pandemic strain of H5N1 influenza virus does not emerge. Serious new infectious diseases of humans (often derived initially from animals) have been emerging steadily over the past 30 years, and it is expected that this trend will continue. The most recent example is the emergence of SARS, which had a major detrimental impact on the global economy. Activities proposed under VAHIP that strengthen animal and human health institutions provide solid foundations on which to tackle emerging diseases. Improved animal and human disease surveillance systems developed for influenza will allow these new diseases to be recognized earlier and their treatment and control will be enhanced through stronger animal health responses and enhanced hospital facilities.

8. **Global Reputation and Tourism.** Vietnam has been widely praised by the global community for its responsible attitude in reducing the possibility of emergence of a pandemic strain of influenza virus and this provides confidence to tourists that Vietnam is a safe place to visit, contrasting with other Asia countries in which the disease remains poorly controlled. However if the gains made so far in controlling this disease are not consolidated and uncontrolled outbreaks of disease in humans and poultry recurs the country's credibility could be damaged. This has implications for other parts of the economy, especially the rapidly growing tourism sector.

9. Although there was no indication that the tourism industry was adversely affected to any significant extent in 2004 when HPAI in poultry first emerged in Vietnam, tourism in other countries has probably been affected as a result of adverse publicity concerning avian influenza (e.g. Indonesia). However, the impact would be far greater if an H5N1 virus were to convert to a human pandemic strain, or appeared to be doing so (e.g. clusters of human-to-human transmission). If this were to occur, individuals would start to practice voluntary social isolation, bringing the tourism industry to a standstill. The adverse effects of SARS in Vietnam on international tourism have already demonstrated the likely magnitude of this effect following emergence or even signs of emergence of a pandemic strain of human influenza. Losses associated with SARS were estimated at perhaps 2 percent of East Asian regional GDP in the second quarter of 2003 with tourist arrivals plummeting in early 2003 when SARS emerged in Vietnam.

10. **Costs of Avian Influenza to the Poultry Industry in Vietnam.** The costs incurred by Vietnam as a result of outbreaks of avian influenza have been reviewed by the Bank in 2004²⁴ and 2005²⁵. These costs include the direct costs from the uncontrolled disease and control measures, and also indirect costs to the poultry sector and other parts of the economy.

²⁴ <http://www.worldbank.org.vn/news/avian%20influenza%20epidemic%20paper%20eng.pdf>

²⁵

<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/EXTEAPREGTOPHEANUT/EXTEAPAVIFLU/0,,contentMDK:20985331~pagePK:64168445~piPK:64168309~theSitePK:2706883,00.html>

11. The first large outbreak of avian influenza in Vietnam, in the winter of 2004 resulted in the value of output of the poultry sector declining by roughly 15 percent. The share of poultry in total GDP in 2003 was estimated at 0.55 percent, so that the decline was the equivalent of a drop in total GDP by about 0.08 points. Another way to arrive at this figure is to consider the number of heads of poultry lost because of the avian influenza outbreak. It is estimated that 45 million poultry were culled or died during the first large outbreak. The average farm-gate price of a bird is roughly one dollar. The value of the stock lost between 2003 and 2004 was then 45 million dollars. Given that total GDP in 2004 reached 45 billion dollars, this loss is the equivalent of roughly 0.1 percentage points of GDP.

12. While the most visible impact of an avian influenza outbreak is on poultry production, there are other effects on agricultural output. This is because of agricultural activities which are either complements or substitutes of poultry production. Eggs are the most obvious complement. Total egg production fell from 4,852 million units in 2003 to 3,939 million in 2004. Assuming that the decline was entirely due to the avian influenza outbreak, the value of the output loss was around 46 million dollars. Given an average ratio of value added to output of 65 percent, the loss was equivalent to 0.07 percent of GDP.

13. Although these effects on the overall economy were considered relatively minor, the impact on individual producers was severe especially for those farmers who lost their livelihood. The direct costs of disease to farmers of subsequent outbreaks were lower because they were detected earlier, the stamping out program was modified so that only affected flocks were culled (instead of those in an area around the outbreak in early 2004) and the last wave in 2005 was halted by the introduction of a suite of measures including vaccination and market closures. While these measures were effective, some of them had major economic effects on farmers who no longer had access to urban markets for their produce. The exact magnitude of these losses has not been calculated but this demonstrated the major negative effects on many rural households of rapid policy shifts on rules relating to sales of poultry and access to markets. The past 12 months has seen stability return to the poultry sector and this stability helps to ensure that poorer farmers can invest in poultry with more confidence, provided they retain access to market outlets.

Moving from cost-benefit to cost-effectiveness analysis

14. Control and eradication of HPAI are complicated tasks that can only be achieved using a combination of measures. No single measure is likely to be appropriate and effective. The composition of measures must be chosen and adapted according to the conditions in the country and its disease status, and must therefore be phased. The aim is to ensure a minimum cost composition of control measures to achieve this objective.

15. The introduction of the suite of measures in 2005 provides a baseline cost for the control of avian influenza in Vietnam. For example, the cost of vaccination alone amounts to some \$20 million per annum.

16. As of late November 2006 (i.e. the time of appraisal), no outbreaks have been reported in Vietnam since the introduction of this suite of measures. Therefore the baseline against which the economic benefits to the poultry industry of VAHIP can be measured is a situation with no HPAI disease outbreaks reported (although H5N1 viruses are still present in the country) The

resources allocated in VAHIP to control HPAI should therefore be assessed against their contribution in reducing the overall costs of HPAI control in a way that does not lead to an increase in the incidence of the disease. To achieve this, sustainable changes in existing marketing and production practices must be implemented and veterinary institutions strengthened. The benefits of these improvements should be judged on whether the current favorable disease status is retained and, whether, in the long term, the costs of control are reduced.

17. For example, enhanced hygiene in live poultry markets through investment in new procedures and facilities, as proposed in VAHIP, will reduce the overall levels of infection in these markets and the level of risk to producers in market catchment areas, whose poultry could be infected by traders traveling from markets back to farms. The benefits of these improvements would accrue over a number of years as the risk of disease falls and investments in other measures such as mass vaccination are reduced through better targeting, and may eventually be stopped. These are public good activities that accrue to all poultry farmers and to all people exposed to poultry through the reduction in the risk of encountering infected birds.

