

**RESPONSES TO AVIAN INFLUENZA
AND STATE OF PANDEMIC READINESS**

THIRD GLOBAL PROGRESS REPORT

DECEMBER 2007

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&
World Bank

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ACRONYMS AND ABBREVIATIONS

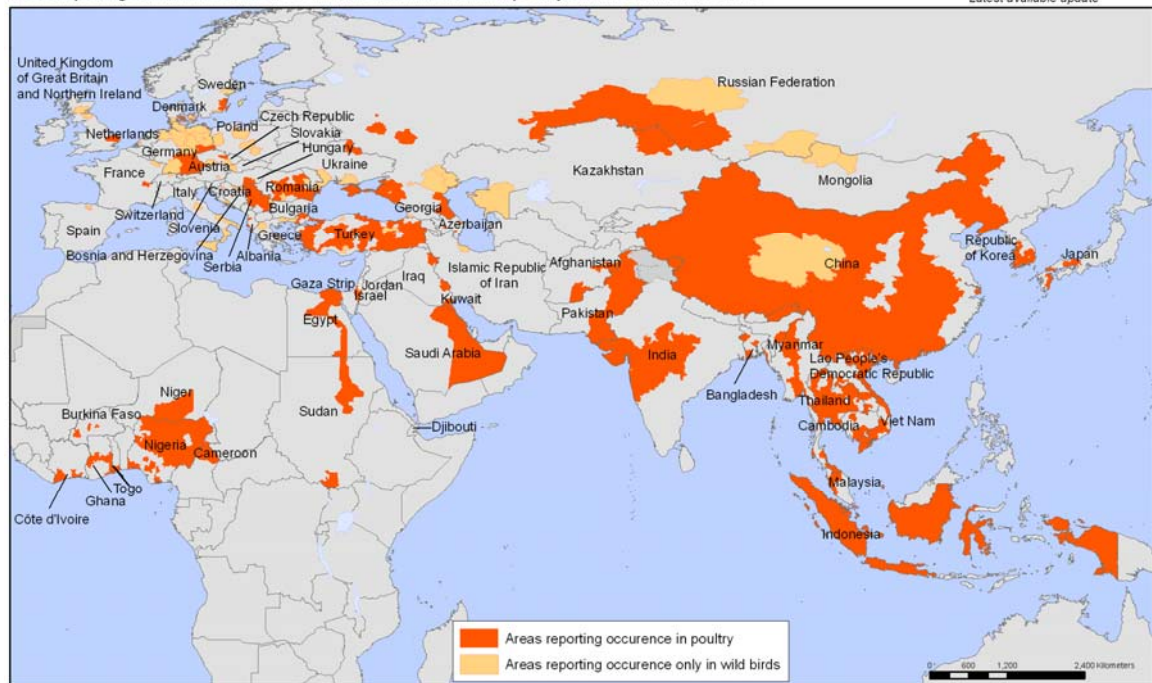
AI	Avian Influenza	IBRD	International Bank for Reconstruction and Development (World Bank)
AHI	Avian and Human Influenza	IDA	International Development Association (of the World Bank)
AHIF	Avian and Human Influenza Facility	IMF	International Monetary Fund
AHITF	Avian and Human Influenza Task Force	INGO	International Non-Governmental Organisation
ALive	Africa Partnership for Livestock Development, Poverty Alleviation and Sustainable Growth	IPAPI	International Partnership on Avian and Pandemic Influenza
APEC	Asia & Pacific Economic Cooperation	LSHTM	London School of Hygiene and Tropical Medicine
ASEAN	Association of Southeast Asian Nations	MBDS	Mekong Basin Disease Surveillance
AU	African Union	MDBs	Multilateral Development Banks
AU-IBAR	African Union – Inter-African Bureau for Animal Resources	MDTF	Multidonor Trust Fund
CAREC+	Central Asia Regional Economic Cooperation (including Turkmenistan and the Russian Federation)	MNA	Middle East and North Africa
CFIA	Central Fund for Influenza Action	NGO	Non-Governmental Organisation
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement	OCHA	United Nations Office for the Coordination of Humanitarian Affairs
CMC-AH	Crisis Management Centre for Animal Health	OFFLU	OIE/FAO Network of Expertise on Avian Influenza
EAP	East Asia and Pacific	OIE	World Organisation for Animal Health
ECA	Eastern Europe and Central Asia	PAHO	Pan American Health Organization
ECDC	European Centre for Disease Prevention and Control	PHRD	Policy and Human Resources Development (World Bank-managed Japanese Trust Fund)
ECTAD	Emergency Centre for Transboundary Animal Diseases	PIC	UNSC Pandemic Influenza Contingency
EEA	European Economic Area	PPE	Personal Protective Equipment
EU	European Union	PVS	Performance, Vision and Strategy
FAO	Food and Agriculture Organisation of the United Nations	RA	Rapid Assessment
GAINS	Global Avian Influenza Network for Surveillance	UNDG	United Nations Development Group
GLEWS	Global Early Warning and Response System for Major Animal Diseases, including Zoonoses	UNDP	United Nations Development Programme
GPAI	Global Program for Avian and Human Influenza Control and Preparedness	UNEP	United Nations Environment Programme
GOARN	Global Outbreak Alert and Response Network	UNHCR	Office of the United Nations High Commissioner for Refugees
HPAI	Highly Pathogenic Avian Influenza	UNICEF	United Nations Children’s Fund
IASC	Inter-Agency Standing Committee	UNSC	United Nations System Influenza Coordination
ICS	Incident Command System	USAID	United States Agency for International Development
IFRC	International Federation of the Red Cross and Red Crescent Societies	USCDC	United States Centers for Disease Control and Prevention
		WFP	World Food Programme
		WHO	World Health Organisation
		WHO WPRO	WHO Western Pacific Regional Office

MAPS

Map 0.1

Areas reporting confirmed occurrence of H5N1 avian influenza in poultry and wild birds since 2003

Status as of 27 September 2007
Latest available update



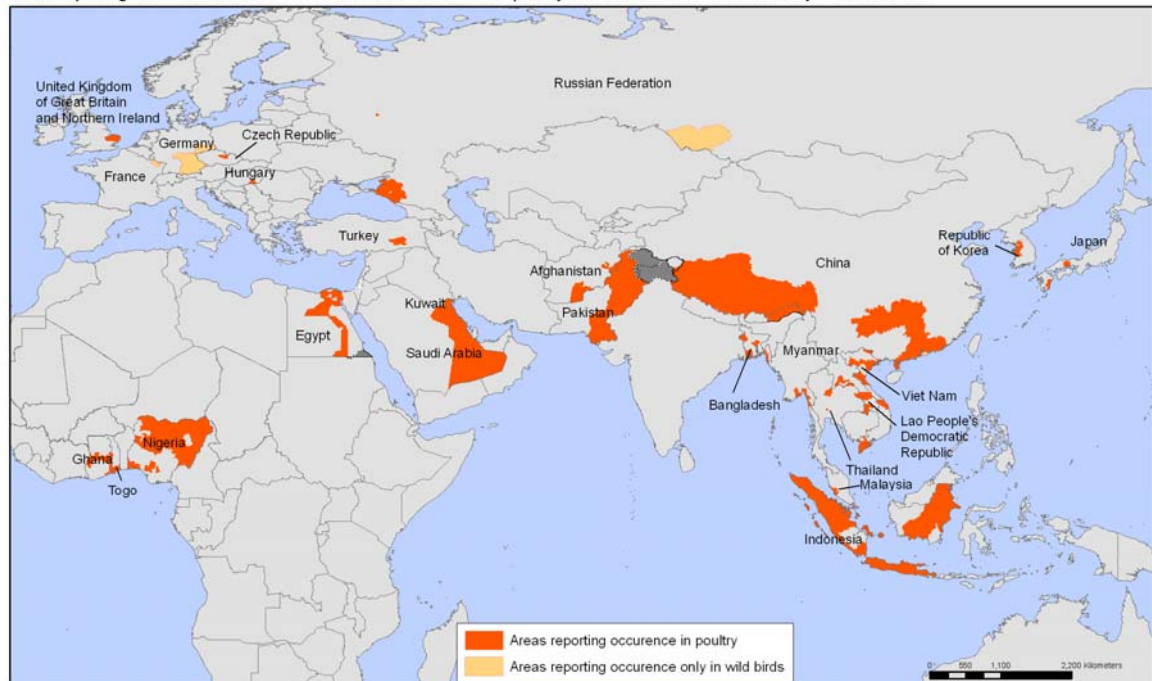
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Data Source: World Organisation for Animal Health (OIE) and national governments
Map Production: Public Health Mapping and GIS
Communicable Diseases (CDS) World Health Organization

Map 0.2

Areas reporting confirmed occurrence of H5N1 avian influenza in poultry and wild birds between January and June 2007

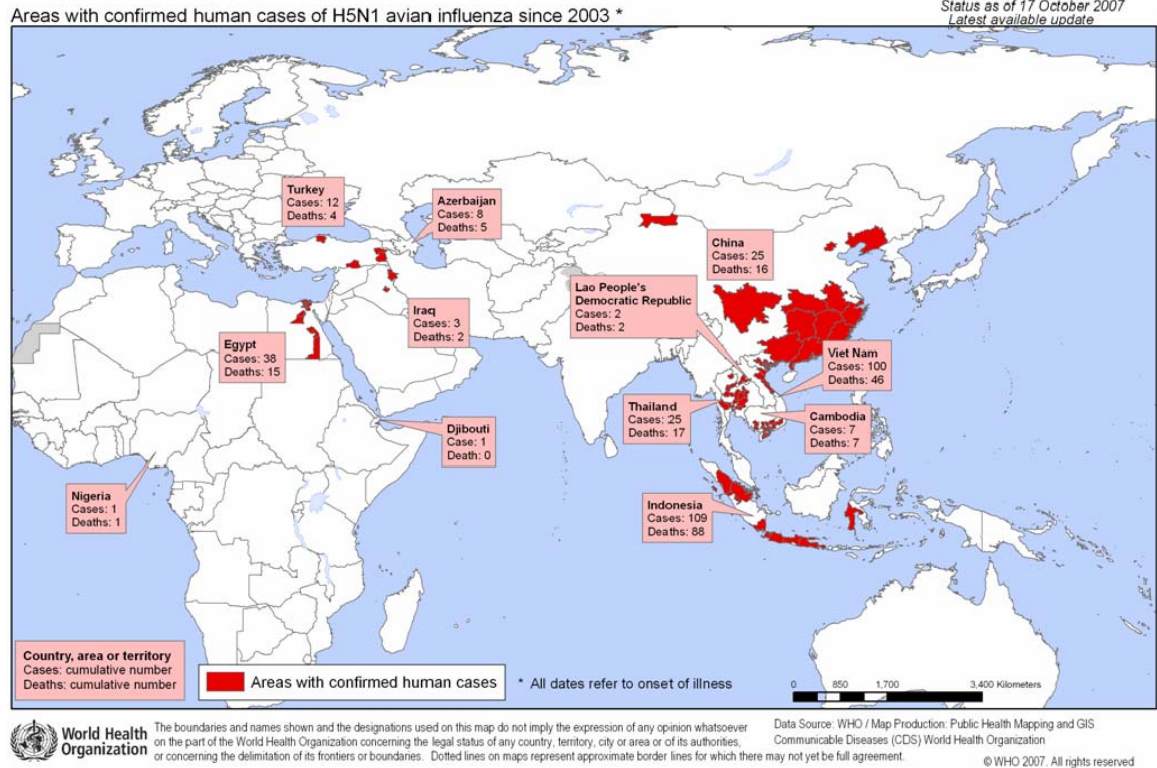


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Data Source: World Organisation for Animal Health (OIE) and national governments
Map Production: Public Health Mapping and GIS
Communicable Diseases (CDS) World Health Organization

