Cambodia
National Comprehensive
Avian and Human Influenza Plan

Foreword

In 2004, Cambodia was one of the first countries to experience a large epizootic of highly pathogenic avian influenza (HPAI) among poultry, caused by the influenza A(H5N1) virus. In 2005, the virus caused four confirmed human cases in Cambodia, all of whom died. As of April 6, 2006, two additional human deaths have been recorded, and epizootic outbreaks remain disturbingly frequent.

A human influenza pandemic is inevitable. While it is not possible to predict when it might occur, it is possible to be prepared to minimise its impact. The Royal Government of Cambodia is seeking to invest increased resources and efforts into controlling the current outbreak and thereby reducing the risk of a pandemic. In order to tackle the problem in an integrated, holistic and sustainable manner the Royal Government of Cambodia is further strengthening its central co-ordination mechanisms for better inter-ministerial, civil society and development partner cooperation.

This Cambodia National Comprehensive Avian and Human Influenza Plan furthers these cooperation efforts. It combines plans for animal health, human health, communication and inter-ministerial cooperation into a single comprehensive framework for Avian and Human Influenza. This comprehensive framework is designed to assist the allocation of resources to this essential effort, including resources for pandemic preparedness, response and recovery planning.

Strong leadership, organization and co-ordination, and clear lines of accountability and communication will be key in pandemic preparedness and response. The Royal Government of Cambodia respectfully calls upon all relevant national and international partners to play their part in together overcoming the threats of the influenza Pandemic and other emerging diseases.

Prime Minister

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Introduction

Background and Context

This plan has been developed as a response to the rapid spread of Avian Influenza (specifically H5N1) in Southeast Asia and now spreading around the world. While Cambodia has been dealing with Avian Influenza management in the animal health sector for 3 years now, the growing concern that the H5N1 virus might mutate into a human pandemic virus has generated the need for more comprehensive planning that combines efforts in both animal and human health sectors with more broad inter-sectoral planning to help prevent, prepare for, and respond to a possible pandemic.

The United Nations specialized agencies, notably FAO and WHO have been working with the relevant Government of Cambodia ministries, the Ministry of Agriculture, Fisheries and Forestry (MAFF) and the Ministry of Health (MoH), respectively, on Avian and Human Influenza planning. More recently, UNICEF has been working with both ministries in support of their Information, Education and Communication (IEC) efforts. The United Nations Resident Coordinators office has also been supporting the efforts of the Cambodian Government to coordinate with a broad range of donors and local and international organizations focused on assisting with Avian and Human Influenza efforts.

On 26 October 2005, a joint regional UN Avian Influenza and Pandemic Preparedness team including representatives from FAO, WHO, UNICEF, UNDP, and UNOCHA conducted a workshop in cooperation with the Government of Cambodia to initiate the process of comprehensive, or integrated planning, based on the progress and continuing efforts made in the animal and health sectors. A very rough framework for a comprehensive plan was developed at the workshop, and guided the establishment of the UN Joint Programme for Addressing Avian Influenza and Pandemic Planning in Cambodia on 16 December 2005. On 23 February 2006 a further workshop was conducted to further clarify the planning strategy and guide the completion of the Comprehensive National Plan. This document is based on those workshops, information from relevant documents including MAFF and MoH plans and workshop reports, and the Cambodia National Plan for Disaster Management. This plan is meant to be comprehensive in terms of broad sectoral coverage and general activity categories, but not in terms of defining the complete set of actions, and corresponding resource requirements, to manage Avian and Human Influenza. Additional actions and resource requirements will emerge as pandemic preparedness planning and ongoing Avian Influenza management evolves.

There has been a great deal of effort from the UN system and other organizations to develop information resources for Avian and Human Influenza. Some of those information resources are listed in Appendix F.

Objectives

To control the outbreak of AI in birds

To prevent transmission of AI from birds to humans

To minimise risk and consequences of a pandemic

Considerations behind the Plan Structure

Maintain the planning integrity of the Lead Technical Ministries
Include essential roles and responsibilities for other Ministries
Help strengthen the connections between the two lead Ministries and among the other Ministries, filling the gaps and improving the effectiveness of pandemic prevention and response activities.

Key Issues for Comprehensive Influenza Planning and Preparedness in Cambodia

- There must be support at the highest levels of government to ensure essential inter-ministerial cooperation.
- Key role of lead technical agencies must be supported and not undermined. This will be essential for maintaining a strong and flexible approach to a pandemic.
- Key role for Communication/Public Information
- Need for business continuity planning for essential services. This applies to all ministries, NGOs, UN system and any actor providing, or able to provide essential services in Cambodia.

Structure and Scope

The comprehensive plan, as discussed in the 26 October 2005 workshop and further refined in the 23 February 2006 workshop, is composed of the Animal Health Plan developed by the Ministry of Agriculture, Fisheries and Forestry (MAFF) together with the Human Health Plan developed by the Ministry of Health (MoH) combined with an Inter-Ministerial Cooperation Plan. (The comprehensive plan expands on the UN Joint Programme for addressing Avian Influenza and Pandemic Preparedness in Cambodia, which was approved by the Council of Ministers on December 16, 2005, and is included as Appendix F.) The Animal Health Plan is comprised of the National Strategy on Highly Pathogenic Avian Influenza Control and Eradication (Chapter One of this document) combined with the Action Plan for implementing the control of Avian Influenza in Cambodia (Appendix B of this document). The Human Health Plan is the Action plan for Avian Influenza in Cambodia (Chapter Two of this document). The National strategy on Information, Communication and Education makes out the third chapter while the Inter-Ministerial Cooperation Plan (Chapter 4) focuses on cooperation and coordination arrangements among ministries in support of both Avian and Human Influenza.

It is recognized that influenza planning is a dynamic process, and not a static product, yet there must be some strategic and coordinated basis for actions that helps form a relatively stable basis for resource mobilization. To that end, this Comprehensive Plan is meant to provide a basic framework for Avian and Human Influenza Management planning. The composition of the plan is represented in the below diagram:

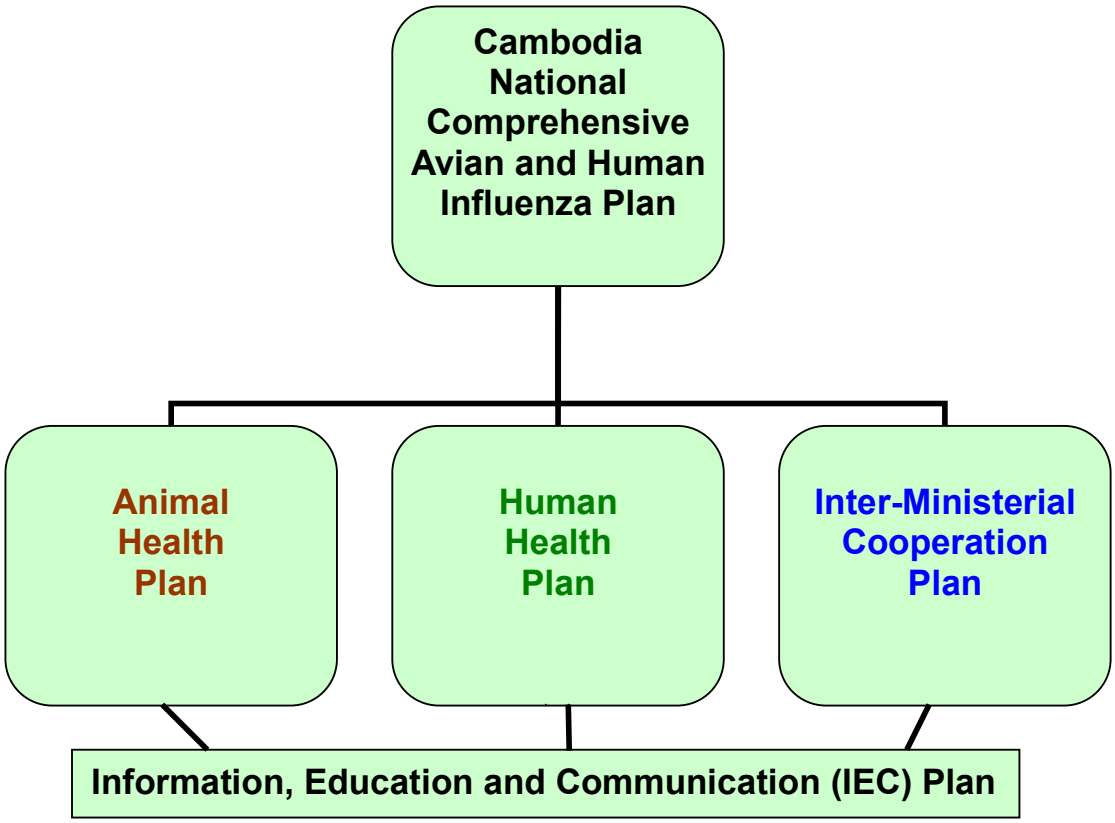


Fig. 1. Composition of Comprehensive National Plan

The composition of the plan is not meant to correspond to the level of importance placed on planning sectors. It is recognized the importance of the four planning sectors: animal health, human health, communications and inter-ministerial cooperation will vary with the phasing of the pandemic. The animal health sector is the most important sector of activity during the current WHO pandemic phase 3 (Animal to Animal and limited Animal to Human transmission), while there are also important human health aspects and inter-ministerial cooperation is most important between the MoH and MAFF with more limited involvement of other ministries. As the pandemic phase shifts towards rapid human to human transmission (WHO pandemic phase 6), the emphasis will rapidly shift away from animal health towards human health concerns, with more need for strong inter-ministerial cooperation and coordination. The need for public communications is constantly high in all phases. The shifting influence is illustrated in the following two figures:

Fig. 2. Relative sectoral emphasis for WHO Phase 3 Animal Health Emergency (Human Health Threat)

Fig. 3. Relative sectoral emphasis for WHO Phase 6 Human Health Emergency

This comprehensive plan is in no way meant to take the place of a detailed national pandemic plan or of detailed business continuity plans for individual ministries. Other plans will have to be developed. **This document is meant to identify the broad activities, and corresponding resources required to meet the priority needs to manage Avian and Human Influenza, including the resources required for development of these more detailed and specific plans.** Appendix A includes Government Strategy and Action Plan Budgets. **The resource requirements identified in this plan are indicative of initial priority needs only, and additional resources will certainly be required to strengthen current efforts and to sustain efforts beyond a three-year funding framework.**

Chapter 1. Animal Health: Controlling the disease in Animals; preventing disease spread to humans

National Strategy on Highly Pathogenic Avian Influenza Control and Eradication (May 2006)

FOREWORD

The Highly Pathogenic Avian influenza (HPAI) outbreak in the region has posed devastating impact on the poultry industry and public health in Asia; Cambodia in particular. The disease is now endemic with virus circulating causing serious jeopardy in backyard poultry and a constant threat to human health.

For prevention and control of HPAI, on the 12th January 2004, MAFF issued the movement control measure of poultry and its products from neighbouring country and order the field investigation on poultry farms in the country. With high attention taken by the Royal Government of Cambodia, on 16th January 2004, the control checkpoints were re-established and MAFF issued the declaration for nationwide prevention of introduction of HPAI, and on 22nd the inter-ministerial committee was created. The veterinary measures including control of poultry and its products movement, culling, disinfection, field investigation, field epidemiological surveillance and sampling have been carried out by the provincial animal health offices and village animal health workers under the supervision of DAHP.

The HPAI outbreak in Cambodia provided the lesson-learned experiences that call for the closer and cordial regional and international cooperation in prevention and control of animal and zoonotic diseases. In implementing the current emergency prevention and control measures for HPAI, MAFF also envisages the HPAI re-assuring strategic control approaches, which provides a secure environment for poultry practices to contribute to food security and poverty reduction with the following consideration:

Strengthening the veterinary administration, animal disease control and food sanitary for public good and food safety;

Developing the Contingency Plan for Animal Disease Control that includes: enabling legislation development and implementation; disease emergency response, communication, reporting and public awareness capacity; improved disease diagnostic, investigation and monitoring capability; animal quarantine and movement management capability; animal disease research capability.

Poultry production rehabilitation program that links to the national strategic plan for food security and poverty reduction.

The national strategy presented here provides a long term vision, goal, approach and implementation plans to control HPAI in Cambodia with a phased disease control programme.

HE Chan Sarun
Minister
Ministry of Agriculture, Forestry and
Fisheries May 2006

INTRODUCTION

Cambodia was one of the first countries in South East Asia infected by Highly Pathogenic Avian Influenza (HPAI). The Government of Cambodia reported the first case of Avian Influenza type H5N1 within its borders on 15 December 2003, in the Takmao Wildlife Rescue Centre (45km south of Phnom Penh). The first wave of the outbreak (January-May 2004) severely hit smallholder farmers who raise the ma jority of the country's poultry under subsistence conditions (so called back-yard poultry) or on small-scale commercial poultry farms. Many poultry producers and others stakeholders related to the poultry sector lost their livelihoods because of this. The disease seriously disrupted Cambodia's poultry sector, causing significant economic losses.

Estimates by the National Animal Health and Production Investigation Centre (NAHPIC) are that over 80 percent of chicken stalls in the Phnom Penh live-bird markets and over 60 percent in provincial markets ceased selling chicken between late January and February 2005. In addition, the disease is posing a threat to human health. After the outbreak appeared to be under control by late 2004, Cambodia has seen new HPAI cases re-emerging in early 2005, this time with 4 human cases (all fatality cases) reported. The repeated outbreaks are indicative that the disease has become endemic, highlighting the country's inadequate disease surveillance system and lack of capacity to control the disease.

The Ministry of Agriculture, Forestry and Fisheries (MAFF) has been able to mount a timely response to emergency control of HPAI outbreaks in early 2004 through the provision of much needed protective gear and equipment for culling, disposal of affected poultry and disinfection of infected poultry premises. FAO and the international donor community have provided emergency funds to support the Government of Cambodia in controlling the disease and mitigate the potential regional impact of the avian influenza crisis. These emergency funds were utilised to provide much needed equipment and supplies for control of outbreaks, to support public awareness and also to lay out the foundation for building the capacity of national staff for disease surveillance, outbreak investigations and emergency response.

Whilst this emergency assistance has been much welcomed and contributed significantly to containment of disease outbreaks with some success, the experience has identified serious institutional and technical constraints limiting the country's capacity for effective control of the disease. All these constraints are addressed in the present national strategy with a longer term approach to establish and sustain the necessary human and physical resource capacity to prevent the resurgence of the disease and proceed with its eradication.

POULTRY SECTOR IN CAMBODIA

According to the FAO classification system describing the poultry sector, four poultry production systems were identified according to the level of bio-security and the marketing of birds and products were defined (Annex 1.)

Two main different systems in the Cambodian poultry sector exist: backyard/smallscale and commercial. The commercial sector is further sub-divided into broiler, layer, duck and hatchery systems. The number of poultry units per system and the total poultry population are summarized in Tables 1 and 2. The most important poultry populations are found in Pursat (15%), Takéo (11%), Kampong Cham (10%), Kandal (8.6%), Prey Veng (8.6%), Kampot (7%) and Kampong Speu (7%).

The backyard systems dominate the poultry sector in terms of the number of farms and overall number of birds, but the farm size is small. The commercial sector has less than 1% of the total number of farms, but 10% of the national flock.

Table 1. *Classification of the poultry systems in Cambodia*

Sector 1 Sector 2	Sector 3	Sector 4

1 farm of 100,000 layers 68 broiler units 9 layer units 1 hatchery 57 pullet raising units (Estimated to be around 400 thousand birds)	30 broiler units 43 layer units 20-30 duck hatcheries 951 duck units (Estimated to have 400 thousand chickens and 841 thousand ducks)	85% of the households(1,9 million) raise 90% of poultry population (11.96 million chickens and 2.73 million ducks)

Table 2 *Number of farms and bird populations in the different poultry systems in Cambodia*

System	Number of farms				Population ('000)			
	Chicken	*Duck*	*Total*	*%*	*Chicken*	*Duck*	*Total*	*%*
Backyard	1,881,000	380,000	1,900,000	99.94	11,955	2,727	14,682	90.07
Commercial broilers	92		92	0.00	379		379	2.32
Commercial Layers	52		52	0.01	400		400	2.45
Duck systems		285	285	0.05		841	841	5.16
Hatcheries, parent stock	1	30	31	0.00				0.00
Total			**1,901,221**	**100.00**			**16,301**	**100.00**

The backyard systems are low input-output systems. Where chickens are kept, very few eggs are eaten, and birds are the main output either for home consumption or for sale as live birds. Ducks are important providers of eggs both for sale and consumption. Mortality rates are high, with between 50 to 60% annual rates being common. Eighty percent of households keep only chickens, 19% keep chickens and ducks and 1% keeps only ducks.

The broiler and layer industry is concentrated in the provinces of Kampong Speu, Kandal, Phnom Penh and Siem Reap, which combined have 88% and 95%, of these flocks respectively. With the exception of Siem Reap, all these provinces are close to the capital Phnom Penh. There is only one chicken hatchery in Cambodia, which is found in Kandal and owned by the Thai firm CP. This company also dominates the broiler sector where two thirds of the farms are part of their integrated system. CP is also important in the production of pullets with 57 integrated farms, but less important in egg production where it has 12% of the layer farms under contract. The investment in housing in these commercial chicken sectors is relatively high, but not all systems have enclosed housing.

The commercial duck population is more widespread, but there are concentrations of the national flock in the provinces Takeo (29%), Battambang (21%), Banteay Meanchey (28%), Prey Veng (13%) and Kampong Cham (10%). With the exception of Battambang and Banteay Meanchey all these provinces are close to the capital Phnom Penh. The duck systems generally have low levels of investment in housing and the ducks are raised outdoors.

For the commercial sectors there was a reliance on imported eggs and day old chicks before the HPAI outbreak with the purchase of between 160 to 260 thousand chicks per month from Thailand. In addition, the CP hatchery had the capacity to produce 120 thousand broiler chicks and 24 thousand layer chicks per month. The parent stocks are imported from Thailand. There are 20 to 30 local duck hatcheries concentrated in Takeo, which were started

some time ago and there are imports of ducklings from Thailand and Viet Nam. Chickens and ducks are generally marketed live, being brought into the main centres of consumption by car and then distributed locally on motorbikes.

From the data available, the Cambodian poultry sector is dominated by backyard or sector 4 systems. There appears to be no operations that could be classified as sector 1, and the majority of commercial chicken systems could be classified as sector 2 with the rest plus the duck systems in sector 3. Cambodia does not export poultry or poultry products.

WILD BIRDS IN CAMBODIA

Over 550 species of wild birds have been recorded in Cambodia. Of these:

69% are considered primarily resident
22% are considered winter visitors or passage migrants
9% are considered irregular visitors or vagrants.

No wild species have yet been identified as competent carriers of HPAI. Species within the order Anseriforme (ducks, geese and swans) are considered central to the epidemiology of LPAI. Cambodia supports five resident duck species (although only two of these are considered common), and five species of migrant duck in the winter (all of which are considered uncommon). The country does not hold any species of goose or swan.
Isolates of HPAI H5N1 have been made from wild birds elsewhere in East and Central Asia during surveillance and outbreak investigation. Species affected during these outbreaks can be grouped into the following categories:

Species that inhabit wetlands (including ducks, swans, geese, grebes, herons, cormorants, gulls, rails and shorebirds).
Species that inhabit rural agricultural or urban areas (including mynas, crows, drongos, sparrows, munias and pigeons).
Species in legal or illegal bird trade (including raptors and various passerine species).

DISEASE SITUATION IN CAMBODIA

Disease occurrence

The first case of H5N1 to be officially notified was in a commercial layer operation in Phnom Penh on 23rd January but deaths had started about 14th December 2003 and most of the birds died during the following two weeks. The second confirmed case was investigated on 16th January. It was a small-scale commercial farm, also within the municipality of Phnom Penh, approximately 10km from the index case. Prior to this outbreak, avian influenza was not considered in the list of differential diagnoses in poultry diseases.

Unknown to the National Animal Health and Production Investigation Centre (NAHPIC) at the time, the Phnom Tamao Wildlife Rescue Centre located approximately 45km south of the city, was experiencing mortalities in a large variety of captive birds, captive exotic species and free-flying crows. H5N1 was isolated in two outbreaks involving non-poultry avian species. Overall mortality in captive species reached 25%. Clinical signs, primarily lethargy and non-appetite , were also evident in zoo cats. Psittacines were affected in a further outbreak, although only 2 recent introductions died in an aviary group of 30.

The primary epidemic lasted until April with no further outbreaks until the disease was again detected on 21st September 2004 at Veal Sbove commune in Kean Svay district, in Kandal province on a farm with about 4500 chickens located about 5km from Phnom Penh. No virus was isolated from mortality investigations in ducks, chickens, or pigs in Phnom Penh (29/09/04 and 14/10/04), Rattanakiri (05/10/04), Kandal (06/10/04 and 12/10/04) and Prey Veng provinces (06/10/04). There were two outbreaks in 2005 in Kandal (February) and Kampot (March). There were a further two outbreaks in 2006, in Kampot and Kompong Speu,

both in March.

At least prior to May 2006, there have been no cases of H5N1 isolated from free-flying wild birds in Cambodia.

Human cases

During the first outbreak (January – April 2004) no human cases occurred. With the resurgence of HPAI outbreaks in late 2004 – early 2005, four human cases and fatalities were reported in Kampot province on the borders with Viet Nam. In March 2006, two people died, one from Prey Veng and one from Kompong Speu.

Impact

The clinical losses and losses due to slaughter were about 41,000 heads.

Since the first wave of the AI outbreaks, there were only 6 human cases of fatalities (2 died in Vietnam): ˜Kampong Trach District: a 24-years-old woman died on 27 January 2005 ˜Bantey Meas District: a 28-years-old man died on 22 March 2005 ˜Kampong Trach District: a 9-years-old girl died on 8 April 2005 ˜Bantey Meas District: a 20 years-old-woman died on 19 April 2005. Two people died in March 2006, one from Kompong Speu and one from Prey Veng.

Disruption of domestic trade and supply

There was a complete disruption of domestic trade and supply of poultry observed from 15 January to 15 March 2004.

Livelihood

Since the outbreaks occurred early 2004, there is serious impact on both livelihoods of smallholders and economic profit of the semi-commercial farms.

Commercial farm number decreased

Causes are : difficulty to restart activity after outbreak, difficulty to restock, high risk activity at present. -Layer farms: 52 farms in 11/2004 versus 74 farms in 2003 -Broilers farms: 92 farms in 11/2004 versus 108 farms in 2003

Commercial farms production decreased

-Mortality and culling can decrease capacity of production: actually much higher than reported by farmers during HPAI outbreak in 2004 -Quarantine and Prakas too long to be released stop from restocking: farmers ran out of money quickly when they can not work, and they can restock only partially.

-Lack of DOC supply: DOC import from neighboring countries is now banned. Only one local company (CP) can supply DOC and pullets: the price increased and contracted farms are first delivered.
-Demand of local DOC increased obviously and lack of availability lead up to high prices:
-Day Old Chick price raised from USD 0.25 in December 2003 to USD 0.33 in May 2004
-Pullet 18 weeks old costs USD 3.5 when bought in CP company.
-Before import ban, the farmer could raise himself pullets from 1 day (USD 0.4) and the cost of a 18 week old pullet was USD 2.4

Cost of Control (shouldered by government)

-The government has shouldered physical and human resources for the HPAI control program.

-Visit to the district and the provincial veterinarians to perform the complete epidemiological investigation related to the past outbreak in order to clearly determine the

date of the first symptoms and possibly to identify at-risk places outside of the outbreak zone. Assess the current situation of the poultry mortality in the district and in the province.

-Visit the outbreak place : a village or a commercial farm and complete the epidemiological investigation by discussing with the owner of the farm and the chief of the village and/or the Village Animal Health Workers and/or and some families.
-In case the outbreak place is a village, collect samples to assess if the virus is still circulating (virology) or if it has largely circulated (serology). Number of samples to collect : 12 to 15 per species (see appendix 1, table 2, using 20 to 25% within-farm prevalence)
-Visit a random selection of villages in the protection zone1 (3 km around the outbreak zone) to perform :
-a brief investigation on morbidity and mortality in 2004 and 2003 + vaccination status + animal movement in 2004
-clinical assessment (poultry and ducks)
-collect samples in the village in case :
-of suspected mortality reported for the past 3 weeks,
-the information is not complete and
-possibly, each time high suspected mortality is reported in 2004.
-Number of samples to be collected in case of suspicion : 12 per species (using a 25 % within-farm prevalence)
-For surveillance purpose, the animals sampled must have lived in the village at the time the mortality was reported.
-Visit every commercial farm within the protection zone and sample animals2 to assess if the virus has circulated or is still circulating. Number of samples to take : 12 to 15 samples.
-Visit the at-risk places if any were identified and collect samples7 to assess the possible circulation of the virus. Number of samples : 12 to 15 per species.

THE NEED FOR A NATIONAL STRATEGY

The continuing outbreaks of highly pathogenic avian influenza (HPAI) in several Southeast Asian countries since early 2004 have been disastrous to the poultry industry in the region, and have raised serious global public health concerns. The HPAI has now become endemic in the region with the H5N1 virus circula ting continuously in the smallholder poultry sector and the duck systems. Unless the disease is controlled in these systems, the livelihoods of the resource poor rural communities, who are dependent on small-scale farming as continuous source of protein rich food from livestock, mainly the backyard poultry will be in serious jeopardy and the presence of virus will pose a constant threat to humans.

Cambodia is always at risk of HPAI re-occurring in areas near the borders as in the rest of the country. It is therefore imperative for the veterinary services to develop the capacity to detect disease outbreaks in a timely manner and mount early response. Strengthening government capacity in dealing HPAI will help also to cope with a number of epidemic and endemic disease risks. On a regional basis, controlling and eradicating the disease from Cambodia will create a natural land barrier, limiting the chance of HPAI spreading between Thailand and Viet Nam.

Inadequate capacity and lack of human and physical resources in Cambodia, compounded by lack of legal framework for animal diseases control are the principal limiting factors to effectively control and eradicate HPAI. There is an urgent need to invest significant sums of money to strengthen the grass-root level disease surveillance systems through the training of the farmers and community health workers in disease diagnosis, early reporting and emergency response, and to underpin underline this by additional support to improve laboratory diagnostic capacity and veterinary services. Support is also needed to improve communication and awareness of the disease and importance of disease control programmes at the national and village levels to prevent re-emergency of HPAI outbreaks and

progressively eradicate the disease from the country.

The draft strategy presented here provides a long term vision, goal, approach and implementation plans to control HPAI in Cambodia with a phased disease control programme. Thus the present strategy suggests building a strong and sustainable human and physical capacity in the country to respond in an effective and timely manner to stamp out not only HPAI outbreaks but also newly-emerging infectious zoonotic and transboundary animal diseases (TADs). Restructuring the poultry sector and capacity to carry out the socio-economic impacts of HPAI control options and analysis of local market effects will also be deve loped as part of the national plan.

Active surveillance programmes with implementation of conventional disease control options are the pillars of the present strategy. Vaccination is not being considered as an option for the time being given the small scale of HPAI problem, limited to smallholder backyard poultry sector. It is to be emphasised that the present strategy will be further refined through continuing consultations with all national stakeholders in the country and international organisations such FAO and OIE, as well as and regional organisations in Asia.

NATIONAL STRATEGY

Global Objectives

Containing and eventually eradicating HPAI in Cambodia, thus contributing to the larger vision of minimising the risk of human pandemic and promoting healthy trade in poultry products, improving the livelihoods options related to poultry of the resource poor farmers and enhancing food security of the rural poor populations of the region.

Components

The proposed strategy design is in line with the objectives of the Government of Cambodia, the Asian Regional Framework and the FAO/OIE Global Strategy for the containment of avian influenza. The major components of the strategy would be grouped into six components, each with clearly defined objectives and activities. FAO is a major partner in all components.

Component 1: Veterinary Service Strengthening

Component 2: HPAI surveillance investigation and response

Component 3: Strengthening Biosecurity in Poultry Production and Trade

Component 4 : Information Education and Communication

Component 5: Pandemic Planning

Component 6: Strategy Management

Component 1: Veterinary Service Strengthening

Objectives:

to develop the appropriate policy and regulatory framework to strengthen governance of the veterinary system, and to enable enforcement of the HPAI control measures to include early reporting, animal movement control and application of bio-security measures

to strengthen the Department of Animal Health and Production (DAHP)

to strengthen provincial Offices of Animal and Production (OAHP) and district veterinary services so they have sufficient capacity to implement disease control programs

to strengthen and expand the Village Animal Health Worker (VAHW) system to national coverage

to strengthen delivery systems of vaccines and improved livestock technology to rural areas

This component has five activities:

1.1 Policy and legislation

Policies, and supporting legislation and regulations will be developed to support the veterinary system and disease control in general and to direct and support HPAI disease control.

National HPAI Control and Eradication Policy

The policy for control of avian influenza, to be promulgated by the Government as the official national policy under which to undertake all necessary regulatory and legal action towards the control of AI will be drafted. DAHP will prepare the policy, in collaboration with the Ministries of Finance and Health, the provincial multi-sectoral committees, and other agencies and stakeholders.

There are several key issues which need to be addressed in the policy. These include policies on compensation for farmers whose poultry are culled, policies on vaccination, domestic and cross-border movement and trade and policies on insurance for front-line workers exposed to the HPAI virus.

The policy development process will involve all key stakeholders.

Animal disease control legislation and preparation

A general regulation related to the control and surveillance of animal diseases is urgently needed to clarify the duties and responsibilities of the official veterinary services and farmers with respect to a list of important diseases.

Poultry Industry Restructuring Policy

The government needs to work out and develop clear policies for restructuring the national poultry industry, including both production units and downstream supply chains. There is a need to promote private sector integration into national and regional animal health systems and to ensure coordination between public and private sectors in animal disease control. In addition investments need to be encouraged in breeding farms, to reduce the reliance on imported day old chicks. There is also a plan to encourage the establishment of poultry and farmer associations. However, there are difficulties in assessing the costs of restructuring as previous information is inadequate to determine trends prior to the outbreak. In societies that are getting progressively richer it would be expected that bird units would increase in size.

One of the aims of the restructuring is to have improved biosecurity in the poultry production and trade.

Policy on Village Animal Health Worker System

The government will develop a policy for development, regulation and administration of the village animal health worker system to effectively implement existing regulations. The policy will include those actions that will strengthen and expand the system to a national coverage of a quality veterinary service delivered through the private sector.

Veterinary Service Structure Review

The government will support a review of the structure of the veterinary services which is consistent with national disease control and rural development and poverty reduction objectives. The structure review will address the

recommendation made under the Agricultural Productivity Improvement Project (APIP) to upgrade NAHPIC to the level of an institute.

Emergency Preparedness and Contingency Plans Preparation

Emergency preparedness aims to develop capacities for early warning and early response to disease epidemics. This requires in advance the preparation of contingency plans (generic and AI-specific). This has to be made in cooperation with national stakeholders and possibly with neighbouring countries. In a medium term approach, other newly-emerging infectious zoonotic and trans-boundary diseases could be candidates for emergency and contingency plans.

1.2 Strengthening of DAHP

NAHPIC

Veterinary epidemiological and diagnostic services are provided by the National Animal Health and Production Investigation Center, NAHPIC. The mandate of NAHPIC is to investigate, conduct surveillance and research and consolidate information on all matters pertaining to animal health and production and food safety. The NAHPIC provides timely feedback and action and functions as a national reference centre for diagnostic and epidemiological services. The NAHPIC would be the principal technical coordinating centre in the national strategy to eradicate HPAI.