18. Vaccination in the commercial sector will continue as long as farmers feel the risk of infection to their flock remains and that the insurance provided by vaccination is worth the premium paid. This is a commercial decision. Targeted vaccination in high risk populations will also be required for some time (e.g. grazing ducks) but this is less taxing to implement than blanket programs. However, concerns have been expressed that in the long term the current government driven mass vaccination of smallholder and village poultry is not sustainable given the significant time and effort required to implement this properly. Experiences with other animal vaccination programs suggest that even if vaccination remains compulsory, ‘vaccination fatigue’ will set in eventually, especially if no cases of disease occur. This can eventually lead to reduced vaccination coverage and once national or regional flock immunity falls, the disease will re-emerge. Therefore, other measures to achieve sustainable reductions in the level of infection must be introduced to consolidate and maintain recent gains before this ‘fatigue’ sets in.

19. The suite of activities outlined in Component A aim to reduce the need for blanket vaccination while maintaining or improving the current risk of disease in poultry and humans and to reduce the cost of control.

20. **Pro-poor Control Measures.** The costs of avian influenza differ for different social groups, such as poor rural households or small commercial poultry producers. The proportion of poultry production undertaken by backyard and small commercial systems is much higher at lower levels of per capita income. In Vietnam, where the bulk of poultry production is still by backyard producers, the impact has fallen mostly on individual rural households, and has only partly been offset by government compensation to farmers. Survey data show that the poorest quintile of households relies more than 3 times as much on poultry income than does the richest quintile, so there are also adverse distributional effects. Research has shown that income from poultry is much more equally distributed than overall income. Reductions in poultry income due to avian flu or to avian flu control strategies will thus tend to worsen income distribution in Vietnam.

21. Project subcomponents proposed in this project aim to ensure that the effects on the poor of this disease and the control measures implemented are minimized through activities such as use of ring vaccination, studies on streamlining of compensation, finding ways to allow smallholders to keep accessing markets (e.g. studies on safe production of native chickens) through live poultry markets any measure controlling the disease, enhancing community animal health worker training, raising awareness of avian influenza and therefore providing better animal health services, which also benefit them both directly and indirectly. The control of this disease improves the stability of markets and reduces the uncertainty of losses.

Appendix 9: Technical Notes

VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

Technical Note 1 – Poultry Sector Restructuring

- Objective and Rationale.** The poultry sector restructuring subcomponent will support the restructuring activities of the poultry sector that will contribute to strengthening HPAI control. The poultry sector restructuring activities are based on the OPI proposed supports for poultry sector restructuring and are part of the strategy for long-term control of HPAI defined by DAH.
- In moving from the control phase to consolidation phase of HPAI in Vietnam, control measures preventing the re-infection of the poultry production and marketing chains will become increasingly important. Sustainable HPAI disease control can be achieved by improving the biosecurity level of the poultry production and marketing chains. This will require both behavior changes towards biosecure production and marketing practices, as well as incremental investments in increasing biosecurity in production, marketing and processing facilities. Such changes must be made in a socio-economically equitable manner that does not lead to increased environmental damage or inadvertently increase the risk of disease outbreaks through the over-concentration of poultry.
- Structural changes of the poultry sector in Vietnam are in progress and the role of the Vietnamese government in regulating and enforcing externalities are becoming increasingly important. However, introducing stricter biosecurity regulations can limit access by smallholder producers who are not able to comply. DLP is in the process of developing the necessary incentives, guidelines and regulatory framework to guide the future development of the poultry sector in a social and environmentally sound manner. The objective of this subcomponent is to support DLP in developing and demonstrating poultry production models and development schemes that are efficient, equitable and environmentally sound.
- Background and Assessment of the Poultry Sector.** The Vietnamese poultry sector is characterized by small scale and scavenging chicken production. Prior to the HPAI outbreaks in late 2003, about 8.3 million households were keeping 250 million poultry. Out of the 8.3 million poultry keeping households, less than 500,000 households owned more than 50 birds (as average flock size).
- It is estimated by the government that about 45 million poultry were culled or died due to the HPAI epidemic. Since the last major outbreaks in 2005, the poultry sector is rehabilitating gradually. Poultry farms are gradually restocking their production facilities and poultry production is again relatively profitable. Poultry keeping is a tradition with a strong consumer demand for free ranging native poultry and the income share from poultry production is relatively higher for lower income households. In the long-term, a structural shift towards more intensive production can be anticipated. However, the competitiveness of the sector is limited by about 20% higher feed costs compared to other countries in the region. With WTO accession soon to be realized, the domestic poultry industry will face increased competition due to market liberalization. However, the bulk of demand for poultry products over the mid-term will continue to be supplied by small scale poultry producers.

6. Due to increasing disposable household incomes in urban areas, increased consumer demand for poultry meat can be expected. Given the profitability of poultry production arising from this demand, private investments in the poultry sector are certain to continue. This implies a need for an appropriate regulatory framework from the public sector that sets the right incentives to guide future private investments in the development of the poultry sector towards more biosecure and environmentally sound production. The construction design of new production farms and processing plants needs to incorporate hygiene, disease control and environmental standards. At the same time, existing sector III farms, still generating the majority of poultry, remain important for to maintain an adequate supply of poultry products. Therefore the development of appropriate production models for upgrading biosecurity and environmental standards on existing farms is essential.

7. **Support Proposed under this Subcomponent.** This subcomponent will support restructuring activities of the poultry sector that contribute to HPAI control and take social and environmental issues of poultry production into consideration.

Activity A. Capacity Building within the Department of Livestock Production (DLP)

8. The ongoing restructuring activities by DLP are providing the opportunity to assist developing the necessary regulatory framework that would guide the structural change in those sectors of the industry that can adopt enhanced standards towards more biosecure production. In order to enable staff in DLP and DARD to conduct the necessary steps involved in implementing a policy change in poultry production capacity building is required.

9. This will include postgraduate MSc training for DLP staff members, and training courses in social, economic, environmental and risk impact assessments. The resulting master thesis must be strongly linked to various aspects of poultry sector development and planning so that the students have to work on issues of direct interest to the project. The budget is provided for them on the condition to come back to (MARD/DLP) and use their knowledge and findings for fieldwork.

Activity B. Planning and Demonstrating Biosecure Poultry Production Models

10. A spatial planning and risk assessment will be conducted to determine indicators for the most suitable areas for poultry production in terms of public health, economic viability and environmental pollution. The conclusion will be used to revise the regulatory framework and investment incentives accordingly.

11. Technical assistance will be provided to train, and develop, together with DLP staff, biosecure, economically viable and environmentally sound poultry house construction plans, tailored to smaller scale broiler and layer farms. These plans will be made available for individual producers wishing to invest in poultry production. Leaflets containing this information will be distributed through District Veterinary Health Stations and poultry feed retailers.