Map 0.3



Map 0.4

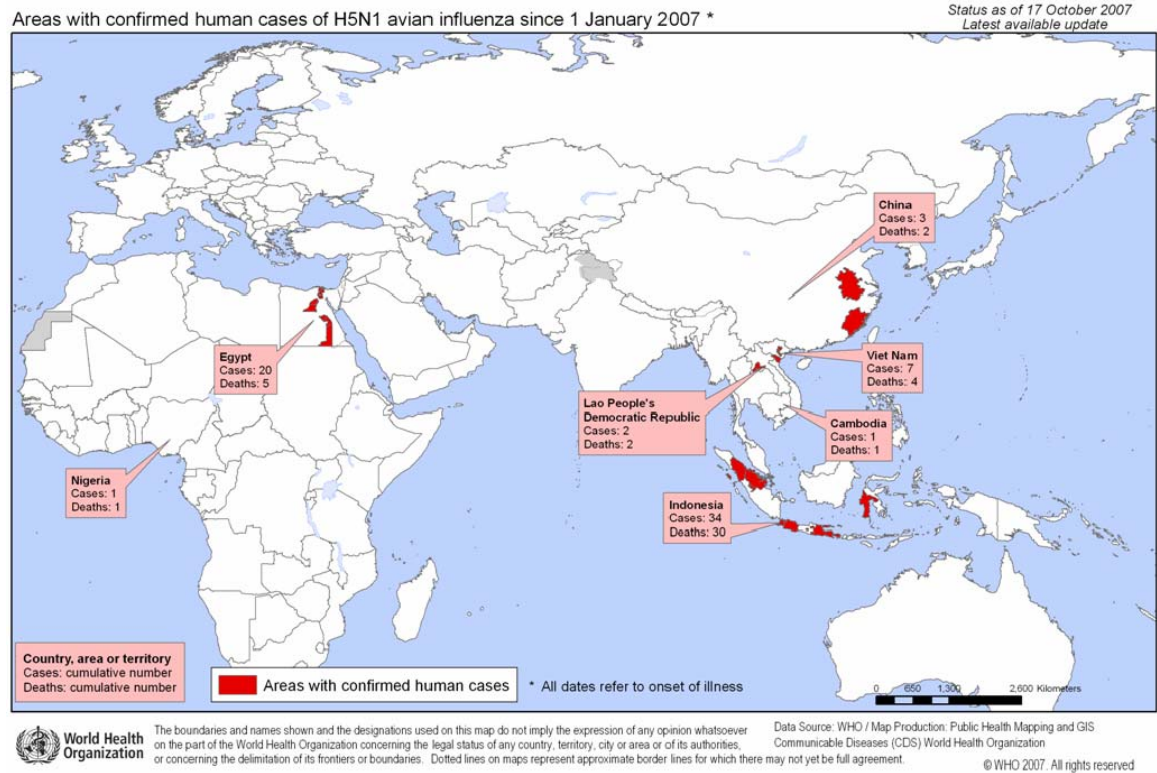
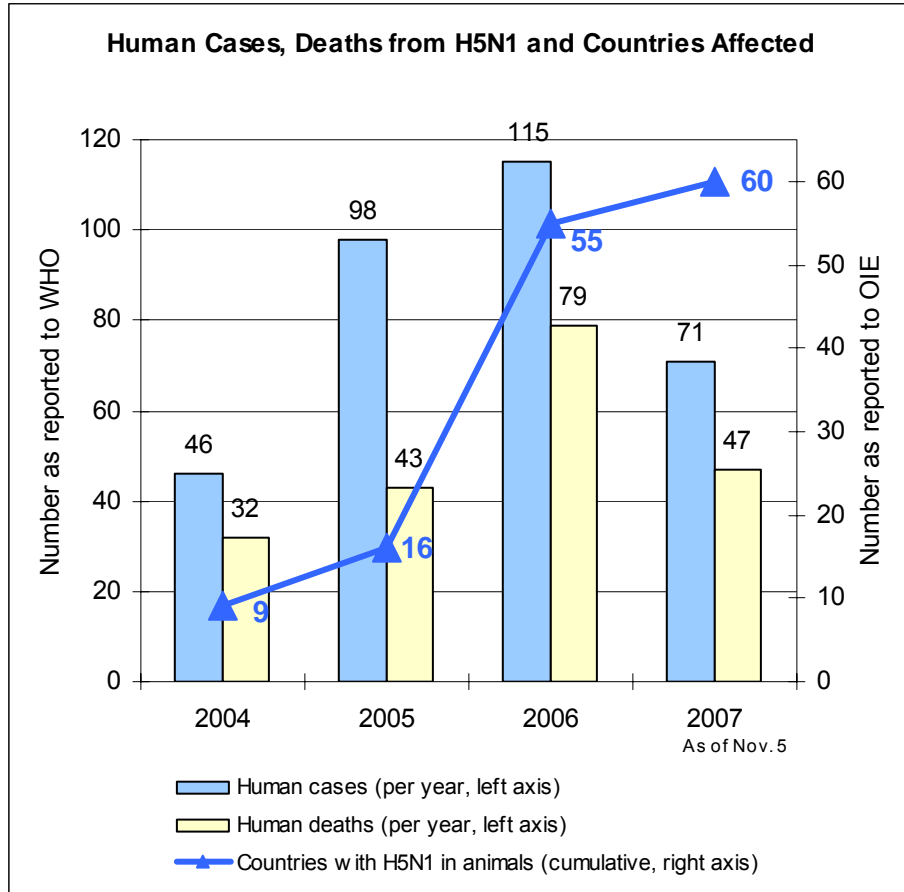


Figure 0.1



EXECUTIVE SUMMARY

The risk of a world-wide influenza pandemic is as great in late 2007 as it was in mid-2005. The World Health Report 2007 states that “There will be an influenza pandemic, sooner or later” with the potential to result in millions of deaths and severe social, economic and humanitarian consequences. We have a unique opportunity to prepare for the pandemic now and to significantly mitigate its potential impact. The current epizootic of Highly Pathogenic Avian Influenza (HPAI) is caused by type A virus H5N1 which has the capacity to infect humans (though, at the time of writing, less than 350 cases of sporadic human infection have been confirmed). There is concern that the genetic material in the avian virus could mutate or re-assort in a way that makes the virus capable of sustained transmission between humans. So far, this sustained human-to-human transmission has not been observed. However, HPAI continues to spread among poultry and other birds. The virus has been found in an additional five new countries so far during 2007: a total of 60 countries and territories have now reported H5N1 outbreaks either in poultry or wild birds or both. Continuous transmission of HPAI H5N1 occurs in some settings: the virus is considered to be entrenched (or enzootic) in parts of Indonesia, Egypt, Nigeria and (possibly) part of Bangladesh and China. Given the potential for wild birds to carry the virus over long distances, continued transmission of HPAI among poultry in any one country represents a threat to the world.

This is the third in a series of reports to document global progress with control of HPAI and preparedness for the next influenza pandemic. Once again it has been jointly produced by the United Nations System Influenza Coordinator (UNSIC) and World Bank. The description of progress in this report is based primarily on the data provided by national governments. Information was collected from 146 countries in response to a survey circulated by UNSIC during July 2007. This data gathering was complemented with case studies, key informant interviews and the analyses of experts from specialized UN system agencies, the World Bank, and the OIE. The information on pledges, commitments and disbursements in support of avian and human influenza control and pandemic preparedness has been collected by the World Bank from donor countries.

The report covers developments over the past two years, with a specific focus on the last six months (January – June 2007). It provides (a) an analysis of efforts made and financial assistance provided to date, and (b) an assessment of progress in the capacity of nations to respond to HPAI and their preparations for the next influenza pandemic. The report considers the implications of progress to date for future national and international investments in animal and human health security.

The results presented in the report indicate that substantial progress has been made in the initial – emergency – phase of the global response to HPAI and threats to public health.

Data from countries suggest that capacity to respond to Highly Pathogenic Influenza (HPAI) infection in poultry has improved. Outbreaks are being detected more rapidly and the response is more effective. However, animal health services are still sub-standard in most countries – they lack necessary regulatory frameworks, budgets, laboratory capacity and implementation of bio-security measures.

Country data also suggests that there has been an improvement in human influenza virus diagnostic and surveillance capacity globally. However, capacity varies significantly and is considered to be insufficient in a number of countries (particularly in Africa).

Whilst there has been an increase in the number of countries reporting that they are planning for pandemic influenza, the preparations pay insufficient attention both to operational readiness at the local level and to cooperation on pandemic preparedness between neighboring countries. Only a small proportion of preparedness plans focuses on sectors other than health.

Analysis of the ways in which pledged international assistance has been used reveals that virtually all grant funds have been committed and more than three quarters disbursed.

The following challenges are identified:

- i) The need to expand from emergency, short-term responses to sustained medium- and longer-term strategies with an increased focus on bio-security in both family and commercial poultry production systems;
- ii) The importance of intensive responses in locations where there is continued transmission of HPAI H5N1 among poultry and where the virus is entrenched;
- iii) The requirement for sufficient capacity at country level for compliance with the International Health Regulations (2005);
- iv) The need for increased involvement of different economic and social sectors, as well as humanitarian organizations, in pandemic planning in order to mitigate social, economic and humanitarian impacts; and
- v) The need for convergence in capacities for animal and human health, environmental health, food safety and crisis management to better prepare for threats to human security.

Many national authorities, especially in countries where HPAI is entrenched, will seek international technical and financial assistance as they respond to these challenges: additional grant finance will be required to ensure that the necessary assistance can be provided as and when needed, in a sustained manner.

In order to ensure proper control of avian influenza (and other zoonoses) and readiness for future health crises, an appropriate national, regional and international three to five year response to these challenges (and others identified in the forthcoming New Delhi International Conference on Avian and Pandemic Influenza) should be mapped out and agreed by governments. The resulting road map would serve as a valuable guide for policies, actions and outcomes, and as a measure against which future progress could usefully be assessed.

1. BACKGROUND AND INTRODUCTION

Purpose and Outline of This Progress Report

- 1.1 In line with requests from the Intergovernmental Conferences on Avian and Pandemic Influenza held in Beijing and Bamako, this third report has been produced jointly by the United Nations System Influenza Coordinator (UNSIC) and the World Bank. It focuses mainly on progress between January and June 2007.
- 1.2 Previous UNSIC – World Bank reports covering the periods January – June 2006 and July – December 2006 were produced in preparation for the Vienna (June 2006) and Bamako (December 2006) conferences. This third progress report will be released ahead of the next Ministerial Conference on Avian and Pandemic Influenza which is due to be hosted by the Government of India in New Delhi on December 4th – 6th 2007. The report covers developments over the past two years, with a specific focus on the six months between January – June 2007. It provides (a) an analysis of efforts made and financial assistance provided to date (b) an assessment of progress in the capacity of nations to respond to HPAI and their readiness for the next influenza pandemic, and (c) considers the implications of progress to date for future national and international investments in animal and human health security.¹
- 1.3 The report includes analyses of data and presentation of information in 5 subject categories, (a) global financial and technical assistance (b) animal health, (c) the capacity to respond to human health threats, (d) pandemic readiness, and (e) communications. Material in the report is presented sequentially: Chapter 2 contains an overview of international financial, technical and political assistance provided to date. Chapters 3 – 6 present available information on outcomes that have been achieved. Chapter 7 includes an interpretation of the results, seeks to assess the impact of external assistance on national capacities and global readiness, and concludes with points for action.

Study Design, Information Collection, Analytical Methods and Limitations

- 1.4 Data regarding the five subject categories were obtained from the following sources:
 - Collection of data from national authorities within countries by UNSIC: the data came mainly from Livestock Departments within Ministries of Agriculture, and from Ministries responsible for public health, and were obtained using a questionnaire that was made available in the 6 United Nations' languages. Questionnaires were dispatched to 173 countries: representatives of 146 countries responded by providing data before the (final) cut-off date of August 23, 2007² ;
 - Information collection from donor countries – by the World Bank – covering pledges, commitments and disbursements in support of avian and human influenza control and pandemic preparedness;
 - Illustrative examples/ Case studies of influenza programs developed by national officials, staff of the World Bank and personnel from UN systems agencies;
 - Reports from key informants within the UN system – on specific technical issues, on external coordination and on issues faced during support for program implementation;
 - Other published analyses, assessments and studies.
- 1.5 For the UNSIC data collection, 54 questions were posed. The questions were prepared with care with the intention that they be unambiguous, have the same meaning to all who receive them, and be applicable to a variety of different country settings. The responses received from some countries originated from more than one Ministry and did not appear to have been coordinated. In several countries conflict situations or natural disasters complicated the process of data collection and reporting. In a small number of instances questions were misinterpreted and answered incorrectly. The results have been consolidated into 5 regions based on World Bank classifications (See Annex I).