NAHPIC will be strengthened in diagnostics in order to be able to respond more effectively to the existing demand for HPAI testing and to be able to respond to possible large increases in demand.

The AI diagnosis laboratory at the NAPHIC will be upgraded and equipped for HPAI serology and virus isolation. The virology unit at NAHPIC must be able to perform a range of internationally approved diagnostic tests for both Highly Pathogenic Avian Influenza (HPAI) virus and antibody. Current techniques include haemagglutination (HA), haemaglutination inhibition (HI) and enzyme linked immunoabsorbent assay (ELISA) tests. There is an urgent need to introduce polymerase chain reaction (Real-Time PCR) technology to allow virus sub-typing at the haemagglutinin(H) / neuraminidase (N) level. This will require the construction of a new rooms for virology at NAHPIC.

The Real-Time PCR process is currently conducted at the Pasteur Institute Cambodia (PIC).

NAHPIC must be able to implement internationally acceptable and recognized Quality Assurance (QA) and Quality Control (QC) procedures to ensure that the testing of large numbers of samples is undertaken both accurately and rapidly.

NAHPIC must have sufficient quantities of quality reagents, extra laboratory space, some specialized equipment and suitable necropsy facilities.

The safety and quality control, and assurance systems at the virology unit will be assessed in order to bring the facility in line with international bio-safety and quality standards.

NAHPIC requires a regular supply of chicken embryos sufficient for laboratory testing of HPAI samples.

External technical support is required for the improvement of NAHPIC. Now that the basic skills are in place for running HPAI diagnosis, follow-up by international experts should focus on the good management practices to assure the safety of the operations (especially with virus culture to be introduced) and on more specific training needs to benefit the general diagnosis capacity of the serology/virology unit.

HPAI samples will be shipped to international reference laboratories for virus characterisation. This activity will be organized through the sub-regional FAO surveillance and diagnostic network.

The increased needs on HPAI surveillance and research require a well trained epidemiology team, able to compile and analyse the data generated to provide timely, accurate information regarding HPAI and other disease outbreaks to decision makers.

Staff of the epidemiology unit need 2 years in-house training on applied epidemiology.

The current epidemiological disease reporting system will be reviewed and upgraded to a functioning Animal Health Information System, and human resource and equipment needs identified. A disease reporting system will be introduced, and staff trained in data management. Staff involved in field surveillance will be trained.

The capacity of NAHPIC will be improved with respect to research, and partnerships with other regional and international research agencies will be sought through the sub-regional network.

NAHPIC will be strengthened to be able to arrange out-sourcing of socio-economic assessment of disease control programs, especially on HPAI, to inform policy makers. Policy makers need to refer to the socio-economic studies issued by their services to assist them in their decision making. This capacity needs to be strengthened by appropriate training on cost-effectiveness and cost-benefit analysis. There is a cost to all the control measures which must be weighed to determine whether the cost of that measure will be cost effective. Studies on the economic impact of HPAI would justify to policy makers the need to focus on HPAI control measures. The cost of instituting a measure must be weighed against the value of the benefit derived from such a measure. The economic evaluation is also a tool to evaluate whether or not there is a need to pursue eradication of a disease nationwide or if a new strategy is required.

Animal Health Office

The Animal Health Office (AHO) will be strengthened to coordinate the management of the village animal health service delivery system. This system includes VAHWs, VAHW trainers, the cold chain for vaccine storage in both the public and private sector, and the use of vaccines. A national system will be established to license and register VAHWs and to monitor the extent and quality of basic animal health services to farmers. Management of the VAHW system is essentially the responsibility of the Provincial OAHP's, and the AHO's role is to support and coordinate, and to ensure that information is collated and used effectively to inform disease control and livestock development programs. The AHO will establish and operate a Village Animal Health Delivery Information System for this purpose.

Animal Production and Extension Offices

The Animal Production Office will be strengthened to support poultry industry development, restructuring, and improved biosecurity in the smallholder sector, duck production and in the commercial sector. This includes establishing and maintaining an inventory of technologies and processes that have been successful in improving village livestock production.

The Extension Office will be strengthened to be able to coordinate production of extension materials and implementation of information, education and communication programs especially on HPAI control.

1.3 Strengthening of OAHP and district veterinary services

All activities of surveillance, public awareness and control of HPAI will be achieved by provincial Offices of Animal Health, District Veterinarians with support of VAHW under direction of central DAHP. Implementation of all activities aiming at fighting HPAI will use the existing networks in place in the provinces, will involve trained government staffs and VAHW at the village level.

They will work under the general technical supervision of the relevant central departments (DAHP for what is related to animal health), but the urgent decision related to the surveillance and the control measures implementation will have to be taken at the provincial level. This will facilitate a quick answer to the suspected and confirmed cases.

The capacities of the Provincial OAHP's and district veterinary services will be strengthened in order to be able to support the development of the VAHW system, conduct vaccination and extension activities, conduct HPAI disease control measures and manage Animal Health Information Systems.

A team of technical staff in each provincial office, under the direction of the chief of OAHP and supported by office-based staff, will be organised into groups for routine purposes – VAHW management, training and support, vaccination and extension activities, and HPAI disease surveillance and awareness raising. The groups can all be re-directed rapidly to HPAI disease control activities as circumstances dictate, for example if outbreak investigations and responses are required.

A team of veterinary staff in each district will be established, with responsibility for supporting the VAHW development and vaccination/extension activities, and HPAI disease control activities. All staff can work on HPAI disease control according to circumstances.

OAHPs will establish, under the direction of the DAHP, and in consultation with VAHWs, a system for registering and licensing VAHWs. The Animal Health Office of the DAHP will support and advise them developing this function.

1.4 Village Animal Health Worker System Management

Village veterinary services will be strengthened through expansion of the network of VAHWs so that all farmers have access to the services of a VAHW, by training and equipping new VAHWs, promoting VAHW associations, and ongoing support of existing VAHWs to ensure service quality. The plan supports the development of VAHW associations. According to current DAHP records, about 8,000 VAHWs have been trained in Cambodia, of which about 6,700 are officially recognised by the DAHP. It is not clear how many of these VAHWs are currently active in villages. DAHP estimates that a further 5,000 VAHWs need to be established with the aim that all farmers have access to basic animal health services. The DAHP will determine the needs for VAHWs in a national basis by conducting a baseline survey.

New VAHWs will be trained according to existing government guidelines and the development of associations to promote sustainability and support networks will be actively supported.

1.5 Vaccine and Technology Delivery Systems

Vaccination and extension activities aimed at improving farmer's knowledge, understanding and incomes will be implemented on a national basis. Many provinces have substantial experience in conducting extension activities promoting vaccination in cattle and buffalo, pigs and poultry, and promoting production technologies that can improve farmer income.

Promoting vaccination in poultry helps to reduce outbreaks of Newcastle Disease and Fowl Cholera. Outbreaks of these diseases contribute significantly to the background

noise of the HPAI surveillance program. Promoting improved village poultry production (ducks and chickens) can improve bio-security. Farmers learn about HPAI through participation in vaccination and extension activities.

The cold chain for vaccine storage will be expanded so that vaccines are readily available in all areas of Cambodia.

Component 2: HPAI surveillance investigation and response

Objectives:

to have better information on HPAI epidemiology in order to improve disease control strategies

to have an effective national surveillance, investigation and response system

to manage outbreaks of HPAI effectively

to have a vaccine supply system in place if required

This component has six activities:

2.1 Conduct of epidemiology surveys and research on HPAI

Epidemiological surveys will be conducted according to FAO/OIE recommendations on chickens, ducks, wildlife populations and pigs. Surveys will be conducted in both village and commercial production systems and down the supply chain through to markets. Participatory epidemiology surveys will be conducted amongst farmers, traders, and marketers of poultry and birds, zoo birds, and temple birds. Unusual mortality in wild birds will be investigated.

The epidemiology of HPAI in the context of a large village poultry population needs to be better understood. Analysis of risks along the Cambodian poultry production systems (especially the ducks raising system) and the market chain is a major item for better targeted disease control.

Another issue that needs to be better assessed is related to the role of other species in the transmission of HPAI. In particular, research has to be conducted on the role of pigs in HPAI spreading in an environment where pigs and poultry are very often raised together.

With respect to wild birds, key priorities include:

Defining unusual mortality events in wild birds and developing a framework for detecting and responding to wild bird outbreaks, in parallel with existing poultry surveillance at provincial OAHP.

Providing specialist support during domestic outbreak investigations, to determine the species diversity, numbers and possible involvement of in-contact wild birds.

Conducting prospective surveillance and research to increase understanding of priority wild bird groups, including waterbirds, species inhabiting agricultural and urban areas and the wildlife trade.

All activities involving the capture of wild birds will conform to international standards such as those set by the British Trust for Ornithology.

Interpretation of wild bird surveillance will require specialist skills in areas of ecology, field ornithology and epidemiology and would benefit from interaction between multiple sectors of government. Thus, NAHPIC will seek the participation of Forestry Administration of MAFF and the Wildlife Conservation Society (WCS) in the development of a project that will satisfy national requirements for wild bird surveillance..

2.2 National epidemiology surveillance networks based on grassroots veterinary services

Village surveillance by VAHWs and farmers is the front line of surveillance activities. VAHWs are private sector workers and the system of surveillance will have to reflect and support this. VAHWs will report disease outbreaks in poultry as a priority. VAHWs will also report disease outbreaks in pigs, cattle and buffalo, as a part of an overall

animal health information system which will be developed and coordinated by NAHPIC. The national surveillance system will be steadily improved as more new VAHWs are trained.

The involvement of VAHWs means educating them about their duties to report animal diseases to the authorities, training them on disease prevention, disease recognition, disease control measures, bio-security at the village level and to promote public awareness.

The guidelines for VAHWs on HPAI recognition and control at the village level will be finalized by DAHP in cooperation with FAO in order to ensure that it is adequate with the VAHW skill level. Guidelines will be a tool for the training for VAHWs.

VAHWs will also receive training on the proper use of Personal Protective Equipment in collaboration with Ministry of Health under the supervision of WHO.

Rangers working with the wildlife protection service of the Forestry Department of MAFF will be trained to report unusual mortality in wild birds for investigation by DAHP.

The national hot-line located at NAHPIC will be established for early reporting of suspicious poultry or wildbird disease outbreaks from farmers, VAHWs or others. This hot-line will be widely advertised through the public awareness component. Upon receiving a call about a suspicious event, NAHPIC will contact the relevant provincial or municipal authority to get them to investigate further. If it is deemed necessary, NAHPIC staff will also investigate. NAHPIC will fully inform the CDC of MoH with regard to investigations that are being carried out.

Veterinary staff in all districts will travel regularly from village to village meeting with VAHWs and farmers to check the disease situation and to check the activity of the VAHWs.

Provincial staff of the OAHP will travel regularly to districts, communes and villages and farms to check the activity of the VAHWs and the disease situation in the villages and farms.

All villages and farms will enter into pre-outbreak agreements with the veterinary authorities describing respective responsibilities during the pre-outbreak, during outbreak and post-outbreak periods.

2.3 Outbreak investigations

Upon receiving reports of suspicious outbreaks, teams from NAHPIC, provincial and district levels will travel to the outbreak site, and conduct investigations with the VAHWs in accordance with Standard Operating Procedures based on FAO/OIE recommendations. Investigations will include an assessment of in-contact wild birds.

2.4 Management of HPAI outbreaks

Upon receiving news of confirmed HPAI in the village or farm, veterinary staff travel to the outbreak village or farm and conduct valuation, culling, disinfection, disposal and quarantine activities according to FAO/OIE approved guidelines.

In case of HPAI outbreak, Provincial Multi-sectoral Committees must fully support the Provincial Animal Health Office and DAHP to carry out culling in a proper manner. Especially in releasing personnel requested to achieve the culling, carcass disposal and disinfection, because it is difficult to force villagers or farmers to accept culling but it is crucial to fight HPAI spread.

The provincial and district veterinary services will conduct demonstrations in the affected villages. These demonstrations will focus on educating farmers about improved poultry and pig raising, and making sure they have access to the information and services they require to improve their animal raising activities.

Through this process they will learn more about HPAI and how to prevent it occurring again.

2.5 Compensation Fund Management

The Government is currently considering the development of a compensation policy for farmers whose poultry are culled. Depending on the outcome of these discussions, the government may seek donor support for a compensation fund.

2.6 Vaccination against HPAI

It is not expected that vaccination against HPAI will take place given current level of disease. However as conditions change, vaccination may take place in compartment by species, or production sector, or geographical zone, according to assessed risk. The government will seek donor support to establish a vaccination fund and will investigate potential sources of vaccines.

Component 3: Strengthening Biosecurity in Poultry Production and Trade

Objectives:

to identify the level of biosecurity associated with existing structures and activities in the poultry production and supply chain

to develop and test models of improved biosecurity measures in the poultry production and supply chain

to have a more developed and efficient commercial poultry industry

The Cambodian poultry industry is essentially divided into two main systems: viz. backyard/small-scale and commercial. The commercial sector is further sub-divided into broiler, layer, duck and hatchery systems which fall into either Sector 2 or 3 category (FAO) classifications. There are a few medium to large-scale Sector 2 farms with medium to high biosecurity level. In a context where the supply of poultry product does not cover the national demand, it is important to improve the bio security of the production systems in order to protect both production as well as farmers income.

Biosecurity increases with rehabilitation and restructuring at all levels along the poultry production chain:

a. Parent stock and primary providers (hatcheries)

b. Production at farms level:

Sector 4; small scale backyard
Sector 3; small scale commercial
Sector 2; medium scale commercial

c. Transport/sellers and middlemen

d. Live birds markets

e. Slaughtering facilities

f. Poultry products processing and marketing

This component has five activities.

3.1 Supply Chain Study

A supply chain study will be conducted that will encompass the whole of the poultry industry. The study will identify those aspects of the supply chain which lack biosecurity and will analyse the effects on the supply chain of HPAI disease and HPAI

disease control measures. The study will advise as to whether a specific project is required to support the further development of the commercial sector. The study will advise and risk management in import of poultry and poultry products.

3.2 Smallholder Production

At the farm-level in sector 4, smallholder systems cannot implement adequate bio - security measures easily, as an important feature of the system is the need for poultry to scavenge food from the environment which minimises production costs for the farmer. However, it is important to increase awareness of what to do to prevent disease transmission and to apply new husbandry practices.

This group of producers own more than 90% of the poultry in Cambodia and concerns up to 2,000,000 households. Almost every single rural and peri-urban household in Cambodia is involved in small scale poultry production with indigenous breeds. These producers are difficult to reach and are producers in a "survival type of production systems" with often mixed species (chicken, ducks and pigs). Controlling bird flu involves commitment by the rural population in a better understanding of the disease in all its dimensions: disease risks, mode of transmission, importance of early detection and taking appropriate measures in case of disease outbreaks. VAHWs are key players in their communities and have a strong understanding of the problems at community level. They can disseminate information and positively influence community behaviour to reduce transmission risks with suitable husbandry practices. They can also influence attitudes in case of disease outbreaks and report to the veterinary services. Adequate information needs to be available for poultry smallholders supported by training to better prevent and control HPAI. Appropriate husbandry practices that will modify their production farming systems include confinement of the birds, separation of species, construction of poultry houses, quarantine measures for new birds coming into the farm, etc.

The Government has a strong commitment to changing the behaviour of farmers and traders, especially to stop farmers eating sick or dead poultry and traders trading in sick or dead poultry or poultry from villages where there are disease outbreaks. In addition, the government is committed to investigating whether reducing scavenging chickens (and scavenging pigs) is feasible, and under what conditions.

A series of studies will be conducted to grade the biosecurity levels of villages, districts, and provinces. The study will also identify within-village groups according to bio-security risk. Studies will be conducted to investigate potential models for improving bio-security in villages.

Demonstrations on improving bio-security will be implemented. These will focus on informing farmers of the risks, and encouraging them to come up with solutions.

Successful approaches will be implemented in broader areas.

3.3 Duck Production

Ducks play a very important role in the epidemiology of HPAI. They are a special case since they can carry HPAI virus but not have disease. HPAI can spread from ducks to chickens and people.

A series of studies will be conducted to grade the biosecurity levels of different duck production systems.

Pilot demonstrations on improving biosecurity will be implemented. These will focus on informing farmers of the risks, and encouraging them to come up with solutions.

Successful approaches will be implemented in broader areas.

3.4 Commercial Poultry

In the commercial Sectors 2 and 3, the producer has a greater responsibility for biosecurity. However, even some of the integrated units may not be as bio-secure as were earlier believed.

A series of studies will be conducted to grade the biosecurity levels of various farms and farm types within the commercial sector.

Demonstrations on improving bio-security will be implemented. These will focus on informing farmers of the risks, and encouraging them to come up with solutions.

DAHP/MAFF will seek funds for an agribusiness project to support development of the semi-intensive chicken and duck sector. This project will support the development of a supply of day-old chicks and ducklings to reduce reliance on imports.

3.5 Movement and Markets

At present, motorbikes or bikes, loaded with live poultry arrive either directly at the markets or at the sellers' house. When arriving at the market, they usually unload their animals in the middle of the road without any clinical inspection by the veterinary officers and without cleaning and disinfection before leaving.

At present, Cambodia has banned the import of poultry and poultry products from infected countries. The risk of infection from this source needs to be assessed and a system to manage these risks needs to be developed. This could include checkpoints leading in to Phnom Penh.

A series of studies will be conducted to grade the biosecurity risks of behaviours along the marketing chain, and the feasibility of changing behaviour. Potential options include construction of slaughter areas, separation of ducks and chickens, and cleaning of markets. An appropriate balance between a regulatory and market-driven approach needs to be taken.

Pilot programs and activities on improving biosecurity will be implemented and then expanded if considered successful. These will focus on informing traders and marketers of the risks, and encouraging them to come up with solutions.

Component 4: Public Awareness

Objectives

the general public has a good understanding of HPAI

specific stakeholders have a very good understanding of HPAI

General Public Awareness

The component will utilise a range of channels such as radio, television, posters, leaflets, product labels, and signboards and will focus on how the disease can or cannot be transmitted from poultry to humans and what key behaviour changes are required to reduce the chance of poultry to poultry, and poultry to human infection.

There will be close coordination with MoH and other agencies on public awareness about HPAI.

Targeted education programs

Key stakeholders within the poultry industry such as producers, input suppliers, traders and marketers will be educated about HPAI through a series of trainings and workshops. Also key groups such as local authorities and police will be educated about HPAI.

Component 5: Pandemic Planning

Objectives:

the Department of Animal Health and Production can fulfil its role in the pandemic planning process and the pandemic itself

Planning for emergence of Suspected or Confirmed Phase 4

The DAHP will hold workshops to discuss its role in the situation where Phase 4 is suspected to have occurred, or has been confirmed. The DAHP will participate in all planning sessions conducted under the auspices of the National Committee for Disaster Preparedness.

Pandemic Planning

The DAHP will hold workshops to discuss its role in a pandemic. The DAHP will participate in all planning sessions conducted under the auspices of the National Committee for Disaster Preparedness.

Component 6: Strategy Management

Objectives:

the national animal health strategy is effectively managed in the context of a changing disease situation and complex donor environment.

The activities shown in the National Strategy will be implemented over a period of four years. Strategic management will include

seeking and securing resources from sponsors to finance the strategy,. prioritisation of components and activities according to changing conditions

mobilisation of resources, and monitoring and evaluation of the effectiveness and efficiency of resource use. This will include maintaining an updated resource matrix.

informing donors of current and potential gaps in funding for the strategy

close coordination of use of resources supplied by various sponsors

promote close contact between those agencies currently contributing to aspects of strategy implementation

close cooperation with other the Human Health and Inter-Ministerial Cooperation Components of the overall National Strategy

modifying the strategy as circumstances dictate

Monitoring progress towards objectives will be a key part of strategy management. DAHP will track key issues as they progress through various stages

identification as a policy issue

policy development

piloting and testing of a policy

revision of policy in the light of new information

broad acceptance of policy

broad implementation

For these purposes DAHP will establish and maintain a matrix on progress key issues.

With respect to internal arrangements within the DAHP

NAHPIC will be responsible for overall strategy coordination, and will support directly all activities in Component 2.

The Animal Health Office will support the development of VAHW training in Component 1

The Animal Production-Extension Offices will support and coordinate the demonstration activities in Component 1, all activities in Component 3 and Component 4

The Provincial Offices of Animal Health and district offices will be directly responsible

for all VAHW training and management, and conduct of demonstrations in Component 1

for disease control activities in Component 2

for coordinating with the Animal Production-Extension Offices in Component 3 and Component 4

The DAHP requires an Adviser to advise on the strategy.

IMPLEMENTATION ARRANGEMENTS

The plan presented here is part of the overall government programme to address the avian influenza and pandemic influenza threat to Cambodia. Thus the overall implementation framework under which this plan will be implemented will be as outlined in the UN Joint Programme for addressing avian influenza and pandemic influenza planning that is endorsed by the Government of Cambodia.

Since the plan presented here focuses solely on the needs for tackling HPAI in poultry, it is expected that the Department of Animal Health and Production (Ministry of Agriculture, Fisheries and Forestry) in close collaboration with FAO will play a leading role in implementation of the strategy with key support from other agencies. More detailed implementation arrangements will need to be developed further in collaboration with a number of national, regional and international stakeholders.

Absorption capacity

The Government recognizes the need for increased manpower to support additional inputs necessary to implement emergency preparedness and response plans in response to the threat paused by avian influenza. The Government will provide financial incentives to redeploy staff from sections within the DAHP to support these extra needs.

Monitoring and evaluation

The strategy will be reviewed jointly by the MAFF and donor once a year. Annual technical review may be undertaken if deemed necessary. The strategy will be evaluated by the Government, the donor and an independent consultant after three years. The terms of reference, exact timing and place will be decided later.

Time frame

The activities shown in the national strategy will be conducted within a four year timeframe. Given the limited capacity in emergency disease control within the Ministry, it is planned that the implementation of most of the activities related to capacity building and public awareness will be accelerated to be finished within the first two years. The starting year for this strategy will be 2006.

Indicative budget

The total budget required for the plan is US$15.9 million.

Currently some of the planned activities in this proposal are being or will be funded by two trust fund projects executed by FAO and supported by the Governments of the United States

of America and Germany. The total amount of funds from these projects contributing to the activities defined in this plan amount to US$3.4 million.

It is important to note that the budget presented here is only indicative given the rapidly evolving nature of the problem. Funding requirement may need to be adjusted later to include additional costs related to management, coordination (national, regional and international), backstopping and monitoring and evaluation of the strategy.

Indicative time frame

The activities are planned for immediate to long term implementation. The first year must be seen as the year 2006.

PRINCIPAL RESOURCE DOCUMENTS

1. A Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza (HPAI) FAO and OIE in collaboration with WHO, May 2005

2. Concept Note project on Bio-security and Poultry movement control reinforcement for HPAI prevention, July 2005

3. Concept Note project on National HPAI Surveillance and Control, July 2005

4. Concept Note for Cambodia on HPAI Surveillance by Village Animal Health Workers, July 2005

5. FAO' s response to the avian influenza crisis, September 2005

6. FAO Recommendations on the Prevention, Control and Eradication of Highly Pathogenic Avian Influenza (HPAI) in Asia , September 2004

7. Epidemiology of H5N1 Avian Influenza in Asia and Implications for Regional Control, April 2005

8. Emergency Regional Support for Post- Avian Influenza Rehabilitation, February 2005

FUNDING MATRIX

Activity	National Programme Total	FAO Ger	FAO USA1	FAO USA2	FAO Japan	World Bank Project
Sub-Component 1: Strengthening Veterinary Service	**8,257,775**	579,000				3,545,545
Sub-Component 2: HPAI Surveillance, Investigation and Response	**3,411,720**	768,000				1,184,208
Sub-Component 3: Strengthening Biosecurity in Poultry Production and Trade	**1,030,000**	199,000				108,600
Sub-Component 4: Information, Education and Communication	**1,093,000**	105,000				32,000
Sub-Component 5: Pandemic Planning	**10,000**	0				10,000
Sub-Component 6: Project Management	**2,082,960**	1,129,000				1,629,560
Project total:	**15,885,455**	**2,780,000**	**791,583**	**1,000,000**	**2,000,000**	6,509,913

Chapter 2. Human Health: Action plan for Avian Influenza in Cambodia

Prepared by Ministry of Health supported by World Health Organisation

12 July 2006

Background

Avian influenza (H5N1) has been causing continuous outbreaks in the South East Asian region since 2003. This has lead to the destruction of more than 100 million poultry. There have been over 100 cases of avian influenza in humans and the case fatality rate is approximately 50%. The affected countries with human cases of avian influenza are Viet Nam, Thailand, Cambodia, Indonesia, China and most recently, Turkey. Most cases have occurred sporadically, but there have been some instances of inefficient human-to-human transmission of the virus.

Outbreaks of avian influenza have been occurring in poultry in Cambodia since 2004. In January 2005, Cambodia reported the first human case of avian influenza. Five more confirmed cases were detected since then. All of the six cases have died. Four out of the six cases were exposed to poultry that had died in the vicinity of their house or school. There was one instance of suspected inefficient human-to-human transmission, but the index case had reportedly collected chickens that had died and plucked the feathers from the chickens before cooking them. The remaining case was possibly exposed through environmental contamination.

Given the endemicity of the virus in poultry in the region, it is likely that human cases will continue to occur. This also raises fears about the possibility of the emergence of a pandemic strain of influenza. It is necessary to have plans in place to respond to avian influenza to abate the threat of pandemic influenza.

Purpose of the plan

The purposes of the *Avian Influenza Action Plan in Cambodia* are to describe current surveillance and response activities in Cambodia and to identify the key action areas to fill the gaps in the system. By identifying the key action areas, it is anticipated that donors will be able to identify activities that require funding.

The plan is divided into two sections- Section 1 describes the current surveillance and response activities on the human health side. The linkages between the human and animal health sectors are also explored. Section 2 examines the key action areas that need to be initiated or maintained to ensure the effectiveness of the system. The activities described in this plan are consistent with WHO's *Asia Pacific Action Plan for Avian Influenza- For affected and highly vulnerable neighbouring countries.*

Section 1: Current surveillance and response mechanisms

The Ministry of Health (MoH) operates a communicable diseases surveillance system, which consists of a list of 12 syndromes and diseases. One of the 12 syndromes/diseases under

surveillance is 'acute respiratory illness', which theoretically includes avian influenza. Aggregated data is collected for each of the conditions under surveillance from the Health Centre level, which gets sent through the Operational District level to the Provincial Health Department. The central national government receives the data from the provinces. This system is not yet fully implemented and there are some time delays in the flow of data from the community level to the central level.

With the reporting of human cases of avian influenza, the MoH, using existing surveillance structures, shifted the emphasis of the surveillance activities towards event based reporting from the community level, direct to the central level through a hotline. The key informants from the field were the staff of the health centres, Operational Districts (ODs) and Provincial Health Departments (PHDs) who are responsible for the 12 syndromes/diseases reporting system. Rumour surveillance through the media is also a key component to the surveillance system for the early detection of suspected cases of avian influenza.

In addition to the Outbreak Reporting System, the MoH has been establishing a sentinel influenza-like illness (ILI) surveillance system, which will monitor the epidemiology of ILI in Cambodia and examine the predominant circulating strain of influenza. This system requires support to be able to meet its objectives and will be crucial for detecting increased activity of ILI in the community.

Following the investigations of the cases of avian influenza, several weaknesses in the surveillance system were identified. The cases had an average of 2.5 private sector health visits before they were admitted to a public facility. At the time of admission to a hospital, the patients were suffering severe illness from which they were unable to recover. In addition, the villagers in the proximity to the case knew that someone was very sick, but they did not know what to do.

The main links to the animal side of the avian influenza response are through the weekly meeting of the Avian Influenza Intersectoral Technical Working Group. Representatives from the Ministry of Health, Ministry of Agriculture, Forestry and Fisheries, WHO, FAO and Pasteur Institute regularly attend the meeting. Information from animal and human health sides are shared at this meeting.

Section 2: Key action areas for the control of avian influenza in humans

Some of the activities below have already received funding and are being implemented. Appendix 1 lists the activities, their funding status and provides annual cost estimates.

Key action area 1: **Education for health professionals and the public**

The key objective in producing educational materials for health professionals is to provide information about the key signs and symptoms of avian influenza in humans. It is crucial that when a person presents with a fever and a cough that the health care worker ask questions about whether the patient has been in contact with sick/dead poultry or healthy ducks. In addition, the MoH's hotline number should be widely distributed to allow people to report if they suspect a patient might be suffering from avian influenza.

Develop IEC materials (posters and pamphlets) for health professionals and distribute to all PHDs, ODs and Health centres. The distribution of pamphlets should also be extended to health and agriculture NGOs.

Use TV and/or radio spots for broadcasting in health care facilities with TVs or tape players.

The key objective in educating the general public is that there is currently limited understanding of the disease, how it is transmitted and how the disease can be controlled and prevented. A 10 minute documentary was developed and received significant air time in May- June 2005. A shorter TV spot has also been developed to communicate the key transmission routes and what to do if you think you or a family member has avian influenza. Radio spots were also developed and aired on all national and provincial radio stations. This mass media coverage must continue, and have increased air time especially when cases are reported. Since September 2005, UNICEF have been working closely with the MoH and WHO to develop a communications package for avian influenza and more generally about seasonal human influenza. UNICEF are constructing a communications kit for anyone in Cambodia to use and they are also drafting a communications strategy to support the Royal Government of Cambodia. UNICEF's work is cross cutting a number of Ministries within the Royal Government of Cambodia.
Refine and revise TV and radio spots, if required in an emergency.
Funding for broadcasting
Developing and maintaining a website to provide up to date advice to the public as well as posting media releases and other information (including Q&As)

Key action area 2: **Surveillance, investigation and response**

The provincial Rapid Response Teams with the help of the relevant operational district staff are often the ones who conduct the preliminary investigation and identify the location of residence of the suspected cases. It is crucial that these first responders are adequately trained to assess the validity of the rumour and the pandemic threat (eg are there any other cases in the community?). They must also be able to communicate with the central level rapidly through the use of cell phones.
Annual refresh training on avian influenza surveillance and specimen collection for Rapid Response Teams and OD staff involved in surveillance
Annual support for communication (cell phone cards) at central and provincial levels. Central level support is for the continuous operation of the two hotline numbers.

Given that most Cambodian people go to the private sector when they are sick, it is vital that links be made with the private sector to detect cases of suspected avian influenza. The public sector clinicians also need to be made aware of the vital role in surveillance. Training of public and private sector clinicians has been conducted in high risk provinces (Phnom Penh, Kandal, Takeo and Kampot).
Extend training of private and public clinicians to all other provinces
Conduct regular refresh training to clinicians (public and private sector)

The community will also be a key informant about cases, especially at the village level. Village Health Volunteers (VHV) have been used with success in some of the national program areas and could be very useful for the early detection of avian influenza.
Training VHV in high risk provinces- provide education material, but also ask them to become part of the surveillance system by recognising the symptoms and knowing who to report to.
After assessing the training of VHV in high-risk provinces, further funding would be required to complete training in all provinces.
Follow up and evaluation of training throughout Cambodia.