12. A program to assist districts of the VAHIP provinces with their restructuring activities will be advertised. Three districts, which have already made land resources available, will be

selected to assess and study their restructuring planning and activities. This will include an economic, social and environmental impact assessment. Generic guidelines about the necessary operational steps to implement the restructuring activities will be composed. Monitoring and studying of the investments in poultry production serves to review and adjust the new developed poultry production models. Findings are submitted to other provinces and the private sector by workshops. An initial assessment of the ongoing planning and implementation process with regard to the affected stakeholders and their participation in the decision process will be conducted. This will include an economic, social and environmental impact assessment of allocating and developing a new poultry production area. Generic guidelines about the necessary operational steps to implement the restructuring activities will be composed. Private investors interested in producing poultry in compliance with the developed poultry production models will be assisted. About one third of the investment costs will be provided by the project to the investor conditioned on being trained in biosecure poultry production practices, developing a business plan and external monitoring of the production process. The supported investments are restricted to poultry production units with a maximum of 1000 birds. Monitoring and studying of the investments in poultry production serves to review and adjust the new developed poultry production models. Findings are submitted to other provinces and discussed with the private sector by workshops.

Activity C. Biosecurity Upgrading for Existing Small Scale Poultry Farms

13. The market-based avian influenza control program in Ha VI live-bird market in Ha Tay province will result in heightened poultry health requirements for supplying poultry farmers. On the basis of this market driven demand for improved biosecurity, interested sector III poultry farmers will be supported. Beneficiaries are small scale sector III farmers with a maximum of 1000 birds. Trainings from a national consultant on biosecure poultry production practices and advice in upgrading the facility biosecurity will be made available to them. In addition simple systems for collecting and storing the produced poultry manure will be developed in order to limit environmental pollution. Small renovation grant will be made available by the project to partly cover investment costs for biosecurity and manure management upgrading. The upgrading of biosecurity and manure management will be monitored and assessed in order to develop guidelines and a regulatory framework for upgrading of existing sector III farms.

Technical Note 2 - Poultry Vaccination Strategies

VAHIP and Vaccination of Poultry against H5N1 Highly Pathogenic Avian Influenza in Vietnam

14. H5N1 HPAI was first identified as a serious problem in Vietnam in late 2003. This disease was initially tackled through the use of widespread culling of poultry, leading to the death or destruction of some 45 million poultry. This reduced the number of avian infection cases, but did not stem the flow of human disease. By mid-2005, Viet Nam had recorded the highest number of human cases of all infected countries.

15. Due to concerns regarding the pandemic potential of uncontrolled infection in poultry and subsequent exposure of humans, new control measures were implemented in the second half of 2005. These measures included compulsory vaccination of high risk poultry, which was introduced as an emergency measure from August 2005, with the first round completed by December 2005. This aimed to reduce the risk of infection during the cooler winter months of 2005-06 when a resurgence of cases was expected in line with previous years. Since vaccination was fully implemented there have been no reported cases of disease in poultry or humans, although infection has persisted.

16. It is simplistic to attribute all of this improvement to vaccination alone as other measures were also introduced. However, properly vaccinated poultry are known to be less susceptible to infection with H5N1 HPAI and, if they do become infected, excrete significantly lower levels of virus than unvaccinated poultry. They are largely protected from clinical disease. Therefore, vaccination would have reduced the levels of infection by reducing the number of susceptible poultry and the amount of circulating virus.

17. When vaccination was introduced, the difficulties of sustaining such an intensive program for more than a few years were recognized. As more information becomes available regarding the levels of risk, the vaccination campaign should be focused more on high risk populations (such as grazing ducks) and commercial poultry reared under conditions of poor biosecurity and sold through large live poultry markets.

18. In the future, it is possible that in some areas not all poultry will be vaccinated (except following outbreaks of disease, in which case ring vaccination would be considered). Such changes to vaccination policy are still to be decided. The proposals for vaccination under VAHIP have taken into account the possibility of modifications to the vaccination policy, but do not assume that any specific changes will be implemented.

19. **Vaccination and VAHIP.** The following five issues, relating to vaccination, will be addressed under VAHIP.

20. **Vaccination of Grazing Ducks.** At present many flocks of grazing ducks are unvaccinated. However, recent surveillance conducted under AIERP has shown that infection is

persisting in these birds and that they pose a threat to other poultry, especially as many are sold in live-poultry markets where they mix with and can infect other poultry.

21. The main reason why grazing ducks are not vaccinated is that practical methods for doing so have not been developed. These ducks travel over considerable distances making it difficult to vaccinate them once they are grazing paddy fields. This issue needs to be explored so that these ducks are given two doses of vaccine before they are allowed to graze.

22. Under VAHIP, several districts in two major duck rearing provinces (Dong Thap and Long An) will be selected for studies to be conducted in order to establish practical methods for vaccinating ducklings before these birds are sent out for grazing. Once practical methods are established, vaccination will be undertaken and samples collected from vaccinated flocks to assess whether virus excretion is persisting and to monitor serological response to vaccination. Eventually this practice is expected to be extended to all grazing ducks if viable vaccination methods are established.

23. **Vaccination of minor poultry species.** At present, vaccination of quail, pigeons and geese against avian influenza is not done because there is little or no information on the response of these poultry to vaccine (quail and pigeon), or the information available suggests that the response to vaccination in these poultry is poor (geese). Under VAHIP, selected flocks of these birds in the field will be vaccinated and the response to vaccination monitored. Results will be analyzed and if suitable methods are found then high risk flocks of these poultry will be included in the national vaccination campaign.

24. **Ring Vaccination.** The OPI suggests that in future outbreaks of H5N1 HPAI, ring vaccination will be undertaken around outbreak sites after culling of the infected poultry in the center of the ring. This method has not yet been used in Vietnam and requires rapid response teams trained in methods of ring vaccination that minimize the risk of spread of disease by vaccinators. These teams will also implement appropriate movement controls in the area around the outbreak to stop the spread of infection. Unless the response occurs soon after the initial reports of infection, the disease will spread.

25. Under VAHIP, teams comprising regional, provincial, district and commune staff will be given practical training in responding to reports of disease and the use of ring vaccination. The effectiveness of this training will be tested through tests of ring vaccination tied to mock outbreaks (see component A5). These teams would have access to emergency supplies of vaccine and protective clothing and other resources that would allow them to respond immediately to any outbreak.

26. **Feasibility of Local Vaccine Production.** At present, supplies of avian influenza vaccine are imported from other countries, with most of the vaccine sourced from China. Government is interested in producing vaccine locally and has already made a small batch of vaccine for testing. A feasibility study will be conducted to assess whether large scale production of H5 vaccine is technically and economically viable. Once this study is completed and the report compiled, the government can make a decision on whether to proceed with proposals to

produce this vaccine locally or to continue to purchase vaccine from reliable manufacturers elsewhere.