- 1.6 The previous UN-World Bank Progress Reports drew on data provided by staff employed within the UN system and based in countries. In order to improve the validity of data received, information was sought directly from influenza contact persons within national governments.³ UN and WB Avian and Human Influenza country-level Focal Points were asked to help national authorities in coordinating their responses and completing the production of survey data. The draft report was sent to Governments with a request that they confirm that the report provides an accurate characterization of what is happening in their countries and regions.
- 1.7 Some comparisons have been made with results in previous reports, but findings have been interpreted with care due to the change in responder (from UN staff to representatives of national authorities) and the difference in the number of respondent countries. It seemed probable that differences would be more likely to be the result of non-sampling rather than sampling errors, so no tests of statistical significance have yet been applied to the comparisons.
- 1.8 The reader is asked to bear in mind that this report is an assessment of global progress, based on data supplied by national officials and reflects their assessments of progress. The comparability of these data is being checked and it has not proved possible for UNSIC and the World Bank to validate them all. Professionals within FAO, UNICEF, WHO and OIE have examined the conclusions contained in a preliminary draft. In some areas there is a variance between the assessment of the international agency professionals and the results obtained when analyzed. References to countries also include territories, where appropriate.
- 1.9 Many different national and international actors have invested in the programs that account for the progress being reported here. Some of the investments are being provided over a long term while others are comparatively time-limited. It has not been easy to attribute specific results achieved at country, regional or global levels to particular inputs that have been provided: Case studies – some briefly presented in the report - have provided valuable insights and characterize specific aspects of the response. As a consequence, the inferences presented at the end of the report are derived, by UNSIC and the World Bank, from “bundles of convergent findings” rather than quantitatively verified linkages. But the report will serve as a base for further more analytical work to test some of the inferences presented: in the meantime, there are some hypotheses presented as to what has happened and why. These are introduced in Section 7 and will be presented in more detail later, following further analyses.
- 1.10 The World Bank and UNSIC are jointly responsible for the preparation, content and production of the report, and for any revisions that may be issued.

2. Support for Country Responses⁴

Context

- 2.1 This section outlines the overall support provided to the response to the threat of HPAI and influenza pandemic preparedness by individual countries and territories, by multilateral organisations, at the global political level, and through the flexible financing framework.
- 2.2 The December 2005 analysis “Avian and Human Influenza: Financing Needs and Gaps”⁵ served as the basis for a coordinated global response by the international community and outlined a flexible three-year financing framework to cover the immediate and short-term needs (1-3 years) of the response. The analysis recommended that the coordinated global response should be based on a common vision for addressing three areas of activity: (a) preventing the next human influenza pandemic by controlling the highly pathogenic H5N1 virus in fowl and improving surveillance; (b) containing a human influenza pandemic by rapid detection and care of human cases and preventing human-to-human transmission of the pathogen; and (c) preparing to respond rapidly in the event of a pandemic to mitigate its social, economic, and health impacts. The response would be guided by the leading technical agencies – FAO, OIE and WHO.
- 2.3 A number of principles were seen as critical to the response: (a) the use of a multi-sectoral approach; (b) country commitment to integrated national avian and human influenza programs and coordinated donor support for such programs; (c) a balance between short- and long-term actions; and (d) continuous evaluation of key interventions and actions as part of each program.⁶
- 2.4 The “financing gaps” for country, regional and global activities were estimated and then projected at around US\$ 1 billion over three years for country needs, with smaller figures for regional and global needs: the figure was subsequently revised upwards⁷ because so many countries were newly infected with HPAI during 2006. The UN systems agencies went on to develop a combined strategy in December 2005 and produced their consolidated action plan in June 2006 which supports the global response.

Pledges, Commitments and Disbursements to Date

- 2.5 At the international meetings in Beijing in January 2006 and in Bamako in December 2006 donors pledged financial support for the global fight against avian and human influenza and for pandemic preparedness. These pledges were made in the context of the flexible three-year (2005-2007) framework designed to take account of contributions channeled in ways that fit best with donors’ own systems. Donors pledged support (in-kind, grants or loans) for the following purposes and recipients:
 - a. Developing countries, for the design and implementation of integrated country programs.
 - b. Regional organizations, for a range of technical assistance, stockpiling, coordination, and cross-country activities.
 - c. International technical agencies to provide technical assistance, set norms and standards, and coordinate at the global level.
 - d. The Avian and Human Influenza (AHI) Facility, a multi-donor trust fund facility administered by the World Bank, for the provision of grants to integrated country programs and other activities.
- 2.6 In all, 35 donors pledged \$1.8 billion in Beijing, and 17 donors pledged an additional \$474 million in Bamako, bringing the total pledges in support of AHI programs to \$2.3 billion. The initial three-year timeframe set at the Beijing summit comes to an end in December 2007. There is thus a need to take stock of progress to date, to identify further needs, and to establish a new timeframe (i.e., 2008-2010) for donor support in order to sustain and build upon the foundations laid in the immediate and short-term response and to address the medium- and longer-term challenges faced by recipient countries.

2.7 In July-August 2007 the World Bank polled participating bilateral and multilateral donors on their progress on commitments and disbursements against their Beijing and Bamako pledges as part of the overall monitoring of key results and outcomes, and to assist in preparations for the next Ministerial Conference on Avian and Pandemic Influenza in New Delhi. The results of this polling exercise are reported in detail in tables on the pledges, commitments, and disbursements in Annex IV. The World Bank will continue to work with donors to refine the clarity and detail of their pledge, commitment, and disbursement data.ⁱ

Table 2.1 summarizes the AHI financing framework as of end-June 2007. **Against pledges of \$2.3 billion, donors reported commitments of \$1.7 billion, of which over \$1.0 billion has been disbursed.** Of this disbursement, 67 percent was in cash and 33 percent was in kind. Commitments amount to over 72 percent of the total pledged, while 61 percent of the committed amount has been disbursed. Such high commitment and disbursement rates within 18 months of the establishment of the financing framework clearly demonstrate the global commitment to the fight against avian and human influenzas, and are higher than the commitment and disbursement rates of responses to major rapid-onset disasters. Nearly all of the \$1.3 billion of grant funding pledged by bilateral donors and the European Commission has been committed, leaving only \$57 million available for commitment. Many donors have already disbursed most of their commitments: donors reporting more than 50 percent of commitments disbursed include Australia, Belgium, China, Cyprus, Czech Republic, Estonia, the European Commission, Finland, France, Germany, Greece, Ireland, Japan, Korea, Norway, Russia, Saudi Arabia, Spain, Sweden, Switzerland, Singapore, Thailand, United Kingdom, and the United States. Several bilateral donors (Canada, Estonia, France, and Japan) have committed more than their cumulative pledges. The multilateral development banks (MDBs), which provide financing primarily in the form of loans, have made commitments of \$392 million, which leaves \$592 million of their Beijing pledges uncommitted. Disbursements from the multilateral development banks have reached 16 percent of commitments because they largely finance medium-term programs to strengthen capacity, in addition to providing funding for countries' emergency response.

Table 2.1 AHI Pledges, Commitments, and Disbursements as of June 30, 2007¹
(\$ million)

Donors	Beijing Pledge	Bamako	Cumulative Pledge	Commitments	Disbursements	% disbursed	Uncommitted
	(Jan.' 06)	Increase (Dec.'06)					
	A	B	C=A+B	D	E	E/D	C-D
Australia	56	55	111	93	47	51%	18
Canada		87	87	91	40	44%	..
China	10		10	3	3	100%	7
France	31	10	41	45	26	59%	..
Germany	29	8	37	37	23	61%	0
Japan	155	67	222	232	232	100%	..
Netherlands	14	7	21	17	6	34%	4
Russia	24	8	32	32	20	63%	0
United Kingdom	36	18	55	51	29	56%	3
United States	334	100	434	433	375	86%	1
Other EU countries ²	31	11	41	36	30	85%	6
Other countries ³	23	4	27	23	20	88%	5
Subtotal bilateral donors	742	376	1,118	1,094	850	78%	42
European Commission	124	83	208	193	105	54%	15
AfDB	0	15	15	7	4	62%	9
AsDB	468		468	83	13	16%	385
World Bank	501		501	302	45	15%	199
Subtotal MDBs	969	15	984	392	63	16%	592
GRAND TOTAL	1,835	474	2,309	1,678	1,018	61%	649

Notes:

1. Donors' reports of amounts committed and disbursed from calendar year 2005 and to June 30, 2007. 'Bamako increase' includes new contributions and commitments in excess of pledged amounts as of December 2006.

Commitment: The result of an agreement between the donor and recipient for designated purposes; a commitment is a firm decision that prevents the use of allocated amount for other purposes.

Disbursement: Actual budget transfer or release of funds to the recipient for an intended purpose.

2. Austria, Belgium, Cyprus, Czech Republic, Estonia, Finland, Greece, Hungary (which has retracted its pledge due to lack of response from recipient country), Ireland, Italy, Luxembourg, Slovenia, Spain, and Sweden.

3. Iceland, Korea (Republic of), Norway, Saudi Arabia, Switzerland, Singapore, and Thailand.

ⁱ Financial data collected are only for those countries which made an official pledge to fighting AHI at the Beijing and Bamako conferences. We recognize that there are many other donors who are making a valuable contribution to fighting AHI which is not reflected in this analysis. These countries or institutions can contact the World Bank to have their commitment and disbursement data recorded.

2.8 Among the highlights, the **six largest donors** (those pledging over \$100 million) **have reported significant progress**:

- The United States has committed \$433 million of which \$375 million has been disbursed. The US has been a very active donor during the initial phase of 2005-2007 by providing services and grants to over 80 countries, as well as to regional and international organizations.
- Japan has almost fully disbursed its commitments of \$232 million. In addition, Japan's commitment has exceeded its cumulative pledge by \$10 million. Its contributions cover a wide range of countries and organizations at the regional and global levels. Through the Policy and Human Resources Development (PHRD) trust fund, Japan is also providing co-financing for Bank financed operations under the Global Program for Avian Influenza.
- The European Commission disbursed \$105 million out of its commitment of \$193 million. The European Commission is the largest donor to the AHI Facility administered by the World Bank. The combined commitment figure for the EC and the European Union member states amounts to \$379 million.ⁱⁱ
- Australia committed \$93 million, of which \$47 million has been disbursed to recipient countries, regional, and international organizations.
- The Asian Development Bank has committed \$83 million, which includes about \$24 million to WHO and FAO and the remaining amount to various national and regional projects in Asia.
- The World Bank has developed an extensive project portfolio under its Global Program for Avian Influenza (GPAI), endorsed by the Executive Board in January 2006 for funding up to \$500 million; up to end-June 2007 fully-developed integrated programs have been launched in 28 countries (Annex III).