The influenza-like illness (ILI) system is currently being established in four sentinel locations throughout Cambodia (Battambang, Kampong Cham, Takeo and Phnom Penh). The ILI system will rely on the existing structure and processes of dengue fever sentinel surveillance. The system relies on the strong partnership between the surveillance and laboratory aspects. In Cambodia,

this partnership is between the MoH Department of Communicable Disease Control (CDC) and Pasteur Institute (IPC).
Support for sentinel locations and CDC to manage the data and provide feedback reports
Support for laboratory testing of influenza viruses
Support for IPC to send samples to WHO Collaborating Centre

Once a case of avian influenza has been detected and confirmed by IPC, an investigation is launched immediately. Staff from CDC, IPC and WHO meet up with provincial and operational district staff in the field and begin administering the relevant questionnaires. Standard Operating Procedures (SOPs) for the investigation of avian influenza are currently in development.
All investigators require masks and alcohol hand rub as a minimum level of personal protection. There needs to be a stockpile of PPE specifically for investigations.
All of the government staff involved in the investigation require per diems and travel expenses to be covered.
Funds are also required for local radio broadcast of public education messages and loud speaker announcements.
Funds should also be allocated so serological studies or other epidemiological studies can be conducted regularly. These studies will provide answers about the risk factors for infection and the extent of environmental contamination.
Funds for transporting samples from suspected avian influenza cases in the provinces to IPC, Phnom Penh.

Key action area 3: **Case management and infection control**

There are two national referral hospitals for avian influenza: Calmette Hospital in Phnom Penh and the Siem Reap Referral Hospital. Both hospitals have basic isolation facilities and the staff have received training in infection control and can manage cases of suspected avian influenza. There is a need to expand the number of AI referral hospitals to have greater coverage of the population. Three additional hospitals have been chosen: Kampong Cham Provincial Hospital, Kampot Provincial Hospital and Stung Treng Provincial Hospital. All three hospitals will require upgrades to infrastructure, medical equipment to treat patients and staff training in infection control and case management.

Infection control has not received much attention in hospitals and other health care facilities and there are often inadequate supplies of personal protective equipment (PPE).
Infection control training including the use of PPE for hospital staff in all provinces
Regular purchasing of PPE for use by health care workers in caring for suspected cases of avian influenza
Construction of isolation areas at 3 new provincial referral hospitals.

If a suspected case of avian influenza is detected early enough (eg. within 48 hours of symptoms onset), it is possible to treat the patient with antiviral medications, such as Oseltamivir (Tamiflu®). However, if the patient seeks health care late, the possibility of secondary bacterial infections is high. In this case, treatment with appropriate antibiotics will be required.
Stockpile for treating suspected cases of avian influenza with anti-virals
Ensure adequate supplies of antibiotics at provincial hospital level and at the five referral hospitals.

To minimise the risk of reassortment, all investigators and frontline workers (eg. Health centre staff and staff from Operational Districts) from both the human and animal health sectors should be vaccinated with the seasonal human influenza vaccine.
Annual procurement of seasonal human influenza vaccine

Vaccine distribution and training to frontline health care workers and investigators.

Key action area 4: **Laboratory support**

In Cambodia, IPC is the only laboratory that can perform rapid, reliable and sensitive testing for H5N1 and other respiratory pathogens. Given their current function as on of the national referral laboratories for avian influenza, their workload has increased significantly.
Support for a laboratory technician for IPC

During an investigation, swabs are collected from suspected cases and blood samples are collected from close family contacts to determine if the virus has spread.
Laboratory costs for testing for H5N1 virus in cases and contacts.

Given the instability of the influenza virus, it is necessary to continue detailed virological analysis. IPC conducts these analyses in country to enable rapid dissemination of potentially valuable findings to support public health action. However, samples must be sent to a WHO Collaborating Centre for comparison with global strains and for confirmation of the test result. IPC sends all samples to the Pasteur Institute in Paris, which is a WHO Collaborating Centre.
Costs for transporting samples to WHO Collaborating Centre

Key action area 5: **Pandemic preparedness planning**

Influenza pandemic preparedness has started in Cambodia. The first workshop was held in Siem Reap in August 2005 and was attended by representatives from several key ministries, provincial health departments and non-governmental organisations. A draft *National Pandemic Influenza Preparedness and Response Plan of Cambodia* has been prepared by the MoH. During October 2005, a UN inter-agency mission came to Cambodia to facilitate the next step in pandemic preparedness planning. For the Ministry of Health to continue addressing the health-related issues of a pandemic, funding for the following activities has been requested.
Consultation with key stakeholders through targeted meetings
Workshop to finalise the health sector plan
Preparation and printing of the health sector plan
Dissemination workshops
Support for provinces to conduct their own planning to fit within the national pandemic plan
Implementation of the pandemic preparedness plan through stockpiling, desktop exercises and cross country exchanges of public health officials.

Funding matrix

	2006-2008	**2006-2008**	**2006-2008**	
Key area	**Total funding required**	**Donor commitment**	**Funding gap before WB**	**Proposed for WB**
Key action area 1: Education for health professionals and the public	319,000	10,000	309,000	289,000

Key action area 2: Surveillance, investigation and response	2,636,400	1,120,000	1,516,400	1,496,400
Key action area 3: Case management and infection control	2,300,000	731,100	1,558,900	680,000
Key action area 4: Laboratory support	556,000	174,000	382,000	82,000
Key action area 5: Pandemic preparedness planning for the health sector	712,000	0	712,000	262,000
TOTAL	**6,523,400**	**2,035,100**	**4,478,300**	**2,809,400**

Chapter 3. Information, Education and Communication: increasing awareness and understanding among the public

National Communication Strategy and Action Plan for Avian and Human Influenza, July 2006

BACKGROUND

Cambodia was one of the first countries in South East Asia infected by the highly pathogenic avian influenza, H5N1. As it spread in the early months of 2004, the virus severely hit the subsistence farmers who raise 90 per cent of poultry in the country, causing significant economic losses. In 2005, the first four human cases were reported – all were fatal. In April 2006, there were two further human deaths from the disease. Three of the deaths have been children.

The spread of the H5N1 virus from animal to human has been rare so far and the spread appears not to have continued beyond one person. Nevertheless the virus is of great concern for two reasons. Firstly, H5N1 causes widespread deaths in domestic poultry which particularly devastates subsistence farmers in developing countries. This bird flu can also severely affect humans, often causing death. Secondly, scientists believe there is a very real risk that the H5N1 virus – given enough opportunities – could develop the characteristics needed to transmit from human to human and start a deadly global influenza pandemic.

So for both human and economic reasons, the Government of Cambodia has recognized the need to move urgently to stop the spread of bird flu in this country. A number of government ministries are already tackling the problem, working closely with the UN, NGOs and other partners. Effective control of the virus will require strategic planning and close cooperation across these many sectors and organizations and in recognition of this fact the government has produced the Draft Cambodia National Comprehensive Avian and Human Influenza Plan.

This document, the National Communication Strategy and Action Plan for Avian and Human Influenza, is very much a part of such strategic planning. It is a living document - to be updated as the situation changes and as the effects of communication campaigns become known. UNICEF has been mandated to support the development and implementation of the plan and has expressed its full commitment to supporting the government at all levels in the area of communication.

As a key part in the development of this strategy, a National Avian and Human Influenza Workshop was organized in Phnom Penh, in June 2006, involving communication and avian influenza experts from the Government, the UN and NGOs and others. The results of this workshop, together with in-country research by Institut Pasteur du Cambodge and the United States Agency for International Development/Academy for Educational Development (USAID/AED), global and regional technical materials from the UN, and research and information from the Government, have contributed to this Communication Plan.

INTRODUCTION

Communication – why and how

Why? Because effective communication reduces risk of illness and death;
How? With clear, consistent messages and strong coordination

Communication is a critical part of any successful response to the threat posed by both avian and pandemic influenza. Through sharing knowledge widely, we can reduce the spread of the existing H5N1 virus between animals and to humans, and hopefully avert a human pandemic. But should a pandemic arise, communication will be vital in both providing information and preventing panic.

That a pandemic virus would cause a terrible human tragedy through widespread illness and death is widely understood. And of course a high fatality rate around the world would seriously affect our lives and economies. But what must also be anticipated is the extensive economic and social disruption which could be caused by the spread of fear and panic. Communication in a crisis is essential. People will be demanding information and will need it quickly. The messages must be clear, consistent and calm. They must provide clear details on managing illness and death and avoiding contagion, while at the same time encourage calm and reduce panic. To ensure messages match the need (the right messages at the right time) and remain consistent and calm, coordination is critical.

Current requirements are slightly different, though the need for clear and consistent messages and the best possible coordination is still paramount.

The major difficulty at the moment is to persuade people to change their behaviour to protect themselves and their animals from catching bird and human flu. Efforts to reduce the spread of flu are hampered by a number of factors: People do not fully understand the risks; and they cannot see the benefits of changing their traditional farming or personal hygiene practices. They are not responding to messages to fence their chickens and bury or burn dead birds; they are not reporting poultry deaths; often they do not wash their hands; and children are still handling sick and dead birds. All these behaviours need to change if Cambodia is to reduce the risk of avian and human flu transmission. Therefore communication strategies at this stage must look closely at what will persuade people to change their current behaviour.

The difference to a pandemic is worth noting here: In a crisis people will demand information and will more quickly change their behaviour in order to manage widespread human illness and death. Currently they need to be persuaded that a change in behaviour will improve their situation.

Bird flu in Cambodia

The impact of avian influenza in Cambodia to date is outlined in the Draft Cambodia National Comprehensive Avian and Human Influenza Plan. The Plan also looks at what is already being done to stop its spread. These facts, together with the latest information on transmission and prevention provided by the Ministry of Agriculture, Fisheries and Forestry (MAFF), the Ministry of Health (MOH), the Food and Agriculture Organisation (FAO) and the World Health Organisation

(WHO) to the National Workshop (details available in the Workshop Report) provide the context for this communication plan. The two Knowledge, Attitudes and Practices (KAP) studies conducted by the Institut Pasteur du Cambodge and USAID/AED provide valuable information on how people are responding to the threat. The workshop report for the National Pandemic Influenza Preparedness and Response Plan of Cambodia has also been used.

The details of these reports do not need to be repeated here, but there are a number of important facts from the material which are particularly relevant to a communication strategy. These include:

About the virus
Information about the spread of the virus in birds and the specific risk factors that have led to human infection is limited
But a great deal is known about the spread of human flu and how to stop its transmission
No-one knows exactly what form the virus would take if a human epidemic broke out (e.g. how contagious, how deadly, how quickly a vaccine could be produced, etc)

About the raising of poultry in Cambodia
Ninety per cent of poultry in Cambodia are kept by small backyard farmers with low levels of income and education
Families are dependent on the meat as a food source
Both ducks and chickens roam free because they have to forage for food
Farmers, though aware of bird flu, are uncertain of the exact nature of the risks their poultry are facing
Children often care for the poultry and play with the birds

What people are doing now and what they know about bird flu
Regarding the spread from animal to human, only 38% of respondents in the AED KAP study considered it unsafe to eat birds which had died from bird flu
But 61% of those surveyed in the Pasteur study knew that to protect themselves from getting bird flu they should not eat sick or dead poultry or touch the birds with their bare hands. Still, 45% continued to eat dead birds and 75% touched the animals with their bare hands
Only 6% of households own telephones
On reporting, although 50% knew this was important only 7% actually reported poultry deaths
Most people know about avian influenza through TV and Radio (81%)
After handling poultry one-third of people do not wash their hands

This information gives a good indication of what we need to target in a communication strategy. It shows that even where people have information about what should be done to reduce the risk of transmission of bird flu, they are often not doing it. This may be because it threatens an already precarious subsistence livelihood. It may be because they are not convinced that the behaviour change is really needed for their own welfare, or it may be that the behaviour change is just too hard. It also shows up the gaps in our research, as results vary from study to study.

What is also clear, is that information about the spread of the existing H5N1 virus, or the spread of a new virus, should an epidemic break out, is limited. This means that the communication objectives which are based on our current understanding of what needs to be done should be adapted as more evidence becomes available.

STRATEGY

The overall aim of this communication strategy is to inform the public about avian flu in order to reduce the risk of its transmission. If entirely successful, this would prevent a pandemic caused by a human-to-human variation of the H5N1 virus. But in order to be prepared for a pandemic, the strategy also outlines plans for informing the public about containing the spread of disease in a pandemic and caring for the sick; and using the mass media in a crisis for sharing information and controlling panic.

Objectives

The strategy covers two different phases of the situation - pre-pandemic and pandemic - under which there are four objectives:

Pre-Pandemic

1) Reduce the risk of animal to animal transmission of avian influenza
Reduce the risk of animal to human transmission of avian influenza and limit the spread of human influenza

Pandemic

Contain an emerging human (pandemic) virus
Survive a pandemic

In order to implement these objectives we must draw on our existing knowledge of how bird flu is affecting Cambodia, of how the spread of the virus can be contained and of what people can do to improve the situation.

Details of the implementation of these objectives are mapped out in the matrixes in Appendix 1, but here we will consider the key communication elements of the implementation strategies.

Priority Behaviours

Persuading people to change their behaviour requires addressing important socio-economic and cultural factors and identifying the keys to motivating people to do things differently. This is where discussions with targeted groups are critical. Communities need to be involved in working out the solutions to reducing the spread of the disease in their own villages and towns. The active participation of communities in studying and solving their own problems produces highly effective behaviour change. Given that, they need the latest information on bird flu so that their solutions are based on sound facts for reducing transmission.

Such local solutions should always be taken into account when refining communication plans but from the existing research and knowledge we can already identify priority behaviours. These are the behaviours people must adopt, or actions they must take, to reduce the risks around bird flu. These behaviours should be promoted through all communication activities.

The priority behaviours, developed through the National Workshop and from existing research include:

Priority Behaviours/Actions - Pre-Pandemic
Wash hands frequently with soap and water
Report sick birds

Separate poultry from wild birds and living areas
Stop children touching sick or dead birds
Burn or bury dead birds
Handle, prepare and eat poultry safely
Seek treatment immediately if a fever develops after contact with sick birds

In the longer term, in the case of a pandemic, the focus would be redirected to home-based care of the sick, limiting transmission, and averting panic:

Priority Behaviours/Actions - Pandemic
Wash hands frequently with soap and water, adopt strict personal hygiene
Stay home if sick (hospitals will be quickly overwhelmed in a pandemic)
Minimise contact with patients to carer(s) only
Report fever or illness immediately, if possible
Seek information from the media and local officials
Stay calm

These are the broad outlines of the priority behaviours for the two phases. The strategy tables in Appendix 1 list in full all proposed actions for each of the four objectives. These tables also identify the inhibiting behaviours (what is stopping people from adopting such behaviour) and outline ways these might be overcome through communication.

Messages

The importance of the message in communication cannot be overstated. And the experts all agree: to communicate effectively you must use clear, concise and consistent messages. The same simple message should also be repeated consistently and often and through all available channels.

The quality of messages is critical at all phases and in order to ensure such quality every message should meet these three criteria:

> Is the information in the message **correct** using the latest WHO and FAO technical guidelines?
> Is the message **clear and simple**?
> Is the message **consistent with the priority list?** (i.e. does it promote one of the priority behaviours?)

Core messages should be designed to produce the priority behaviours identified above. And the content should be based on our most up-to-date knowledge of how to stop the spread of avian and human influenza in Cambodia.

Here is an outline of the content for the core messages targeting the priority behaviours:

Pre-Pandemic
Core messages:
Wash hands with soap and water to prevent catching bird flu
Report sick and dead birds to stop the spread of the deadly bird flu
Keep children away from sick and dead birds to stop them catching the deadly bird flu
Prepare and cook poultry carefully to stop catching deadly bird flu (high temperatures kill bird flu)
Additional messages:

Keep poultry away from living areas and away from wild birds to stop the spread of the deadly bird flu
Bury or burn dead birds to stop spreading the deadly bird flu
Cover coughs and sneezes to stop the spread of human flu (it spreads through respiratory droplets)
Immediately report fever above 38°C, cough, sore throat, runny nose and muscle aches- if it is bird flu early treatment is critical

Pandemic
Core messages:
Wash hands often with soap and water
Immediately report fever above 38°C, cough, sore throat, runny nose and muscle aches – early treatment is critical
Isolate yourself, wear mask, carer(s) to be only contact
Cover coughs and sneezes as this spreads the disease to your family (flu spreads through respiratory droplets)
Additional messages:
Avoid crowded places, wear a mask, and keep at least 1m from others
Seek information from mass media
Don't panic

In order to effectively change behaviour in the pre-pandemic phase, messages must be clear and simple with an emphasis on 'doable' actions.

In a pandemic, where people will need the latest information on what is going on, messages must be clear and simple and above all calm and steady.

Channels of Communication

The KAP studies referred to above indicate that 81 per cent of Cambodians are learning about bird flu from radio and television – the broadcast media. But the research also shows that the information is having a limited effect in changing their behaviour to reduce risk.

Communication research shows that interpersonal communication is often more effective at getting reluctant people to change their behaviour. When information is being sought directly by the audience, mass media is the most effective. With one flick of the switch the audience can get the latest information on a disaster, for example. But if they need to be persuaded to change a well-established practice, the village chief, the local monk or teacher will have more influence and impact in a face-to-face discussion. The National Workshop in June identified those in the country who could effectively engage in interpersonal communication. The list includes teachers, monks, village health support groups (VHSG), village health volunteers (VHV), animal health workers, traditional healers, the Red Cross and other NGOs, workers' unions, the women's association, the youth association, and village chiefs.

Choosing the right channel at the right time is also critical for effective communication. And to spread the message as often and as far as possible multiple channels should be used. In addition to mass media and interpersonal channels, we should use mobile outreach, mass organisations and the wide distribution of printed materials.

The following are suggestions about how to use different channels to communicate effectively:

Strengthen interpersonal communication at the community level, by mobilizing existing networks. Government, the UN and NGOs should train and use their resources and networks to mobilize potential interpersonal networks - teachers, monks, local authorities particularly Commune Councils, village health support groups (VHSG)/ village health volunteers (VHV), animal health workers and others – making sure they have IEC materials which focus on the clear and consistent messages around bird flu. UNICEF, working in partnership with FAO and WHO and NGOs, should help governments reach these networks with simple communication materials and then mobilize each network to conduct as much community level discussion as possible.

Combine channels by sending messages about avian flu through broadcast media and posters while creating opportunities for local people to discuss the issue and develop their own solutions for improved poultry handling and human hygiene. For example, an extensive campaign of radio and television spots could be timed to coincide with discussion groups involving local leaders, health workers and farmers and a mass distribution of posters**.** This produces opportunities for both sharing information, developing local solutions and implementing effective behaviour change. All of which revolves around different channels of communication.

Use mobile outreach and discussion. Videos on reducing transmission of bird flu, designed for the general public, could be screened in villages and in schools, followed by discussion on local problems and solutions to the spread of bird flu.

The widespread sharing of knowledge, through multiple channels, is also critical in preventing stigma and discrimination, which severely inhibit the adoption of safe behaviours. The more a subject is talked about in a community and the more knowledge that is available and commonly shared, the less potential there is for discrimination.

Audiences

Understanding the audience is obviously crucial to effective communication and messages must be adapted accordingly. Obviously the style of the message, and the channel you use, should change according to your target audience. A poultry farmer will need different information to a journalist, and the style of any message will be different for a six year old child or an adult who can't read. Each will get their information from difference sources and in different ways.

While messages will basically stay the same, the style and channels will vary.

To help identify the different audiences and understand the best channels of communication to reach them, charts are attached in Appendix 3.

Research, monitoring and evaluation

Research into knowledge, attitudes and practices is critical to planning a communication campaign to change behaviour. Two studies have already been done in Cambodia but further research is needed to fill the gaps. USAID/AED's planned follow up studies should provide some of this information which should be used to further refine the priority behaviours outlined above and of course the messages. Research into how and whether the messages are working is also critical.

Monitoring and evaluation of UNICEF's printed materials has been built into the distribution of these materials and based on these findings messages should be reviewed and adjusted if necessary to promote behaviour change.

But monitoring and evaluation and research for communication are almost impossible in an emergency – it simply takes too much time. An emergency communication strategy must depend on what is already known – the facts now- and use existing experience about communicating in a crisis.

IMPLEMENTATION

The details of the strategies for the implementation of this National Communication Plan are presented in the tables in Appendix 1. The purpose of this section is not to duplicate such details but to outline:

Two communication campaigns to support the implementation of objectives 1 and 2; and
How to use the mass media for the implementation of objectives 3 and 4 should a pandemic develop

Suggestions on who should implement these campaigns are included but may be modified by the National Coordinating Committee on IEC for Avian and Human Influenza.

Communication campaigns for Objectives 1 and 2

Although Objectives 1 and 2 target a number of different priority actions, they do have hand washing and personal hygiene in common. These actions were identified by the National Workshop on AHI Communication as top of the list in terms of feasibility and importance for reducing the risk of transmission of both bird and human flu. So Campaign 1 should focus on these two actions.

Campaign 2 should focus on the other priority behaviours which were considered most important though less feasible (because people are reluctant to change their practices). These include the reporting of sick and dead birds, the separation of poultry when purchasing new stock and from humans, and the safe preparation and cooking of poultry. If we are to make an impact on the transmission of bird flu from animal to animal and animal to human a second communication campaign should be launched now to address these priority behaviours.

We have seen from the research that people are slow in changing their risky behaviour. While we know some of the reasons for this, we need more information on exactly what will get them to change their current practices. The two communication campaigns will need to include activities designed both to find out more answers to these questions, but also to get communities involved in developing their own solutions to the threat of bird flu. This type of activity obviously takes more time to plan and organize.

The immediate activities for the two campaigns are outlined first, followed by the longer term activities.

Campaign 1 - Wash, clean and stay safe- immediate activities

To be **implemented** by MAFF and MOH (with support from FAO, WHO, UNICEF, USAID/AED). The Coordinating Committee on IEC should also enlist the support of NGOs such as the Red Cross and others with strong networks throughout the country.

Hand-washing and personal hygiene campaign in all provinces

Over the next two months, TV and radio spots and posters on hand-washing should be distributed widely. Hotlines, which need to expand their capacity, should emphasize the importance of washing hands and covering coughs and sneezes to stop the spread of bird and human flu. The government, the UN and NGOs should coordinate to support such a national campaign on hand washing and personal hygiene. What makes this readily doable is the existence already of key IEC products on hand washing and personal hygiene and of plans and funds to distribute such materials. Distribution on posters in particular has already started.

Village health workers, village animal health workers, Commune Councils and teachers (because of the particular risk to children) should be brought in to support the campaign through interpersonal communication. As mentioned above, the hotlines also need immediate support to expand their capacity. Hotlines are a particularly effective channel of communication. Because people are taking the initiative and are seeking out information they are far more likely to act on the information being received.

Clear and consistent messages on hand washing and personal hygiene should be continuously repeated through immediate channels for three months and move into the medium-term and long term channels as outlined below under longer term activities.

Campaign 2 - Report, cook, separate and stay safe – immediate activities

The campaign product

To be **implemented** by UNICEF which can draw on Facts for Life experience.

To launch campaign 2 a fact sheet, or small booklet, should be produced with clear and consistent information on bird flu – its transmission and prevention.

What emerges clearly from the research, the advice of experts and the discussion at the National Workshop is that many people do not understand the real nature of the risks posed by bird flu. They know it exists but do not widely understand how it is spread or how to prevent its spread. This lack of understanding is slowing people from adopting the key actions of separating poultry, preparing and cooking safely, burying dead birds and reporting both sick birds and sick humans immediately.

Making the communication task more difficult is the fact that the simple basic messages on transmission and prevention are not collected anywhere in a single communication tool. Immediate action can be taken to address this problem and the following is proposed.

Produce a short fact booklet with clear, concise facts (perhaps in the form of questions and answers) on the transmission of avian and human influenza, and how to stop its spread. The fact booklet should list the priority behaviours and explain briefly why they are important. Explanations should be based on what we already understand are the motivating factors (see strategy tables). As more research becomes available as to why people are not adopting the priority behaviours, the facts can be updated.

The fact booklet should include information on what bird flu is, how it is spread and how to stop its spread. It should also include similar information on human flu. The form and style of this tool could be based on UNICEF's Facts for Life – in particular the supplements on issues such as HIV/AIDS.

These are examples of the "facts" which should be in the booklet:
Influenza spreads from human to human through respiratory droplets that can be breathed in by people in close contact with an infected person
The virus in these droplets can stay alive on surfaces and people's hands or bodies for hours and be picked up by other people
Washing hands with soap and water destroys the virus
Washing clothes and food preparation surfaces with soap and water destroys the virus
Wash your hands often because dirty hands can spread diseases such as bird flu to yourself your family and your children
Bird flu is a deadly virus and is killing large numbers of birds
Although humans do not easily catch bird flu, when they do, they usually die
To protect your flocks from the deadly bird flu separate poultry from wild birds and newly-arrived birds – these may be infected and could spread the disease to your flocks, causing widespread death
Humans can catch bird flu from sick and dead poultry and poultry faeces and the disease is often fatal
Keep your children away from sick and dead birds – because they could catch the deadly bird flu and get sick and die
Report sick and dying birds as this will help control the spread of the disease which is killing your flocks
Seek treatment immediately if you or your family have a high fever and cough, in case it is the deadly bird flu – early treatment can save lives

The campaign plan

To be **implemented** by MAFF and MOH (with support from FAO, WHO, UNICEF, USAID/AED). The Coordinating Committee on IEC should also enlist the support of NGOs such as the Red Cross and others with strong networks throughout the country.

In campaign 2 the fact booklet should be used as follows:
to form the basis for all messages on avian flu and for the production of all IEC materials – radio and TV spots, posters, print materials, short videos.
as a communication tool itself, printed and widely distributed to those who can work on interpersonal communication to change behaviour throughout the community: the Commune Councils, VHSG, VHVs, village animal health workers (VAHWs), monks, village chiefs, teachers, etc so that they can spread the information, either through one-to-one contact in the course of their work, or by organizing discussion groups at village level on bird flu
to provide the basis for the messages going out on the hotlines so that all communication on bird flu is repeated consistently and often

Campaigns 1 and 2 – longer term activities

To **implement** these longer term activities, UNICEF could take the lead in coordinating the work, but this should be discussed by the Coordinating Committee on IEC and other partners identified (e.g. particularly those with strong contacts with television and radio broadcasters).

Same messages and products – different channels

Using the same materials and messages, planning should begin now to involve the additional communication channels which have been identified as critical to effective campaigns: TV and radio programmes (not PSAs), schools, local problem-solving groups and mass organizations. Preparation and organization needed for working with these channels can take months so planning should begin immediately. This will ensure that these channels come into action after three months when the immediate term channels are finishing their campaigns. The messages will thus keep rolling out, repeating over and over again the importance of acting to contain bird flu.

The longer-term channels include:

TV and radio shows: It was noted earlier in this plan that 81% of Cambodians got their information on bird flu from television and radio. Obviously then these channels should be used extensively in the campaign against bird flu. The National Workshop suggested getting messages into game and quiz shows, cooking and comedy shows and other popular programmes. As planning for these programmes is developed 3-12 months in advance this will take some time to implement. Work should begin now to select 3-4 popular programmes on national broadcasters with the greatest audience reach and to speak with their producers about developing messages which can be included in the programmes. Efforts should also be made to get high-profile TV presenters and karaoke stars to "champion" the cause and to promote hand washing and protection from bird flu on air. Existing hand washing and personal hygiene messages together with the fact sheet on influenza should provide the content for the messages and for the discussions with producers and presenters in the mass media.

Schools: Again using the same messages and materials as the basis for information, the Government with support from the UN, NGOs and other groups should roll-out a campaign in primary schools about hand-washing and protection from bird flu. Songs or games for children incorporating messages such as staying away from sick and dead birds could be developed.

Community problem-solving groups: Regular meetings of district officials, farmers' groups, women's and youth groups should be targeted for these discussions. The Government, supported by the UN and NGOs should select 2-3 provinces initially (those hardest hit by bird flu) to organize such groups, to share information on bird flu and to come up with local solutions. Commune Councils could raise avian flu issues in their Commune Investment Plan in order to present it to the District Integration Workshops for raising funds or technical support. The discussions should also consider why people are not changing their behaviours to adopt the priority actions and this research can be fed into future messages.

Mass organizations: Training should be organized for leaders of mass organizations to provide information on bird flu and to stimulate interest in developing solutions to stop the spread of the disease. These organizations can help to spread understanding of the disease through the community through their members.

In all these campaigns, there is an emphasis on how avian and human influenza spreads – and how people can act to contain that spread. Repetition of the clear, consistent messages is critical to their success. So too is the coordination among those organizing the distribution and planning of the campaigns. All those involved in implementing these campaigns should be sharing information on what they are doing so that all channels can be covered and continuity maintained.

Communication Campaigns for Objectives 3 and 4

As mentioned earlier, the focus of communication in a crisis is quite different to that in an everyday situation where there is no perceived risk. Calm and precise information on surviving the crisis is needed immediately. And the fastest, most effective channels for this are the mass media. Therefore this section focuses largely on working with the mass media.

Communication in the early stages of a pandemic and preparation

To **implement,** UNICEF could start work now on preparing generic television and radio spots, and producing a poster with one or two key messages. UNICEF could also provide training on handling the media in crisis situations. The Coordinating Committee on IEC should also identify other partners which can contribute to such preparation, particularly in developing contacts with journalists.

a) Messages - In the early stages of a pandemic, when the disease is emerging, the hand-washing and personal hygiene campaigns outlined above should be intensified in the mass media. By this stage too, people will be looking for information, as they see people in their village falling seriously ill, and dying, and access to the mass media is relatively easy. The messages at this stage must be not only simple and clear, but convey a sense of calm. They must stress the importance of taking positive actions to stay safe, without invoking fear and panic.

Core messages should include:
The influenza virus spreads easily from person to person through the respiratory droplets created by coughs and sneezes
Good respiratory habits and good personal hygiene practices will reduce the spread of the disease
Avoid crowded places, wear a mask and keep a minimum one metre distance from other people
Children are particularly vulnerable, so keep them safe from contagion

For those suspected of having flu:
Influenza-like symptoms include a fever above 38°C, cough, sore throat, runny nose and muscle aches
Seek treatment immediately as this could save your life
Isolate yourself, stay in bed
Wear a mask to protect others (including with carers and close family)

b) Channels - particular emphasis should be placed on the broadcast media, as this will reach the most people, quickly. Radio and TV spots (posters are less useful because they reach fewer people and take more time to distribute) for this phase could be developed and stockpiled now. They should focus on the messages outlined above.

b) Spokespeople - Spokespeople for a pandemic should be identified now. Obviously a Government spokesperson at the highest level will be needed for a major crisis. But in an emerging pandemic, a number of health experts should be trained and ready to speak to the media about what is happening, and what needs to be done to stay safe. These spokespeople should be senior in the government (and possibly the medical profession) and be supported by WHO (for content) and UNICEF (for communication style and delivery). The National Coordinating Committee on IEC for Avian and Human Influenza (see next section) should select such spokespeople now and organize training for them in working with the media in a crisis.

c) Journalists - Develop relationships with key journalists now so that the channels of communication to these journalists are already open *before* a pandemic emerges. Members of

the IEC Coordinating Committee should do this across all levels and channels: International, national and local media in TV, radio and newspapers.

d) Internet – the UN website should carry the latest technical information (written in clear and easily understood language) on avian flu and there should be a link to UNICEF's website which should carry the toolbox (appendix 3). The toolbox will be the "kit" which lists all media products in Cambodia on avian flu and pandemic flu.