27. **Cold Chain and Vaccination.** Surveillance of vaccinated poultry after the initial rounds of vaccination have shown that there is insufficient capacity to store large quantities of vaccine under appropriate conditions at the provincial level. This is likely to be one of the factors contributing to the lower than expected response to vaccination seen in some provinces after the first round.

28. Under VAHIP, project provinces will all be supplied with a suitable walk in cold room with a backup generator that will allow proper storage of vaccine at the provincial level. The effect of this will be assessed through post-vaccination surveillance, regular monitoring of cold room temperature records, and use of temperature sensitive indicators that will be included in selected consignments of vaccine to ensure that these are kept cool at all times²⁶. These tags would be checked and recorded at both the provincial and district level.

²⁶See, for example, <http://www.fdcpackaging.com>

Technical Note 3 - Lessons Learned from Addressing HPAI in Vietnam

29. In discussions during a *Technical Workshop on Avian Influenza Control and Preparedness*, held on December 12, 2006, in Hanoi, several observations and conclusions came forward that are of interest to the preparation and implementation of the follow-up VAHIP operation to AIERP. The discussions also covered lessons from the health sector, gained from project implementation of Bank-supported and other projects. Many of the remarks made by workshop participants regarding lessons learned, and the implementation arrangements of the upcoming VAHIP, were of similar nature and found general consensus by the audience. They are valuable lessons to learn in the preparation and implementation of VAHIP. A number of observations pertaining to the workshop discussion are set forth below.

The Animal Health Sector

30. **Speed of implementation**, especially of an emergency operation such as AIERP and the upcoming VAHIP, is if the essence, although AIERP was institutionally constrained by numerous upstream and downstream review stops, combined with a rather inflexible approach to matters of procurement and disbursement. A more direct procurement and disbursement mechanism would greatly facilitate this constraint.

31. **Decentralization** of project implementation to the project provinces was widely promoted by same, especially where subsidiary project accounts are concerned. This preference by many provinces stemmed from their frustration with the often slow and cumbersome procurement and disbursement procedures encountered under AIERP. However, procurement might be further delayed by provincial (PPIU) procurement staff unfamiliar with procedures. Moreover, a strong financial management structure would have to be in place. Decentralization would, however, give the provinces more leeway in tailoring and implementing their respective project activities.

32. **Increased incremental project support** for participating project agencies was commonly expressed as a constraint to effective implementation by provincial and district project staff, laboratory and animal health workers, and district officials, who often perform project duties such as transportation and supervision at personal time and expense. Whereas this constraint can be temporarily alleviated during the project lifespan, its sustainability beyond that time is in question.

33. **The PCU should be a free-standing entity**, capable of giving the project its undivided attention, and thereby be solely responsible for the implementation of VAHIP. This was not the case with AIERP, causing delays in implementation and responsiveness by the PCU. It was universally agreed that VAHIP would be implemented by a separate Human and Animal Health PCU, each solely addressing their respective components.

34. **Consolidation and quality assurance** will be two important objectives of VAHIP / Animal Health. Gains made under AIERP in equipping laboratories and human resource development will be expanded, and quality control instituted in diagnostic work and field surveillance data collection and analysis, to ensure that diagnostic and surveillance results can be trusted to provide the correct information to decision makers. Commune-based disease

surveillance will not only be expanded, but CCAHW training better monitored for quality and appropriateness.

35. The **monitoring and evaluation of AIERP** was weak and inadequately implemented. Rather than providing a centralized M&E structure at the PCU level, M&E will be conducted at the implementation level of each subcomponent activity, supported by oversight from Project Officers responsible for the implementation of each Subcomponent. This will strengthen implementation momentum and quality control, supported by the proactive identification of implementation problems and their resolution.

36. **Communication linkages** are weak and fragmented. The vertical command structure of the Vietnamese bureaucracy discourages lateral networking, a tendency encountered between project agencies at different levels. Although the regulatory aspects of disease reporting are generally in place, enforcement and incentives for reporting from commune to province are weak, or even negative. Incentive mechanisms for adequate and accurate reporting must be found to overcome this constraint. In some provinces, bonuses are paid to those promptly reporting unusual die-offs, or poultry hidden from vaccination.

37. **Lack of clarity of project objectives and implementation arrangements** was frequently mentioned as a chronic implementation constraint. Although these terms are normally spelled out in project implementation documents, they need to be better highlighted and explained at implementation workshops and the like, so that everyone, from lowest to highest level involved in the project, clearly understands his or her role and responsibilities. This matter should receive considerably more attention during project negotiations and implementation start-up.

38. **Public awareness and information** was fully implemented under AIERP, although the extent of its impact on the public at large remains uncertain, as the result of inadequate monitoring of messaging quality and distribution. Villagers at the commune level were found by project supervision teams to be unclear about the danger and consequences of avian influenza. Posters and leaflets appear to be a less favorite vehicle than is radio messaging.

39. Rarely mentioned were:

(a) **Spin off effects** to other infectious disease control programs, by upgrading veterinary services to address HPAI; and (b) **joint medical/veterinary VAHIP project activities**, mentioned by Vice Minister Bui near the end of the workshop. Little agreement seems to exist for working together at the implementation level.

Human Health Sector

40. The health sector has been very active in its response to the HPAI threat since the first human cases were detected in Vietnam and has accumulated significant experience and lessons. At the workshop, the presentation by MOH representatives brought out some important lessons and these helped to set priorities amongst the numerous challenges facing the sector in its response to HPAI and epidemic human influenza.

41. **Changing Context of HPAI in Vietnam.** With the last reported outbreak occurring in December 2005, there has been a slowing down in the momentum of response, hence the need for a change of the context within which HPAI response is approached. This changing context of HPAI in Vietnam was presented as a major issue in the sector's response going forward. The challenges of maintaining momentum during "intervals of outbreak" and especially in non-emergency situations were highlighted, especially given the fact that the pace and quality of implementation may be difficult to sustain if and when the sense of urgency related to HPAI and pandemic influenza moderates. There is therefore a need to make routine, the same level and quality of response that helped curtail the outbreaks. The VAHIP project is designed with this medium term approach in mind by addressing these core public health functions (such as strengthening surveillance) and integrating them into the health system.