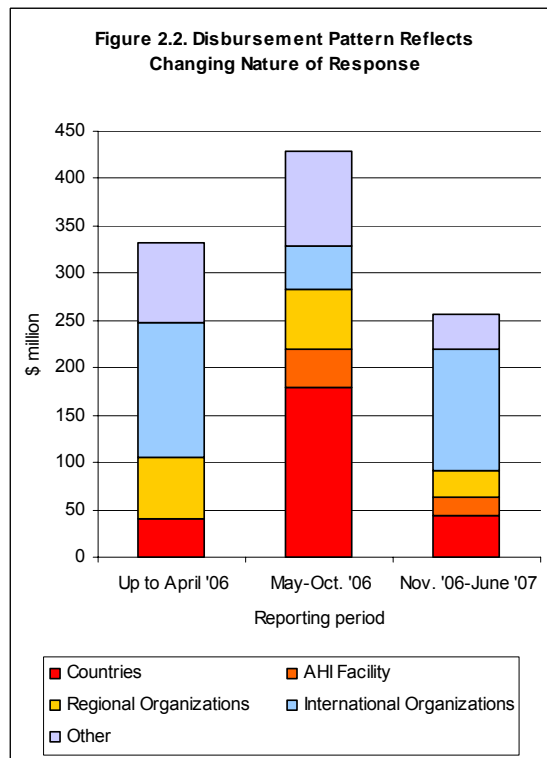
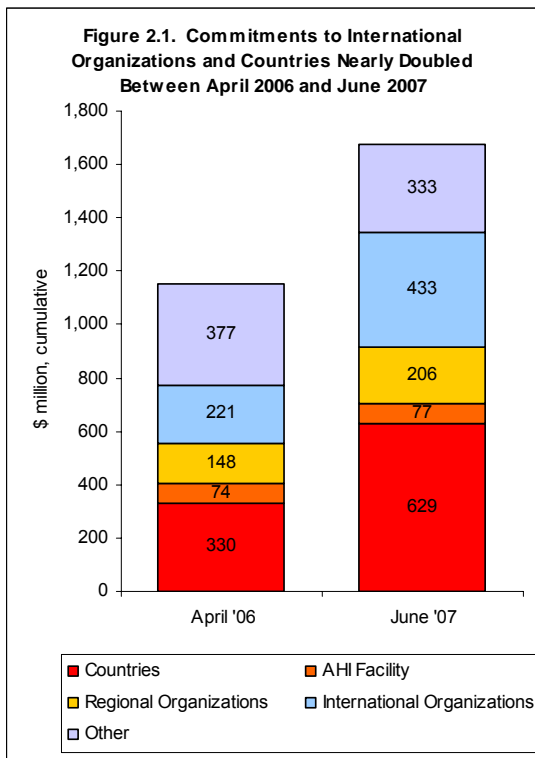
2.9 Table 2.2 below shows the **distribution of commitments among the main recipients**: \$629 million, or 37 percent of the committed funds, is in support of country programs, and \$77 million, or 5 percent of the total, is channeled through the AHI Facility, primarily to support country programs. The level of support directed to countries is thus modest; in particular, it is short of the levels indicated by the World Bank assessments of needs and gaps (which indicated that up to about 80 percent of total support was needed for country programs).⁸ Commitments to international organizations, such as WHO, FAO, OIE, and UNICEF, have grown rapidly (Figure 2.1) and have reached \$433 million, or 26 percent of the total. The remaining funding is for regional organizations and "Other" allocations (details can be found in Annex IV - Table 4b). Bilateral donors are providing \$1.1 billion, or almost two-thirds of total commitments. Bilateral donors tend to channel their funds primarily through international agencies whereas multilateral development banks channel their support to recipient countries directly. The amounts under "Other" category have been reduced by 12 percent since April 2006, reflecting greater specificity in donor responses about their commitments.

Table 2.2. Overview of AHI Commitments as of June 30, 2007
(\$ million)

<i>Donors/Financiers</i>	<i>Countries/ Territories</i>	<i>AHI Facility</i>	<i>International Organizations</i>	<i>Regional Organizations</i>	<i>Other</i>	<i>Total</i>
Bilateral Donors	251	19	379	165	280	1,094
European Commission	31	58	29	39	36	193
Multilateral Develop. Banks	347		25	2	18	392
Total	629	77	433	206	333	1,678
Share	37%	5%	26%	12%	20%	100%

2.10 Figure 2.2 shows the **trends in disbursements by type of recipient**, as reported by donors. During the initial period, up to April 2006, the bulk of disbursements went to international and regional organizations, largely to build capacity for the emergency response. During the second reporting period in May-October 2006, the largest portion of disbursements went to countries and territories, notably reflecting substantial in-kind assistance for preparedness as well as emergency assistance to deal with outbreaks in a growing number of countries as the geographic spread of avian flu expanded dramatically during 2006. In the latest reporting period, international organizations have again been the leading recipient of disbursed funds.

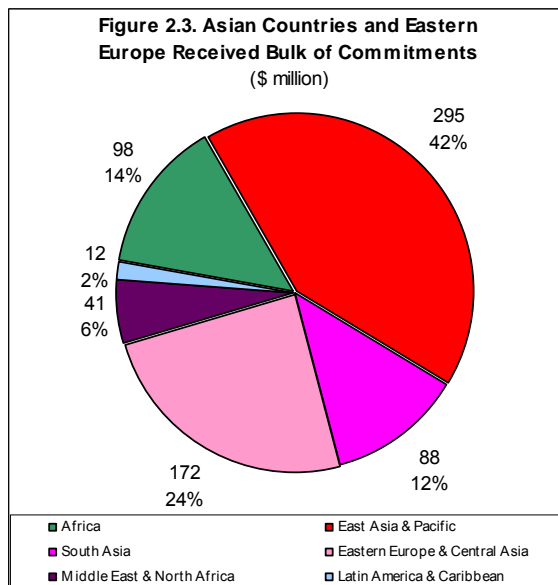
ⁱⁱ This amount could have been higher if all EU member states had responded to the polling exercise; Austria and Italy did not respond to repeated requests for data for this progress report.



2.11 **Commitments to support country programs** were \$706 million (including \$56.7 million from the AHJ Facility and \$19.5 million from the PHRD Trust Fund), with the main recipients being Vietnam (\$107 million), Indonesia (\$97 million), Nigeria (\$54 million), Turkey (\$47 million), and Romania (\$42 million). Table 2.3 lists countries and territories that received more than \$10 million in cumulative commitments. Figure 2.3 shows that countries in East Asia and South Asia together received \$382 million, or 54 percent of commitments to date; countries in Eastern Europe and Central Asia received \$172 million, or 24 percent of total; and countries in Sub-Saharan Africa and the Middle East and North Africa received \$139 million, or 20 percent of total commitments. These funding commitments are not entirely in line with needs as suggested by outbreak data. For example, 17 countries in Africa and the Middle East and North Africa have seen H5N1 outbreaks. In total they received only 20 percent of overall commitments, whereas the East Asia and Pacific region, with 13 outbreak countries received 42 percent of total commitments.

Table 2.3: Countries and Territories Receiving \$10 million or More in Commitments (\$ million)

Country/Territory	Commitments	Disbursements
Vietnam	107	39
Indonesia	97	53
Nigeria	54	25
Turkey	47	12
Romania	42	4
India	35	3
Cambodia	28	13
Lao PDR	25	12
Nepal	19	1
Bangladesh	18	2
Egypt	15	7
Afghanistan	14	1
West Bank & Gaza	14	4
Armenia	13	5
Georgia	11	3
Moldova	11	2
China	11	8



2.12 Nearly half of the support received by countries to date is in the form of loans from the multilateral development banks, while 15 percent is in kind. Figure 2.4 shows the evolution of support to countries for each of the reporting periods. Grants and in-kind assistance were the most important forms of support initially, but over time countries have come to rely increasingly on loans, which were the dominant form of support in November 2006-June 2007.

2.13 A significant source of grant funding has been the multi-donor **Avian and Human Influenza (AHI) Facility**. Born out of the International Pledging Conference held in Beijing during January 2006, the AHI Facility was established five months later as a grant-making mechanism administered by the World Bank and supported by trust funds to which nine donors presently contribute. Its specific goal is to help developing countries prepare and implement integrated country action plans that are designed to reduce the social and economic impact of avian influenza and minimize the possibility of an outbreak of a human influenza pandemic. Led by the European Commission, other donors include Australia, China, Estonia, Iceland, Korea, the Russian Federation, Slovenia, and the United Kingdom (see Table 2.5).

2.14 Besides recipient governments, the Facility can provide grants to international organizations and to NGOs. Grant proposals financed under the Facility are reviewed initially at country level by the government, UN agencies, the in-country representatives of AHI donors, and relevant technical agencies. The proposals are next vetted by an internal review committee of the Bank, and grant proposals that are not country specific (or are over \$3 million in value) are also reviewed by the Facility's Advisory Board on which the Bank and major donors are represented. UNSIC and OIE are designated as observers to Advisory Board meetings. The Board's inaugural meeting was held in Vienna, Austria on June 8, 2006, and the Board's second meeting took place on December 8, 2006 in Bamako, Mali.

2.15 As of June 30, 2007, the Facility's nine donors have made combined pledges exceeding \$77 million equivalent, of which \$60 million equivalent has been received by the Facility. A total of 25 grants amounting to \$58 million had been approved – including five grants that finance rapid assessments, eight that co-finance regular Bank operations under the GPAI, and twelve that finance stand-alone activities. Eighteen grant agreements had been signed with recipients, and slightly more than \$3.1 million had been disbursed. The modest disbursement rate up to June 30, 2007 is explained by the fact that most AHI Facility grants were approved only a few months earlier (for details, see Annex III), and that most recipients of larger grants (for example, Afghanistan, Egypt, Indonesia, and Vietnam, which together received more than half of the grant amount) had not yet put in place the requisite arrangements for disbursements to begin.

2.16 Beyond support to countries, donors have also reported commitments of \$433 million to **support international agencies**, of which \$317 million has already been disbursed. As can be seen in Figure 2.2 above, there is a noticeable increase in the amount of funds received by international agencies after the Bamako conference. The amounts received by various international organizations are reported in Table 2.4.

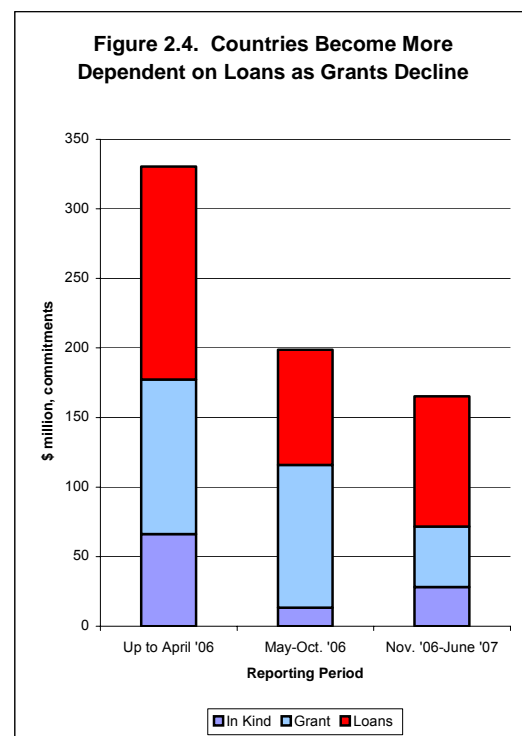


Table 2.4: Commitments and Disbursements Received by International Organizations, (\$ million)

	Commitments	Disbursements
WHO	178.5	126.8
FAO	89.9	65.8
OIE	28.5	20.4
UNICEF	68.5	66.9
Other ^{a/}	67.6	36.8
Total	433.0	316.7

Source: Donor reports to the World Bank polling exercise as of June 30, 2007.

^{a/} See Annex V Table 4a for details.

Table 2.5: Confirmed Pledges to the AHI Facility as of June 30, 2007

Donor	Pledge	Currency amount	Approximate share
Australia	A\$	8,000,000	7.36%
China	US\$	2,000,000	2.33%
Estonia	€	21,344	0.03%
European Commission	€	46,000,000	70.01%
Iceland	US\$	200,000	0.23%
Korea	US\$	1,000,000	1.17%
Russian Federation	US\$	3,000,000	3.50%
Slovenia	€	30,000	0.04%
United Kingdom	£	7,000,000	15.32%

- 2.17 Continued donor support will be critical in the coming years to sustain current efforts and achieve medium- to longer-term goals. While donors should continue to consult with the key technical agencies (FAO, OIE, and WHO) and with the multilateral financing institutions, the technical capacity at the recipient country level should be strengthened to assure implementation of medium- and long-term disease control measures. This is a critical aspect in fighting not only AHI but also other communicable and zoonotic diseases. There are a number of areas where more donor focus is needed. In particular, additional pledges may be sought for newly affected and at risk countries in Africa, the Middle East and Asia, reflecting the further spread of the disease.
- 2.18 The above-outlined financial flows have been channeled to support key avian and human influenza and pandemic preparedness activities at three levels – country, regional and global – outlined in detail in the original financing framework, adopted at the Beijing pledging conference.