Communication in a pandemic

The **implementers** of this phase will be the Coordinating Committee on IEC which will feed information directly to the previously identified Government spokespeople.

Should a pandemic occur, there will be no time for medium or long term planning of communication campaigns, for media training, or for producing complicated IEC materials. The Government must be ready simply to manage the critical short-term communication need - to use the mass media to get the latest information across in a calm and steady manner.

This is where the IEC Coordinating Committee plays an important role. It should:
Provide the identified spokespeople with key messages, based on the latest technical information, about the disease and how to control its spread
Assist the government in designing messages which will calm fears (and thus avert widespread panic)
Reach media gatekeepers and journalists at national and provincial levels to provide the latest technical messages and encourage calm reporting of the pandemic – many of these media people should be the ones with which a relationship has already been established
Update the internet site with the latest information on surviving the pandemic

Emphasis must be placed on getting the latest information out quickly through all channels but particularly through the broadcast, internet and print media. Contact with journalists in an emergency is critical as they are the ones who can send the information quickly and reach the largest numbers of people. All levels of society will be getting their information from the media – from government officials to the village health workers, to the general public. In this situation coordination is critical to ensure that the latest technical information from WHO reaches journalists as soon as possible, through senior Government spokespeople trained in working with the media.

COORDINATION

As can be seen throughout this Plan, the success of any communication strategy depends heavily on the quality of the message and the effectiveness of the coordination. To address these needs, the National Workshop on AHI Communication recommended setting up a National Coordinating Committee on IEC for Avian and Human Influenza. This section looks at the composition and responsibilities of such a committee.

Terms of Reference were developed and recommended by the Workshop and are summarized here. The full TOR is attached at the end of this chapter.

The main purpose of the National Coordinating Committee on IEC for Avian and Human Influenza is to:

Coordinate and ensure implementation of the National Communication Strategy and Action Plan for Avian and Human Influenza to help control the present outbreaks of avian influenza in birds, the spread of avian influenza from birds to humans, the spread of human influenza and the possible outbreak of a pandemic

To ensure coordinated, effective and focused IEC interventions as well as clear, correct and consistent key messages relating to Highly Pathogenic Avian Influenza

To provide regular and periodic review of the communication activities and messages on avian influenza in order to adjust the activities when needed

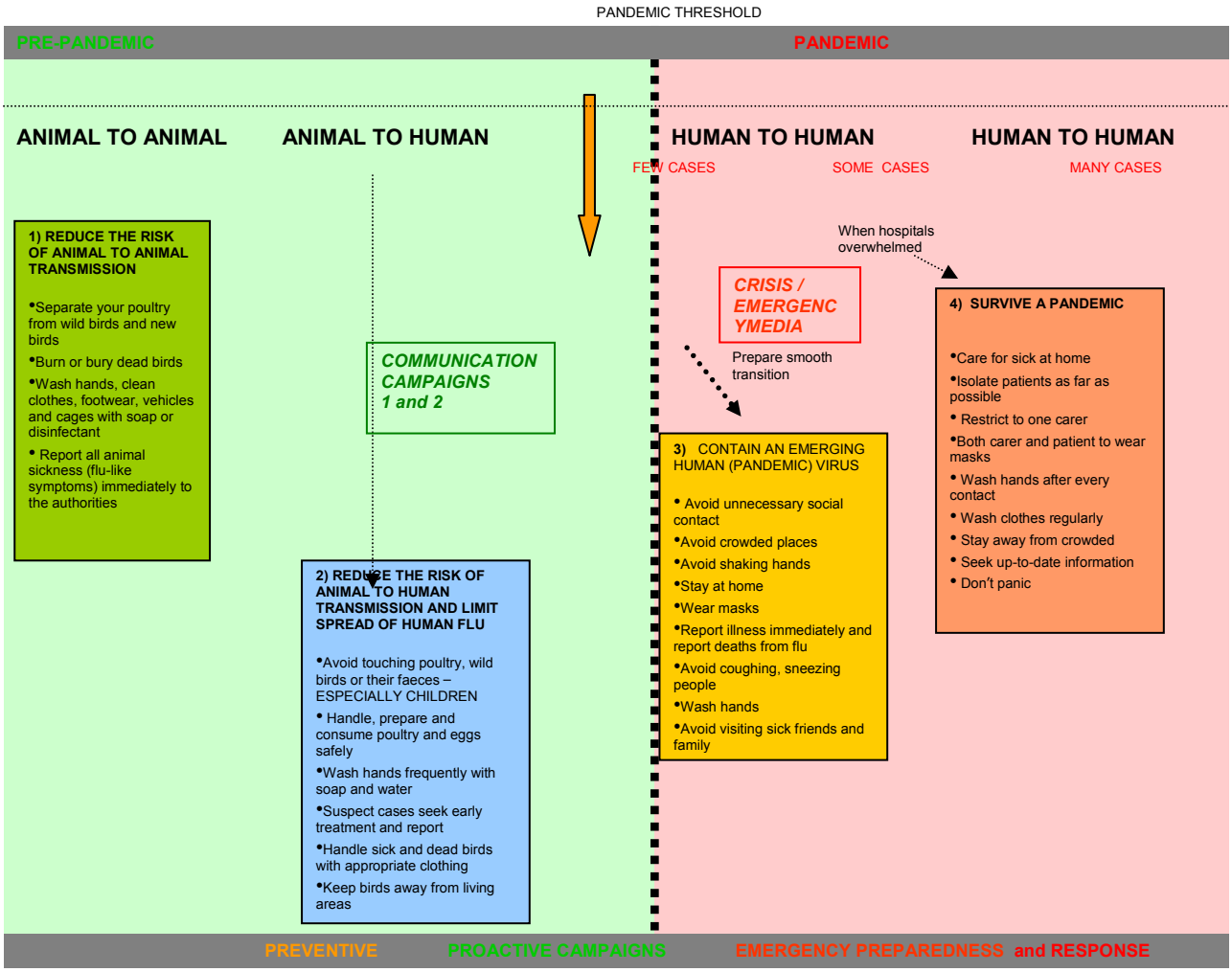
The National Workshop also outlined the structure for the Committee after noting that the control of avian influenza cuts across many sectors of government, the UN, NGOs and civil society. In order to bring all these groups together, it was proposed that two key ministries that are actively involved in communication on Avian and Human Influenza, the Ministry of Agriculture, Fisheries and Forestry (MAFF) and the Ministry of Health (MOH), would be joint moderators of the IEC Coordinating Committee for Phases 3-5 (refer to WHO guidelines on Phases). Should a pandemic emerge and emergency operations come into place (Phase 6), the National Committee for Disaster Management (NCDM) would take over the moderator's role. UNICEF is to be the Secretariat through all Phases.

FUNDING

A brief comment should be made here about budgets for communication activities. Appendix F includes information on budgets, available funding and un-met resource requirements for activities including communication. This National Communication Strategy Plan will not duplicate such work, but these budget Appendices should be referred to and updated as necessary by the members of the National Coordinating Committee on IEC.

STRATEGY TABLES

The strategy tables outline the details for the implementation of the four Communication Objectives of this National Communication Strategy. They are based on information from experts in the Government, the UN, NGOs and community-level research. They draw on well-known and widely-used communication methodologies and behaviour change expertise available throughout the UN, particularly in UNICEF, WHO and FAO.


PANDEMIC THRESHOLD
PRE-PANDEMIC
PANDEMIC
ANIMAL TO ANIMAL
ANIMAL TO HUMAN
HUMAN TO HUMAN
HUMAN TO HUMAN
FEW CASES
SOME CASES
MANY CASES
1) REDUCE THE RISK OF ANIMAL TO ANIMAL TRANSMISSION
•Separate your poultry from wild birds and new birds
•Burn or bury dead birds
•Wash hands, clean clothes, footwear, vehicles and cages with soap or disinfectant
• Report all animal sickness (flu-like symptoms) immediately to the authorities
COMMUNICATION CAMPAIGNS 1 and 2
2) REDUCE THE RISK OF ANIMAL TO HUMAN TRANSMISSION AND LIMIT SPREAD OF HUMAN FLU
•Avoid touching poultry, wild birds or their faeces – ESPECIALLY CHILDREN
• Handle, prepare and consume poultry and eggs safely
•Wash hands frequently with soap and water
•Suspect cases seek early treatment and report
•Handle sick and dead birds with appropriate clothing
•Keep birds away from living areas
When hospitals overwhelmed
CRISIS / EMERGENCY MEDIA
Prepare smooth transition
3) CONTAIN AN EMERGING HUMAN (PANDEMIC) VIRUS
• Avoid unnecessary social contact
•Avoid crowded places
•Avoid shaking hands
•Stay at home
•Wear masks
•Report illness immediately and report deaths from flu
•Avoid coughing, sneezing people
•Wash hands
•Avoid visiting sick friends and family
4) SURVIVE A PANDEMIC
•Care for sick at home
•Isolate patients as far as possible
• Restrict to one carer
•Both carer and patient to wear masks
• Wash hands after every contact
• Wash clothes regularly
• Stay away from crowded
• Seek up-to-date information
• Don't panic
PREVENTIVE
PROACTIVE CAMPAIGNS
EMERGENCY PREPAREDNESS and RESPONSE

OBJECTIVE 1: REDUCE THE RISK OF ANIMAL TO ANIMAL TRANSMISSION

PROPOSED ACTION	**CURRENT BEHAVIOUR**	**REASONS FOR CURRENT BEHAVIOUR**	**BARRIERS TO CHANGE** 'Lock'	**STRATEGY – *'Keys'* for CHANGE**			SUGGESTED INDICATORS
				MOTIVATION Activities and messages	ADVOCATES	PROPOSED CHANNELS	
Separate your poultry from wild birds and new birds	Raise free-ranging birds with poor hygiene	***Tradition, custom, low maintenance, inexpensive***	More work, feeding and cleaning; cost & availability of feed if birds can't forage; external idea, not local	Provide technical assistance and training, materials and start up costs for feed; local demonstration project to show increased yield and improved productivity; organise community focus groups for developing local solutions; raising chickens this way keeps them healthier and raises your income	MAFF, FAO, District Govt. , Commune Councils, through networks throughout country VAHWs	TA Project Community meeting IPC – VAHWs and civil society organizations & volunteers Radio & TV news Newspaper articles	Proportion of farms with domestic birds separated by physical barriers from contact with wild birds and their faeces
Burn or bury dead birds	Lack of care over proper disposal – sometimes thrown into water sources; carcasses eaten by people or fed to other animals	***Threat of income loss – sell or eat rather than bury to minimise loss; no perceived risk; valuable protein source for people and animals***	Poverty; lack of education on the risks; loss of investment and income; can't afford not to eat dead birds	Provide incentives for burying (consider compensation) Education and guidance from local authorities, especially VAHWs Dead and dying birds can cause sickness in people. Protect yourself, protect others, protect your animals.	MAFF, FAO, District Govt. , Commune Councils, through networks throughout country VAHWs	Radio and TV spots Training VCD Testimonies from successful adopters! (other villagers) Fact sheet on bird flu Posters in strategic places, flyers for IPC	Reported safe disposal Physical evidence of disposal sites
Wash hands, clean clothes, footwear, vehicles and cages with soap or disinfectant	Don't wash thoroughly or as frequently as needed (especially between farms and markets); insufficient, infrequent cleaning of areas where birds are kept	***Lack of time, availability of water and soap; people don't perceive the risks; just not practical; unpleasant task; part of nature***	Low or no sense of risk, cost of cleaning in both time and products	Help stop the spread of bird flu in your community with intensive hygiene; keep your poultry healthy with good hygiene; provision of clear information on importance of hygiene in preventing illness and death among poultry	MAFF, FAO, District Govt. , Commune Councils, through networks throughout country VAHWs	Radio phone ins, discussion programmes IPC – Vets, animal health workers, district officials Community meetings; posters and leaflets; Fact sheet on bird flu	Reported washing of hands, clothes/footwear/vehicles and cages; demonstrated washing practice
Report all animal sickness (flu-like symptoms) immediately to the authorities	Hide animal sickness and deaths, don't report or report late	***Fear culling and loss of income, don't know where or what to report***	Lack of compensation – devastating to their livelihoods, misinformation about disease in the community	Compensate farmers or give practical incentives The virus is deadly and highly contagious. If you don't report it quickly it will spread to your friends and neighbours farms The virus can also be transmitted to humans. Your family (especially your children) are at risk.	Prime Minister Minister of Agriculture Country Rep of FAO Media celebrity Community leaders Religious Leaders	Radio phone ins, discussion programmes IPC – Vets, animal health workers, Community meetings Fact sheet Posters and leaflets in strategic places	Proportion of people finding dead birds who report them; speed with which people are reporting "immediately"; % of people who know who to report to

OBJECTIVE 2: REDUCE THE RISK OF ANIMAL TO HUMAN TRANSMISSION AND LIMIT SPREAD OF HUMAN FLU

PROPOSED BEHAVIOUR	**COMMON BEHAVIOUR**	**REASONS FOR CURRENT BEHAVIOUR**	**BARRIERS TO CHANGE** 'Lock'	**STRATEGY – *'Keys'* for CHANGE**			**SUGGESTED INDICATORS**
				MOTIVATION Activities and messages	ADVOCATES	PROPOSED CHANNELS	
Avoid touching poultry, wild birds or their faeces - ESPECIALLY CHILDREN	Unsafe handling of both live and dead birds; children play with sick birds as easier to catch, also look after poultry	Lack of knowledge of correct handling and of the risks; close living conditions with birds; children contribute to family livelihood through care of poultry	Poverty, tradition, lack of education on risks	Overall message: There is a serious new disease affecting chickens, ducks, geese, pigeons, quail and other wild birds. It can be passed to humans. Some people have died from the disease so you must follow this important easy to follow advice to protect yourself.	Prime Minister Minister of Agriculture Country Rep of FAO Celebrity Ambassador (Jackie Chan or other superstar?) Community leaders Religious Leader	Radio spots TV spots Newspaper ads Fact sheet on bird and human flu Short public information films (that can be repeated frequently) Posters and Leaflets in strategic locations	Observation of children on poultry farms; reporting of handling practices
Handle, prepare and consume poultry and eggs safely	Unsafe preparation and cooking of birds and bird products	Lack of knowledge of correct preparation and lack of understanding of risks	No perceived risk, lack of education on bird flu	Bird flu can be transmitted to humans. Cook poultry and eggs properly and you kill the virus and keep your family safe			Report of poultry handling, preparation and consumption
Wash hands frequently with soap and water	Insufficient and infrequent hand washing	Lack of perceived risk, inconvenient, water and soap not handy or not available at all	Bored of hygiene promotion, cost of soap, convenience of water supply	Improving your hygiene can save you and your loved ones from bird flu		IPC with Vets, health workers and Village animal health volunteers	Reported hygiene practices (after handling birds and coughing, sneezing)
Suspect cases seek early treatment and report	People manage sickness at home until really serious	Fever, flu fairly common so no heightened sense of risk, home based treatment common	No perceived risk – don't die of flu, lack of access to health services	Early treatment can increase you chances of a quick recovery. Have fever, cough after handling birds think "Bird flu" and see treatment immediately			Proportion of people who sought treatment for fever within 7 days after close contact with sick birds
Handle sick and dead birds with appropriate clothing	Handle without due care	Low or no perceived risk, impractical	Impractical, too expensive	Help stop the spread of bird flu in your community where it is killing many birds and threatening the lives of your families			Reported safe handling; demonstration of safe handling
Keep birds away from living areas	Continue to live around poultry	No perceived risk, have always done this	Tradition, they like their birds, no perceived risk	Keep your family safe from the deadly bird flu Coughing and sneezing spreads flu. You can greatly reduce spread by covering your mouth with handkerchief or karma. Protect those you love by doing this	Parents (Mothers) Teachers Peers (self image) Commune Council, Monks VHWs, doctors, VHSG	Education through schools and the media – TV and radio spots Also mobile outreach, videos, posters Mass organizations	Proportion of farms with physical barriers for poultry Reported increase in covering coughs
Cover coughs and sneezes with handkerchief	Don'r use handkerchiefs	Handkerchiefs not available, don't see risk	Cost of handkerchiefs, lack of habit of using				

OBJECTIVE 3: CONTAIN AN EMERGING HUMAN (PANDEMIC) VIRUS

PROPOSED ACTION	**COMMON BEHAVIOUR**	**REASONS FOR CURRENT BEHAVIOUR**	**BARRIERS TO CHANGE** 'Lock'	**STRATEGY – *'Keys'* for CHANGE**			INDICATORS
				MOTIVATION Activities and messages	ADVOCATES	PROPOSED CHANNELS	
Avoid unnecessary social contact Avoid crowded places Avoid shaking hands Stay at home Wear masks Report illness immediately and report deaths from flu Avoid coughing sneezing people Wash hands Avoid visiting sick friends and family	Visit markets, shops, cinema, pagoda, school travel on public transport, etc as part of normal life Don't report flu usually	***Normal part of life***	Need to shop, get food, go to work, school Social contact is even more important in a crisis or emergency	There is a serious flu virus circulating – people can have the virus before they show symptoms. The best way to protect yourself is to stay at home. Keep calm - we can get through this together Such flu epidemics happen every 30-40 years. It has happened before - we can get through it. The worst will be over in a few weeks time	Minister of Health, WHO, Well known doctors, village health workers, Red Cross, commune councils	Hotlines Press information session in advance – senior editors Regular press briefings Radio and TV announcements, phone in, talk shows TV – PSAs, programmes Posters, banners Mobile announcements Loudspeakers Pamphlets Billboards Sides of buses, motos, cyclos Internet	% of people staying home People wearing masks in public Reports of more people knowing where and who to report to; Increase % of people reporting
		Need to shop, go to markets, visit family		This is an emergency, but it is a temporary situation. Avoiding contact is the MOST effective way to prevent yourself			
		Stigma from wearing masks, don't have any	Masks not available, too expensive	Keep calm and take precautions such as using masks, karmas make good masks			
		Don't see need	Don't know where, who to report to	Children are very vulnerable – keep them at home. Don't worry - they can make up the lost schooling – I t is more important to protect them from the virus at this time			
		Not aware of the problem		Make everyone aware of the need to cover nose and mouth. Quickly walk away from anyone with coughing and sneezing			
		Strong desire to see friends and family		Minimise your movement away from home to protect yourself from catching the virus. It will help keep your family safe			

OBJECTIVE 4: SURVIVE A PANDEMIC

PROPOSED BEHAVIOUR	**COMMON BEHAVIOUR**	**REASONS FOR CURRENT BEHAVIOUR**	**BARRIERS TO CHANGE** 'Lock'	**STRATEGY – *'Keys'* for CHANGE**			SUGGESTED INDICATORS
				MOTIVATION Activities and messages	ADVOCATES	PROPOSED CHANNELS	
Care for sick at home Isolate patients as far as possible Restrict to one carer Both sick person and carer to wear mask	Go to hospital (but hospitals are overwhelmed) Houses are small, everyone in one room Usual for several family members to share care No-one ever wears masks when sick	*If seriously sick need medical help* *House design, low income* *Family would share the care* *Uncomfortable, hot Would cause stigma*	Fear, panic, love for patient want the very best care Houses designed that way in low income areas Custom Don't have masks	Keep calm. Many people are sick and the hospitals and health centres are full. Now best to care for the sick at home. Here are some simple instructions for you to follow. Patients are highly infectious. If possible keep other family members away. Try to protect other family members as much as possible This virus is very infectious. If the patient wears a mask it will help protect the carer. The carer should wear a mask/krama to give them extra protection	Minister of Health, WHO, Well known doctors, village health workers, Red Cross, commune councils	Mass media, including international, national, community and local television and radio and newspapers, internet	People staying at home, hospitals become less crowded Less people getting infected
Wash hands after every contact Wash clothes regularly	Don't wash hands or clothes often enough	*Not aware of seriousness of risk*	Restricted access to water, soap – low income	Washing hands very frequently is good protection. Keep water and soap nearby and wash often			
Stay away from crowded places Seek up-to-date information Don't panic	Need food and medicine Will seek information but may be sick, caring for sick Panic	*Haven't stockpiled any food* *Too busy* *Fear of illness and death*	May have limited supplies Fear of dying or losing family or children Fear of getting sick	Risk of infection increases in crowded places. If you have to go to the market, wear a mask To be based on latest technical information and existing logistical situation. Must convey a sense of calm, a message not to panic, the need to stay clear-headed in order to increase your chance and your family's chance of survival Must stay calm and keep a clear head in order to keep yourself and your family safe. Messages on protecting yourself must be delivered in a calm and clear way	Prime Minister, Minister of Health and other previously identified spokespeople for the pandemic	Mass media, including international, national, community and local television and radio and newspapers, internet	No evidence of panic, people seeking information and acting accordingly Panic is averted, people respond to information messages

National Coordinating Committee on IEC for Avian and Human Influenza

TERMS OF REFERENCE

Background:

Outbreaks of avian influenza have been occurring in poultry in Cambodia since 2004. As of June 2006, Cambodia has six confirmed human cases resulting in six deaths, including three children. Most of these deaths have been linked to direct contact with diseased or dead poultry in rural areas.

To control the disease in birds and reduce the opportunity for human infection, the Ministry of Health (MOH) and Ministry of Agriculture, Forestry and Fisheries (MAFF) launched a range of public awareness-raising campaigns with support from UNICEF and Academy for Educational Development (AED). IEC materials focusing on key public health and animal health messages have been developed and are being disseminated through intensive information and communication campaigns in all of the country's 24 provinces.

An informal working group has been formed to coordinate the many communication activities surrounding avian and human influenza, and to ensure the implementation of the National Communication Strategy and Action Plan for Avian and Human Influenza, which is part of the Cambodia National Comprehensive Avian and Human Influenza Plan.

Main Purpose:

To coordinate and ensure implementation of the National Communication Strategy and Action Plan for Avian and Human Influenza to help control the present outbreaks of avian influenza in birds, the spread of avian influenza from birds to humans, the spread of human influenza and to prevent the possible outbreak of a pandemic.

To ensure coordinated, effective and focused IEC interventions as well as clear, correct, creative and consistent key messages relating to Highly Pathogenic Avian Influenza.

To provide regular and periodic review of the communication activities on avian influenza in order to adjust the activities when needed.

Working Mechanism

The Moderators, through the Secretariat, will call a meeting once a month to share updated information, and discuss the implementation of the National Communication Strategy. In case of emergency, a meeting can be called at short notice. Where possible, this meeting will immediately precede the Avian and Pandemic Influenza Partnership Meeting.

Related materials will be shared through email to the different organisations involved in avian influenza communication.

Roles and Responsibilities:

Ensure the effective implementation of the communication strategy by monitoring, guiding and coordinating the communication activities implemented by different agencies.

Convene monthly meetings with Government, United Nations agencies, NGOs and civil society involved in all aspects of communication for avian and human influenza and when necessary share updated emergency-related information, discuss issues and action required. Prepare minutes of the meetings.

Coordinate closely with all relevant ministries and ensure that information flows according to procedures included in the National Communication Strategy.

Moderators

The control of avian influenza, and the management of an emergency pandemic, cut across many sectors of government, the UN, NGOs and civil society. In order to bring all these groups together, two key ministries who are actively involved in communications on Avian and Human Influenza, MAFF and MOH, will be joint moderators of the Communication Co-ordination Committee on Avian Influenza, for Phases 3-5. MAFF and MOH will moderate the Committee through Phases 3-5 and NCDM will moderate at Phase 6, if emergency operations come into place. UNICEF will be the Secretariat.

Organisations involved in AI Communication

The following organizations will be on the Committee. This does not exclude others from joining as they become involved in AI communications.

Ministry of Agriculture, Forestry and Fisheries, H.E. Yim Voeunthan, Secretary of State (co-chair)
Ministry of Health, H.E. Professor Eng Huot, Secretary of State (co-chair)
UNICEF (secretariat)
National Committee for Disaster Management
Ministry of Information
Ministry of Rural Development
Ministry of Education, Youth and Sports
Office of the UN Resident Coordinator
World Health Organisation (WHO)
Food and Agriculture Organisation (FAO)
United Nations Development Programme (UNDP)
USAID
Academy of Educational Development (AED)
Cambodian Red Cross/International Federation of Red Cross

Chapter 4. National response: Inter-Ministerial Cooperation

Action Plan to Support Inter-Ministerial Cooperation for Pandemic Influenza Preparedness in Cambodia

Foreword

For the past three years Cambodia has been combating and controlling avian influenza both in the fields of animal and human health. The H5N1 virus has killed six people to date and outbreaks among birds continue to exist in the rural communities, namely in the southern provinces of the country. Concerns are increasing that H5N1 may be developing into a human influenza virus, that may cause a pandemic leading to widespread deaths and the interruption of basic public services, security, public order, which would severely impact on the social economy. Collective national efforts are now required in order to minimize loss of life and socio-economic disruption. This is being achieved by combining Cambodia's national animal and human health plans with an inter-ministerial cooperation Plan and a national Information, Education and Communication Plan into one integrated document.

Recently, and in close collaboration, three government entities, the Ministry of Agriculture, Forestry and Fisheries, Ministry of Health, and the National Committee for Disaster Management (NCDM) together with support from the UN system in Cambodia, produced this *National Comprehensive Avian and Human Influenza Plan*, which stems from a joint project between the government and the UN system on avian influenza and pandemic control, that was signed by HE Deputy Prime Minister Sok An and Mr. Douglas Gardner, the UN Resident Coordinator, on 16 December 2005.

This chapter describes the structure as well as the role and planned pandemic response coordination activities of the National Committee for Disaster Management (NCDM) which has been given the mandate to coordinate a whole of government response and recovery in the event of a pandemic.

To effectively manage the situation during the pandemic and to minimize human casualties requires a strategic approach and close cooperation between all sectors and organizations, including civil, military and private societies. In this regard, the National Committee for Disaster Management as the central entity and coordinator on risk reduction and emergency management in Cambodia, chaired by the Prime Minister together with its all level of authority such as Committees for Disaster Management at municipal/provincial, district and commune levels, wish to solicit participation from all entities, including ministries, UN agencies, International Organizations, Non-Governmental Organizations, civil societies, communities and the private sector in this process to ensure good cooperation and success at all stages, including preparedness, response and restoration in the aftermath of the crisis.

May we be successful in jointly overcoming this critical threat and may the world be prepared to manage a global pandemic when it arrives.

Dr. Nhim Vanda

Senior Minister and 1st Vice President

National Committee for Disaster Management

October 2006

I. General Framework:

Background and Objectives:

The continued presence of Avian Influenza and its threat to human livelihoods and health, combined with the threat of a possible human influenza pandemic call for strong inter-ministerial cooperation to effectively reduce the risk to human lives and livelihoods. It is recognized that a human pandemic would affect all citizens, all organizations, and all government levels.

The basic cooperation framework for AHI recognises that the technical agencies, MoH and MAFF, are lead agencies in their respective areas of expertise. It also recognizes that roles and responsibilities must be defined at different organisational levels, and at different phases during the pandemic, recognizing the necessity to shift focus as the pandemic phase shifts.

This action plan is meant to complement and support the existing plans and efforts of the MoH and MAFF for Human and Animal Influenza, respectively. It is designed to help secure sufficient resources to provide coherent inter-ministerial cooperation in support of National Avian and Human Influenza efforts including National Pandemic Planning.

II. Terms of Reference for the National Committee for Disaster Management (NCDM) related to Avian and Human Influenza (AHI)

Background and Objectives:

As the inter-ministerial arrangements for public health emergencies, particularly those related to a potential pandemic emergency, are recognized to be similar to those required for natural disaster management, the National Committee for Disaster Management (NCDM) has been designated to serve as the focal point agency for inter-ministerial cooperation on AHI with particular emphasis on Pandemic Influenza Preparedness. It is also recognized that the current terms of reference for the NCDM, which are focused on flood and drought disasters, are not appropriate for managing an infectious disease emergency.

The objectives of this section are to establish appropriate terms of reference, including roles and responsibilities, for the NCDM for AHI activities. Section III presents the steps and resources required to ensure the NCDM and NCDM Secretariat have the necessary capacity to carry-out these new AHI roles and responsibilities.

Note: Much of this document is adapted from the three-part NCDM "Yellow Book" report of May 2001 which is comprised of: (1) Report of the Capability and Capacity of NCDM; (2) Five-year Institutional Development Strategy of NCDM; (3) Two-year plan of Action for NCDM Development. The original document has been modified substantially to address the specific TOR of AHI, including a more focused action plan to be implemented in a shorter time frame.

Description of The National Committee for Disaster Management (NCDM) from the 2001 report:

In 1995, as a result of the country's experience with regularly occurring disasters, the Royal Government of Cambodia (RGC) established a National Committee for Disaster Management (NCDM) through a Sub Decree (No. 54 ANKR-BK) signed by the Prime Minister and later amended in 1999. Under this Sub-decree, an organizational structure is outlined stating the membership of NCDM among RGC Ministries. It also includes the designation of the Provincial Governors and the provincial level departments as members of the Provincial Committee for Disaster Management (PCDM). At the district level, District Chiefs and relevant district level officers are designated members of District Committee for Disaster Management (DCDM). While membership is almost entirely composed of government organizations, the Sub-decree also provides instructions on the important role and

membership of the Cambodian Red Cross (CRC) in NCDM and their provincial and district branches in PCDM/DCDM. In addition to these, at the national level, a General Secretariat headed by a Secretary General and composed of five (5) departments was also organized and established to perform implementation of roles and responsibilities under the mandate of the Sub-decree.

Principles of Disaster Management as they relate to Avian and Human Influenza

The following principles of disaster management identified in the 2001 NCDM report are particularly relevant to AHI:

Effective Disaster Management is a carefully planned and implemented set of actions by different organizations who control resources that are critical in reducing impacts of disasters. Resources include: qualified personnel, transport, evacuation centres, early warning, relief supply, emergency health assistance, restoring damaged livelihood and many others. There is no single organization who can respond to the variety of urgent needs of affected communities.

Actions before disasters strike such as planning, training of personnel, stockpiling of relief materials, building of flood resistant pagodas and schools and designating them as evacuation centres and many others covered under the prevention-preparedness-mitigation aspects of disaster management are proven to be effective in reducing loss of lives, and properties. They are also more cost effective in relation to post disaster action.

When organizations work together under a cohesive strategy and action plan, they not only become more efficient, but their assistance is timely and appropriate and meeting the urgent needs of the affected community.

Organizations will work better in the future if their relationships, roles and responsibilities are well understood and more importantly, a coordinating body such as the NCDM is acting as a convenor and facilitator for cooperative action.

In all these phases, cooperation and participation of various organizations, particularly of an "effective RGC inter-ministerial system in disaster preparedness, response and rehabilitation" is very important in reducing the effects of disasters to Cambodia's communities.