42. **Institutional Arrangements.** At the institutional level, the health sector has been directing its response through a steering committee and a series of sub-committees (surveillance and control; therapy; education; logistics) at the national and provincial levels. At the central level, these committees have set policy and guidelines and played a role in monitoring the provinces, while their provincial homologues have dealt with implementation under the additional supervision of the PPCs' AI Steering Committees. These committees made use of mass organizations (such as the women's unions) and other effective social mobilization mechanisms due to their effective reach to the community. The importance of strong political will and commitment was also stated. The VAHIP project by emphasizing provincial level planning as well as interventions at the district level, with active involvement of the respective people's committees will help to foster local ownership and commitment.

43. **Systemic Constraints.** In its previous response to the HPAI outbreak, MOH mobilized government and donor resources for investments in the HPAI response. These were primarily in equipment (ventilators, refrigerators, disinfectant sprayers, personal protective equipment, etc.), revision of clinical care guidelines and training for curative care staff in influenza patient care and for preventive medicine staff in EWARS. These were backed up by outbreak simulation exercises in seven areas. In the course of its implementation, it was observed that most of the challenges faced were not specific to HPAI, but were associated with the usual performance constraints of the system in general that limit the capacity to deliver the required technical responses in surveillance and curative care, such as:

- Human resource shortfalls – low numbers, poor motivation, inadequate technical skills in both preventive medicine and curative care;
- Infrastructure and equipment inadequacies in hospitals and preventive medicine. However, the VAHIP project will address the mismatch between demand and supply by ensuring that district level plans are based on rigorous assessments of needs and capacity;
- Poor quality data from surveillance because of inadequate forms and weak data collection, flows, and use.

44. These areas identified above are all being addressed in various subcomponents under VAHIP.

45. **Communication and Coordination.** The importance of coordination and information sharing within the sector and with MARD at various levels has also been highlighted and the

VAHIP project, drawing from the lessons learned, is incorporating mechanisms for joint programs at the provincial level for the two sectors. One such area is in communication. Limited communication with health staff and the public about risk and mitigating measures was identified as one of the challenges of previous efforts, therefore VAHIP (through its BCC strategy) will adopt approaches to provide comprehensive information to workers in both the human health and animal health sectors at all levels, and to the public to foster positive behavior change.

Technical Note 4 – Selection Criteria for Provinces included under VAHIP

46. MARD and MOH each developed selection criteria to rank provinces for possible inclusion under VAHIP.

47. Selection criteria used on the part of MARD were:

- Total number of poultry by province and by region (North, Central, South)
- Prior participation in AIERP
- Capacity of province to manage and implement
- Level of loss caused by HPAI outbreaks in 2004 and 2005
- Capacity of veterinary service
- Number of fatal human H5N1 cases and return of the disease during the three outbreaks (2004 and 2005)
- Large cities with high population densities and heavy traffic
- Location near border and presence of quarantine station

48. On the part of MOH the following criteria have been applied:

- Provinces selected by MARD
- Confirmed human H5N1 cases and number of poultry affected
- High risk of AHI due to uncontrolled smuggling of poultry and quarantine activities
- Provincial hospital is served as referral hospital for receiving and treating infectious cases
- Big cities, busy transportation routes, high population density
- Qualified staff of provincial preventive health centers to manage and coordinate project activities.

49. **Provinces Selected.** Based on the above criteria and with an aim to ensure efficient implementation, MOH limited the number of provinces to be included to eight which are also included on MARD's list. Hence Component A and B will be implemented by MARD and MOH, respectively in: Lang Son, Ha Tay, Thai Binh, Thua Thien-Hue, Binh Dinh, Long An, Tien Giang, and Dong Thap. In addition, MARD will implement activities under Component A in a further three provinces Thanh Hoa, Ha Tinh, and Tay Ninh. Hence, the total number of provinces included under VAHIP is eleven.

Appendix 10: Statement of Loans and Credits
VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P086361	2006	VN-PRSC V	0.00	100.00	0.00	0.00	0.00	100.74	0.00	0.00
P075407	2006	VN-RT3	0.00	106.25	0.00	0.00	0.00	108.92	1.00	0.00
P085071	2006	Customs Modernization	0.00	65.90	0.00	0.00	0.00	66.58	-0.25	0.00
P073361	2006	VN -Natural Disaster Risk Mngt Project	0.00	86.00	0.00	0.00	0.00	81.73	-3.06	0.00
P084871	2006	VN-TRANS & DISTRIB 2	0.00	200.00	0.00	0.00	0.00	200.79	6.67	0.00
P077287	2006	VN-RRD RWSS	0.00	45.87	0.00	0.00	0.00	45.75	1.69	0.00
P079344	2006	VN -ICT Development	0.00	93.72	0.00	0.00	0.00	90.43	0.97	0.00
P079663	2006	VN-Mekong Regional Health Support Proj	0.00	70.00	0.00	0.00	0.00	72.46	0.03	0.00
P074688	2005	VN-RURAL ENERGY 2	0.00	220.00	0.00	0.00	0.00	215.74	34.43	0.00
P066051	2005	VN - Forest Sector Development Project	0.00	39.50	0.00	0.00	0.00	49.11	3.23	0.47
P073763	2005	VN-WATER SUPPLY DEV.	0.00	112.64	0.00	0.00	0.00	109.10	5.05	0.00
P080074	2005	VN-GEF-RURAL ENERGY 2	0.00	0.00	0.00	5.25	0.00	4.95	0.20	0.00
P082604	2005	VN-HIV/AIDS Prevention Project	0.00	0.00	0.00	0.00	0.00	28.40	-1.42	0.00
P082627	2005	Payment System and Bank Modernization 2	0.00	105.00	0.00	0.00	0.00	99.57	28.83	15.67
P074414	2005	VN - GEF Forest Sector Development Proj	0.00	0.00	0.00	9.00	0.00	8.50	1.83	1.32
P085080	2005	VN-ROAD SAFETY	0.00	31.73	0.00	0.00	0.00	29.26	2.47	0.00
P085260	2005	VN-EFA Support Program	0.00	50.00	0.00	0.00	0.00	46.04	15.00	0.00
P088362	2005	VN-Avian Influenza Emergency Recovery	0.00	5.00	0.00	0.00	0.00	2.68	2.24	0.00
P070197	2004	VN-URBAN UPGRADING	0.00	222.47	0.00	0.00	0.00	203.56	3.29	0.00
P065898	2004	VIETNAM WATER RESOURCES ASSISTANCE	0.00	157.80	0.00	0.00	0.00	148.42	18.36	0.00
P059663	2004	VN-ROAD NETWORK IMPROVT	0.00	225.26	0.00	0.00	0.00	211.89	83.52	0.00
P071019	2003	VN-GEF DEMAND SIDE MGMT & ENERGY	0.00	0.00	0.00	5.50	0.00	3.21	0.81	0.00
P075399	2003	Public Financial Management Reform Proj.	0.00	54.33	0.00	0.00	0.00	51.86	29.63	0.00
P044803	2003	VN-PRIMARY EDUC FOR DISADVANTAGED CHILRE	0.00	138.76	0.00	0.00	0.00	175.19	44.15	0.00
P073778	2002	VN-GEF-System Energy Equitization-Renewa	0.00	0.00	0.00	4.50	0.00	3.61	3.61	0.00
P073305	2002	VN-Regional Blood Transfusion Centers	0.00	38.20	0.00	0.00	0.00	38.39	26.29	0.00
P072601	2002	VN - Rural Finance II Project	0.00	200.00	0.00	0.00	0.00	40.61	-60.29	0.00
P066396	2002	VN-SYSTEM ENERGY, EQUITIZATION & RENEWAB	0.00	225.00	0.00	0.00	0.00	188.33	145.60	26.18
P059936	2002	VN-Northern Mountains Poverty Reduction	0.00	110.00	0.00	0.00	0.00	41.15	7.11	0.00
P051838	2002	VN-PRIMARY TEACHER DEVELOPMENT	0.00	19.84	0.00	0.00	0.00	12.52	9.52	5.19
P042927	2001	VN-MEKONG TRANSPORT/FLOOD PROT.	0.00	110.00	0.00	0.00	0.00	56.64	40.64	-4.82
P052037	2001	VN-HCMC ENVMTL SANIT.	0.00	166.34	0.00	0.00	0.00	155.94	90.71	83.46
P062748	2001	VN - COMMUNITY BASED RURAL INFRA.	0.00	102.78	0.00	0.00	0.00	57.87	30.91	0.00
P056452	2000	VN-RURAL ENERGY	0.00	150.00	0.00	0.00	8.82	22.25	25.17	7.26
P042568	2000	VN - COASTAL Wet/Prot Dev	0.00	31.80	0.00	0.00	0.00	5.22	3.31	3.31