National Capacity Building

- 2.19 At the country level, key components of the response were identified by the financing framework as (a) integrated country plans, (b) social mobilization, communication and coordination, (c) surveillance and early-warning systems, (d) strengthened health system capacity, (e) rapid outbreak containment plans and operations, and (f) medium-term investments in stronger veterinary capacity, health system capacity reflecting both the International Health Regulations and the need to restructure poultry production.
- 2.20 Figures from UNISC 2007 data gathering exercise show 144 of 145 responding countries reported that they either had integrated plans, pandemic plans, or avian and human influenza plans. In all countries that have been more heavily affected by H5N1, national integrated plans for avian and human influenza have been prepared, but they differ in the extent they involve sectors other than health and agriculture.
- 2.21 The framework placed substantial emphasis on coordination. Today, a national coordination body, often with high-level leadership, is guiding the development of the national strategy and its implementation in most affected countries (e.g. Vietnam: High-level National Steering Committee for Avian Influenza Disease Control and Prevention; Nigeria: National Inter-Ministerial Steering Committee on AI; Egypt: Supreme National Council on AHI). The involvement of actors from sectors other than livestock and public health, as well as from private sector and voluntary organization is progressing (data collected for this report show 90 out of 144 responding countries indicated that NGOs, civil society and/or the private sector has been involved in planning) but varies from region to region.
- 2.22 In affected countries, UN System agencies, the OIE, the World Bank and other international actors are playing an important role in providing technical assistance for (a) situation assessments, (b) development national strategies and programs, and, when needed, (c) helping with implementation of both emergency and longer-term programs. Case studies suggest that practical assistance from the specialized international agencies helped national officials as they started to structure and implement national plans. UN Country Teams have formed Task Forces on Avian Influenza usually involving the major technical agencies and have been engaging with other partners such as the European Commission, bilateral donors active in supporting the country, the World Bank and NGOs.
- 2.23 In order to ensure coordinated external support for national strategies, joint programming for external assistance has been encouraged: Usually the coordination is led by government, with the help of the UN Resident Coordinator and/or the World Bank Country Director, and typically includes UN systems agencies, the OIE, development banks, donor organizations, and civil society groups. Only in a few instances are the funds provided by external bodies pooled. If external funding is envisaged the preferred method of coordination is to ensure that each entity is aware of the intentions of others, all are engaged with the government in preparation and appraisal of country programs, and that every attempt is made to ensure synergy between the actions supported by the different partners.
- 2.24 All countries, including those not yet affected by HPAI, are expected to undertake joint programming to develop surveillance and early warning systems for both animal and human health, strengthened health system capacity for rapid outbreak containment, medium term investments in stronger veterinary and health system capacity.

- 2.25 In the last two years most countries have moved ahead rapidly to prepare for a pandemic, treating it as a multi-sectoral issue, involving collaboration among ministries, local authorities, civil society and the private sector. Within governments, livestock and/or agriculture ministries are joined by health, information, defence and foreign ministries as they handle HPAI both within their own countries and as an issue for inter-country action. In some cases external assistance is explicitly designed to build capacity for pandemic prevention and preparedness through incorporation of pandemic planning into existing crisis preparedness. In addition, in many countries there is emphasis on strengthening the capacity of veterinary services to detect and respond to diseases in animals that have the potential to affect humans.

West Bank and Gaza: Donor Coordination Contributes to Effective Response

Many families in West Bank and Gaza, especially the poor, depend on poultry as their most important source of protein. In fact, almost 88% of total animal protein intake in Gaza is derived from poultry. Any new major avian influenza outbreak in the near future, particularly in Gaza, could thus disproportionately impact the poorest families.

The capacity of the Palestinian Authority to address the HPAI threat and to implement necessary preventative measures has to date been limited. This has been further exacerbated by cuts in aid flows from the international community in response to the recent transitions in the government. Despite the difficult situation, relevant regional and international organizations have been able to harmonize their work well, and have efficiently coordinated their efforts with the ministries of Health and Agriculture to minimize the impact of the HPAI outbreaks and in preparing for possible future outbreaks of Avian Influenza and a pandemic.

Through recent cooperation between WHO, UNICEF, WFP, FAO, UNDP and the World Bank, a UN Interagency Framework for Avian Influenza and Pandemic Response in West Bank and Gaza was developed, based on a multi-sectored approach addressing food security, public health and veterinary control issues, risk management, as well as restructuring plans for the poultry sector. In parallel, the Islamic Development Bank sponsored the purchase of equipment for local veterinary laboratories. The Russian Government also responded by compensating farmers affected by past outbreaks of HPAI. Moreover, FAO and WHO have contributed from their own funds to assist the Palestinian Authority in carrying out necessary capacity building and training activities.

Within this framework, the World Bank undertook a Rapid Assessment of the HPAI situation in the Palestinian territories, along with extensive consultations with its UN partners. Subsequently a grant was mobilized to minimize the risk of the spread of HPAI to humans and domestic poultry through improved preparedness, control and response, and to mitigate the income loss of farmers through compensation. Funding provided through the multi-donor Avian and Human Influenza Facility has played a catalytic role in maintaining good coordination within the donor community and providing an effective response to HPAI preparedness and control in West Bank and Gaza.

(Provided by the World Bank)

Armenia: Free from HPAI despite Regional Threat

Despite reported outbreaks of Highly Pathogenic Avian Influenza (HPAI) in neighboring countries (Georgia, Turkey and Azerbaijan) and human deaths in Turkey and Azerbaijan, Armenia has not had any confirmed cases of AI. This suggests that natural mitigating features may have helped. But, more important, a quick government response and strong commitment have helped the country prepare for tackling outbreaks.

Armenia responded rapidly to the global threat of AI by implementing quick measures against it. The government instituted an inter-ministerial task force which was mandated to respond to any emergency situation, to implement a communication strategy and to coordinate between various government agencies. While many activities of the task force were sporadic and ad-hoc, it was quite effective in ensuring coordination between government agencies and in quickly implementing various required measures. These measures included bans on poultry imports, surveillance at the border posts and communication with the public. In addition, the task force was effective in preparing the Government's program of measures against HPAI, which served as the basis for the overall donor support. The veterinary services were able to utilize the semi-private community veterinarians and state inspectors for the major surveillance effort. There are about 870 veterinarians based in communities and the probability of detection of an outbreak of HPAI at village level is fairly high. In addition, extension efforts appear to have created a high awareness of the dangers of H5N1 at the community/village level.

This success was in part possible thanks to Armenia's capacity to quickly mobilize the necessary resources from various donors (World Bank, FAO, USAID, Russia, PHRD, AHIF) to support its national HPAI program. The Government and the World Bank mobilized resources to design a national program under the GPAI framework within a few months. This program was tailored to meet the Armenian context and to address the immediacy of the AI threat. The harmonization with USAID's support was quite instrumental; as USAID planned its AI program to finance AI activities while the World Bank support was being prepared. The Bank project envisages building capacity in the veterinary services for AI preparedness. In addition, it addresses broader veterinary capacity in the country, thus becoming the major intervention to strengthen the veterinary system.

(Provided by the World Bank)

Lao PDR: Donor and Government Coordination in Joint Implementation Review

The principles of coordination and integrated action that underpin Laos' National Avian Influenza Control and Pandemic Preparedness Plan 2006-10 ("the National Plan") were tested as all levels of government, affected communities, and development partners responded to AI outbreaks in February-March 2007 in which 2 people died, over 350,000 poultry were culled, and 560,000 eggs were destroyed. Learning and responding to the lessons of this experience was a complex, challenging but essential process. Over a three week period between April and May 2007, 27 representatives from 10 international agencies worked side by side with more than 50 of their Government counterparts to undertake a comprehensive joint implementation review (JIR) that examined each of the five strategy areas that comprise the National Plan.

The implementation review was structured to improve coordination efforts among development partners in order to avoid duplication of efforts and build on synergies. Officials and representatives from technical and development partners worked together in groups corresponding to the five National Plan strategy areas and each contributed to a detailed collective assessment of the strengths and weaknesses of the implementation process to date. The JIR demonstrates that the Government and its development partners can work effectively together on the AHl response with the flexibility necessary to respond rapidly to emerging priorities.

(Provided by the World Bank)

Coordinating the Response at the Global Level

- 2.26 The financing framework also identified key global-level activities to be carried out by multi-lateral institutions: (a) setting norms, standards and global strategies; (b) monitoring key results and outcomes; (c) stockpiling consumables (e.g. anti-virals, PPE and vaccines) and strategies for their deployment, (d) support to laboratory networks (e) communications: regular status updates, risk communication, policy guidance and advocacy; (f) cross country anticipation of responses to economic, human and governance consequences of an influenza pandemic; (g) effective mechanisms to coordinate the multi-sectoral response.
- 2.27 Since the first partners' meeting in Geneva November 2005 (hosted by FAO, OIE, WHO and the WB) efforts have taken place to develop an integrated strategy for responding to the threat of HPAI and an influenza pandemic, and much progress has been made in identifying successful strategies and tools in the last two years. As suggested at the Fourth Intergovernmental Conference on Avian and Human Influenza in Bamako in December 2006, a Technical Meeting on Highly Pathogenic Avian Influenza and Human H5N1 Infection was convened in Rome in June 2007 to review current strategies and best practices (organized by FAO, OIE and WHO, with support from UNICEF and UNSIC). Technical specialists from the main implementing UN and non-UN agencies, regional and national organizations and funding agencies, as well as independent technical experts examined strategies for controlling HPAI, preventing and managing human infection with the H5N1 virus and preparing for containment and mitigation of the next influenza pandemic, identified remaining gaps and made recommendations for the way ahead. This annual cycle of collectively reviewing strategies is expected to continue.
- 2.28 International organizations have developed programs that relate to control of HPAI and/or pandemic preparedness (some, like FAO, OIE and WHO, have been engaged in this work for decades). The plans of 12 international agencies, funds, programs and coordinating bodies have been harmonized and are presented in the UN Consolidated Action Plan for Avian and Human Influenza (UNCAPAHI). This document, released in June 2006 and revised at the end of 2006, describes ways in which agencies, funds and programs should work in synergy. It reflects the common objectives, strategic directions and results to be pursued by different parts of the UN system together with their international and regional partners, and indicates financial requirements necessary for the realization of these objectives. A Review of the UNCAPAHI 2007 was issued in September 2007: it shows how international organizations have modified their programming in the light of the changing AHl situation, the evolving context and countries' needs.⁹
- 2.29 The strategy on Animal Health and Bio-security has been established under the leadership of FAO and OIE. The strategy sets out ways to improve capacity of veterinary services to respond to animal health concerns, with special emphasis on Avian Influenza and the establishment of adequate bio-security standards worldwide. The experts and partners engaged in developing this strategy have established and then maintained the global cohesive framework and examined – at country, regional and global levels – links between pandemic agents and livelihoods (and used the results of this work to revise the time course,

content and mode of implementation of HPAI control strategies). Between December 2006 and June 2007, the Crisis Management Centre/Animal Health (CMC/AH) has deployed seven rapid assessment and response capacity missions for HPAI outbreaks, and has advised FAO in-country teams. An assessment process for the Integrated National Action Plans (INAPs), involving the World Bank, FAO, OIE and WHO, has been initiated to help the definition of national action plans and spending priorities. Further AI Rapid Assessments in 15 African countries will feed into the preparation of INAPs. Agencies have promoted applied research on the epidemiology of HPAI disease and its control to improve the quality of technical tools, methods, and strategies. A number of difficult issues remain to be resolved in relation to animal vaccination, though progress has been made this year.¹⁰

- 2.30 Sustaining Livelihoods: The UN System with the OIE and the World Bank contributed to establish mechanisms to protect and sustain livelihoods of those affected by avian influenza. They investigated and developed an improved understanding of optimal mechanisms for compensating those who lose birds because of the application of disease control measures.¹¹
- 2.31 Human Health: The UN and partners, under the aegis of WHO, are intensifying their efforts to help countries build and maintain sound systems for safeguarding the health of human populations during a pandemic. Ten missions have been conducted in response to confirmed outbreaks of AI in humans. Multidisciplinary teams composed of experts from WHO and its partners in the Global Outbreak and Alert Response Network (GOARN) were rapidly mobilized to provide support as needed in efforts to control and contain the outbreaks. In addition, 30 assessment missions were conducted by teams from WHO headquarters, regional and country offices, often including national staff from ministries of health, agriculture and environment.
- 2.32 The revised IHR (2005) came into force in June 2007: the IHR now provide a composite legal framework for protecting human populations and both preventing and controlling the international spread of disease, including AHI. The IHR (2005) are being implemented by all countries, with the assistance of the WHO and other Member States. The WHO has coordinated the development of an interim protocol for Rapid Containment, which will provide countries with guidance in efforts to prevent a potential pandemic and to ensure synergy of their responses during the critical first stages of a pandemic's emergence.
- 2.33 Since the beginning of 2007, the WHO has worked with key partners and stakeholders to increase access by countries in need to pharmaceuticals, vaccines and supplies that would be necessary in the event of an influenza pandemic. At the same time, WHO is working to improve the world's influenza surveillance system through which virus samples from all countries are shared with a network of specialized laboratories that assess the pandemic threat posed by emerging influenza strains. This network, known as the WHO Global Influenza Surveillance Network (GISN) has been successfully coordinated by the WHO for over 50 years without formal protocols. Nevertheless, the emergence of H5N1 has required a revision of the system to improve procedures and formulate standard terms and conditions for the use of viruses. To date, several meetings have been held on the issue.
- 2.34 Communications: The UN system has helped identify and better understand the different dimensions of AHI communications – specifically communications about outbreaks both of avian influenza in poultry and human cases of avian or pandemic influenza. UN agencies have identified a need for greater coordination (including precise protocols, focal points with clear responsibility and accountability, clarity on who takes responsibility for which actions) and for social mobilisation around AHI threats. OIE and FAO made progress in addressing the issue of animal health communications by organizing a roundtable event (April 2007) that triggered important follow-up, including the development of a communications action plan to address animal health aspects of H5N1 transmission, the creation of communications tools, and the establishment of a technical advisory group on HPAI communication to provide strategic guidance to partners and monitor progress.
- 2.35 UNICEF and WHO set the standard for behaviour change material and messaging by defining key behaviour before and during a pandemic at a conference in December 2006.¹² UNICEF conducted research in over 20 countries to ascertain audience knowledge, attitudes and behaviours for evidence-based planning and implementation of behaviour change strategies.
- 2.36 Pandemic Preparedness: The WHO Pandemic Preparedness Guidelines (2005), have been used globally by governments to design national pandemic influenza preparedness plans. WHO and partners have supported countries by providing technical guidance for planning and self-assessments through visits and

exercises. These guidelines are currently in a process of revision; the new update will be prepared by a large consortium and published by the last quarter of 2008. The UN has also provided assistance to governments to develop and test their pandemic preparedness plans. UNSIC and the Pandemic Influenza Contingency (PIC) Team have prepared guidelines, planning tools and material for simulation exercises that help UN Country Teams and other stakeholders to prepare and test plans.