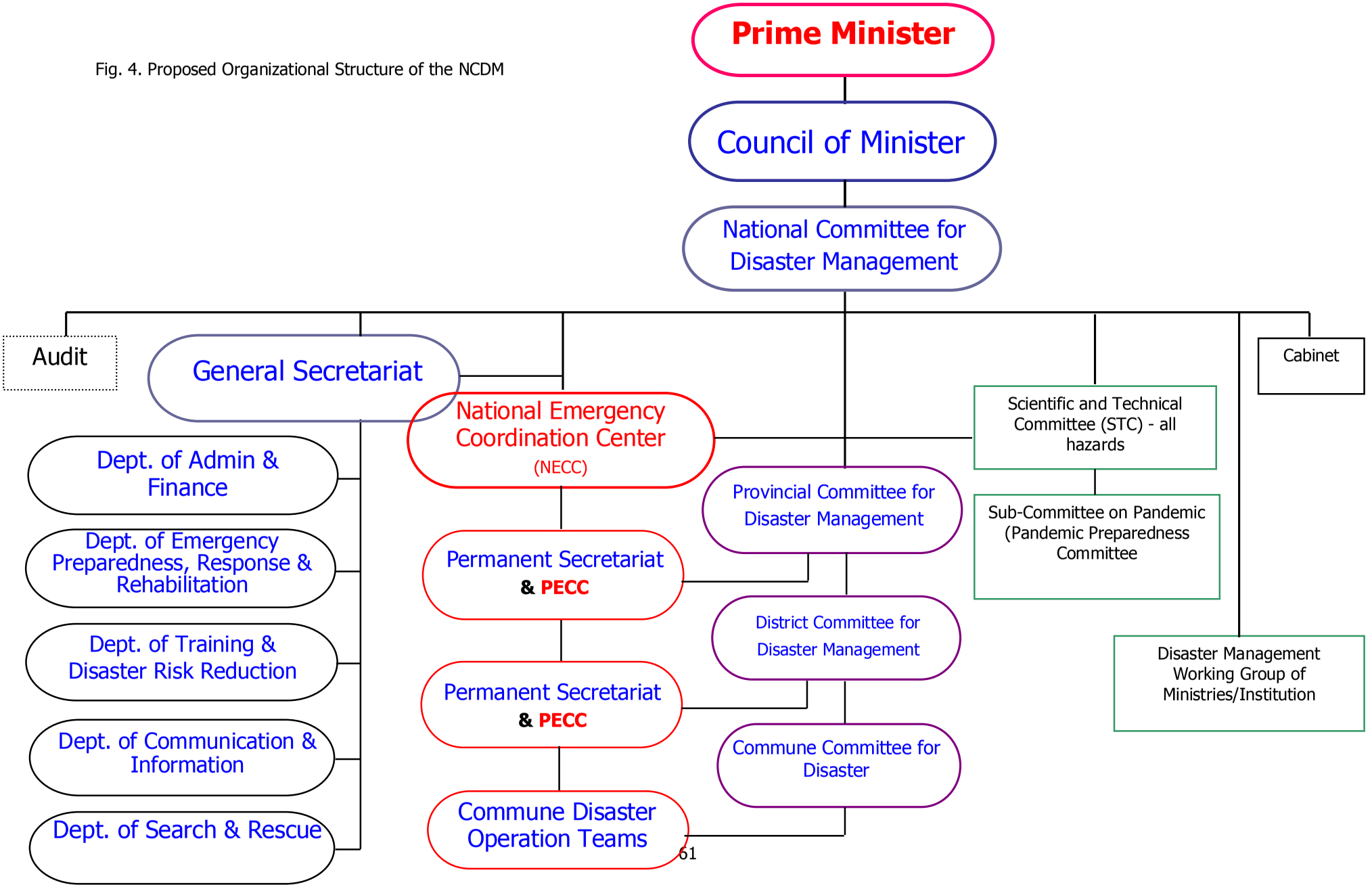
In addition to the important considerations for effective disaster management mentioned above, and in recognition of the importance of high level leadership, participation of communities, and coordinated actions, infectious disease emergencies also require some special considerations. These terms of reference are meant to address these special considerations.

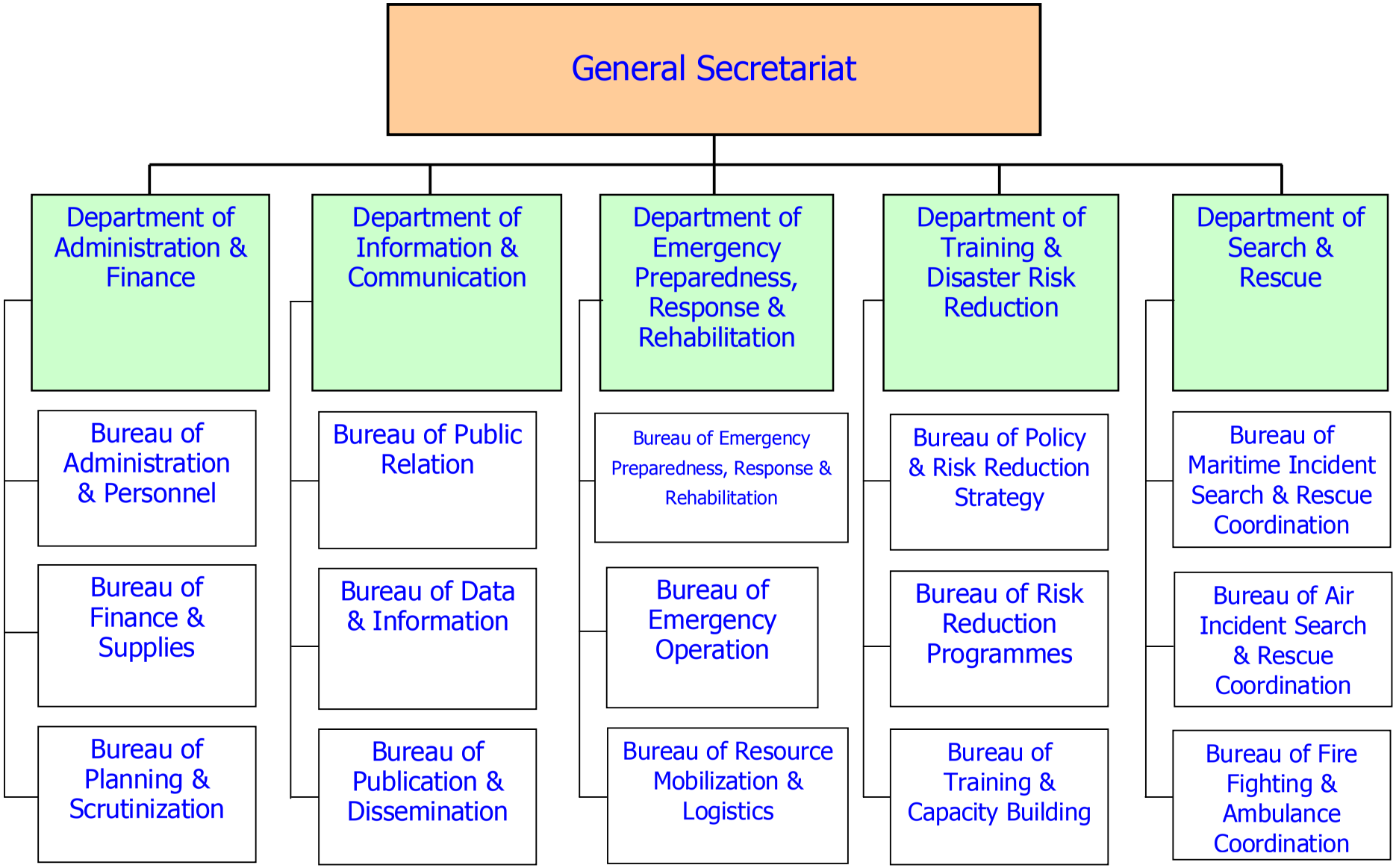
Proposed Structure of the NCDM related to Avian and Human Influenza

The proposed structure of the NCDM both for Avian and Human Influenza and future emergency management is based on the existing structure with the addition of an Emergency Coordinator position at the Undersecretary of State Level. This Emergency Coordinator will be responsible for overall operational and day-to-day mangagment of NCDM departments as well as leading the effort to develop the National Pandemic Preparedness Plan.

The proposed structure is not meant to radically change the existing structure for disaster management, but to enhance it for an expanded role that includes coordination of prevention, preparedness, response, and recovery to pandemic influenza (or other national infectious disease emergencies). It is understood that significant institutional strengthening of NCDM and particularly the NCDM secretariat will have to take place in order to effectively carry-out this new role, while also strengthening its traditional role in flood and drought emergencies.

Fig. 4. Proposed Organizational Structure of the NCDM




General Secretariat
Department of Administration & Finance
Department of Information & Communication
Department of Emergency Preparedness, Response & Rehabilitation
Department of Training & Disaster Risk Reduction
Department of Search & Rescue
Bureau of Administration & Personnel
Bureau of Finance & Supplies
Bureau of Planning & Scrutinization
Bureau of Public Relation
Bureau of Data & Information
Bureau of Publication & Dissemination
Bureau of Emergency Preparedness, Response & Rehabilitation
Bureau of Emergency Operation
Bureau of Resource Mobilization & Logistics
Bureau of Policy & Risk Reduction Strategy
Bureau of Risk Reduction Programmes
Bureau of Training & Capacity Building
Bureau of Maritime Incident Search & Rescue Coordination
Bureau of Air Incident Search & Rescue Coordination
Bureau of Fire Fighting & Ambulance Coordination

The Roles and Responsibilities of the NCDM General Secretariat related to Avian and Human Influenza

Notes: Until pandemic phase 6 (see Appendix G), the normal functioning of MAFF and MoH for the current phase 3 will continue. NCDM activities focus on preparedness (including necessary additional procurement and training) for a phase 6 emergency, where it will manage the emergency situation under the direct leadership of the highest level of government. Details will be elaborated during the National Pandemic Preparedness Planning process which will be coordinated by NCDM, and guided by MoH, in accordance with the WHO international checklist for Influenza Pandemic Preparedness Planning.

To collaborate with relevant institutions on training the members of the Provincial/Municipal Committee, and with regard to disseminating important information to the public (pandemic preparedness);
Coordinate with the MoH and WHO regarding the current pandemic phase and on advice from MoH make recommendations to the (NCDM and Prime Minister) regarding the declaration of a human health emergency (pandemic phase 6), including termination of emergency declaration.
To develop guidelines on emergency preparedness, emergency operations, containment (slowing transmission) and mitigation measures, as well as post-emergency recovery.
To conduct vulnerability analyses, and monitor status of preparedness;
To coordinate efforts with institutions and organizations and the CRC in order to enhance assistance in terms of maintaining essential services including security, supporting a public awareness program with regard to pandemic preparedness, and preparing other programs;
To establish a sub-committee for Pandemic Planning (Pandemic Taskforce) under the NCDM Scientific and Technical Committee (STC).(phase 6). This Taskforce will comprise of specialist officials from relevant Ministries that have the duty to identify national policy, plans and procedures for the technical aspects of the implementation of pandemic influenza prevention, preparedness, response, and recovery. The sub-committee membership will also include relevant UN agencies and the Cambodian Red Cross.
The sub-committee will guide the development and incorporation of a National Pandemic Influenza Plan as part of the National Policy for Emergency Management.
To formulate recommendations to sub-levels of the NCDM on the implementation of Pandemic Preparedness and response activities as part of the National Policy for Disaster Management;
To report regularly to NCDM on the overall situation and status of activities for pandemic preparedness, as well as response and recovery measures. This would include analysis of gaps and overlap to ensure coverage and efficiency of operations.

The Role of NCDM Secretariat Departments

Department of Administration and Finance

Undertake all aspects of the routine administration finance and supply.
Undertake the preparation of documents, memos, security orders, etc..
Undertake personnel and staff related activities, including salary payment, allowances rated by the Royal Government.
Prepare budget proposal, equipment and other means of work.
Take responsibilities with respect to the Secretary General and financial agencies of all donors including the temporary establishment of a project implementation unit to administer the World Bank AHI Emergency Project with assistance from the UNDP
Take over management of institutional resources (real estate, furniture) and all expenses of the General Secretariat.

Department of Emergency Response and Rehabilitation

Establish a command structure to coordinate emergency operations in accordance with the established national policy for emergency management (including the national pandemic plan) upon receiving guidance from MoH and WHO on a pandemic emergency. Inform all relevant ministries and

institutions, Scientific and Technical Committee, pandemic sub-committee, national and international organizations, and submit reports to the Secretary General for taking action.
Coordinate security arrangements for emergency areas, emergency workers, victims and VIPs visiting emergency areas.
Liaise with international organizations, NGOs, embassies and families of international victims.
Determining courses of action to be taken based on recommendations of NCDM regarding emergency operation.
Under the guidance of the Ministry of Health, prepare appropriate recommendations to proper authorities for possible relief activities in affected areas, and request for the release of emergency relief funds.
Make recommendations on prevention, mitigation and recovery.

Department of Emergency Preparedness and Training

Coordinate the preparation of equipment, materials, and essential supplies (and procure directly, if required) for emergency response.
Make recommendation to concerned institutions and agencies on the development and implementation of communicable disease legislation, which will include provisions of the newly revised International Health Regulations.
Develop pandemic influenza training curriculum for incorporation into the Disaster Management Committee's programme of education and public awareness in the communities. at both national and local levels
Share information at monthly AHI partners meetings on status of preparedness and response activities.
Coordinate with related institutions to get information, data on pandemic situation.
Facilitate training on business continuity planning for all agencies.
Facilitate the development of National Pandemic Plan in close collaboration with the Ministry of Health

Department of Communication and Relations

Coordinate closely with all relevant ministries and ensure that information flows according to procedures included in AHI communications strategy and pandemic plan.
Establish an effective NCDM Emergency Management Information System that will serve pandemic preparedness and emergency operations, incorporating an active Monitoring and Evaluation system.

Department of Search and Rescue

Coordinate logistical support (both civilian and military) for the distribution of essential drugs, services and equipment.
Coordinate logistical support for emergency response preparedness and pandemic simulations

Provincial/Municipal Committee for Disaster Management

Implement national policy and guidelines set by NCDM.
Give instruction and support all activities of district committee for disaster management.
Advise NCDM on activities conducted by concerned institutions, agencies, CRC, national and international organizations involved in disaster prevention, preparedness, emergency response and recovery.
Submit to NCDM reports of needs and recommendations for the provision of funds, materials and equipment means and forces for intervention during an emergency.
Implement the training curriculum for pandemic preparedness to strengthen the capacity of staff employed in disaster management, and conduct public education in the communities. This committee has the same structure as NCDM and will also require stable staffing and funding for a provincial-level secretariat. (Two permanent staff designated for each province and municipality).
Establish a Provincial Emergency Operation Centre (PEOC) through which Provincial level emergency operations will be conducted (eg, operations during a pandemic emergency, including relief, movement control, and medical care). The PEOC will be activated during an emergency event, staffed by the PCDM and coordinated by the PCDM Chair who will report directly to the NEOC. The PEOC will ensure two way information flow between national and district levels.

District Committee for Disaster Management

Implement national policy and guidelines set by NCDM.

Advise PCDM/NCDM on status of pandemic preparedness and response.
Appoint staff to attend a training/workshop at national and provincial levels on pandemic preparedness and response.
Disseminate information to public.
Submit initial reports to PCDM/MCDM on needs.
Establish a District Emergency Operation Centre (PEOC) through which District level emergency operations will be conducted (eg, operations during a pandemic emergency, including relief, movement control, and medical care) The DEOC will be activated during an emergency event, staffed by the DCDM and coordinated by the DCDM Chair who will report directly to the PEOC..
Submit final report to PCDM/MCDM on response operations.

Commune Committee for Disaster Management

Implement national policy and guidelines set by NCDM.
Advise DCDM/PCDM/NCDM on status of pandemic preparedness and response.
Appoint member to attend a training/workshop at district, national and provincial levels on pandemic preparedness and response.
Disseminate information to the commune.
Submit initial reports to DCDM/PCDM/NCDM on needs.
Conduct operation during a pandemic emergency, including relief, movement control, and medical care.
Submit final report to DCDM/PCDM/NCDM on response operations.

III. Strengthening and Activation of RGC's National Committee for Disaster Management (NCDM) for Pandemic Influenza Preparedness

The National Committee for Disaster Management (NCDM) is the Royal Government of Cambodia's inter-ministerial system under the sub decree issued by the Prime Minister. NCDM consists of various levels: 1) the policy making body, 2) the Secretariat who manages day to day affairs and 3) the local leadership in the provinces, districts, and communes. In this document, they are often referred to as one organizational system- the NCDM. The focus of strengthening efforts will be on the operational secretariats at the national, provincial and district levels.

It is important to note that the purpose of NCDM involvement in Pandemic Preparedness is not to create an unnecessary bureaucracy. It is neither a threat to existing Ministries and organizations, nor to any ongoing activities related to Avian and Human Influenza. The NCDM is engaged to harness collective and high level leadership among the Government Ministries. It's Pandemic Preparedness and Response activities will be designed to minimize overlapping of functions and avoid duplication and waste of resources. The NCDM will provide "bridges" and "linkages" among all organizations including governmental, non-governmental, international, and civil society organizations.

More importantly, NCDM will be strengthened to serve an essential purpose: To reduce the impact of pandemic influenza in Cambodia. This larger purpose is an aspiration common to all, including those with focus on national development and sectoral themes like local level institution building, poverty alleviation, enhancing food security, and improvement of access to water, health and sanitation.

Furthermore, the NCDM inter-ministerial system will be strengthened to address coordinated actions before-during and after a pandemic emergency. Specifically, the NCDM Secretariat will be strengthened to effectively support pandemic emergency prevention, mitigation, preparedness, response and recovery as mandated by the Royal Government of Cambodia.

The plan for strengthening and activating NCDM for AHI is comprised of four major objectives:
Establishment of the legal framework and institutional capacity to support the development of an operational, inter-ministerial, Pandemic Preparedness, Response and Recovery Plan
Implementation of an Effective Pandemic Preparedness, Response and Recovery Program
Establishment of an effective Emergency Management Information System including an active Monitoring and Evaluation system
Incorporation of Pandemic Preparedness activities into Community Based Disaster Risk Reduction Programmes (CBDRM)

Objective 1: Establish the Legal Framework and Institutional Capacity to Support the Development of a Pandemic Preparedness, Response and Recovery Plan as part of the National Policy for Emergency Management in full cooperation with all Ministries, PCDM, DCDM, CCDM and other important stakeholders in Cambodia.

This objective involves establishing the necessary inter-ministerial cooperation and legal framework for pandemic preparedness, response and recovery. This objective also encompasses the core capacity-building of the NCDM secretariat necessary to carry-out out its AHI duties.

1.1 Develop legislation requiring pandemic preparedness planning as part of a national policy for emergency management with sub-decrees based on this legislation assigning roles and responsibilities to the NCDM and its Secretariat.

This sub-objective establishes the necessary legal framework for inter-ministerial pandemic activities as part of emergency management policy. It is recognized that developing this legislation may take some time, and it is not meant to slow any pandemic preparedness activities, but to ensure a sound legal basis for maintaining pandemic preparedness in Cambodia.

1.2 Establish functional, full-time, NCDM General Secretariat and various internal units to oversee implementation of coordination activities among ministries and development partnership mechanisms among external organizations (e.g. International Organizations, NGOs, corporations) for pandemic preparedness programs and projects.

This sub-objective is focused on establishing capacity within the NCDM Secretariat to conduct pandemic preparedness, response, and recovery activities. Activities include core human resource capacity building as well as establishing physical capacity including an Emergency Operations Centre as a hub for emergency response activities. It will also serve as a hub for preparedness planning and for the simulation of emergency situations. Thus, the EOC will support the development and testing of the National Pandemic Preparedness Plan.

Additional capacity development includes establishing logistical and transportation capacity to support emergency preparedness and response in the field. Capacity development also includes the establishment of essential financial accountability systems to allow a smooth and transparent flow of preparedness, response and recovery resources.

Objective 2: Develop an Effective Pandemic Preparedness, Response and Recovery Program implemented at all levels (national, provincial, district, and commune disaster management committees).

This objective focuses on implementing the pandemic preparedness, response and recovery plan at all levels. The plan will be continually revised and updated as part of the implementation process, balancing international guidelines with field realities.

2.1 Implementation of the Pandemic Preparedness, Response and Recovery Plan

This sub-objective includes review of the pandemic preparedness, response and recovery plan in reference to the National Emergency Management Policy at all levels of government. It involves training and consultations related to pandemic preparedness planning at all levels from commune to regional and international levels. This sub-objective also includes facilitating business continuity planning for maintaining essential services among relevant ministries and agencies. To further support refinement and design of the pandemic plan, and to enhance preparedness and response efforts, a pandemic vulnerability analysis will be conducted using existing data, and field preparedness assessments will also be conducted.

2.2 Testing the Pandemic Preparedness, Response and Recovery Plan

This sub-objective involves conducting pandemic simulations of all types involving all levels of government and all stakeholder organizations. Simulations will range from desktop exercises at different levels to full-scale simulations involving all relevant stakeholders. The simulations will help further refine and improve the pandemic plan, as well as overall preparedness.

Objective 3: Establishment of an effective NCDM Emergency Management Information System that will serve pandemic preparedness and emergency operations, incorporating an active Monitoring and Evaluation system.

This objective involves the establishment of an effective emergency management information system to support pandemic planning including vulnerability analysis, and monitoring the preparedness and response capacities at all levels. This objective includes the establishment of an active monitoring and evaluation system.

3.1 Review and develop data collection, collation and reporting systems at all levels

This sub-objective involves the design, development, and implementation of reporting systems in support of emergency management information activities.

3.2 Establish an Active Monitoring and Evaluation System

This sub-objective involves the establishment of and effective monitoring and evaluation system to allow tracking of preparedness activities, to point out weak links, and to help guide pandemic planning improvements. The establishment and operation of the monitoring and evaluation system will involve stakeholder participation and include regular external evaluation to ensure transparency and effectiveness.

Objective 4: Incorporate Pandemic Preparedness activities into Community Based Disaster Risk Reduction Programmes (CBDRM) developed and implemented in support of NCDM, PCDM, DCDM, and CCDM policy, programs, and activities.

4.1 Develop and conduct an integrated public awareness, pandemic preparedness, and CBDRM programme

Objective 4 is designed to integrate pandemic preparedness, response and recovery activities into ongoing Community-Based Disaster Risk Management programmes that are, in turn, integrated into rural development programming. The key to effective and sustainable emergency response, including pandemic response, is the preparedness and response activities of communities and individuals within those communities. This objective will help ensure that the pandemic preparedness plan will be implemented, when necessary, and should also help to efficiently reduce the impact of pandemic influenza.

Appendix A: Strategy and Action Plan Budgets

Appendix A1: Animal Health Strategy Budget

Financial Requirements for

National Strategy on Highly Pathogenic Avian Influenza

(2006-2009)

Table of Activities and Budget Estimate

Activities	Resp Agency	Urgent	Cost Estimate (US Dollars)
1. Strengthening Veterinary Service			**8,257,775**
1.1 Policy and legislation	MAFF/FAO	(✓)	156,000
1.1.1 National HPAI Control and Eradication Policy	DAHP/FAO	(✓)	
1.1.2 Animal disease control legislation and preparation	DAHP	(✓)	
1.1.3 Poultry Industry Restructuring Policy	DAHP		
1.1.4 Policy on Village Animal Health Worker System	DAHP/NAHPIC	(✓)	
1.1.5 Veterinary Service Structure Review	DAHP/FAO		
1.1.6 Emergency Preparedness and Contingency Plans Preparation	DAHP/NAHPIC		
1.2 Strengthening of DAHP	DAHP	(✓)	1,823,600
1.2.1 NAHPIC	NAHPIC	(✓)	
1.2.2 Animal Health Office	AHO	(✓)	
1.2.3 Animal Production and Extension Offices	APO/EXO	(✓)	
1.3 Strengthening of OAHP and district veterinary services	DAHP/OAHP/FAO	(✓)	3,206,770
1.4 Village Animal Health Worker System Management	DAHP/OAHP/FAO	(✓)	1,738,605
1.5 Vaccine and Technology Delivery Systems	DAHP/FAO		1,332,800

2. HPAI Surveillance Investigation and Response			
2.1 Conduct of Epidemiology Surveys and Research on HPAI	NAHPIC/FAO	(✓)	3,411,720
2.2 National Epidemiology Surveillance Networks based on Grassroots Veterinary Services	NAHPIC/FAO	(✓)	
2.3 Outbreak Investigations	NAHPIC/OAHP	(✓)	
2.4 Management of HPAI Outbreaks	NAHPIC/OAHP	(✓)	
2.5 Compensation Fund Management			
2.6 Vaccination Against HPAI	DAHP/FAO		
3. Strengthening Biosecurity in Poultry Production and Trade			
3.1 Supply Chain Study	OAH/FAO		1,030,000
3.2 Smallholder Production	OAH/EXO		
3.3 Duck Production	OAH/EXO	(✓)	
3.4 Commercial Poultry	OAH/EXO		
3.5 Movement and Markets	OAH/NAHPIC/FAO	(✓)	
4. Public awareness			
4.1 General Public Awareness	AED/FAO/DAHP	(✓)	1,093,000
4.2 Targeted Education Programs	AED/FAO/DAHP	(✓)	
5. Pandemic Planning			
5.1 Planning for Emergence of Suspected or Confirmed Phase 4	DAHP/FAO/NAHPIC/MOH		10,000
5.2 Pandemic Planning	**MAFF/MOH**		
6. Strategy Management	DAHP/FAO	(✓)	2,082,960

Total	**15,885,455**

Activity	National Programme Total	FAO Ger	FAO USA1	FAO USA2	FAO Japan	World Bank Project
Sub-Component 1: Strengthening Veterinary Service	**8,257,775**	579,000				3,545,545
Sub-Component 2: HPAI Surveillance, Investigation and Response	**3,411,720**	768,000				1,184,208
Sub-Component 3: Strengthening Biosecurity in Poultry Production and Trade	**1,030,000**	199,000				108,600
Sub-Component 4: Information, Education and Communication	**1,093,000**	105,000				32,000
Sub-Component 5: Pandemic Planning	**10,000**	0				10,000
Sub-Component 6: Project Management	**2,082,960**	1,129,000				1,629,560
Project total:	**15,885,455**	**2,780,000**	**791,583**	**1,000,000**	**2,000,000**	6,509,913

Appendix A2: Human Health Action Plan Budget

Key area	2006-2008 Total funding required	2006-2008 Donor commitment	2006-2008 Funding gap before WB	Proposed for WB
Key action area 1: Education for health professionals and the public	319,000	10,000	309,000	289,000
Key action area 2: Surveillance, investigation and response	2,636,400	1,120,000	1,516,400	1,496,400
Key action area 3: Case management and infection control	2,300,000	731,100	1,558,900	680,000
Key action area 4: Laboratory support	556,000	174,000	382,000	82,000
Key action area 5: Pandemic preparedness planning for the health sector	712,000	0	712,000	262,000
TOTAL	**6,523,400**	**2,035,100**	**4,478,300**	**2,809,400**

Key action area 1: Education for health professionals and the public

		Implementation	2006-2008	2006-2008		2006-2008	
	Component		**Total funding required**	**Donor commitment**	**Donor**	**Funding gap before WB**	**Proposed for WB**
1.1	**IEC**		**319,000**	**10,000**		**309,000**	**289,000**
1.1.1	Education and Training Consultant (6 months x12000US$)		72,000			72,000	72,000
1.1.2	Workshop for strategy development		10,000			10,000	10,000
1.1.3	Development of an overal IEC communication strategy (pre, during and post-pand)	MOH/CDC Dpt, NCHP, UNICEF			UNICEF (Japan, Australia)		
1.1.4	Develop IEC materials for health professionals (2 months x 1000US$)	MOH/CDC Dpt, NCHP,	2,000			2,000	2,000
1.1.5	Production and distribution of IECs materials for health professionals to all provinces	MOH/CDC Dpt, NCHP	100,000			100,000	100,000
1.1.6	Evaluation of mass campaign- KAP study	MOH/CDC/NCHP/UNICEF			UNICEF (Japan, Australia)		
1.1.7	Develop IEC materials for general population	MOH/CDC/NCHP/UNICEF			UNICEF (Japan, Australia)		
1.1.8	Print and distribute IEC materials for general population	MOH/CDC/NCHP/UNICEF			UNICEF (Japan, Australia)		
1.1.9	Develop radio spot	MOH/CDC/NCHP	15,000			15,000	15,000
1.1.10	Develop TV spots	MOH/CDC/NCHP	30,000			30,000	30,000
1.1.11	Broadcasting through Radio and TV station in Phnom Penh and other provinces where available	MOH/CDC/NCHP	60,000			60,000	60,000

1.1.12	Development of a school-based program on AI	MOH/CDC/NCHP/UNICEF			UNICEF (Japan, Australia)		
1.1.13	Training of media personnel	MOH/CDC/NCHP/UNICEF/AED	30,000	10,000	USAID-AED	20,000	0
	GRAND TOTAL		**319,000**	**10,000**		**309,000**	**289,000**

Key action area 2: Surveillance, investigation and response

		Implementation	**2006-2008**			**2006-2008**	
	Component		**Total funding required**	**Donor Commitment**	**Donor**	**Funding Gap before WB**	**Proposed for WB**
2.1	**Strengthening early detection and rapid response**		**1,593,400**	**354,000**		**1,239,400**	**1,219,400**
2.1.1	Outbreak investigations: Per diems/travel costs for investigators ($2,900 per case x 7 cases x 3 years)	MOH/CDC, national, prov., districts, HC	60,900	6,150	AusAID	54,750	54,750
2.1.2	Outbreak investigations: Training/education sessions for schools, village and commune leaders, VHV and HC staff ($2,700 per case x 7 cases x 3 years)	MOH/CDC, national, prov., districts, HC	56,700	5,850	AusAID	50,850	50,850
2.1.3	Outbreak investigations: Consumables ($1,400 per case x 7 cases x 3 years)	MOH/CDC, national, prov., districts, HC	29,400	3,000	AusAID	26,400	26,400
2.1.4	Workshop on lessons learned- with affected prov.	MOH/CDC, national, prov., WHO	20,000	20,000	CDC-USA	0	0
2.1.5	Training Rapid Response Teams	MOH/CDC, national, prov., WHO	120,000	120,000	CDC-USA	0	0
2.1.6	Seasonal human influenza vaccine procurement	Procurement	14,820	4,940	AusAID	9,880	0
2.1.7	Vaccine distribution and training for frontline health workers (provincial, operation district, health centre, hospital and central)	MOH/CDC, prov, district and HC staff	15,180	5,060	AusAID	10,120	0

2.1.8	Supervision: Travel costs for national to province level checking (144 (2 every yr x 3 yr) trips x 300US$)	MOH/CDC, national	43,200	0		43,200	43,200
2.1.9	Supervision: Travel costs for provincial to district level checking (912 trips (4 every yr x 3 yr) x 30US$)	MOH/CDC, prov.	27,360	0		27,360	27,360
2.1.10	Supervision: Travel costs for district to HC level checking checking (11592 (4 every yr x 3 x 966) x 10US$)	MOH/CDC, distric	115,920	0		115,920	115,920
2.1.11	Annual meeting of rapid response teams and national level CDC Dept staff	MOH/CDC, provinces	15,000	0		15,000	15,000
2.1.12	Pickup vehicle (24 prov + 1 national x 20000US$)	Procurement	500,000	100,000	ADB (5 vehicles)	400,000	400,000
2.1.13	Vehicle maintenance (25vehilcle/year x 5000US$)	Procurement	375,000	75,000	ADB (5 vehicles)	300,000	300,000
2.1.14	Motorbike district (1200US$ x 76)	Procurement	91,200	12,000	ADB (10 motos)	79,200	79,200
2.1.15	GPS and GIS software for CDC Dept	Procurement	10,000	0		10,000	10,000
2.1.16	Satellite phone for CDC Dept	Procurement	2,000	0		2,000	2,000
2.1.17	Office Supplies for province and district level (200US$ per year x (24+76) x 3 years)	Procurement	60,000	0		60,000	60,000
2.1.18	Office Supplies for national level (100 US$ per month x 3 years)	Procurement	3,600	0		3,600	3,600
2.1.19	Communication for provincial rapid resp teams(24 prov/year x 3 people per province x 360US$)	Procurement	25,920	0		25,920	25,920
2.1.20	Communication for national level	Procurement	7,200	2,000	AusAID	5,200	5,200
2.2	**Serological investigations of clusters to determine asymptomatic carriage of AI in humans**		**145,000**	**0**		**145,000**	**145,000**
2.2.1	Consultant to develop AI research strategy		72,000	**0**		72,000	72,000
2.2.2	Workshop for strategy development		10,000	**0**		10,000	10,000