P051553	1999	VN-3 CITIES SANITATION	0.00	80.50	0.00	0.00	0.00	38.73	33.45	21.41
P004845	1999	VN - MEKONG DELTA WATER	0.00	101.80	0.00	0.00	0.00	31.10	26.44	-15.45
P004828	1999	VN-HIGHER EDUC.	0.00	83.30	0.00	0.00	0.00	23.37	17.06	17.68
P045628	1998	VN-TRANSMISSION & DISTR	0.00	199.00	0.00	0.00	39.69	47.36	79.36	18.07
P004844	1998	VN-AGRIC. DIVERSIFICATION	0.00	66.90	0.00	0.00	0.00	11.28	9.68	6.80
Total:			0.00	3,815.69	0.00	24.25	48.51	2,929.25	767.24	186.55

VIETNAM - STATEMENT OF IFC's
Held and Disbursed Portfolio
In Millions of US Dollars

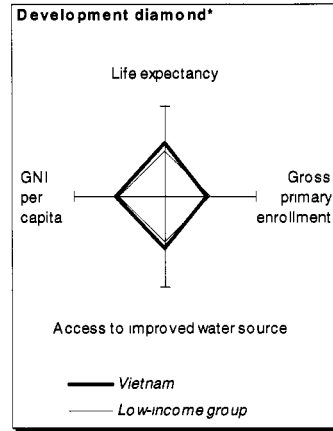
FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
2003	ACB-Vietnam	0.00	5.02	0.00	0.00	0.00	5.02	0.00	0.00
2002	CyberSoft	0.00	0.06	0.00	0.00	0.00	0.06	0.00	0.00
2002	Dragon Capital	0.00	0.00	1.05	0.00	0.00	0.00	1.05	0.00
2002	F-V Hospital	5.00	0.00	3.00	0.00	5.00	0.00	3.00	0.00
2005	Khai Vy	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1998	MFL Vinh Phat	0.13	0.00	0.00	0.00	0.13	0.00	0.00	0.00
1997	Nghi Son Cement	10.09	0.00	0.00	1.88	10.09	0.00	0.00	1.88
2004	Olam	20.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00
2005	Paul Maitland	7.20	0.00	0.00	0.00	7.20	0.00	0.00	0.00
2001	RMIT Vietnam	7.25	0.00	0.00	0.00	3.50	0.00	0.00	0.00
2006	SABCO	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	Sacombank	0.00	2.77	0.00	0.00	0.00	2.77	0.00	0.00
2004	Sacombank	0.00	2.31	0.00	0.00	0.00	2.31	0.00	0.00
2005	Sacombank	0.00	2.05	0.00	0.00	0.00	2.05	0.00	0.00
2006	Sacombank	0.00	3.05	0.00	0.00	0.00	3.05	0.00	0.00
2002	VEIL	0.00	0.00	2.00	0.00	0.00	0.00	2.00	0.00
2003	VEIL	0.00	7.41	0.00	0.00	0.00	7.41	0.00	0.00
2007	VEIL	0.00	6.15	0.00	0.00	0.00	6.15	0.00	0.00
Total portfolio:		75.67	28.82	6.05	1.88	45.92	28.82	6.05	1.88

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic.
2000	MFL-AA	0.00	0.00	0.00	0.00
2006	CCS-Asia	0.02	0.00	0.00	0.00
2000	Interflour	0.01	0.00	0.00	0.01
2006	CII-Vietnam	0.00	0.00	0.00	0.00
2000	MFL Mondial	0.00	0.00	0.00	0.00
2002	F-V Hospital	0.00	0.00	0.00	0.00
1999	MFL Minh Minh	0.00	0.00	0.00	0.00
1999	MFL Chau Giang	0.00	0.00	0.00	0.00
Total pending commitment:		0.03	0.00	0.00	0.01

Appendix 11: Country at a Glance

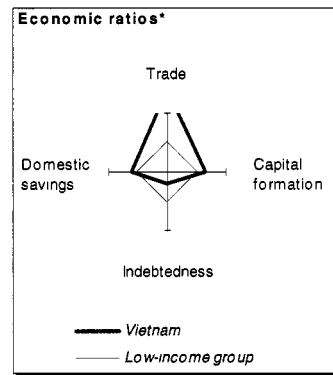
VIETNAM: VN Avian & Human Influenza Control & Preparedness Project