Support through Regional Institutions

- 2.37 The needs assessment considered at the Beijing conference in January 2006 also recognized that cross-country activities would need to be undertaken at the regional level with a view to building essential capacity within countries. They were expected to help countries as they faced similar challenges – including (a) securing synergy on policies and protocols between countries, (b) building institutional capacity in regional bodies that provide vital support to countries, including reference laboratories, (c) ensuring consistent messages and strategies for communication, and (d) supporting research on regional issues.
- 2.38 Many regional political bodies (e.g. EU, APEC, AU, ASEAN) are engaged and provide valuable assistance to countries, in particular in pandemic preparedness efforts. Member economies of the Asia-Pacific Economic Cooperation (APEC) have worked on an action plan for preventing and responding to threat of Avian and human influenza. It covers multi-sector cooperation; risk communication; reduction of effects on agriculture and trade; cooperation with the private sector; and regional collaboration. The plan includes proposals for common practice across countries with regard to continuity of essential services during a pandemic. During 2007, APEC leaders endorsed the APEC guidelines to ensure that economies continue to function in times of pandemic. They also agreed to support the sharing of influenza specimens in a timely manner and to promote transparent, fair and equitable access to vaccines and other benefits that derive from them. Ministers from European Union countries have encouraged a joint approach within their member countries and sought to coordinate provision of external assistance through the European Commission (see Case Study below for EU Preparedness and the work of European Centre for Disease Control's Influenza Project with its particular emphasis on assessing pandemic readiness in Europe). Further examples of advancing regional collaboration include the activities by the Mekong Basin Disease Surveillance (MBDS) (see Case Study under Section 4), the Southern Cone Countries in Latin America (see Case Study below) and the Association of Southeast Asian Nations (see Case Study in section 4).

Latin America: Regional Interagency Collaboration on H5N1 Pandemic Preparedness in Southern Cone Countries

Regional collaboration has been important in preparing Latin American countries for control and prevention of a potential epizootic of the Highly Pathogenic Avian Influenza (HPAI) virus subtype H5N1, in the still HPAI-free Americas. The national prevention capability differs between the countries due to the state of their infrastructure in public health facilities, veterinary services, and their experience with other regionally prevalent bird diseases such as low pathogenic AI virus strains and Newcastle disease.

In December 2006 the Southern Cone countries, Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay, received a regional grant from the AHI Facility to strengthen the Southern Agricultural Council (*Consejo Agropecuario del Sur*, or CAS) for Avian Flu Preparedness. The CAS is a regional coordination entity set up by the Ministers of Agriculture of the expanded MERCOSUR (*Mercado Comun del Sur ampliado*).

The engagement of the CAS at the level of ministers of agriculture in these six countries is strategic and is important for tackling HPAI and other animal diseases across the sub-region. The grant finances the building of regional capacity for surveillance and prevention of HPAI and other current and emerging trans-boundary animal health issues. It recognizes the importance of the potential economic and social damage to a leading poultry producing and exporting sub-region. The grant's activities therefore also address the potential social impact of HPAI on both small poultry producers and large scale commercial producers in all six countries.

Interagency collaboration across IICA (*Instituto Interamericano de Cooperación para la Agricultura* - the project implementer), FAO, OIE and the World Bank is another key element of this operation. This collaboration will better aid to engage regional experts, and make links between avian influenza and other poultry and animal diseases.

(Provided by the World Bank)

Coordinated International Engagement

- 2.39 With a view to encouraging all countries to feel comfortable about working together – and transparently – at the regional and global levels there has been intense international political engagement on this issue within many political forums. This has been focused on the continued functioning of economies and governments at the time of a pandemic and has usually engaged senior officials and/or Ministers from national governments.
- 2.40 Informal international partnerships on avian and pandemic influenza were initiated by different nations during 2005 and 2006 and have now coalesced as a single entity (though without universal agreement on its name). The partnership has provided political impetus for action (both individually and jointly) by many different nations during the past two years. The United States refers to it as the International Partnership on Avian and Pandemic Influenza and originally invited partners to agree on 10 principles for joint working, including transparency on information and samples. The Partnership brings together key nations and international organizations to improve global readiness by: elevating the issue on national agendas; coordinating efforts among donor and affected nations; mobilizing and leveraging resources; increasing transparency in disease reporting and surveillance; and building capacity to identify, contain and respond to a pandemic influenza. Political leaders have, in turn, requested effective coordination of technical, institutional and financial support to national and regional influenza action during this period.
- 2.41 The three-day Fourth Intergovernmental Conference on Avian and Pandemic Influenza held in Bamako, Mali, in December 2006 was attended by delegations from more than 70 countries. It reviewed global progress, with a specific emphasis on emerging HPAI infection on the African continent. Grants to the value of \$474 million were pledged to enhance and sustain the global response to avian influenza and preparedness for a human pandemic. It was agreed to continue the pattern of intergovernmental meetings and to next review progress in New Delhi, India, in December 2007. There was less enthusiasm among some of the donor participants for Delhi to be a pledging event.

How Well Is Europe Prepared for a Pandemic?

The progress made by EU and EEA countries in pandemic preparedness since 2005 is currently being documented by the European Centre for Disease Prevention and Control (ECDC). It is currently compiling a report based on an information gathering exercise conducted in August 2007, its report of earlier this year and self-assessments of preparedness by countries working with ECDC to a standard protocol developed by ECDC, the European Commission and WHO European Region.

All relevant EU institutions, EU and EEA member states have contributed resources for pandemic preparedness guided by documents issued by WHO and the Commission with technical guidance from ECDC and WHO. The advanced level of veterinary preparedness and the bio-security have limited the number of outbreaks of HPAI in domestic poultry to only a few in EU/EEA countries and no human cases of H5N1 in the EU.

Europe is rapidly becoming more prepared. Major developments since 2006 include pandemic preparedness in health sector generally being made operational. However, all self-assessments led by ECDC and WHO indicate that more work needs to be done. Particular areas that EU/EEA member states are working to improve in the next two years are a) contingency plans for maintenance of non-health essential services, b) joint work with neighboring countries, c) detailed local preparations and cross-sectoral mechanisms and d) ways of enhancing use of seasonal influenza vaccine which is highly variable between countries. Differences exist between Eastern and Western Europe in state of preparedness. Eastern Europe is considered to have a lower state of preparedness due to political and economical circumstances. Many countries in this region lack financial and infrastructural resources to implement pandemic preparedness plans especially regarding the surveillance sector such as laboratory diagnosis. There is also a need in this region of better access to anti-virals. The stockpiles of anti-virals still vary to a great extent between member countries and there is no regional stockpile for emergency use in the EU.

The main challenge is now considered to be maintaining momentum. Where plans are developed, they need to be regularly exercised and tested, so as to sustain pandemic preparedness. The emphasis in 2008-2009 should be engaging all government sectors, the business community and civil society. The five areas where further work is particularly needed have not changed since 2006:

- Stepping up prevention efforts against seasonal influenza
- Integrated planning across governments
- Making plans operational at local level
- Interoperability at the national and EU level
- Extending influenza research

(European Pandemic Preparedness Workshop – Luxembourg 09/27/07)

Conclusions and Recommendations

- 2.42 It is estimated that by the end of December 2007, most funding pledged in Beijing and Bamako for the initial emergency response to AHI and pandemic preparedness will have been committed and approximately 75% will have been disbursed. This emphasizes the high priority that the international community gives to fighting avian and human influenza and improving pandemic preparedness.
- 2.43 Nearly all of the \$1.3 billion of grant funding pledged has been committed, leaving only \$57 million available for commitment by bilateral donors and the European Commission. The multilateral development banks made commitments of \$392 million, leaving \$592 million available, but this is largely in the form of loans. Additional grant funding is crucial to ensure that all countries, in particular those with the weakest capacity, can respond to the AHI threat and prepare for a possible pandemic. In order to build on the foundations put in place during the initial three-year period, and assure medium and long-term impacts in fighting avian flu and other emerging and zoonotic diseases, continued funding will be essential.
- 2.44 Twenty-four countries have reported more than 50% of commitments disbursed and four donors – Canada, Estonia, France and Japan – have committed more than their cumulative pledges.
- 2.45 Financial support has also enabled the global and regional functions that constitute an essential input to the response to AHI and pandemic preparedness planning. Providers of external assistance have given substantial support to UN agencies in-country; there is in many cases a need to better integrate these activities with national programs and to further enhance coordination that is often structured around a UN Country Team AHI task force or other coordination mechanisms. However, whilst the abstract coordination and planning are often considered successful, there is scope for improvement with implementation of further joint programs.
- 2.46 The coordination assistance to in-country activities needs to be strengthened and broadened. It should involve international agencies, development banks, bilateral local actors as well as private and voluntary organizations.
- 2.47 Multilateral institutions have made an important contribution through the provision of global functions. The UN System agencies, OIE, and other international partners have set norms and standards, developed global strategies, and provided policy guidance and advocacy. Responding to the evolution of the disease and of knowledge about effective control methods, agencies have revised guidance that is relevant to prevention and control of international spread of diseases (through the entering into force of the IHR 2005), rapid containment, animal vaccination, compensation, definition of desired behaviours, and the development of pandemic preparedness plans. However, whilst much has been achieved, in some areas, there remain gaps to be filled at this level.
- 2.48 Some very promising regional cooperation is taking place which is essential for cross-country disease surveillance and monitoring with reliable and timely exchange of information, as well as sound pandemic preparedness that is consistent across countries.
- 2.49 Intergovernmental partnerships have been strong and provided important political impetus. It is crucial at this point that the momentum is maintained, with a shift of emphasis from the emergency- and short-term approach to the response to AHI to medium and long-term strategies that address capacity-building and sustainable pandemic readiness.
- 2.50 In a number of instances reviewed, the key principles for an efficient response (the use of a multi-sectoral approach, integrated programs, balancing of short-term and long-term actions and continuous evaluations) have been pursued successfully by countries individually and collectively. However, problems still persist and a lot of coordination effort is necessary to continue the efforts with this approach. If done consistently, it will be fruitful for other areas of collaboration and will yield returns that go beyond the response to the avian and human pandemic influenza threat.