2.2.3	Travel costs for staff conducting area survey (6 trips x 500US$)	MOH/CDC, national, prov.	3,000	0		3,000	3,000
2.2.4	Consumables for area surveys (100 x 500US$)	Procurement	50,000	0		50,000	50,000
2.2.5	International shipment of blood samples	WHO- courier company	10,000	0		10,000	10,000
2.3	**National disease information system management**		**806,000**	**766,000**		**40,000**	**40,000**
2.3.1	National surveillance assessment for IHR compliance consultant (12.000US$ x 1month)	WHO, MOH	12,000	0		12,000	12,000
2.3.2	IHR compliance workshops (2)	WHO, MOH	20,000	0		20,000	20,000
2.3.3	IT consultant (500US$ x 36 month)	TA	18,000	12,000	WHO, URC-USAID	6,000	6,000
2.3.4	IT per diem for duty travels	TA	6,000	4,000	WHO, URC-USAID	2,000	2,000
2.3.5	Sentinel ILI surveillance system	MOH/CDC Dept, IPC	750,000	750,000	CDC-USA	0	0
2.4	**Legislation for communicable disease control**		**92,000**	**0**		**92,000**	**92,000**
2.4.1	Consultant to develop draft legislation	MOH/CDC Dept, IPC	72,000	0		72,000	72,000
2.4.2	Workshops for drafting legislation (4 workshops)	MOH/CDC Dept, IPC	20,000	0		20,000	20,000
	GRAND TOTAL		**2,636,400**	**1,120,000**		**1,516,400**	**1,496,400**

Key action area 3: Case management and infection control

			2006-2008			2006-2008	
	Component	**Implementation**	**Total funding required**	**Donor Commitment**	**Donor**	**Funding gap before WB**	**Proposed for WB**
3.1	**Case management and infection control**		**1,630,000**	**731,100**		**888,900**	**10,000**
3.1.1	Purchase of medicine (anti-virals and antibiotics)	WHO, procurement	300,000	68,100	ADB, WHO	231,900	0
3.1.2	Purchase of medical equpiment for treatment for the 5 referral hospitals	Procurement	300,000	120,000	URC/USAID	180,000	0
3.1.3	Audit of PPE stocks in CMS	MHO/CDC, Hospital dept.	3,000	0		3,000	0
3.1.4	Purchase of PPE for 5 referral hospitals	Procurement	330,000	120,000	URC/USAID	210,000	0
3.1.5	Preparation of PPE kits for provincial and referral hospitals	MHO/CDC, Hospital dept.	10,000	0		0	10,000
3.1.6	Infection control training		180,000	107,000	AusAID and URC/USAID	73,000	0
3.1.7	Evaluation of training effectiveness		15,000	10,000	URC/USAID	5,000	0
3.1.8	Facility infrastructure to manage suspected and probable patient at 3 provincial hospitals (including isolation facilities and environmental control)	MOH, Hospital dept.	300,000	114,000	URC/USAID	186,000	0

3.1.9	Ambulances equipped for CD patients for 4 referral hospitals	Procurement	192,000	192,000	URC/USAID	0	0
3.2	**Environmental compliance**		**670,000**	**0**	**0**	**670,000**	**670,000**
3.2.1	TA determination of waste quantity, evaluation of waste management technology, develop waste management plan		70,000	0		70,000	70,000
3.2.2	Investment in waste management equipment and supplies		490,000	0		490,000	490,000
3.2.3	Waste management training		30,000	0		30,000	30,000
3.2.4	Operational cost of waste management		50,000	0		50,000	50,000
3.2.5	Hospitals ground clean up		30,000	0		30,000	30,000
	GRAND TOTAL		**2,300,000**	**731,100**	**0**	**1,558,900**	**680,000**

Key action area 4: Laboratory support

		Implementation	2006-2008			2006-2008	
	Component		**Total funding required**	**Donor Commitment**	**Donor**	**Funding gap before WB**	**Proposed for WB**
4.1	**Laboratory support**		**556,000**	**174,000**	**0**	**382,000**	**82,000**
4.1.1	Development of lab strategy consultant		72,000	0		72,000	72,000
4.1.2	Workshop for strategy development		10,000	0		10,000	10,000
4.1.3	Laboratory technician for Pasteur Institute	IPC	30,000	30,000	USA	0	0
4.1.4	Real time PCR machine	IPC	54,000	54,000	USA	0	0
4.1.5	Specimen collection kits for every provincial health department	MOH, WHO	60,000	20,000	AusAID	40,000	0
4.1.6	Laboratory consumables and reagents to test for respiratory pathogens	IPC, WHO	300,000	60,000	AusAID	240,000	0
4.1.7	Transport from Pasteur Institute to WHO collaborating centre	WHO- courier company	30,000	10,000	AusAID	20,000	0
	TOTAL		**556,000**	**174,000**		**382,000**	**82,000**

Key action area 5: Pandemic preparedness planning

		Implementation	2006-2008			2006-2008	
	Component		**Total funding required**	**Donor Commitment**	**Donor**	**Funding gap before WB**	**Proposed for WB**
5.1	**Pandemic planning for MOH**		**712,000**	**0**		**712,000**	**262,000**
5.1.1	Worskhop on guidelines	MOH-CDC, WHO	30,000	0		30,000	30,000
5.1.2	PPE stockpile for CMS	MOH-CMS	450,000	0		450,000	
5.1.3	Preparation, translation and printing of plan	MOH	10,000	0		10,000	10,000
5.1.4	Dissemination workshop	MOH	20,000	0		20,000	20,000
5.1.5	Support /train prov. level to develop their PPP	MOH, WHO	52,000	0		52,000	52,000
5.1.6	Plan for desk top exercises	MOH, WHO	30,000	0		30,000	30,000
5.1.9	Undertake simulation exercice	MOH, WHO	120,000	0		120,000	120,000
	GRAND TOTAL		**712,000**	**0**		**712,000**	**262,000**

Appendix A3: Inter-Ministerial Cooperation Action Plan Budget

National Committee for Disaster Management

Action Plan for Avian and Human Influenza Support

OBJECTIVE 1: Establish the Legal Framework and Institutional Capacity to Support the Development of a Pandemic Preparedness, Response and Recovery Plan as part of the National Policy for Emergency Management in full cooperation with all Ministries, PCDM, DCDM, CCDM and other important stakeholders in Cambodia

1.1 Develop legislation requiring pandemic preparedness planning as part of a national policy for emergency management with sub-decrees based on this legislation assigning roles and responsibilities to the NCDM and its Secretariat.

1.2 Establish functional, full-time, NCDM General Secretariat and various internal units to oversee implementation of coordination activities among ministries and development partnership mechanisms among external organizations (e.g. International Organizations, NGOs, corporations) for pandemic preparedness programs and projects.

OBJECTIVE 2: Develop an Effective Pandemic Preparedness, Response and Recovery Program implemented at all levels (national, provincial, district, and commune disaster management committees).

2.1 Implementation of the Pandemic Preparedness, Response and Recovery Plan

2.2 Testing the Pandemic Preparedness, Response and Recovery Plan

OBJECTIVE 3: Establishment of an effective NCDM Emergency Management Information System that will serve pandemic preparedness and emergency operations, incorporating an active Monitoring and Evaluation system.

3.1 Review and develop data collection, collation and reporting systems at all levels

3.2 Establish an Active Monitoring and Evaluation System

OBJECTIVE 4: Incorporate Pandemic Preparedness activities into Community Based Disaster Risk Reduction Programmes (CBDRM) developed and implemented in support of NCDM, PCDM, DCDM, and CCDM policy, programs, and activities.

4.1 Develop and conduct an integrated public awareness, pandemic preparedness, and CBDRM programme

Resource Requirements Summary					
Totals by Objective #	**Technical Assistance**	**Workshops/Training**	**Equip**	**Operating Costs**	**Total**
1.1	$ 15,000	$ 6,000	$ -	$ -	$ 21,000
1.2	$ 95,000	$ 59,000	$ 170,000	$ 4,000	$ 328,000
2.1	$ 35,000	$ 175,000	$ -	$ -	$ 210,000
2.2	$ 30,000	$ 90,000	$ -	$ -	$ 120,000
3.1	$ -	$ -	$ -	$ -	$ -
3.2	$ 60,000	$ 4,000	$ -	$ -	$ 94,000
4.1	$ 15,000	$ 48,000	$ -	$ 2,000	$ 65,000
Totals:	$ 250,000	$ 382,000	$ 170,000	$ 6,000	$ 838,000

National Committee for Disaster Management

Action Plan for Avian and Human Influenza Support

							Resource Requirements						Allocations			
Act #	Activities	Coordinating Partners	Implementing Partners	When	Indicators	Expected Output	Resource Req. Description	Technical Assistan	Workshops /Trainin	Equip	Operating Costs	Total	2nd Q 2006	3rd Q 20	4th Q 200	2007-20
1	**OBJECTIVE 1: Establish the Legal Framework and Institutional Capacity to Support the Development of a Pandemic Preparedness, Response and Recovery Plan as part of the National Policy for Emergency Management in full cooperation with all Ministries, PCDM, DCDM, CCDM and other important stakeholders in Cambodia**															
1.1	**Develop legislation requiring pandemic preparedness planning as part of a national policy for emergency management with sub-decrees based on this legislation assigning roles and responsibilities to the NCDM and its Secretariat.**															
1.11	Review the roles and responsibilities of the NCDM and Secretariat in relation to pandemic preparedness, response and recovery.	Council of Ministers (COM)	All Ministries with technical support from MAFF and MoH	1-2nd Q 2006	Roles and Responsibilities identified	NCDM and NCDM Secretariat's roles and responsibilities identified in Comprehensive National AHI Plan	UNRC TA plus workshops		$ 2,000	$ -	$ -	$ 2,000	$ 2,000	$ -	$ -	$ -
1.12	Formulation of required legislation on pandemic preparedness as part of the national policy on emergency management	Council of Ministers (COM)	technical support from MAFF and MoH	3rd Q 2006	Draft Legislation developed	Draft Legislation	1 mo. TA plus workshops	$ 15,000	$ 2,000	$ -	$ -	$ 17,000	$ -	$ 17,000	$ -	$ -
1.13	Adoption of required legislation on pandemic preparedness as part of the national policy on emergency management	COM submits to parliament	technical support from MAFF and MoH	3rd Q 2006	Approved national policy	Clear legal framework for activities		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1.14	Issuance of appropriate sub-decrees mandating NCDM to facilitate inter-ministry coordination and other related pandemic preparedness activities.	Prime Minister, Council of Ministers	technical support from MAFF and MoH	3rd Q 2006	Executive Order	Approved executive order	workshops among working group	$ -	$ 2,000	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -	$ -
							Total:	$ 15,000	$ 6,000	$ -	$ -	$ 21,000	$ 2,000	$ 19,000	$ -	$ -
1.2	**Establish functional, full-time, NCDM General Secretariat and various internal units to oversee implementation of coordination activities among ministries and development partnership mechanisms among external organizations (e.g. International Organizations, NGOs, corporations) for pandemic preparedness programs and projects.**															
1.21	Review existing organizational structure and recommend appropriate table of organization with permanent staffing positions based on established roles and responsibilities.	COM and NCDM	Sec. Gen. and various Dept. heads, PCDM staffs	2nd Q 2006	Clarified table of organization and internal roles and functions	Approved table of organization and staffing with job descriptions	Review-session (2 sessions @ $2,000/session) TA to develop job descriptions	$ 15,000	$ 4,000	$ -	$ -	$ 19,000	$ -	$ 19,000	$ -	$ -
1.22	Establish an Emergency Operations Centre at the **Council of Ministers** to serve as communications and logistics hub for pandemic response, preparedness and recovery.	COM and NCDM		3-4th Q 2006	Established infrastructure, TOR and Operating procedures for EOC	Functioning EOC for emergency preparedness, response, and recovery	TA 2mo:, training + infrastructure (computers, communications equipment, supplies)	$ 15,000	$ 5,000	$ 60,000	$ -	$ 80,000	$ -		$ 80,000	$ -
1.23	Training needs assessment, develop Human Resource Development Strategy and appropriate training program	COM, NCDM		4th Q 2006	Understood personnel development program	Approved HRD Strategy, training needs assessment and training program	TA: HRD specialist ($10,000/month for 2 months) plus training $1,000 * 50 courses	$ 30,000	$ 50,000	$ -	$ -	$ 80,000	$ -	$ -	$ 25,000	$ 55,000
1.24	Capacity Assessment, Strengthening infrastructure of NCDM Secretariat departments	COM, NCDM		2nd-3rd Q 2006	Adequate infrastructure in place for all departments to function	Fully functioning NCDM Secretariat	TA(minor); 3*5 computers; plus 5 sets: faxes, copiers, printers	$ 5,000	$ -	$ 50,000	$ -	$ 55,000		$ 55,000	$ -	

1.25	Create financial accountability and transparency system for the NCDM within the RCG financing framework (develop a team to ensure smooth and transparent flow of funds)	COM, NCDM and MoEF	NCDM Finance Dept.	2nd-3rd Q 2006	Operational Project Accounting and Reporting System with External Audit scheme	Installed Financial Systems with Manual of Operations	TA: 3mo, plus training	$ 30,000				$ 30,000			$ 30,000	
1.26	Regular annual budget allocation instated for the institutional viability of NCDM	COM and NCDM	MoEF	4th Q 2006	Funding and staffing agreement in place	stable staffing and budgeting framework established	TA: 1mo to develop budget and staffing plan									
1.27	Logistical and Transportation capacity for field preparedness and response operations	NCDM, Min of Transport		2nd Q 2006 to 2nd Q 2007	Transportation capacity and logistical procedures in place	Ability to sustainably conduct operations in the field	2-4WD vehicles, spare parts, initial operating costs	$ -	$ -	$ 60,000	$ 4,000	$ 64,000		$ 64,000		
							Total:	$ 95,000	$ 59,000	$ 170,000	$ 4,000	$ 328,000	$ -	$ 138,000	$ 135,000	$ 55,000
2	**OBJECTIVE 2: Develop an Effective Pandemic Preparedness, Response and Recovery Program implemented at all levels (national, provincial, district, and commune disaster management committees).**															
2.1	**Implementation of the Pandemic Preparedness, Response and Recovery Plan**															
2.11	Review of existing draft National Policy for Emergency Management and Preparation of a Pandemic Preparedness, Response and Recovery Plan to be incorporated into a revised National Policy for Emergency Management.	COM, NCDM	All ministries at all levels	2nd Q 2006 to 4th Q 2007	Assessment reports and draft Response Plan	Approval of plan with roles and responsibilities identified for all stakeholders	TA: Full-time Pandemic Preparedness Consultant 1st yr-WHO, 2nd yr-?; workshops 2*$2000									
2.12	Training Programme for staff in all ministries, all levels, on the introduction of the Pandemic Preparedness, Response and Recovery Plan	COM,NCDM	PCDM, DCDM, CCDM, All ministries, all levels	3rd Q 2006 to 4th Q 2007	Workshop and training proceedings	Improved staff knowledge and skills on preparedness and response plan	Training (50 courses x $1,000)	$ -	$ 50,000	$ -	$ -	$ 50,000	$ -		$ 25,000	$ 25,000
2.13	Consultative workshops with stakeholders at all levels	NCDM	PCDM, DCDM, CCDM, all stakeholders	3rd Q 2006 to 4th Q 2007	Workshop proceedings	Revised pandemic plan with stakeholder input	Workshops (50 workshops nationwide x $1,000)	$ -	$ 50,000	$ -	$ -	$ 50,000	$ -	$ 20,000	$ 20,000	$ 10,000
2.14	Facilitate Business Continuity Planning for Maintenance of Essential Services for all relevant ministries and agencies	NCDM	PCDM, DCDM, CCDM, all relevant ministries and agencies	3rd Q 2006 to 4th Q 2007	Business continuity plans for all organizations	Essential services maintained during a pandemic	TA: 3 mo+ training workshops	$ 30,000	$ 30,000	$ -	$ -	$ 60,000	$ -	$ 30,000	$ 30,000	
2.15	Conduct a pandemic vulnerability analysis to provide substantial analytical inputs to the preparation of preparedness and response plans	NCDM	Concerned Ministries	4th Q 2006	Vulnerability Analysis Report and map	Improved preparedness and response targeting	TA (minor) using existing data	$ 5,000	$ -	$ -	$ -	$ 5,000	$ -	$ -	$ 5,000	$ -
2.16	Field assessments of pandemic preparedness planning at sub-national levels to guide plan development.	NCDM	NCDM. PCDM, DCDM, CCDM	3rd Q 2006 to 4th Q 2008	Assessment reports with recommended plan revisions	Improved plan based on field reality	Cross-visits (15 @ $1,000)	$ -	$ 15,000	$ -	$ -	$ 15,000	$ -	$ 2,000	$ 8,000	$ 5,000
2.17	External exposures related to relevant practices in pandemic preparedness and response planning to improve planning nationally and improve regional coordination.	NCDM	NCDM, PCDM, other relevant ministries	3rd Q 2006 to 4th Q 2008	Study visit with recommended plan revisions	Improved plan based on external experience and better coordination with other countries	External visits (30 officials and staff @ $1,000/person)	$ -	$ 30,000	$ -	$ -	$ 30,000	$ -	$ 10,000	$ 10,000	$ 10,000
							Total:	$ 35,000	$ 175,000	$ -	$ -	$ 210,000	$ -	$ 62,000	$ 98,000	$ 50,000

2.2	**Testing the Pandemic Preparedness, Response and Recovery Plan**															
2.21	Conduct Simulations (from desktop to full-field scale) of Disaster Preparedness and Emergency Response Plan	COM, NCDM	All ministries, all levels of government	3rd Q 2006 to 4th Q 2008	Appropriate actions taken at all levels by all organizations	Well coordinated response based on clear understanding of roles	TA:2mo plus 9 simulations or desktop exercises (@ $10,000 x 9)	$ 30,000	$ 90,000	$ -	$ -	$ 120,000	$ -		$ 60,000	$ 60,000
							Total:	$ 30,000	$ 90,000	$ -	$ -	$ 120,000	$ -	$ -	$ 60,000	$ 60,000
3	**OBJECTIVE 3: Establishment of an effective NCDM Emergency Management Information System that will serve pandemic preparedness and emergency operations, incorporating an active Monitoring and Evaluation system.**															
3.1	**Review and develop data collection, collation and reporting systems at all levels**															
3.11	Review of current NCDM disaster data gathering and reporting flow (review to cover village-level data retrieval to national level data analysis) and approval of Management Information Framework	NCDM	PCDM, DCDM, CCDM, all stakeholders	3rd Q 2006	Management Information Framework	Approved Management Information System	Disaster MIS specialist 1mo, 1 consultative-workshop									
3.12	Allocating detailed area of responsibility for collection of data and reporting to various organizations (i.e. ministries, IOs, NGOs)	NCDM	All stakeholders	4th Q 2006	Agreed roles and responsibilities on data gathering and reporting	Official agreements with ministries on data gathering and reporting	6 consultative sessions @ $1,000; 2 training events @ $2,000/training									
3.13	Provincial-level emergency data systems	NCDM	PCDM	4th Q 2006	Equipment installed for Provincial level data management and transmission	Effective provincial level data management with rapid communication to central level	24 special purpose computer systems + fax									
3.14	District and Commune level emergency communication systems	NCDM, PCDM	PCDM, DCDM, CCDM	1st Q 2007	regular monthly call-ins to DCDM and PCDM	Regular reporting and emergency communications available to all communes	30$ * 1500 (cell phone for each commune and district)									
3.15	Standardizing assessment and reporting formats and providing training for agencies and persons involved in data collection and reporting across various levels (commune, district, province, national)	NCDM	PCDM, DCDM, CCDM	1st Q 2007 onwards	Agreed format of reports and data collection being implemented	Standardized reports being reported to NCDM level	120 district level training workshops @ $1,000/training; TA: (MIS consultant for 1 month)									
							Total:	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**Establish an Active Monitoring and Evaluation System**															
3.21	Develop Monitoring and Evaluation System based on Pandemic Preparedness, Response and Recovery needs and data management capacities	COM, NCDM, MoH, MAFF	PCDM, DCDM, CCDM, , other concerned ministries	3rd-4th Q 2006	Monitoring and Evaluation System influencing Pandemic plan revisions	Improved results tracking and reporting, and improved pandemic preparedness	TA: 3mo	$ 30,000	$ -	$ -	$ -	$ 30,000	$ -	$ 10,000	$ 20,000	$ -
3.22	Monitoring and Evaluation consultations with stakeholders	COM, NCDM, MoH, MAFF	PCDM, DCDM, CCDM, all stakeholders	4th Q 2006	consultation reports	Identified gaps and recommended improvements for M&E system	workshops	$ -	$ 4,000	$ -	$ -	$ 4,000	$ -	$ -	$ 4,000	$ -
3.23	External Evaluation and Validation of process and performance	COM, NCDM, MoH, MAFF	External Evaluator and stakeholders	4th Q 2006, 4th Q 2007, 4th Q 2008	evaluation reports	M&E System and Performance improvements	TA:3x1month	$ 30,000	$ -	$ -	$ -	$ 30,000	$ -	$ -	$ 10,000	$ 20,000
3.24	Conduct project evaluation (Final)											$ 30,000				
							Total:	$ 60,000	$ 4,000	$ -	$ -	$ 94,000	$ -	$ 10,000	$ 34,000	$ 20,000

4	**OBJECTIVE 4: Incorporate Pandemic Preparedness activities into Community Based Disaster Risk Reduction Programmes (CBDRM) developed and implemented in support of NCDM, PCDM, DCDM, and CCDM policy, programs, and activities.**														
4.1	**Develop and conduct an integrated public awareness, pandemic preparedness, and CBDRM programme**														
4.11	Review existing public awareness programs being implemented by NCDM and other selected ministries, especially MAFF and MoH	COM, NCDM	MAFF and MoH, and other relevant ministries	3rd-4th Q 2006	Review document	Identifying accomplishments and gaps in existing public awareness program	9 consultative review sessions ($1000 each)	$ -	$ 9,000	$ -	$ -	$ 9,000	$ -	$ 2,000	$ 7,000	$ -
4.12	Consultation-sessions with various village associations, NGOs, IOs on their current public awareness and CBDRM programs.	NCDM	PCDM, DCDM, CCDM NGOs, IOs, MoH and MAFF reps	3rd-4th Q 2006	Consultation proceedings	Agreements in existing CBDRM implementation among NGOs, DCDM, PCDM	30 consultations ($1000 each)	$ -	$ 30,000	$ -	$ -	$ 30,000	$ -	$ 5,000	$ 25,000	$ -
4.13	Incorporation of Pandemic Preparedness into existing CBDRM programme (design, pilots, and spread)	NCDM	PCDM, DCDM, CCDM, NGOs, villages	3rd-4th Q 2006 and follow-up	% of communes trained in PP as part of CBDRM	Communities prepared for all disasters including pandemics	TA for design, 3 training courses, 3 workshops, follow-up operations (most CBDRM activities supported by NGOS).	$ 15,000	$ 9,000	$ -	$ 2,000	$ 26,000		$ 5,000	$ 11,000	$ 10,000
							Total:	$ 15,000	$ 48,000	$ -	$ 2,000	$ 65,000	$ -	$ 12,000	$ 43,000	$ 10,000
5	Objective 5: Operational support														
5.1	UNDP support to the programme	UNDP		continuous	programme implemented satisfactorily			$ 150,000								
5.2	Annual independent audit	UNDP		annually				$ 25,000								
5.3	UNDP General Management Support	UNDP	5% of total budget	continuous				$ 55,350				$ 55,350				
							Total:	$ 175,000				$ 175,000				
							Grand Totals:	**$ 425,000**	**$ 382,000**	**$ 170,000**	**$ 6,000**	**$ 1,107,000**	**$ 2,000**	**$ 241,000**	**$ 370,000**	**$ 195,000**

Appendix B: Action Plan for implementing the control of Avian Influenza in Cambodia

(Ministry of Agriculture, Forestry and Fisheries)

I - Implementation of effective poultry movement control.

It is proposed here to strengthen the control of the poultry and poultry products movement by setting up check points along borders and on the main roads in the provinces and around Phnom Penh and by increasing the inspection of live birds arriving in the markets. The purpose is to control the movements of poultry and poultry products from the neighboring countries and within the country from infected places to market places.

Justification

The DAHP will set up check points on the main roads coming from the Vietnamese and Thai boarders with collaboration with the PC. These check points will be situated on the main ways to the provincial cities, not far from the boarders. Actually it should be more effective than controlling the boarders' checkpoints because smugglers are used to avoid or deal controls.

Checkpoint will be established as well around Phnom Penh because of the density of population and poultry markets. A special attention will be paid to Siem Reap to reassure tourists.

Outputs expected:

This control will familiarize Provincial Staff with poultry movement control and will prevent Bird Flu virus spread from provinces to provinces and from provinces to cities in case of outbreaks. A total of 19 checkpoints will be setup with necessary equipment to conduct disinfections and recording:

- adequate shelter
- pump sprayer
- PPE
- Equipment to burry carcasses
- Materials to record and report
- Communication means to report in emergency

Suggestion to set up the checkpoints:

- road 56 Mkak Changha (Sisophon)
- road 5 Kampong Svay (Sisophon)
- road 57 Ou Mal (Battambang)
- road 5 Ou Char (Battambang)
- road 6 Puok (Siem Reap)
- road 6 x road 67 (Siem Reap)
- road 7 Svay Chreah (Kratie)
- road 7 Sralab (Kampong Cham)
- road 1 Svay Rieng
- road 1 Neak Loeang (Mekong river)
- road 2 Pech Sar (Takeo)
- road 31 Bantey Meas (Kampot)
- road 3 Lang (Kampot)
- road 3 Kach Touch (Kampot)

Ring protection around Phnom Penh could be:

- road 1 Veal Sbov
- road 2 Ta Khmau (after the bridge)
- road 3 and 4 Potchentong

road 5 Prey Phnov
road 6 Preak Lieb

Activities to be achieved

The function of these check points will be to disinfect all poultry transport means (cars, motorbikes, cages…). If an outbreak is confirmed these structures will facilitate banning poultry movement.
In case of suspected high mortality during the transport, the provincial/district staff will destroy carcasses and immediately report to authorities.

Human resources needed

Staff working in POAH will carry out this control and movement recording. However in case of strict control when outbreak occurs, these staffs will need support of Provincial Committees.
Staffs will receive incentives to make this supplementary 24hours/7days work.

Trainings

Provincial/district staff in charge of control at the checkpoint will be trained to identify suspected cases and to implement proper disinfection and safe carcass disposal.
They need to be trained as well to report properly.
Trainings will be organized every 2 months by POHA.

Description of checkpoints

To set up effective poultry movement check points it will be necessary to build shelters on the verge of the road for checkpoint team and provide all equipment necessary to clean and disinfect all transport means using to carry poultry, to monitor and control mortality in transported poultry, to collect and dispose carcasses, and to record and report activities.

II- Upgrade bio-security level

1. Semi- commercial and commercial farms

Justification

In Cambodia there are roughly 150 commercial chicken farms (56 layers farms and 92 broiler farms) according the complete census in October-November 2004. Bio-security improvement will lead to prevent the risk of HPAI contamination in these farms and avoid spreading the virus, since the farmers, when facing outbreaks, try to sell the contaminated chickens and then this can contribute to the dissemination of the virus.

Outputs expected
All commercial and semi-commercial farms will be refurbished according standard rules of safety. These modifications will be adequate with local premises and appropriate to prevent virus contamination.
The project will provide:
fences and concrete stakes
nets
safe gates with lavabo, footbath
reusable cover-all, boots
tanks to treat water if pumped from ponds

Implementation of bio-security improvement

Strengthen bio-security means to refurbish the premises in a proper manner and to give adequate training to the farmers and stakeholders. The content of this up-grading is as follow:
avoiding contact with wild bird (nets to close the roof openings) ;
avoiding contact with local ducks and chickens (fence around the premises) ;
controlling quality of water (especially avoiding to pump water in ponds and use of chlorine) ;
providing a safety gate to enter the premises (to change the shoes, the clothes and to wash the hands) ;

Human resources needed

A National Consultant with support of experts will be responsible for designing premises modifications, contracting construction companies, following-up the work.

Trainings

Farmers, owning semi-commercials farms will be trained every 3 months to learn and refresh good practices of management.
Staffs of POAH will organize these trainings and assess farmer's response.

2. Backyard farms

Justification

Backyard chickens are mainly scavenging chickens and they have contact with wild birds in the village surroundings. These scavenging chickens can catch, transmit and spread Bird Flu virus very easily in the village because they are free ranging.

Outputs expected.

Means necessary to prevent Bird Flu virus to penetrate in the village and means to avoid the virus to reach outside the village:

- disinfectant pools
- manual pump sprayers
- disinfectant
- traditional osier cages

Implementation
It is impossible to implement bio-security measures in each house in the village but the whole village will be considered like a farm and will be protected like a farm.
Achievement of a good bio-security will require:
basic disinfection of transport means entering in the village because droppings can be full of virus; in case of outbreaks in the region, they will be filled with disinfectant and all bicycle, motorbikes, trucks and of course shoes will be disinfected before entering in the village in order to avoid visitors to bring virus.
Cleaning the village to avoid comfortable environment for the virus and prevent storage of virus that can live for 21 days in good condition.
traditional cages in all houses to quarantine poultry coming from outside; when buying alive chicken at the market the health status is uncertain; the poultry will be quarantined in cages far from other birds for 5 days to be sure they are not in incubation of Bird Flu.
setting up all measures necessary to move away wild birds.

Human resources

VAHW and Chiefs of the villages can be responsible of bio-security achievement.
In case of outbreaks they will receive support of the district veterinarian.

If the HPAI outbreak occurs in the village the Provincial Authorities will support to achieve strict control.

Trainings

Training will be organized at the village level to inform the farmers by the VAHW.
Workshop must be organized for VAHW as well to share experience and ideas; bio-security in villages is a crucial issue but no one has realistic experience to strengthen it.

3. Markets and poultry slaughterhouses

Justification

Infected poultries shed a lot of virus. Thousands of chickens coming from several provinces are collected in a small area with close contact. Customers bring back poultry in many places in the city. Wet-markets are the best place to bring the virus, to contaminate other poultries and to disseminate the virus in the city.

Outputs expected

Reducing virus burden and spread thanks to disinfection equipment like pump sprayers and controlled places to unload poultries that will be reserved in all markets.
Reducing contamination risk for people involving in slaughtering poultry including refurbishment of slaughtering environment, using cleaned water, wearing PPE, having good waste disposal management, and applying good hygienic practices.
Inform retailers about the risk of handling HPAI carrier poultry using adequate information tools: leaflets, posters and brochures.