POVERTY and SOCIAL	East Asia & Pacific		
	Vietnam	East Asia & Pacific	Low-income
2005			
Population, mid-year (millions)	83.0	1,885	2,353
GNI per capita (Atlas method, US\$)	620	1,627	580
GNI (Atlas method, US\$ billions)	51.4	3,067	1,364
Average annual growth, 1999-05			
Population (%)	1.1	0.9	1.9
Labor force (%)	2.1	1.3	2.3
Most recent estimate (latest year available, 1999-05)			
Poverty (% of population below national poverty line)	29
Urban population (% of total population)	26	41	30
Life expectancy at birth (years)	70	70	59
Infant mortality (per 1,000 live births)	17	29	80
Child malnutrition (% of children under 5)	28	15	39
Access to an improved water source (% of population)	85	79	75
Literacy (% of population age 15+)	90	91	62
Gross primary enrollment (% of school-age population)	98	115	104
Male	101	116	110
Female	94	114	99



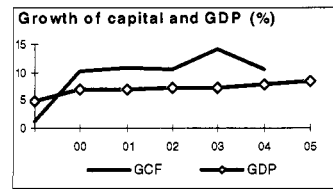
KEY ECONOMIC RATIOS and LONG-TERM TRENDS

	1985	1995	2004	2005
GDP (US\$ billions)	14.1	20.7	45.2	52.4
Gross capital formation/GDP	..	27.1	35.6	..
Exports of goods and services/GDP	..	32.8	66.4	..
Gross domestic savings/GDP	..	18.0	28.3	..
Gross national savings/GDP	..	19.2	32.2	..
Current account balance/GDP	-3.8	-13.5	-3.8	..
Interest payments/GDP	0.0	0.4	0.7	..
Total debt/GDP	0.4	22.6	39.4	..
Total debt service/exports	..	4.7	2.6	..
Present value of debt/GDP	34.1	..
Present value of debt/exports	50.4	..
(average annual growth)				
	1985-95	1995-05	2004	2005
GDP	6.5	6.9	7.7	8.4
GDP per capita	4.3	5.6	6.6	7.4
Exports of goods and services	25.2	15.8	27.9	15.0



STRUCTURE of the ECONOMY

	1985	1995	2004	2005
(% of GDP)				
Agriculture	40.2	27.2	21.8	..
Industry	27.4	28.8	40.1	..
Manufacturing	20.5	15.0	20.3	..
Services	32.5	44.1	38.2	..
Household final consumption expenditure	..	73.8	65.3	..
General gov't final consumption expenditure	..	8.2	6.4	..
Imports of goods and services	..	41.9	73.6	..
(average annual growth)				
	1985-95	1995-05	2004	2005
Agriculture	3.5	4.1	3.5	..
Industry	7.3	10.0	10.2	..
Manufacturing	4.3	11.0	10.1	..
Services	8.4	5.7	7.5	..
Household final consumption expenditure	..	5.2	7.1	..
General gov't final consumption expenditure	..	3.8	7.8	..
Gross capital formation	25.8	9.8	10.5	..
Imports of goods and services	24.2	16.5	25.2	..



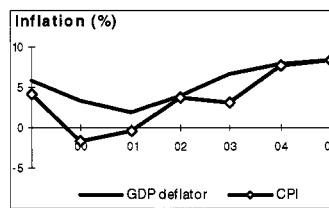
Note: 2005 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

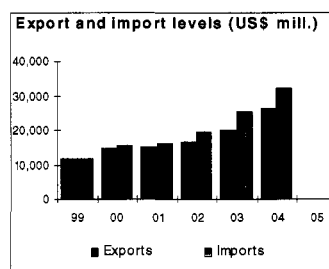
PRICES and GOVERNMENT FINANCE

	1985	1995	2004	2005
Domestic prices				
<i>(% change)</i>				
Consumer prices	7.8	8.3
Implicit GDP deflator	..	17.0	7.9	8.4
Government finance				
<i>(% of GDP, includes current grants)</i>				
Current revenue	..	23.3	23.1	..
Current budget balance	..	6.0	6.6	..
Overall surplus/deficit	..	0.7	-1.4	..



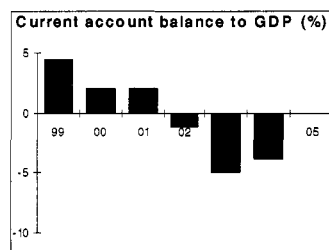
TRADE

	1985	1995	2004	2005
<i>(US\$ millions)</i>				
Total exports (fob)	507	5,198	26,503	..
Rice	..	547	950	..
Fuel	..	1,063	5,671	..
Manufactures	..	1,785	14,842	..
Total imports (cif)	930	7,543	31,954	..
Food
Fuel and energy	..	856	3,574	..
Capital goods	..	2,097	8,624	..
Export price index (2000=100)	..	108	107	..
Import price index (2000=100)	..	103	106	..
Terms of trade (2000=100)	..	106	101	..



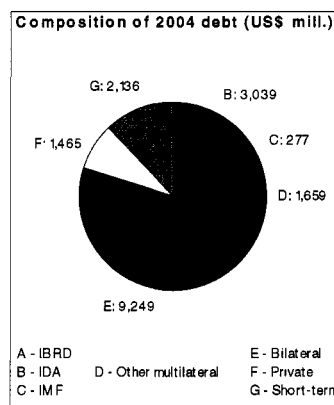
BALANCE of PAYMENTS

	1985	1995	2004	2005
<i>(US\$ millions)</i>				
Exports of goods and services	..	7,607	30,363	..
Imports of goods and services	..	10,603	33,608	..
Resource balance	-496	-2,996	-3,245	..
Net income	-90	-279	-940	..
Net current transfers	52	474	2,484	..
Current account balance	-534	-2,801	-1,701	..
Financing items (net)	265	3,301	2,395	..
Changes in net reserves	269	-500	-694	-1,261
Memo:				
Reserves including gold (US\$ millions)	..	1,376	6,314	7,575
Conversion rate (DEC, local/US\$)	8.3	11,038.3	15,772.3	15,987.1