3. IMPROVING THE CAPACITY OF ANIMAL HEALTH SYSTEMS TO REDUCE THE THREATS OF AVIAN INFLUENZA AND SIMILAR CONDITIONS

Recent Outbreaks of HPAI in Animals

- 3.1 At the end of August 2007, 60 countries in Asia, Europe, Africa and the Middle East had experienced outbreaks of Highly Pathogenic Avian Influenza, subtype H5N1. Out of these, 44 have reported outbreaks in domestic poultry. In most cases the disease was detected and contained rapidly, showing increased awareness and improved surveillance in affected countries. The disease is thought to be entrenched in Indonesia, Egypt, and Nigeria, and in parts of China and Bangladesh, and has been re-introduced, despite successful containment for a substantial period, in India, Thailand, and Vietnam, amongst others. Recent outbreaks were detected in, amongst others, the Czech Republic, Germany, Ghana, France, India, Myanmar, and Togo.
- 3.2 These recurrences are not surprising as the virus continues to live undetected in migratory birds and wildfowl, and is spread through trade in poultry and other birds. Control is therefore *successful* if adequate surveillance systems are in place such that local and national authorities are able to rapidly detect and stamp out outbreaks at source and prevent the virus from spreading and becoming entrenched. Because countries can expect to experience occasional or regular challenges from H5N1 (beyond the countries where the virus is entrenched), it is crucial that a medium-term strategy is adopted which focuses on strengthening and expanding the systems put in place over the past three years.
- 3.3 This chapter will:
- Summarize available evidence relating to capacity of countries to detect and respond to HPAI in animals through early warning and detection, immediate confirmation of suspected cases, speedy (and transparent) notification and rapid (and effective) eradication of the disease at source through an appropriate combination of culling, movement restriction and surveillance;
 - Examine how countries with limited capacity, and without any improvement, are seeking to improve it;
 - Examine the success of efforts to prevent outbreaks of HPAI through improved bio-security in poultry farming operations; and
 - Describe some of the specific challenges faced by authorities in seeking to control HPAI in locations where H5N1 virus infection is entrenched (including vaccination, restrictions on poultry keeping and other interventions).

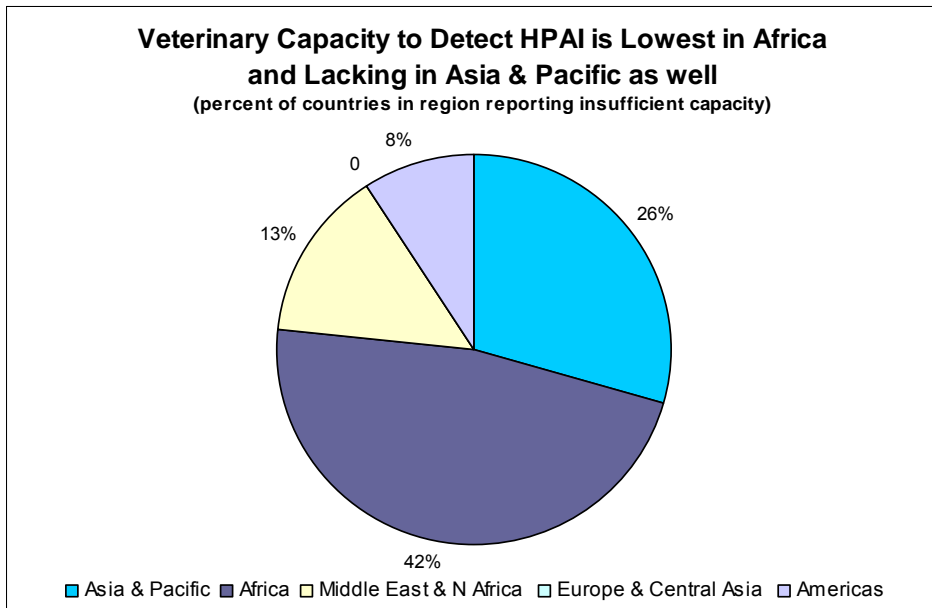
Surveillance, Detection and Response

- 3.4 There is evidence to indicate improved capacity to maintain the health of poultry within many countries through (a) better disease surveillance systems, (b) improved laboratory capacity and (c) increased access to epidemiological expertise. These factors account for improved detection and response to HPAI H5N1 and other influenza viruses. Strengthening of surveillance systems is a key component of every country's integrated national plan. Despite a positive picture at the global level the capacity of individual countries varies enormously and insufficient capacity persists. Especially countries in Europe and Central Asia, and Africa, which typically have weak infrastructure, will need to continue to focus on strengthening their surveillance systems. Where there are recognized weaknesses, there are programs at the global and regional levels that provide technical assistance for performance improvement. However, considerable challenges and gaps still remain. The size and distribution of the poultry industry in many infected countries does not allow for adequate surveillance and early detection. This is exacerbated by silently infected domestic duck populations, live poultry markets, and the millions of small poultry flocks at risk of H5N1 infection.¹³

Veterinary, Laboratory and Epidemiological Capacity

3.5 Data collected suggests that veterinary capacity has increased in all regions. As of June 2007 only 18% (27/135) of national focal points reported that their countries have “insufficient” veterinary capacity to detect HPAI. Most of the countries indicating insufficient capacity are found in the Africa and Asia-Pacific Region (Figure 3.1). It should be noted, however, that this does not mean that all other countries have sufficient veterinary capacity overall, but merely that government focal points responding felt that overall veterinary services would be able to detect an HPAI outbreak. Figure 3.3 provides additional information in terms of the capacity to detect H5N1 at the local, central and international levels.

Figure 3.1



3.6 In order to provide a more detailed assessment of the true capacity of a country's veterinary services and to bring countries in line with international standards and legislation, the OIE and the Inter-American Institute for Cooperation on Agriculture (IICA) have developed a strategic approach for improving veterinary services through the development of the Performance, Vision and Strategy (OIE-PVS) instrument. The PVS assessment enables those responsible for veterinary services to identify their current level of performance, to agree a vision with the private sector, to establish priorities and plan – strategically – its implementation. As of September 5, 2007, 51 country requests for a PVS assessment had been received, mostly from developing countries; 36 missions had been conducted and 27 reports finalized (Further details in Annex II, Table 3). OIE recommends a PVS assessment for all countries.

3.7 The first round of OIE-PVS evaluations has already highlighted the following sources of concern and non-compliance between the national situation evaluated and the international standards:¹⁴

- (i) Overall, legislation and regulations related to animal disease prevention and control are often outdated, incomplete, obsolete or even non-existent. This undermines any program directed towards early detection and rapid response mechanisms;
- (ii) Public-Private partnerships are often still in their infancy, if not non-existent. Complementarities and synergies between official veterinarians, private practitioners and farmers represent a field of improvement for implementation of early detection and rapid response;
- (iii) Sustainable operational budgets for veterinary services are insufficient and far below the pro rata contribution of animal farming activities to the national economy or inadequate when compared to the livestock population of the country;

- (iv) Staff resources, education and training (initial training as well as continuing education) are a source of concern in almost every country evaluated. In some countries the length of initial veterinary education is less than 2 years (world standards being more or less 6 years); and
- (v) Laboratory capacity is also a weak at national and at regional (sub-continental) level. This is not only due to a lack of adequate equipments; this is also a management, personnel training and budgetary issue. The procurement of modern equipments, often not adapted to local conditions (no water, no electricity), rarely settles it all. Conditions of collection and of shipment of biological samples to the laboratories are also a limiting factor working against early detection and confirmation of animal diseases.

3.8 In addition, an assessment process for Integrated National Action Plans (INAPs), involving the World Bank, FAO, OIE and WHO, has been initiated. This aims to help develop plans and spending priorities. The World Bank, in collaboration with the ALive Platform, is conducting Rapid Assessment (RA) missions throughout sub-Saharan Africa. The RA process aims to provide a comprehensive diagnosis of the country status with respect to avian influenza prevention and control and human influenza pandemic preparedness.¹⁵ By the end of July 2007, RA missions had been completed in six African countries (Liberia, Malawi, Mauritania, Sierra Leone, Uganda, and Zambia). The World Bank, with financial support through ALive from the EC and drawing on the support of technical partners (OIE, FAO, AU-IBAR, and WHO-AFRO) has set a target of carrying out RA missions in all African countries over the next two years.

3.9 One of the major program thrusts of the last three years has been the enhancement of the capacity, capability and quality of veterinary laboratory services.¹⁶ Improved laboratory capacity in a number of countries has contributed to better functioning surveillance programs.¹⁷ However, evidence from the survey suggests there are considerable differences in laboratory capacity across the regions. The percentage of countries responding to the survey with insufficient access to laboratory facilities was highest in Asia-Pacific and Africa. All responses from MNA and ECA countries indicated sufficient laboratory capacity. In comparison with previous data gathering exercises, avian influenza expertise and laboratory detection capacity has increased globally from 64% (80/124) of the total respondents in June 2006, to 77% (58/74) in Oct 2006, and now in June 2007 87% (117/134) of countries in June 2007 identified sufficient access on some level (national, regional or international) to adequate laboratory facilities. The comparison from previous results to the current survey suggests improvement throughout all regions except Asia-Pacific and the Americas (Figure 3.2). In addition, 82% of responding countries have expert epidemiological capacity to trace HPAI with the lowest response in Africa and Asia-Pacific.

Figure 3.2

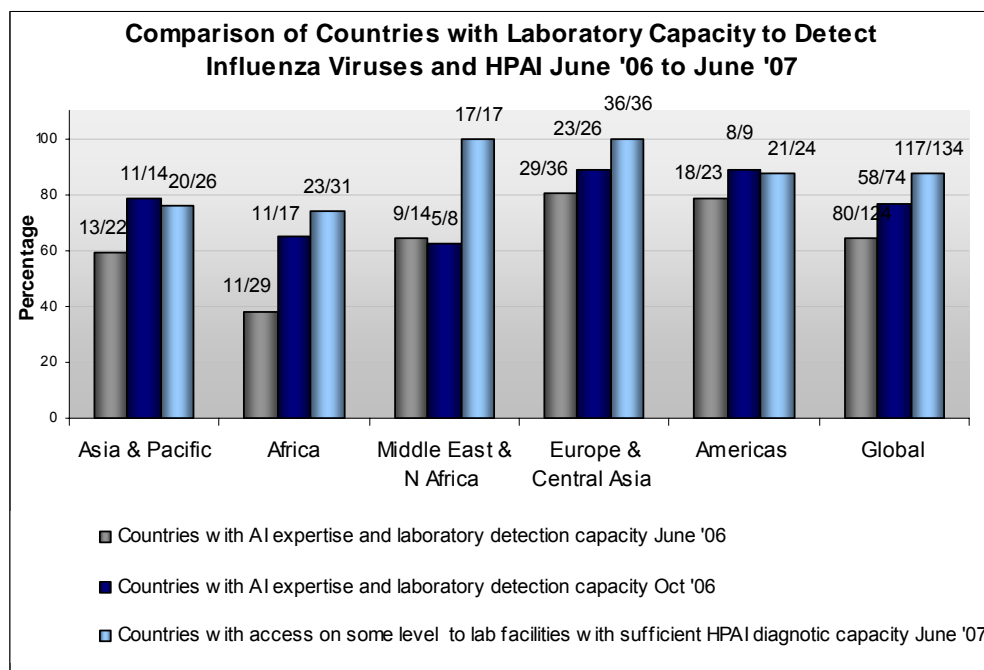
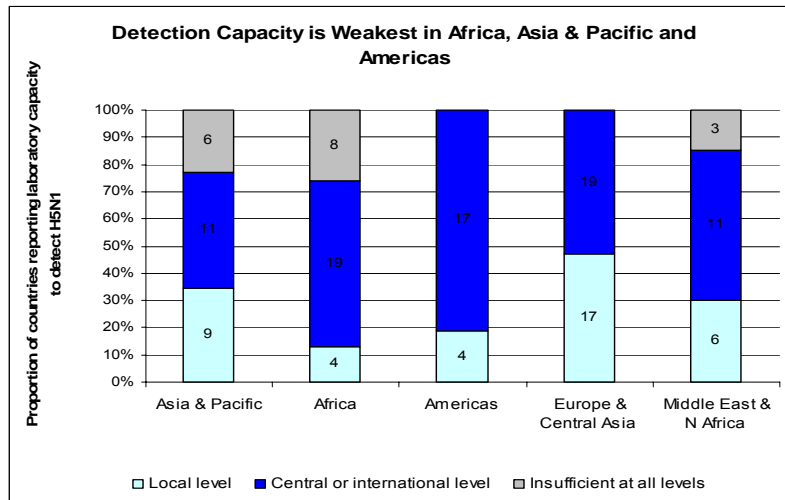


Figure 3.3



3.10 Various networks of laboratories and surveillance mechanisms have enhanced regional capacity to detect and respond to HPAI H5N1 and other avian influenza viruses. Some examples of these include:

- OFFLU, an international network of expertise on avian influenza established by OIE and FAO specializes in providing laboratory and scientific services are provided to countries with limited capacity;¹⁸
- The Global Avian Influenza Network for Surveillance (GAINS) has participants working in 28 countries conducting mortality surveillance, AI sampling and wild bird censuses including 10,000 samples collected in 2007;¹⁹
- Global Early Warning System for major animal diseases, including zoonoses (GLEWS), combines and coordinates the alert mechanisms of FAO, OIE and WHO, including the sharing of information, epidemiological analysis and contributions on joint field missions to assess and control outbreaks (see case study below);
- FAO's Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES) promotes the effective containment and control of the most serious epidemic livestock diseases/Transboundary Animal Diseases (TAD) as well as newly emerging diseases by progressive elimination on a regional and global basis through international co-operation involving Early Warning, Early Reaction, Enabling research, Coordination.