Implementation

Hygiene and sanitation in markets include:
disinfection of transport means when arriving at the markets
proper slaughtering practices in appropriate area
Adequate disposal/management of feathers, entrails, dirty water, etc.
sanitary control re-enforced
information provided to retailers to explain clearly issues of bio-security

Human resources

The Municipality staff in charge of market control will ensure that retailers respect safe slaughtering practice.
These staffs will announce a weekly day of disinfections and all vendors must empty cages.
They will as well inform retailers on risks and duties.

Trainings

Municipality staff in charge of market control will be trained regularly on monitoring and surveying by DAHP staff. as well as the general hygienic procedures for those who handle with poultry.
These trained staff will then train the retailers and poultry slaughterers on proper handling of poultry and general hygienic procedures.

4. Traders

Justification

The demand of poultry meat has increased significantly particularly in Phnom Penh and Siem Reap and some movement has been made between provinces where the demands of poultry meat and eggs are high. To rich the destination, these poultry are transported by various means of transport.
The travel of middlemen or traders from farms to the markets and from markets back to the farms may pose a risk of spreading disease to the flocks through contaminated equipment and materials used for carrying the birds.

Outputs expected

Virus burden causing possible spread can be reduced by educated traders on proper sanitation of their transport means and equipment and materials used in transporting poultry every circle.

Implementation

Hygiene and sanitation of transport means include:
properly clean equipment and materials used for carrying poultry
properly clean transport means
disinfection of transport means and equipment and materials when arriving at the markets

Human resources

The PAHPO staff will be responsible for ensuring the implementation of traders regard safe practice. They will also inform traders about the risks and duties.

Trainings

The PAHPO staff will be trained regularly on general hygienic procedures and the risks of HPAI associated with movement of poultry.
These trained staff will then train the traders regard this matter.

III- HPAI surveillance and control at the village level

Justification

HPAI outbreaks occurred early part of last year and tapered off to one or two in the middle of the year. This year however, the disease picture included human cases at the border with Vietnam. The total picture is still unclear with villagers experiencing high mortalities in chickens but never really reporting it. Still in some instances, no clinical signs are apparent but the duck population surrounding the scavenging poultry is highly suspect in transmitting the disease. Villagers go on with poultry raising, even consuming meat from dead poultry, unmindful of the risks they face.
The role of village animal health workers in surveillance has been recognized and will be tapped for surveillance. The information that they get will all be managed into a central data base at the NAHPIC. .

Outputs expected

A network at the national scale of 7000 VAHW will be trained to carry out:
surveillance in the village that will request transport cost payment to visit farms facing suspect mortality
immediate control in a safe manner thanks to appropriate equipments: PPE, manual pump sprayers, disinfectant, shovel to burry carcasses
villagers awareness with adequate information tools like guides, posters
properly record on specific report notebooks with guidelines to report properly and means to call.

Implementation

Chief of PAHPO and District veterinarians will plan the training of VAHW. They will plan group of 10 to 15 VAHW that will be trained every 2 months.

Objectives of these trainings are:
to identify the disease especially in identifying suspected mortalities
to achieve immediate control in case of suspected mortality: collecting carcasses to burry it, disinfecting premises and surroundings
to report in a good manner to the district veterinarian during the monthly meeting or immediately if the case is really suspect
to inform villagers about the risk of Bird Flu and the manner to prevent outbreaks in the village
The overall goal of the project is to generate a clear picture of the disease situation at any time so that response to possible outbreaks could be done at the shortest time possible.

Human resources
VAHW to achieve these activities at the village level. This supplementary work will be paid
District veterinarians who assist the trainer and organize monthly meetings to get VAHW's reports. The District veterinarian will be responsible as well of spreading a copy of reports to NAHPIC epidemiology unit; this supplementary work will be paid.
Provincial Chief of POAH who is responsible of training organization and of evaluation of VAHW work; this supplementary work will be paid
Trainers with complete knowledge on Bird flu, to make specific trainings for VAHW and to answer all questions about the disease. DAHP staff will train these people.
A national Consultant; receiving thousands of reports from VAHW will lead to employ a person to record and analyze the reports to give a clear picture of the situation.

Trainings

Workshop (2 days) to inform chiefs of PAHPO on the project and their role in activities achievement; after 6 months a second workshop must be held to evaluate the success and weakness of the project
Training (5 Days) for ToT to be sure they have deep and strong knowledge on Bird Flu and to strengthen their capacity to train VAHW
Trainings (1 day every 2 months) to provide good skill on Bird flu to VAHW

IV- National Surveillance and Investigation capacity

Justification

In addition to the information that will come from the VAHW, a national surveillance program must be conducted. Those activities, started since July 2004, need to be strengthened and continued without interruption. This would involve regular sampling at market places and in ducks farms. The main objective of this surveillance program is to offset the weakness of the national passive surveillance network and increase the chance of early detection of new outbreaks in the country.

At present, although the outbreaks are sporadic, the AI virus is still circulating and outbreaks can occur anytime. The close proximity to countries still reporting HPAI and recent developments on the role of ducks in the transmission of the disease puts Cambodia highly at risk for a repeat of HPAI outbreaks of a larger scale. It is important therefore, that active surveillance of the disease be continued to prepare the veterinary services in case of an outbreak.
In case of outbreak occurring capacity of epidemiology staffs to conduct a complete investigation and to analyze data will help to better understand the model of spread especially in villages and will determine origin of contamination and point out weakness of surveillance and control.

Outputs expected

Thousands of cloacal swabs and blood samples will be collected in sentinel ducks flocks with appropriates collection materials: swabs, vacutainers

Farmers who will face loss of income when the surveillance staffs collect samples in layers will be reasonably compensated.
These samples will be brought to NAHPIC virology unit in good condition, in recommended transport media and stored in iceboxes.

Implementation

PAHPO staffs that will visit weekly main markets in the province and collect samples in sentinel flocks will implement routine surveillance.
They will send in time and in good manner these samples to NAHPIC with necessary information to record in the database.
After analyzing the specimens the DAHP will inform POAH and the Provincial Committee to give back a clear review of the situation in the province.

Investigation is a specific work that request a strong experience in interviewing villagers, farmers…epidemiology staff of NAHPIC will be in charge of conducting investigation with support of provincial and district staff.

Human resources
Provincial veterinarians well trained to collect specimens
Staffs of epidemiology unit in NAHPIC
A National Consultant in epidemiology to support staffs and strengthen skill to investigate and to analyze data**.**

Training

Training in the field for Provincial veterinarians every 3 months
Training course in epidemiology for one or two staff of the unit to reach international standard.
Part of the control policy, surveillance activities must be accompanied by effective control measures in case of detection of a HPAI suspect or confirmed case. The Government also needs support to continue its efforts on this important matter**.**

V- Laboratory capacity

Justification

The virology unit must perform reliable analyzes to detect and identify Bird Flu virus or H5N1 antibodies to have a clear picture of virus circulation in Cambodia and to lead to confirm Bird Flu outbreak to achieve control measures.
Control will be faster conducted and more efficient if the virology unit can confirm results without delay.
The virology unit will analyze thousands specimens after setting up a complete surveillance network at the village level and when carrying out an efficient routine surveillance at the national scale.

Outputs expected

Availability of all reagents necessary to perform different techniques to identify and detect H5N1 virus in every one of specimens collected in the field.
Extension of virology unit to allow analysing large quantities of specimens
New equipment needed to identify H5N1 virus (at present the virology unit can only identify group A viruses)
Necropsy unit reaching international safety standards

Implementation

The virology unit is supposed to double the surface to increase capacity to perform IFAT, HI analyses in a large quantity of specimens and to perform RT-PCR technique that allows identifying H5N1 virus.

To reach this objective the virology unit plan to install equipment with international safety level in the meeting room.
It will be compulsory to recruit new trained staff to achieve this new development of the virology unit.
At present NAHPIC staff conduct autopsy without ensuring environment safety and contamination risk for the neighbouring buildings (one of them is a school) are not negligible. Safety gate, safe air extraction and proper used water disposal will be the first steps of refurbishment.

Human resources

Analysing samples require working out of normal work schedule because some techniques take plenty of hours to be achieved,
On the other hand, samples arrive from provinces every day and immediate preparation of specimens is essential to perform reliable analyses.
NAHPIC must recruit and train more staffs and plan to pay over-time to ensure 24/7 work.
Support of International experts are indispensable to train the staff to draw the new virology unit construction, to request equipment specification and to train staffs to perform this new technique
Laboratory National Consultant will be responsible of recruitment, organization of experts assignments, follow-up of extension of the unit in cooperation with experts

Trainings

To support new staff to reach requested level
To refresh and assess capacity in carrying out usual technique
To train to RT-PCR

VI- Communications and public awareness

The messages on HPAI will be transferred to farmers and public through media (TV and radio), extension materials, shows or loud-speaker campaign, and face to face meeting in the high risk areas.
From these activities the following outputs are foreseen:
Knowledge on HPAI increased;
Effective techniques in preventing and controlling HPAI disseminated;
Awareness among stakeholders on the importance of controlling HPAI developed.

Justification

With the significant role that the poultry sector takes part in the economy of the country and because of the bird flu outbreak being experienced, there is a need to increase the awareness of the primary stakeholders on the control of such disease as recently, farmers are not or little familiar with this disease. Thus, more emphasis on the importance of controlling the disease as well as promoting specific control and preventive measures should be advocated. Pertinent information on the specific disease has to be conveyed for the stakeholders to have better knowledge. Also, a change in attitude and eventually practices of the stakeholders needs to be initiated through introduction of new techniques and highlighting the benefits that can be derived in preventing and controlling bird flu.
However, information tools distributed in the field need to be controlled as many agencies, NGO who have limited knowledge about HPAI trying to share the information on bird flu in their coverage areas. Spreading different and inaccurate information will confuse farmers. Thus, information on Bird Flu must be approved (with short reply) by DAHP before circulating**.**

Outputs expected

New TV and radio spots will be prepared and broadcasted regularly during the year especially during high-risk period to prevent misreporting of suspected cases.
Other information tools suck as leaflets and posters will be upgraded and distributed. Posters will be pined in all strategic places.
Specific public awareness like loud-speaker campaign, theatre groups travelling from villages to villages, airing or playing realistic simulation of HPAI outbreaks will target remote villages.

An extension department in MAFF and DAHP will examine all documents to be distributed in the field with power to give a quick approval / refusal after comments.

Implementation

The National Consultant for communication will prepare script for both TV and radio spots and will produce in collaboration with DAE and DAHP.
These spots will be broadcasted regularly throughout the year or following independent schedule of outbreaks depending on the spots produced.
In case of confirmed H5N1 outbreak the specific TV and radio spots will be broadcasted.
The upgraded extension tools including posters, leaflets and brochures will be produced and distributed to all PAHPO for further distributing to farmers and other stakeholders.
The DAE and DAHP will check all documents that NGOs and agencies want to spread in the country. These two departments will study the contents of documents in a short delay to decide if it is technical sound and suited for the country situations, and work closely with the national consultant, agencies and NGOs to assist them to issue appropriate documents.

Human resources

A National Consultant for communication
A committee with participants of MAFF, PAHPO, Provincial committees, MoH to work closely with communication department. This supplementary work will be compensated
NGOs contracted to animate theatre simulation shows in the villages
Provincial Committees will asses distribution of information tools in the province

Training

Workshop will be organized with relevant partners to explain the communication policy to show clearly that regulation will prevent confusing in sharing field experience of DAHP and not to reduce transparency.
Farmer meeting (including local traders) will be organised in the high risk areas to highlight the benefits that can be derived in preventing and controlling bird flu, and to promoting specific control and preventive measures to change in attitude and eventually practices of the stakeholders.

VII- Restructuring poultry production

The poultry production in Cambodia is insufficiently developed, considering growth of the domestic market and food insecurity of many households. Although the need for poultry meat and eggs is obvious and the availability of these products can go a long way to meet the protein requirement, there are several constraints to the future development of the poultry industry. The first and foremost is the availability of capital. Another constraint in those areas is the availability of adequate supplies of grain and protein supplements necessary for formulation of poultry feeds. A third constraint on future poultry industry development is the need to develop the various supporting industries necessary for commercial poultry production including supply of DOC, poultry production equipment, pharmaceuticals, packaging and housing materials. The lack of poultry skilled people for middle management positions is a real hindrance to further growth in the industry. Finally, the most obvious constraint on poultry production is the climate. High temperature, especially when coupled with high humidity, imposes severe stress on birds and leads to reduced performance.

Justification

A tremendous potential for increasing poultry production is through the development of small and medium scale commercial operations. Success of those operations depends on the adaptation of modern practices of poultry production in an integrated approach. This development is going to be closely linked to availability of feed sources that do not compete with human food, and adequate supply of DOC. Thus, more private enterprises should be encouraged to engage in production of

DOC, as CP is currently the only one, and its capacity is insufficient to meet the demand. This situation led to illegal import of poultry from current HPAI infected countries to restock the farms in time.

If private stakeholders are not interested yet in breeding management of local poultry breeds, the State should initially engage into this activity, which is vital for small scale farmers and for biodiversity.

Implementation

DAHP and Provincial Committees must assess needs at the province level to estimate the best location to set up hatcheries and type of products required (broilers, layers…)
A National Consultant will make a complete study of feasibility and look for private investors
Provincial Committees will suggest technical and financial support requested to set up such hatcheries
With these documents, MAFF will draw a program of hatchery development at the national scale that will ensure sufficient supply and competitive price with illegal importation
DAHP will write guidelines of bio-security requirements and surveillance to be implemented in the hatcheries

Human Resources

National Consultant with experience in poultry production and hatchery management
PAHPO to produce a review of current production and estimation of needs in the province. PAHPO will be contracted to achieve this work and to produce a document.
DAHP will be contracted to write a guideline on good management of hatcheries.

Training

When setting up hatcheries, farmers will be trained to implement a safe management and to reach

standard technical level.

VIII- Policy on Diseases Control and Preparedness Plan

Justification

The HPAI has now become endemic in the region with the H5N1 virus circulating in the smallholder poultry sector and the duck systems.
Decentralization process is part of the general governmental strategy. In the specific case of AI control, the Government marked a new step by requesting the creation of provincial multi-sectoral committees for a better management of the AI control (Second Inter-Ministerial meeting on AI chaired by Ministry of Agriculture on the 10th May 2005). Those committees, under the authority of the governors, will be responsible for the smooth implementation of the AI control policy. They will work under the general technical supervision of the relevant central departments, but the urgent decision related to the surveillance and the control measures implementation will have to be taken at the provincial level. This will facilitate a quick answer to the confirmed cases.
This point out the necessity to set up a clear policy on Diseases Control to provide a legal frame work to authorities responsible of this control.

Implementation

Official setting up of Provincial Committees

Each province must establish complete list of participants mentioning everyone's name/ phone number / current position and new responsibilities in the committee. The Chairman and acting director must be clearly identified. This list will be spread in Ministries, DAHP, NAHPIC, FAO and others OI, NGO involved in project implemented in provinces.

- Drafting regulations: The general regulatory framework for the actions of the veterinary services is very limited. There is no regulation about the animal disease control; this means that there

is no disease submitted to notification and no animal disease control program. The draft regulation on animal disease control must be discussed within the Provincial Committees to ensure to be realistic and adequate. This legal framework will give authority to the veterinary services to possibly apply the sanitary measures in case of outbreak of regulated diseases and especially in case of HPAI outbreaks.

- Preparation of preparedness plan: In case of outbreaks among poultry, immediate control will avoid spreading the virus to other districts and other provinces. Limited outbreaks will prevent transmission to humans.

When an outbreak is declared positive to H5N1 by NAHPIC, efficient response must be implemented:

Culling
Carcasses disposal
Disinfection
Control of poultry movement
Banning wet markets

1. Official setting up of Provincial Committees

Listing

Each province must establish complete list of participants mentioning everyone's name/ phone number / current position and new responsibilities in the committee.
The Chairman and acting director must be clearly identified.
This list will be spread in Ministries, DAHP, NAHPIC, FAO and others OI, NGO involved in project implemented in provinces.

1.2 Location

Judiciously headquarters should be in Provincial Animal Health Office but place must be clearly identified. A fax number must be indicated as well.

Official starting of activities

These committees will be invited in Phnom Penh to participate in a workshop; MAAF, MoH, WHO, FAO…will make presentation to review current situation, to assess the risk in Cambodia and to raise responsibilities of the Committees.
To work efficiently Provinces will be divided in groups, because response in case of outbreak must be adequate with local constraint:

High risk Provinces (lot of duck flocks and bordering Vietnam or Thailand)
Provinces with intense poultry movements
Provinces with high commercial poultry
Remote Provinces

2. Activities to be achieved by the committees

Legal frame work for HPAI control

The general regulatory framework for the actions of the veterinary services is very limited. There is no regulation about the animal disease control; this means that there is no disease submitted to notification and no animal disease control program. The draft regulation on animal disease control must be discussed within the Provincial Committees to ensure to be realistic and adequate. This legal framework will give authority to the veterinary services to possibly apply the sanitary measures in case of outbreak of regulated diseases and especially in case of HPAI outbreaks.

Preparation of a Provincial preparedness plan

In case of outbreaks among poultry, immediate control will avoid spreading the virus to other districts and other provinces. Limited outbreaks will prevent transmission to humans.

When an outbreak is declared positive to H5N1 by NAHPIC, efficient response must be implemented:
Culling
Carcasses disposal
Disinfection
Control of poultry movement
Banning wet markets

The power of Provincial Committees will be necessary to support DAHP staffs to achieve culling and movement control because it is difficult to force villagers or farmers to accept culling but it is crucial to fight HPAI spread.

The Provincial Committees must prepare action plan in accordance with OIE/FAO recommendations and realistic implementation.
Listing of compulsory checkpoints at the district level and provincial level to control efficiently movements
Means necessary to organize these checkpoints
assigning people responsible of market control
Identification of those responsible to support culling…

Centralizing public awareness tools

2.3.1 To prevent population confusing the Provincial Committee will control that information spread in the field is in compliance with relevant ministries guidelines:
Identification of all projects implemented by NGO, Agencies…in the province.
The Committee will inform clearly partners that they have to request agreement before spreading leaflets, posters…
2.3.2 To avoid wasting, the Committee will record all information tools delivered in the province and ensure that the distribution has been properly achieved.

3. Setting up an information network

Provincial Committees must be aware of the situation in Cambodia, in neighbouring countries (Khmer version of AI bulletin issued by FAO and WHO can be spread to the Committees).

Provincial Committees must be informed when activities are implemented in their province by Central authorities: NAHPIC, CDC…

Provincial Committees must received summary and analysis of activities of VAHW involved in surveillance and immediate control to be clearly aware of the situation in the province.

3.1 DAHP/NAHPIC must assign a National Consultant (funded by on-going project) responsible of recording all reports made by VAHW trough District veterinarians.

3.2 This Consultant will be responsible to spread information and monthly report to the Provincial committees.

3.3 The National consultant will assess the quality of information provided to Provincial Committees.

4. Means required

List of equipment
to set up check points at the district and provincial level
communication needs
office furniture…

Human resources
International expert
National consultant

Workshops
4.2.1 To be organized for each group every 4 months to review situation and activities
Travels
Central staff attending Central Committees meetings
Support to implement activities
National Consultant evaluations

IX Research

Surveillance of the migratory birds in Tonle Sap region and birds selling at markets will be carried out in collaboration with Wildlife Conservation Society and USDA.
Disease patterns/ pathways
Impact assessment
Other epidemiological studies

ACTION PLAN FOR IMPLEMENTING THE CONTROL OF HPAI IN CAMBODIA DURING THREE YEARS FROM 2006 TO 2008

Activities	Responsible Agency	Estimate budget in US 000	Year 1				Year 2				Year 3				Justifications
			1	2	3	4	1	2	3	4	1	2	3	4	
I- Poultry Movement Control															
19 checkpoints and mobile teams will be set up with necessary equipment to conduct disinfections and recording	DAHP/PAHPO/PMSC	**700**			x	x	x	x	x	x	x	x	x	x	check points on the main roads coming from the Viet Nam and Thai borders with collaboration with the PC
Training provincial/district/central staff who in charge of control at the check point	DAHP			x	x		x		x		x		x		Training to identify suspected cases and to implement proper disinfection and safe carcass disposal
II-Upgrade bio-security level															
1. in semi-commercial and commercial farms		**800**													
All commercial and semi-commercial farms will be refurbished according standard rules of safety	DAHP/PAHPO			x	x	x	x	x			x	x			148 commercial and semi-commercial chicken farms (56 layers farms and 92 broiler farms) will improve bio-security level to prevent the risk of HPAI contamination

Activities	Responsible Agency	Estimate budget in US 000	Year 1				Year 2				Year 3				Justifications
			1	2	3	4	1	2	3	4	1	2	3	4	
Training farmers, owning semi-commercial farms	DAHP/ PAHPO			x	x			x	x			x	x		Training will be every 3 months to learn and refresh on good practices of management
2. In the backyard farms		**800**													
Means necessary to prevent Bird Flu virus to penetrate in the village and to avoid virus spread to outside the village	District Vet/ VAHW/ Chief of village				x	x	x	x	x	x	x	x	x	x	Implement bio-security measures in the whole village and the village will be considered like a farm and will be protected like a farm
Training and workshopto share experience and ideas on bio-security in the village level	VAHW/PAHPO		x	x	x	x	x	x	x	x	x	x	x	x	
3. Market and poultry slaughterhouse		**180**													
Reducing virus burden and spread by disinfection and control places to unload poultries that will reserved in all markets	Municipality staff			x	x	x	x	x	x		x	x	x		Hygiene and sanitation in markets due to thousands of chickens coming from several provinces to the city in wet-markets
TrainingMunicipality staff will be trained on Hygiene and sanitation in wet markets	DAHP		x	x	x	x	x	x	x	x	x	x	x	x	Municipality staff who in charge of market control will be regularly trained to implement the techniques properly by DAHP
4. Traders		**100**													

Activities	Responsible Agency	Estimate budget in US 000	Year 1				Year 2				Year 3				Justifications
			1	2	3	4	1	2	3	4	1	2	3	4	
Virus burden causing possible spread can be reduced by proper sanitation of transport means and equipment and materials used in transporting poultry every circle.	PAHPO staff			x	x	x	x	x	x	x	x	x	x	x	Properly clean and disinfect equipment and materials used for carrying poultry, and transport means.
The PAHPO staff will be trained regularly on general hygienic procedures and the risks of HPAI associated with movement of poultry.	DAHP		x		x		x		x		x		x		PAHPO staff who in charge of movement control will be regularly trained by DAHP
III- HPAI surveillance and control at the village level															
Train VAHW on -surveillance in the village -Immediate control in a safe manner -to identify the disease especially in the identifying suspected mortalities	PAHPO/ VAHW/NAHPIC	**6420**	x	x	x	x	x	x	x	x	x	x	x	x	7000 VAHW will be trained to carry out surveillance, control, reporting and public awareness in villages

Activities	Responsible Agency	Estimate budget in US 000	Year 1				Year 2				Year 3				Justifications
			1	2	3	4	1	2	3	4	1	2	3	4	
-to achieve immediate control in case of suspected mortality -to report in a good manner to the district vet - to inform villagers about the risk of Bird Flu and the manner to prevent outbreaks in the village															
IV- National Surveillance and Investigation capacity															
- Surveillance program will be conducted in all provinces -Regular sampling at market places and in ducks farms -In case of outbreak occurring capacity of epidemiology staffs to conduct a complete investigation	NAHPIC/PAHPO/ Phnom Penh Municipality	**200**	x	x	x	x	x	x	x	x	x	x	x	x	Thousands of cloacal swabs and blood samples will be collected in markets and in sentinel ducks flocks. All samples will be brought to NAHPIC in good condition
Training in the field for Provincial vet every 3 months	NAHPIC		x	x	x	x	x	x	x	x	x	x	x	x	

Activities	Responsible Agency	Estimate budget in US 000	Year 1				Year 2				Year 3				Justifications
			1	2	3	4	1	2	3	4	1	2	3	4	
V-Laboratory capacity															
-Extension of virology unit to allow analysing large quantities of specimens -Perform RT-PCR technique to identify H5N1 virus -To recruit and train more staffs to achieve the new development of the virology unit -Support new staff to reach request level -To train on RT-PCR -To refresh and assess capacity in carrying out usual technique	Donors/ NAHPIC	**325**			x	x	x	x			x	x			-The virology unit must perform reliable analyzes to detect and identify Bird Flu virus H5N1 -The virology can confirm results without delay -The virology unit will analyse lot of specimens after set up a complete surveillance net work at the village level
VI- Communication and public awareness		**250**													
-Routine public awareness program	DAHP/PMSC/ PAHPO/ VAHW		x	x	x	x	x	x	x	x	x	x	x	x	-To educate and aware people on the bird flu risk and good practices:

Activities	Responsible Agency	Estimate budget in US 000	Year 1				Year 2				Year 3				Justifications
			1	2	4	3	1	2	4	3	1	2	4	3	
-Information and farmers awareness will be explained face to face to people with low education level -Prepare new script of TV spots and show in the villages after MAFF approval -The films will be broadcasted regularly -To control all information tools distributed in the field															- Farmer meeting - Radio spot Leaflets and poster **-**To involve NGOs, OI, agencies...staffs in spreading approved information tools -To increase awareness of people on bird flue risk and good practices
VII- Restructuring poultry production															
-Increase production of DOC by setting up the hatcheries -Review of current production and estimation of needs in the provinces -Write guide on good management of hatcheries	DAHP/ PMSC/PAHPO	**1085**					x	x	x	x	x	x	x	x	Production of DOC, pullets and duckling is far to be sufficient to fit with the needs in the country

Activities	Responsible Agency	Estimate budget in US 000	Year 1				Year 2				Year 3				Justifications
			1	2	3	4	1	2	3	4	1	2	3	4	
VIII- Policy on Diseases Control and Preparedness plan															
-Set up a clear policy on diseases control -Draft regulation on animal disease control -Preparation of preparedness plan in case of outbreaks among poultry	DAHP/PMSC/ Expert need		x	x	x	x									-Creation of provincial multi-sectoral committees for a better management of AI control
Workshop to explain duties of PC	DAHP	**480**	x			x			x				x		Update composition/location of the committees DAHP provide guidelines to set up a preparedness plan at the district/provincial level
Follow up of Provincial Committees activities	DAHP			x			x			x	x			x	Evaluation by DAHP/PAHPO
Workshops to update situation and planning	DAHP/PAHPO		x		x		x		x		x		x		
Recruitment of National Coordinator	To be recruited in DAHP		x												To coordinate activities of PC and to support implementation in cooperation with relevant ministries
	Travel and report to relevant authorities														
IX- Research		**100**													

Activities	Responsible Agency	Estimate budget in US 000	Year 1				Year 2				Year 3				Justifications
			1	2	3	4	1	2	3	4	1	2	3	4	
Wild life surveillance in the wet markets	NAHPIC/ USDA/ WCS		x	x	x	x	x	x	x	x	x	x	x	x	Migratory bird will be trapped and taking samples
Disease patterns/pathways					x	x									To understand the sources of infection
Impact assessment							x	x			x	x			To understand the benefit and losses caused by HPAI
Other epidemiological studies									x	x			x	x	Research necessary regards HPAI control and eradication
Total		**11,340**													

Appendix C: List of Acronyms and Abbreviations

AHI	Avian and Human Influenza
AHPO	Animal Health Provincial Office
AI	Avian Influenza
CCDM	Commune Committee for Disaster Management
CCG	Cambodia Coast Guard
CDC	Cambodia Development Council
CDM	Committee for Disaster Management
COM	Council of Ministers' Office
CRC	Cambodian Red Cross
DAHP	Department of Animal Health and Production
DOC	Day old chick
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
DCDC	Department of Communicable Disease Control (Ministry of Health)
DCDM	District Committee for Disaster Management
DHTE	Department of Higher and Technology Education
DMTP	Disaster Management Training Programme
EOC	Emergency Operations Centre
FAO	Food and Agriculture Organization of the United Nations
HPAI	Highly Pathogenic Avian Influenza
IFRC	International Federation of Red Cross and Red Crescent Societies
KAP	Knowledge Attitudes and Practices
LPAI	Lowly Pathogenic Avian Influenza
MAFF	Ministry of Agriculture, Forests and Fisheries
MCRA	Ministry of Cults and Religious Affairs
MEF or MoEF	Ministry of Economy and Financial
MEYS	Ministry of Foreign Education, Youth and Sport
MFAIC	Ministry of Affairs and International Co-operation
MIME	Ministry of Industry, Mines and Energy
MINF	Ministry of Information
MINT	Ministry of Interior
MND	Ministry of National Defence
MOE	Ministry of Environment
MOH	Ministry of Health
MOP	Ministry of Planning
MOT	Ministry of Tourism
MPT	Ministry of Posts and Telecommunications
MPWT	Ministry of Public Works and Transport
MRD	Ministry of Rural Development
MSWLV	Ministry of Social Welfare, Labour and Veterans
MYR	Ministry of Youth Rehabilitation
NAHPIC	National Animal Health and Production Investigation Centre
NCDM	National Committee for Disaster Management
NCHP	National Centre for Health Promotion (Ministry of Health)
NCLUU	National Committee for Land Use and Urbanisation
NEMP	National Emergency Management Policy
NGO	Non-Government Organisation(s)
OIE	Organisation Internationale des Epizooties, (World Organisation for Animal Health)
PCDM	Provincial (or Municipal) Committee for Disaster Management
PIC	Pasteur Institute of Cambodia
PMO	Prime Minister's Office

PS	Permanent Secretary
RCAF	Royal Cambodian Air Force
RCN	Royal Cambodian Navy
RGC	Royal Government of Cambodia
SAR	Search and Rescue
TADs	Trans-boundary Animal Diseases
TOR	Terms of Reference
UN	United Nations
UN-DMT	United Nations Disaster Management Team
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNRC	United Nations Resident Coordinator
UNSIC	The Office of the United Nations System Influenza Coordination
VAHW	Village Animal Health Worker
VHSG	Village Health Support Group
VHV	Village Health Volunteers
WFP	World Food Programme
WHO	World Health Organisation

Appendix D: List of Selected References

UN System:

- *Food and Agriculture Organisation (FAO) animal health and Avian Influenza website* http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/special_avian.html
- *World Organisation for Animal Health (OiE)* http://www.oie.int/eng/en_index.htm
- *UN System Influenza Coordinator (UNSIC) website* http://influenza.undg.org
- *WHO checklist for influenza pandemic preparedness planning.* Geneva, World Health Organization, 2005. (Document WHO/CDS/CSR/GIP/2005.4.) http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_GIP_2005_4/en/
- *WHO consultation on priority public health interventions before and during an influenza* pandemic. Geneva, World Health Organization, 2004. (Document WHO/CDS/CSR/RMD/2004.9.) http://www.who.int/csr/disease/avian_influenza/consultation/en/
- *WHO guidelines on the use of vaccines and antivirals during influenza pandemics.* Geneva, World Health Organization, 2004. (Document WHO/CDS/CSR/RMD/2004.8.) http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_RMD_2004_8/en/
- *WHO outbreak communications guidelines.* Singapore, September 2004. http://www.who.int/infectious-disease-news/IDdocs/whocds200528/whocds200528en.pdf
- *World Health Organisation (WHO) pandemic influenza preparedness website* http://www.who.int/csr/disease/influenza/pandemic/en/index.html#prepare
- *WHO pages on response to H5N1 in humans:* http://www.who.int/csr/disease/avian_influenza/en/
- *Selected WHO guidelines on influenza H5N1.* http://www.who.int/csr/disease/avian_influenza/guidelines/en/
- *Humanitarian Early Warning Service, Avian Influenza Page:* http://www.hewsweb.org/avian_flu/
- *Documents from the International Pledging Conference on Avian and Human Influenza:* http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,,contentMDK:20765603~menuPK:2077305~pagePK:41367~piPK:51533~theSitePK:40941,00.html

Other Sources:

- *US Center for Disease Control avian flu pages* http://www.cdc.gov/flu/avian/index.htm
- *Flu Wiki has a good collection of user submitted content on all sorts of issues* http://www.fluwikie.com
- *Wall Street Journal runs a very up to date daily news tracker* http://online.wsj.com/public/article/SB112896461663164579-ppo_6wfcgN3zajns2WY43LVH7E4_20051019.html?mod=blogs
- *Wikipedia article on pandemic influenza* http://en.wikipedia.org/wiki/Pandemic_influenza

Business continuity planning:

- *NZ govt information and support tools* http://www.med.govt.nz/templates/ContentTopicSummary____14451.aspx

- *CDC/US govt tools* http://www.cdc.gov/flu/pandemic/business.htm

Appendix E: WHO Pandemic Phases

From: WHO global influenza preparedness plan: The role of WHO and recommendations for national measures before and during pandemics

http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_GIP_2005_5.pdf

NEW PHASES	OVERARCHING PUBLIC HEALTH GOALS
Interpandemic period	
Phase 1. No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk[a] of human infection or disease is considered to be low.	Strengthen influenza pandemic preparedness at the global, regional, national and subnational levels.
Phase 2. No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk[a] of human disease.	Minimize the risk of transmission to humans; detect and report such transmission rapidly if it occurs.
Pandemic alert period	
Phase 3. Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.[b]	Ensure rapid characterization of the new virus subtype and early detection, notification and response to additional cases.
Phase 4. Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.[b]	Contain the new virus within limited foci or delay spread to gain time to implement preparedness measures, including vaccine development.
Phase 5. Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).	Maximize efforts to contain or delay spread, to possibly avert a pandemic, and to gain time to implement pandemic response measures.
Pandemic period	
Phase 6. Pandemic: increased and sustained transmission in general population.[b]	Minimize the impact of the pandemic.