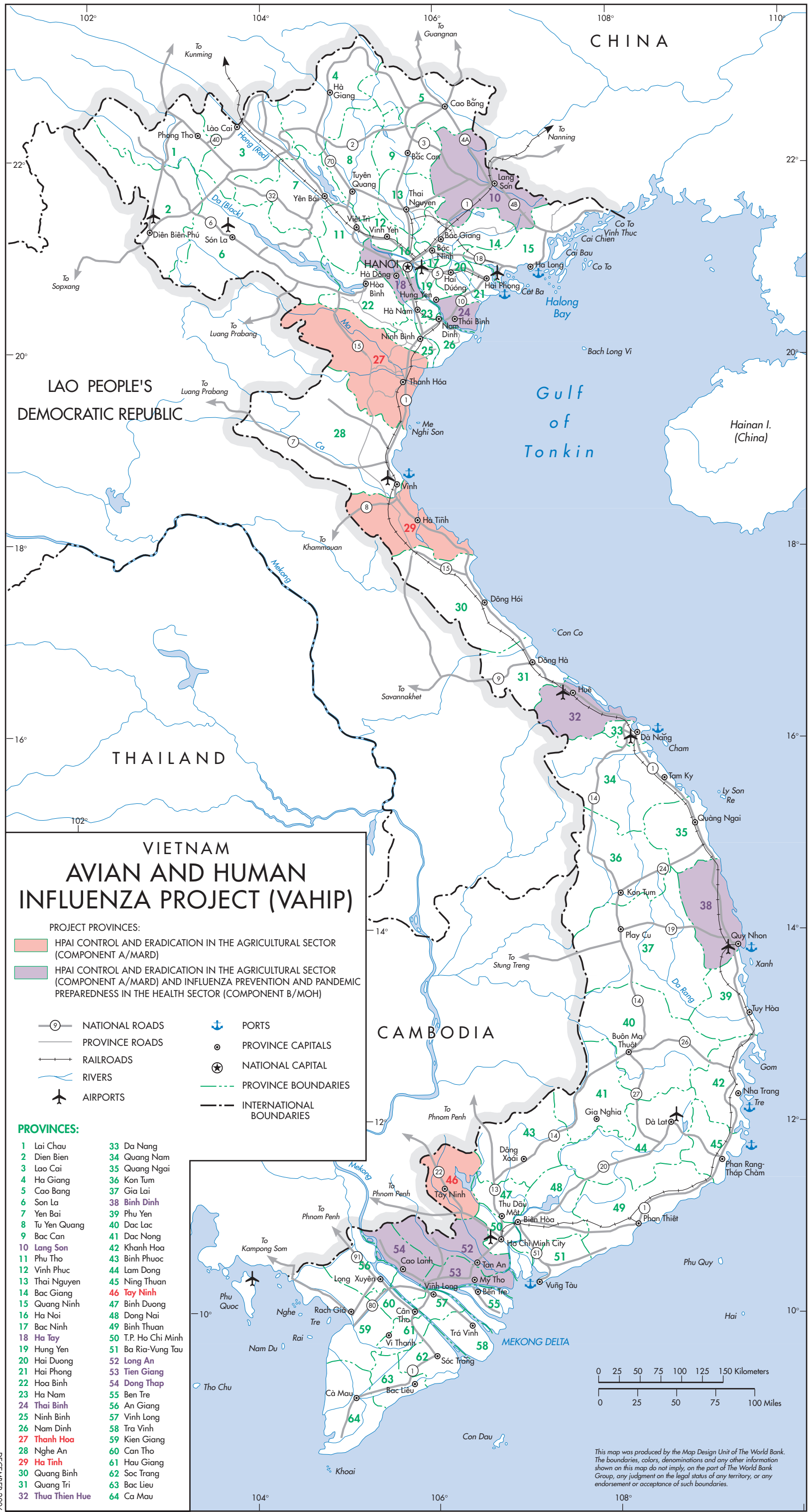
EXTERNAL DEBT and RESOURCE FLOWS

	1985	1995	2004	2005
<i>(US\$ millions)</i>				
Total debt outstanding and disbursed	61	25,428	17,825	..
IBRD	0	0	0	0
IDA	54	231	3,039	3,187
Total debt service	2	364	781	..
IBRD	0	0	0	0
IDA	0	2	37	44
Composition of net resource flows				
Official grants	38	348	387	..
Official creditors	7	58	1,278	..
Private creditors	0	356	10	..
Foreign direct investment (net inflows)	0	0	1,610	..
Portfolio equity (net inflows)	0	0	0	..
World Bank program				
Commitments	0	265	711	..
Disbursements	7	47	444	391
Principal repayments	0	1	8	14
Net flows	7	46	436	378
Interest payments	0	2	29	31
Net transfers	7	45	407	347



Note: This table was produced from the Development Economics LDB database.

8/13/06



VIETNAM AVIAN AND HUMAN INFLUENZA PROJECT (VAHIP)

PROJECT PROVINCES:

- HPAI CONTROL AND ERADICATION IN THE AGRICULTURAL SECTOR (COMPONENT A/MARD)
- HPAI CONTROL AND ERADICATION IN THE AGRICULTURAL SECTOR (COMPONENT A/MARD) AND INFLUENZA PREVENTION AND PANDEMIC PREPAREDNESS IN THE HEALTH SECTOR (COMPONENT B/MOH)

- NATIONAL ROADS
- PROVINCE ROADS
- RAILROADS
- RIVERS
- AIRPORTS
- PORTS
- PROVINCE CAPITALS
- NATIONAL CAPITAL
- PROVINCE BOUNDARIES
- INTERNATIONAL BOUNDARIES

PROVINCES:

- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Lai Chau 2 Dien Bien 3 Lao Cai 4 Ha Giang 5 Cao Bang 6 Son La 7 Yen Bai 8 Tu Yen Quang 9 Bac Can 10 Lang Son 11 Phu Tho 12 Vinh Phuc 13 Thai Nguyen 14 Bac Giang 15 Quang Ninh 16 Ha Noi 17 Bac Ninh 18 Ha Tay 19 Hung Yen 20 Hai Duong 21 Hai Phong 22 Hoa Binh 23 Ha Nam 24 Thai Binh 25 Ninh Binh 26 Nam Dinh 27 Thanh Hoa 28 Nghe An 29 Ha Tinh 30 Quang Binh 31 Quang Tri 32 Thua Thien Hue | <ul style="list-style-type: none"> 33 Da Nang 34 Quang Nam 35 Quang Ngai 36 Kon Tum 37 Gia Lai 38 Binh Dinh 39 Phu Yen 40 Dac Lac 41 Dac Nong 42 Khanh Hoa 43 Binh Phuoc 44 Lam Dong 45 Ninh Thuan 46 Tay Ninh 47 Binh Duong 48 Dong Nai 49 Binh Thuan 50 T.P. Ho Chi Minh 51 Ba Ria-Vung Tau 52 Long An 53 Tien Giang 54 Dong Thap 55 Ben Tre 56 An Giang 57 Vinh Long 58 Tra Vinh 59 Kien Giang 60 Can Tho 61 Hau Giang 62 Soc Trang 63 Bac Lieu 64 Ca Mau |
|---|--|

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