[a] The distinction between ***phase 1*** and ***phase 2*** is based on the risk of human infection or disease resulting from circulating strains in animals. The distinction is based on various factors and their relative importance according to current scientific knowledge. Factors may include pathogenicity in animals and humans, occurrence in domesticated animals and livestock or only in wildlife, whether the virus is enzootic or epizootic, geographically localized or widespread, and/or other scientific parameters.

[b] The distinction between ***phase 3***, ***phase 4*** and ***phase 5*** is based on an assessment of the risk of a pandemic. Various factors and their relative importance according to current scientific knowledge may be considered. Factors may include rate of transmission, geographical location and spread, severity of illness, presence of genes from human strains (if derived from an animal strain), and/or other scientific parameters.

Appendix F: UN Joint Framework for Addressing Avian Influenza and Pandemic Planning in Cambodia

I. EXECUTIVE SUMMARY

The purpose of this UN Joint Programme Framework is to explain the approach of the UN System in Cambodia with regard to Avian Influenza and the possibility of Pandemic Influenza.

The details of this Framework will be updated as the situation evolves, and as priorities change[1]. The Framework is both a description of what is already happening, as well as a statement of important issues which need further attention at this stage. It seeks to summarise current best estimates of remaining funding requirements.

Currently the world is in Phase 3 of the WHO Pandemic Alert Period. It is at the point when heightened surveillance is absolutely essential – both of livestock and of humans – and when preparedness planning for a possible pandemic is highly advisable. It is also important that a focus on human health issues does not eclipse the fundamental first priority of containing avian influenza in animals.

The UN's approach in Cambodia is:

1. To support and reinforce the work already being done by FAO and WHO, with their respective counterpart ministries (MAFF and MoH). Most of the resources are and should be going to the animal and human health sectors. To support the ongoing IEC (Information, Education and Communication) campaigns of UNICEF. All three parts (Animal health, Human Health and IEC) representing the main components in the Government's National Comprehensive Plan on AHI.

2. To encourage and support national pandemic preparedness planning led from the very top of government, namely the Prime Minister himself, through the National Committee for Disaster Management (NCDM) which has been given the mandate to coordinate Cambodia's pandemic preparedness in cooperation with all ministries, especially MoH.

3. To continue planning for the UN system response to a pandemic through ensuring staff safety and health, business and programme continuity, communication structures and the functioning of a UN Crisis Management Team that will coordinate UN's response in a pandemic.

4. To ensure that NGOs and donors are fully informed at all stages of the planning and operations, so that they can play their full part.

The UN supports a substantially increased flow of international resources to assist Cambodia to respond to this challenge. It does so because the urgent need exists but also in the knowledge that effective animal and human health capacity, as well as pandemic preparedness, will serve the larger purpose of building Cambodia's overall capacity to manage
its own sustainable human development and ensure human security for its people.

Current best estimates of additional resource requirements for the medium to long term amounts to US$ 5.6 million.

[1] Last updated October 2006

II. INTRODUCTION

(a) Purpose

The purpose of this UN Joint Programme Framework is to summarise the response of the United Nations System to Avian Influenza and the current level of preparedness for Pandemic Influenza in the Royal Kingdom of Cambodia.

This UN Cambodia response situates itself both in the context of the UN System's global response to the challenge posed by this virus, as well as in the programmes already underway in Cambodia, under the leadership of the Royal Government of Cambodia. The paper does not go into great detail, since other documents (listed in Annex I) provide this level of information. The intent is to provide an overall framework for UN operations in this area, as well as to identify both the strengths and weaknesses – financial as well as operational – at the present time.

The UN's Joint Framework is a "work in progress". The situation in Cambodia, as well as in the world more generally, is continuing to evolve. The Framework is therefore intended as a current snapshot of what the UN is doing and what it considers important. It will change over time, as both practical experience and the ground situation change.

The UN in Cambodia is committed to maintaining a flexible approach to its priorities in this rapidly-changing area.

(b) Note on Terminology

Much of what is written on the subject of Avian Influenza or HPAI (highly pathogenic avian influenza) conflates several different concepts. It is therefore helpful to clarify terminology from the outset as follows:

- ✓ **Avian Influenza**: a disease caused by a highly pathogenic (HPAI) virus, which occurs in birds and which has a 60-100% mortality rate in chickens. Ducks and migratory birds might be more resistant and mostly just carriers of the virus. Mortality has occurred in a number different countries, including Cambodia, and the virus continues to spread globally.
- ✓ **Avian Influenza in Humans**: a disease caused by the same Avian Influenza virus in poultry that sometimes infects humans, notably those who work closely with infected birds. In humans the virus has been detected in 251 people and killed 147 worldwide. Of the cases detected, the case fatality ratio is 55%. There have been 6 mortalities in Cambodia.
- ✓ **Pandemic Influenza**: a disease caused by a new strain of influenza. The new pandemic strain of the virus can emerge from mutations or reassortment with other viruses. Epidemiologists believe its occurrence is likely, based on the fact that the three previous documented influenza pandemics have developed from an avian source and another pandemic is judged to be overdue. Its virulence is unknown as yet, but human immunity would be lower than for the more common forms of influenza and thus infection and mortality rates could be significantly higher.

For the purpose of this paper, the above terms will be used as applicable.

(c) Background

There is little need to elaborate here on the importance of Avian Influenza and the possibility of a Pandemic Influenza developing in the foreseeable future. A great deal has already been written on the subject. In summary, the possible impact is both human and economic. It is global as well as national. It is a true example of global interdependence, and one of the evident downsides of globalisation. The UN System in Cambodia is therefore conscious of its obligation both to Cambodia as well as to the larger international community.

In itself, Avian Influenza, which now appears to be endemic in South East Asia, poses a serious threat to poverty reduction and economic viability of many subsistence farming communities in the region. Some estimates put the economic cost of the disease to date as already being tens of millions of dollars. There have also been 147 human deaths recorded, out of 251 infections. Thus, Avian Influenza in and of itself represents a serious problem that needs to be addressed.

More seriously, if Pandemic Influenza were to emerge, there could be significant loss of life (the epidemiological minimum and maximum estimates are understandably broad) as well as economic consequences. Depending upon the level of infection and the virulence of the new virus, the loss of production in terms of sick-days as well as deaths could be in the billions of US dollars, and could be so disruptive as to threaten food security and essential services within the affected countries.

Cambodia faces its own unique dilemmas in this respect: it has experienced its own incidents of avian influenza over the past two years, with losses of more than 40,000 chickens and six human fatalities. This is potentially very serious for a country in which 90% of poultry is raised by smallholder or subsistence farmers (so-called back-yard farming), who depend on this as a source of day-to-day livelihood and nutrition.

Cambodia sits between two large poultry producers: Vietnam and Thailand, both of which have already experienced far larger outbreaks of avian influenza, including significant human infection. The sub-region is therefore a potential flashpoint for an escalation of Avian Influenza and the development of Pandemic Influenza. Under such circumstances there is no effective way in which Cambodia could isolate itself from events in its immediate neighbourhood, let alone in the world at large.

The UN in Cambodia is very conscious of this threat to human security in Cambodia and is mobilising resources to assist the Royal Government and the People of the country to address the challenge.

III. A UN JOINT FRAMEWORK FOR ACTION

(a) Overall Objectives

The overall objective of the UN's engagement in Cambodia is to strengthen national and international efforts to address the twin challenges of Avian and possible Pandemic Influenza.

Having said this, however, there are several different interconnected strands to these efforts, perhaps in logical order of importance:

1. **To control outbreaks of Avian Influenza** in poultry and thus to limit the economic costs of the disease and the potential for its expansion into humans.
2. **To prevent transmission of Avian Influenza from birds to humans**, and thus to limit the opportunities for mutation of the virus into human to human transmission.
3. **To minimise the risks and consequences of a pandemic** by planning for such an outbreak, both in terms of human health services but also in terms of preparedness in society as a whole.

(b) Sequencing and Timing

The United Nations subscribes to WHO's sequential framework for viewing the development of the possible pandemic influenza. This is contained in its document "Global Influenza Preparedness Plan 2005". The sequential framework is summarised in Attachment II to this document.

The world is currently in **Phase 3 of the Pandemic Alert Period**. This is when "there are human infections of the Avian Influenza virus, but no human-to-human spread, or at most rare instances of spread to a close contact".

If and when the cycle moves into Phase 4, i.e. limited human-to-human transmission, it is likely that the process will rapidly accelerate to Phase 6, i.e. the Pandemic Period, unless there is a very rapid response to effectively contain the situation.

Thus, in the UN's view, Cambodia is at the point when heightened surveillance is absolutely essential – both of livestock and of humans - and when preparedness planning for a possible pandemic is highly advisable. It is also important that a focus on human health issues does not eclipse the fundamental first priority of containing avian influenza in animals.

(c) Elements of a Response

While FAO and WHO sometimes use slightly different terms, since the one is dealing with birds and the other with humans, there is general agreement within the UN that the following four components comprise a comprehensive approach to the challenge posed by Avian Influenza in Cambodia:

- ✓ **Disease surveillance, investigation and diagnosis**: In animals this entails the rapid flow of information as to possible outbreaks and accurate identification of the virus so that prompt action can be taken. In humans, this is much the

same in principle, although it must also identify whether or not the virus has adapted to human-to-human transmission.

- ✓ **Infection control and treatment**: This is somewhat simpler for livestock in that it requires rapid culling of the affected stock and consequent containment of the outbreak. For human beings, management of limited incidents of animal-human transmission is relatively straightforward, but containment and treatment of a rapidly evolving human-to-human pandemic virus represents a logistical challenge of a wholly different order of magnitude
- ✓ **Information, education and communication (IEC)**: Both of the above components need to be supported by a carefully pitched and widely targeted series of messages as regards livestock care and personal health measures. In the build-up to, and outbreak of a pandemic, the clarity, consistency and wide dissemination of such communication is of great importance.
- ✓ **Pandemic preparedness measures**: Hitherto viewed as an animal and/or human health issue, the prospects of a pandemic requires many other parts of government and society generally to become engaged and to think through the implications of unusually high levels of infection, sickness, incapacity and mortality.

For the UN in Cambodia, all of these elements are essential for addressing the challenge of Avian and possible Pandemic Influenza. However, it should also be noted that building national capacities in Cambodia for this purpose will also serve the broader purpose of public health management for the country and increase its capacity to manage other diseases.

(d) The UN System's Approach in Cambodia

Much useful work has already been done in Cambodia, firstly in the Ministry of Agriculture, Forestry and Fisheries (MAFF) which has been working closely with the Food and Agriculture Organisation of the UN (FAO) for several years to control Avian Influenza. The Ministry of Health, working with the World Health Organisation (WHO), has been addressing the challenges of animal-to-human as well as possible human-to-human transmission. And finally, UNICEF has been working very actively with both these ministries as well as Ministry of Education, Youth and Sports, Ministry of Information and Ministry of Cult and Religion in developing effective IEC (Information, Education and Communication) campaigns on AI awareness among the public. There is therefore a very solid foundation of national work and UN collaboration to build upon.

Bearing this in mind, the UN System's approach is:

- ✓ **To support this ongoing work** in the areas of animal health, human health and IEC. The UN's lead technical agencies – **FAO, WHO and UNICEF** – have substantial expertise and experience in this area, as well as excellent relations with their national counterparts. The draft National Comprehensive AHI Plan has been prepared in close collaboration between the UN and the Government.
- ✓ **To reinforce this collaboration** with more resources wherever necessary. This may involve additional funding requests, where there is a shortfall vis-à-vis practical requirements, but it will also involve bringing further expertise available from within the system.

- ✓ **To encourage pandemic preparedness planning** across the Cambodian Government and Society. This is an area which is still in its infancy and needs to be given a rapid infusion of priority and energy. It represents a new, fourth pillar of the overall national response. In this respect, the proven disaster response capacity within the UN System – **UNOCHA**, **WFP** and **UNDP** –already support this planning.
- ✓ **To foster close linkages and collaboration** between these four elements, under the overall aegis of the **National Committee for Disaster Management (NCDM**). The NCDM represents a well-tried mechanism for high-level oversight of such processes, since it is **chaired by the Prime Minister himself**. It is this high level engagement which the UN believes essential at this stage. However, planning for and possibly responding to a pandemic will be a new experience for Cambodia, as is the case in many countries. Its mechanisms will require some enhancement to enable this under the leadership of the Royal Government of Cambodia.
- ✓ **To ensure that Non-Governmental Organisations (NGOs)** are kept fully in the planning, operational and communications loop throughout, in the knowledge that they represent an essential partner and conduit to civil society throughout Cambodia. Equally important is working closely together with **donors** present in Cambodia to ensure coordinated support.
- ✓ **The UN Country Team in Cambodia is in itself an integral part** of all four elements, including undertaking its own **programmatic contingency planning for a possible Pandemic Period**. The UN Country Team, comprising all resident agencies, has produced a plan for how it will maintain essential programmes and operational support to Cambodia during the Pandemic Period through the coordination of the UN **Crisis Management Team (CMT).**

IV. THE CAMBODIAN NATIONAL PLAN

(a) Animal Health

It is vitally important that the focus on animal health is not eclipsed by human health issues, since poultry are the reservoir for a potential pandemic virus. Immediate control and surveillance of the H5N1 virus in poultry would reduce the risks of poultry-to-human transmissions, although it would still not be a guarantee for avoiding a pandemic. The government's National Strategy in this area has recently been updated and is incorporated into the draft National Comprehensive AHI plan.

One issue which the UN considers of vital strategic importance is the need to carefully consider stronger incentives to encourage reporting of suspicious avian deaths. A surveillance and reporting system has already been started by the MAFF and FAO and first assessments of this confirm its effectiveness. The authorities should also consider how to promote low-cost approaches to improved biosecurity such as separating new poultry coming into the backyard from the existing flock and thereby reducing risk while promoting food-security. There is an important role for community-level NGO programmes to play their part in these efforts, in cooperation with the authorities.

(b) Human health

The recently updated national human health strategy is also incorporated into the draft National Comprehensive AHI plan.

One area which will require further effort at this stage of the cycle is pandemic preparedness planning in the health sector itself, with a focus on maintaining essential services as well as supporting home care. This is now beginning to be addressed by the Ministry of Health.

(c) Information, Education and Communication (IEC)

A national strategy document on IEC (Information, Education and Communication) has been formulated and is now integrated into the National Comprehensive Plan on AHI. Within this component of the National Plan, the Royal Government of Cambodia affirms its commitment, during the Pandemic Alert Period, and even more so during any possible Pandemic Period, to have clear, accurate and consistent communication messages, reaching the general population, as well as specific targeted groups – chicken farmers, health workers, mothers etc.

Such communication needs to be well coordinated, and informed by technical specialists in the animal health and human health sectors. This is now coordinated through the National Coordinating Committee on IEC for AHI, co-chaired by the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Health. UNICEF is the secretariat and facilitator of this forum where all key actors on IEC for AHI in Cambodia are members. The objective is to implement the national IEC strategy and to make sure all awareness campaigns are consistent and complementary. In a Pandemic situation (WHO phase 6), this forum will be chaired by the NCDM as part of a coordinated national response.

(d) Pandemic Preparedness

The planning for how all government agencies should prepare for pandemic influenza has started and will be the main priority for the future. A UN - Government technical working group has been formed to take this process forward and WHO supports a pandemic planner to work within the National Committee for Disaster Management (NCDM). The World Bank, through UNDP as the implementing agency, is funding the NCDM's key activities within national pandemic preparedness.

The UN in Cambodia continues to encourage the NCDM to stimulate preparedness across Government, and will provide capacity building support including scenario building, for this purpose.

(e) Coordination

Avian Influenza and the possibility of Pandemic Influenza pose a special challenge to the Royal Government of Cambodia in that, while the animal and human health elements are recognisable sectoral issues during the Inter-Pandemic Period, the Pandemic Alert Period requires a much greater involvement of other agencies. This is because the possible rapid progression to a Pandemic phase requires contingency planning for a whole new level of operation to contain the outbreak and/or to cope with and minimise its severity.

For this reason, a robust coordination structure is necessary which ensures the appropriate participation of all concerned. In addition, it is impossible to predict exactly how a pandemic will

affect Cambodia, there are a range of possible scenarios. Given this unpredictability of how, and also when, it is vital to create a coordination structure that will be able to cope with all different scenarios. In the end, the hope is that Cambodia will be better prepared to deal with all disasters, not only a pandemic but also floods and droughts.

Conscious of this, the UN System in Cambodia fully supports the Government's decision to place Pandemic Influenza Preparedness under the oversight of the **National Committee for Disaster Management (NCDM)**, a high level committee chaired by the Prime Minister himself. To ensure that the matter receives equally high priority attention within the UN System, the UN Country Team has determined that its counterpart to the NCDM in the event of a pandemic – the **UN Crisis Management Team (UNCMT)** - should coordinate all aspects of the UN's pandemic response and assistance to the Government. In between the NCDM and the CMT is also a UN-Government **Technical Working Group on National Pandemic Preparedness.**

Similarly, the UN supports the consolidation of operational coordination in the existing **Inter-Ministerial Committee on Avian and Pandemic Influenza**, which is a high-level forum within the Council of Ministers. The equivalent to that in the UN is the UN Country Team comprised of the Heads of UN agencies.

Since many practical issues are of a highly technical nature, the Government has invited the two UN technical agencies –WHO and FAO – to participate in a **Joint Technical Working Group**, a level of collaboration which is already working quite effectively. The UN in Cambodia believes it important that this technical working group be permitted to operate professionally, rather than get bogged down with too many additional tasks.

Finally, the UN is deeply conscious of the important role that NGOs play in Cambodia. They have a role to play in terms of all four elements of the National plan – animal health, human health, IEC and pandemic preparedness – and there needs to be regular two-way communication between national policy-makers and the NGO community. Donors are increasingly supporting national efforts and also need to be informed regularly and be provided a forum to share ideas, along with other interested partners. For this reason, an **Avian and Pandemic Influenza Partnership Meeting** has been established to ensure that coordination among all parties represents a fundamental part of the overall planning and operational process.

In order to coordinate all actors on IEC campaigns and to implement the national strategy, a **National Coordination Committee for IEC on AHI** has been established and reports to the Partnership meeting.

Attachment IV provides a graphic representation of this coordination structure.

(f) Funding

Funding requirements for the work of addressing all elements of the Influenza Challenge in Cambodia represents a moving target, as the situation itself evolves. Funding commitments to meet some of these requirements also continues to evolve, as donors and international organisations mobilise their support.

Both the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Health have provided their latest estimates of requirements. Since FAO and WHO have respectively been fully involved in preparing these national estimates, the UN Country Team supports these requests.

The United Nations would in addition propose that some further funding be provided for the Communications and Pandemic Preparedness work that is very necessary at this stage. The current picture may therefore be summarised as follows:

	US $ million
Animal health	3,912
Human health	1,669
IEC	0,016
Pandemic preparedness	0
	Total 5,597 million

A more detailed breakdown of these figures is contained in **Attachment V.**

The Office of the UN Resident Coordinator will be pleased to assist interested donors to identify the most important gaps that exist at any given time, and can advise on the most appropriate funding modalities.

Attachment I.

PRINCIPAL RESOURCE DOCUMENTS

(a) International

1. Pandemic Planning and Preparedness Guidelines for the United Nations System, March 2006

2. A Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza (HPAI), FAO and OIE in collaboration with WHO, May 2005.

3. Responding to the Avian Influenza Pandemic Threat, WHO, August 2005

4. WHO Global Influenza Preparedness Plan, WHO, 2005

(b) Cambodia

5. Cambodia National Comprehensive Plan on Avian and Human Influenza (draft version), August 2006.
6. National Pandemic Influenza Preparedness and Response Plan for Cambodia (draft version), September 2006
7. UN Cambodia Pandemic Preparedness Plan, October 2006
8. The United Nations Development Assistance Framework (UNDAF) for Cambodia, 2006-2010, Office of the UN Resident Coordinator.

Attachment II.

WHO's SEQUENCING OF THE PANDEMIC[2]

✓ Inter-Pandemic Period

- **Phase 1**. No new influenza virus sub-types have been detected in human. An influenza virus sub-type that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low.
- **Phase 2**. No new influenza virus sub-types have been detected in humans. However, a circulating animal influenza virus sub-type poses a substantial risk of human disease.

✓ Pandemic Alert Period

- ***Phase 3. Human infection(s) with a new sub-type, but no human-to-human spread, or at most rare instances of spread to a close contact.***
- **Phase 4**. Small cluster(s) with limited human-to-human transmission but spread is highly localised, suggesting that the virus is not well adapted to humans.
- **Phase 5**. Larger cluster(s) but human-to-human spread still localised, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).

✓ Pandemic Period

- **Phase 6**. Pandemic phase: increased and sustained transmission in the general population.

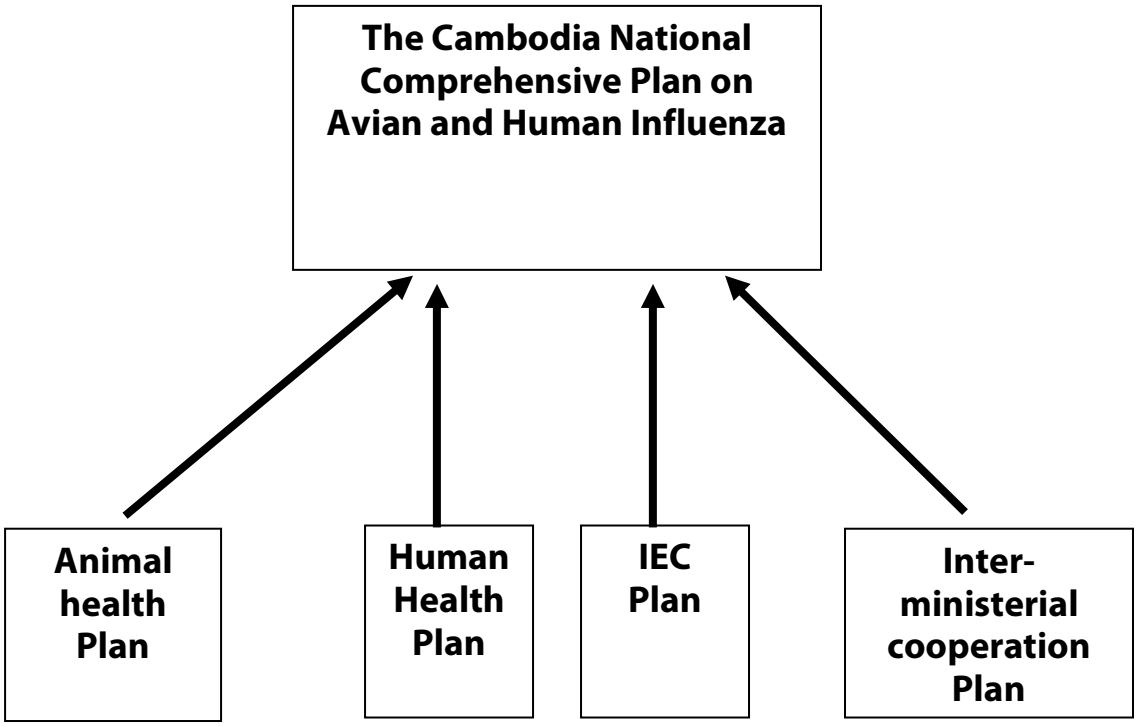
✓ Post-Pandemic Period

- Return to inter-pandemic period.

[2] WHO Global Influenza Preparedness Plan, WHO, 2005

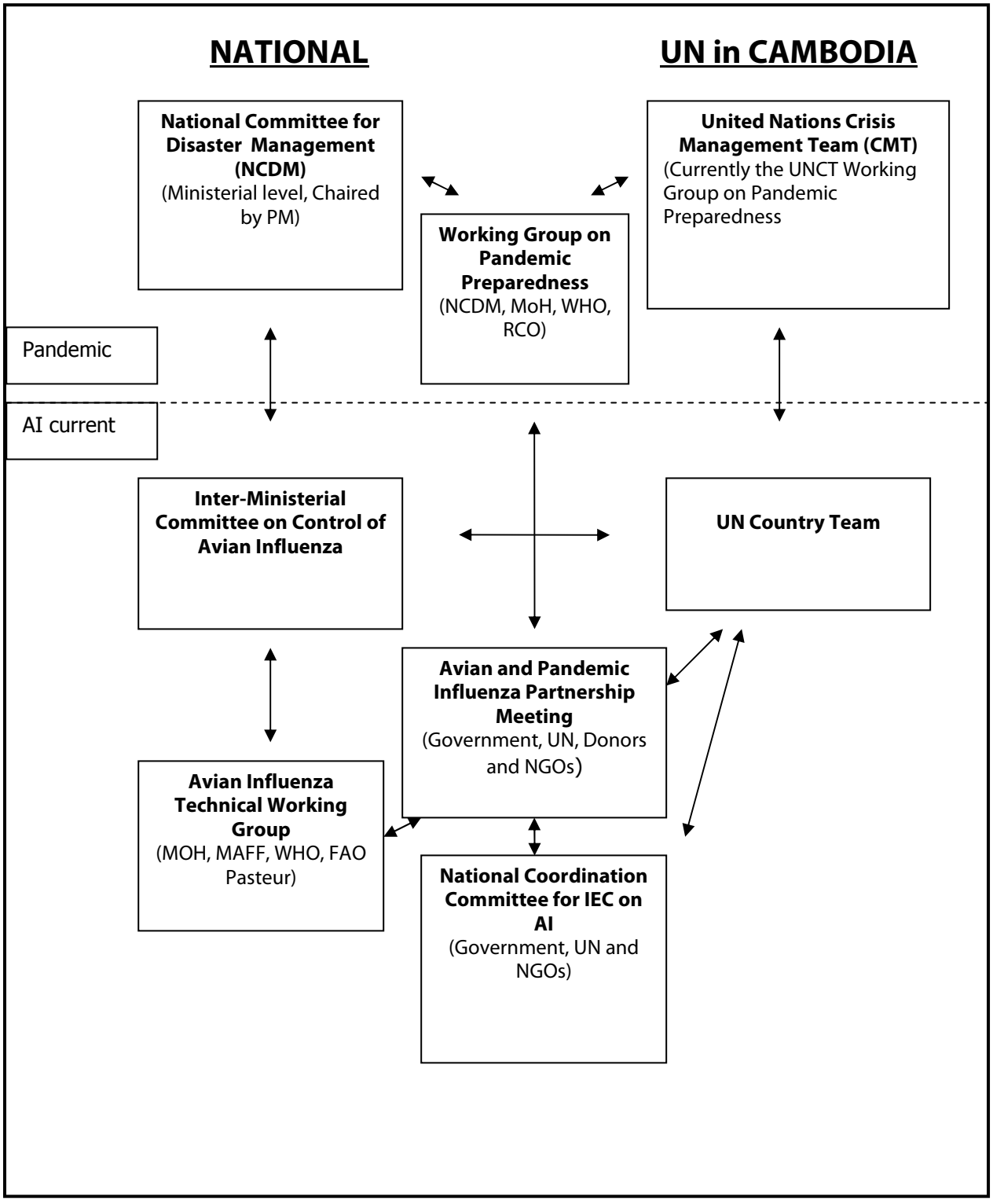
Attachment III.

FOUR COMPONENTS OF THE NATIONAL PLAN



Attachment IV.

COORDINATION STRUCTURES



Attachment V.

Current Resource Requirements

US Dollars

		Estimated Requirements	Existing Funding	Balance Required
Animal Health				
	Strenghtening veterinary services	8,257775		
	HPAI Surveillance, Investigation and Response	3,411720		
	Strengthening Biosecurity in Poultry Production and Trade	1,030000		
	Information, Education and Communication	1,093000		
	Pandemic Planning	10000		
	Project Management	2,082960		
	Sub-Total	**15,885455**	**11,973650**	**3,911805**
Human health				
	Education for health professionals & public	319000	299000	20000
	Surveillance, investigation& response	2,636400	2,616400	20000
	Case management & infection control	2,300000	1,421100	878900
	Laboratory support	556000	256000	300000
	Pandemic preparedness planning (health sector)	712000	262000	450000
	Sub-Total	**6,523400**	**4,854500**	**1,668900**
Information, Education & Communication				
	Planning and Strategy Development			
	Seasonal Flu Campaign			
	Prevention of Animal to Human Transmission			
	Pandemic Preparedness			
	Media Training			

	Project Support and Contingency			
	Sub-Total	**3,017763**	**1,807593**	**1,210170**
Operational Coordination for Pandemic Preparedness				
	Establish the legal framework and institutional capacity to support the development of a Pandemic Preparedness, Response and Recovery Plan as part of the National Policy for Emergency Management in full cooperation with all Ministries, PCDM, DCDM, CCDM and other important stakeholders in Cambodia	349000	349000	0
	Develop an effective Pandemic Preparedness, Response and Recovery Program implemented at all levels Inter-ministerial facilitation and coordination	330000	330000	0
	Establishment of an effective NCDM Emergency Management Information System that will serve Pandemic Preparedness and Emergency Operations, incorporating an active Monitoring and Evaluation system	94000	94000	0
	Incorporate Pandemic Preparedness activities into Community Based Disaster Risk Reduction Programmes (CBDRM) developed and implemented in support of NCDM, PCDM, CCDM policy programs and activities	65000	65000	0
	Operational support	257500	257500	0
	Sub Total	**1,095150**	**1,095150**	**0**
	GRAND TOTAL	**26,521768**	**19,730893**	**6,790875**
	Note: Based on current best estimates for 2006-2008			