3.11 Further networks of national diagnostic laboratories and epidemiological surveillance teams exist on the sub-regional level. These were established by FAO, with the support of donors and in close collaboration with OIE and regional organizations and are dedicated to coordinating HPAI disease surveillance and diagnostic capacity of their member countries, as well as promoting regional approaches for early warning, efficient detection and early response to HPAI. Lessons learned from a disease experience in one country are a valuable tool for other countries' preparedness and response to the same disease. This can be accomplished where there is a transparent exchange of information and collaboration. Regional and sub-regional networks are needed to support countries and national institutions to create a dynamic approach for interaction and break the isolation of efforts in developing countries.²⁰

HPAI Reporting Interval and Capacity to Respond

3.12 Evidence from the OIE suggests that the average time of reporting between the observation of a suspected HPAI outbreak and the laboratory confirmation which meets OIE standards is decreasing; in 2006 it took 9 days (based on 21 records) whereas recent data for 2007 shows a reduced reporting time of only 3 days (based on 5 records). The average reporting time between observation of a suspected HPAI outbreak and laboratory confirmation reported to OIE is also improving, from 9 days in 2006 (based on 60 records) to 6 days so far in 2007 (based on 22 records).²¹ These results should be assessed with caution due to the limited number of records available.

3.13 In the UNSIC data gathering exercise, the majority of countries globally (over 60% - 27/43) and many countries in each region indicated an average time from observation of a suspect case to laboratory

confirmation of less than 3 days. A small number of countries heavily burdened by HPAI H5N1 report an average interval of greater than 7 days, with one country reporting 17.5 days. This indicates the need for improved laboratory and veterinary capacity as well as enhanced surveillance, provision of compensation and raising public awareness. The vast majority of countries that indicated an immediate laboratory confirmation (within 1 day) are countries from the EU (Further details in Annex II, Table 5).

- 3.14 On the global level, the majority of countries (again over 60%) reported an average time for reporting to OIE of less than 3 days from observation of a suspected case. In a few countries with numerous outbreaks average reporting times remain greater than 7 days and may be as high as 30 (see Annex II, Table 6). Improvements in disease reporting times have provided international agencies with comprehensive information upon which to act.²²
- 3.15 FAO and OIE have supported countries in increasing their capacity to respond to HPAI. The Emergency Centre for Transboundary Animal Diseases (ECTAD) is the umbrella entity and coordinating mechanism for the implementation of FAO's global avian influenza program, providing technical and resource support to regions and countries undertaking HPAI control. ECTAD regional units and Regional Animal Health Centres improve synergy and address needs at the national level. This work focuses on early warning, efficient detection and early response to HPAI, as well as providing technical inputs through capacity building and technical support to countries. Within ECTAD, the Wildlife Disease Program facilitates partnerships, coordinates activities and supports science to help better understand the role of migratory birds in the transmission and spread of the disease.
- 3.16 With the specific objective to support rapid response, FAO and OIE have established a Crisis Management Centre for Animal Health (CMC-AH). The CMC-AH is organized to provide an effective operational platform for rapid response to any outbreak or emergency events related to avian influenza (and other transboundary animal diseases). Specialized emergency response teams can be sent to countries that need assistance within 48 hours. As such, the CMC-AH relies on an effective operations management and action-orientated approach based on Incident Command System (ICS). More recently, FAO has been developing Emergency Action Plans that form the basis of coordinated efforts of major stakeholders including the government, donors, international organizations and other parties to work in unison on structures response actions.

Global Early Warning System for Major Animal Diseases, including Zoonoses

GLEWS was formally launched on 18 July 2006 as a joint system that builds on combining and coordinating the alert mechanisms of FAO, OIE and WHO. It assists the international community and stakeholders in prediction, prevention and control of animal disease threats, including zoonoses such as the avian influenza. This is achieved through sharing of information, epidemiological analysis and contributions to joint field missions to assess and control an outbreak.

The aim of GLEWS is to improve the early warning and response capacity to animal disease threats. This is essential for the effective containment and control of epidemic animal diseases, including zoonoses. From a public health perspective, early warning of animal outbreaks with a known zoonotic potential will enable control measures that can reduce human exposure and risk, and prevent human morbidity and mortality.

The goals and expected outputs of GLEWS are to provide:

- Disease alert and early warning messages, with a focus on predicting animal disease threats, through epidemiological analysis and the integration of additional factors that could have an impact on the occurrence and spread of such diseases (such as economic factors, civil unrest, climatic changes, etc.).
- Technical input into coordinated joint responses to animal health emergencies. If in consultation among the three partners there is clear value for onsite assessment of the situation, GLEWS can provide technical input into an urgent joint field mission to obtain a better appreciation of the situation and to engage the country authorities by offering assistance in the formulation of urgent intervention strategies.

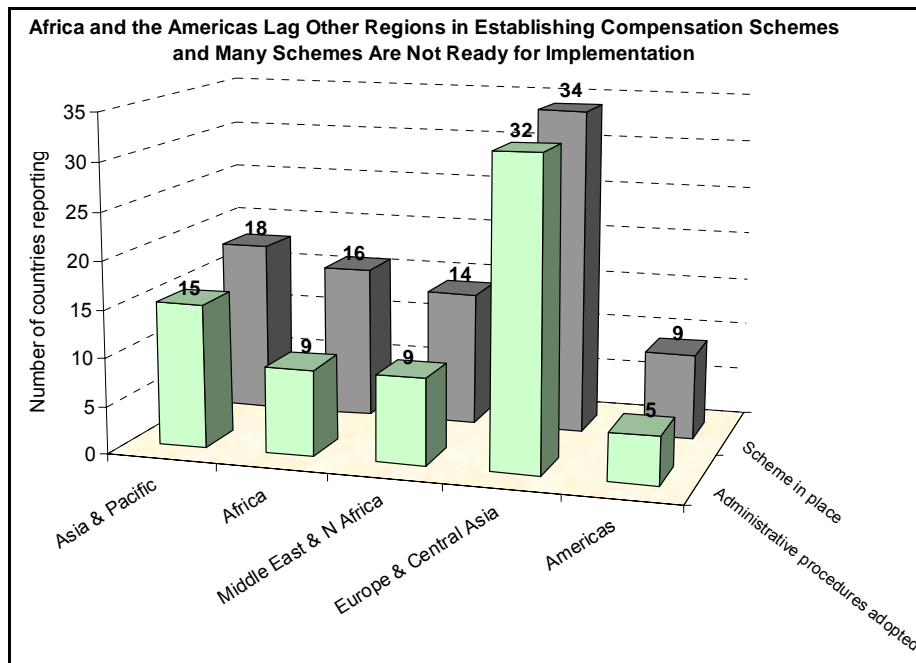
(Adapted from <http://www.who.int/zoonoses/outbreaks/glews/en/index.html>)

Incentives for HPAI Control and Compensation for Property Lost

- 3.17 The interagency report on compensation, 'Enhancing Control of HPAI in Developing Countries Through Compensation,' highlights the importance of providing incentives to encourage early reporting of suspect viruses in combating the spread of HPAI.²³ In previous UN-World Bank reports, the UN System Influenza Coordinator highlighted compensation as one of the six success factors in fighting avian and human influenza.

- 3.18 There has been continued progress in the availability of compensation schemes, their implementation and the amount of compensation to be disbursed as evidenced by the current round of survey results (Figures 3.4 and 3.5). The data gathering exercise indicates an increase in availability of compensation schemes in all regions except for Africa.²⁴ Also, the proportion of countries compensating more than 50% has increased in all regions, except for MNA and the Americas.²⁵ In Africa, 50% (16/32) of countries identify schemes in place and in the Americas 33% (9/27), which is likely to be a result of the absence of HPAI outbreaks.
- 3.19 Despite the evidence that compensation schemes exist, there is no evidence that all necessary steps to make them operational have been taken. For example, the UNSIC data gathering exercise showed that 15% (12/85) of countries with compensation plans have not yet passed the required legislation. Given the need for a high degree of preparedness prior to the occurrence of an outbreak in order to assure effective and prompt payments, these results reaffirm the need for continued high level commitment as well as administrative support for appropriate fund allocation. Governments are thus encouraged to have their compensation plans reviewed, assure that necessary legislation has been put in place, that the compensation rate has been determined, the payment mechanism been put in place, and that necessary communication to the public has been conducted. Furthermore, in countries where compensation schemes are operational, there is a need to examine their performance.

Figure 3.4



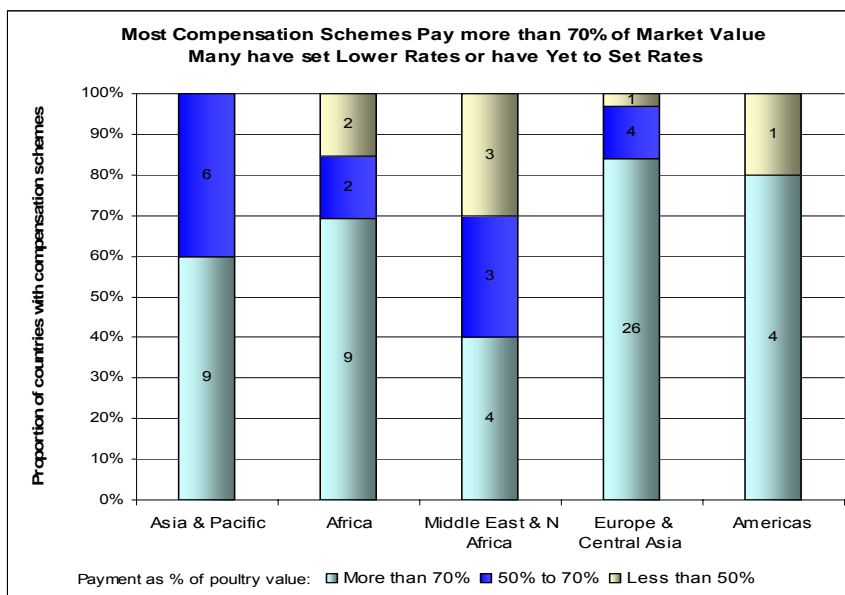
- 3.20 The timeliness of the compensation payment is also crucial in determining the effectiveness of the compensation scheme in stimulating early reporting of suspected outbreaks, especially in sectors 3 and 4. In ECA member states, where sectors 1 and 2 predominate, payments are often only disbursed after 60 days (within 90 days). Globally, a significant number of countries disburse payments in less than 20 days with the majority of countries making compensation payments within 20 – 40 days (Table 3.1).

Table 3.1. Timing of Payment Tabulated by Region

Average number of days to payment of compensation for HPAI outbreaks and number of countries by region reporting compensation payments in less than 20 days, between 20 and 40 days, between 40 and 60 days, and greater than 60 days						
	<i>Days (average)</i>	< 20 days	20 - 40 days	40 - 60 days	> 60 days	<i>n=</i>
Asia & Pacific	28	4	5	0	1	10
Africa	27	4	1	0	0	5
Middle East & N Africa	27	1	2	0	0	3
Europe & Central Asia	47	3	5	1	5	14
Americas	n/a	n/a	n/a	n/a	n/a	0
Global	32	12	13	1	6	32

- 3.21 A final determinant of the effectiveness of a compensation scheme is the level of compensation paid to farmers. Evidence collected from the survey shows that the majority of countries compensate at 50% or more (see Figure 3.5). It is advised that all countries set the level of compensation at between 75 and 90% and communicate this to farmers prior to any outbreaks in order to assure that farmers will immediately report outbreaks, and to prevent sick animals from being sold illegally as farmers attempt to recover losses.

Figure 3.5



Infection Control in Settings Where the Virus is Entrenched

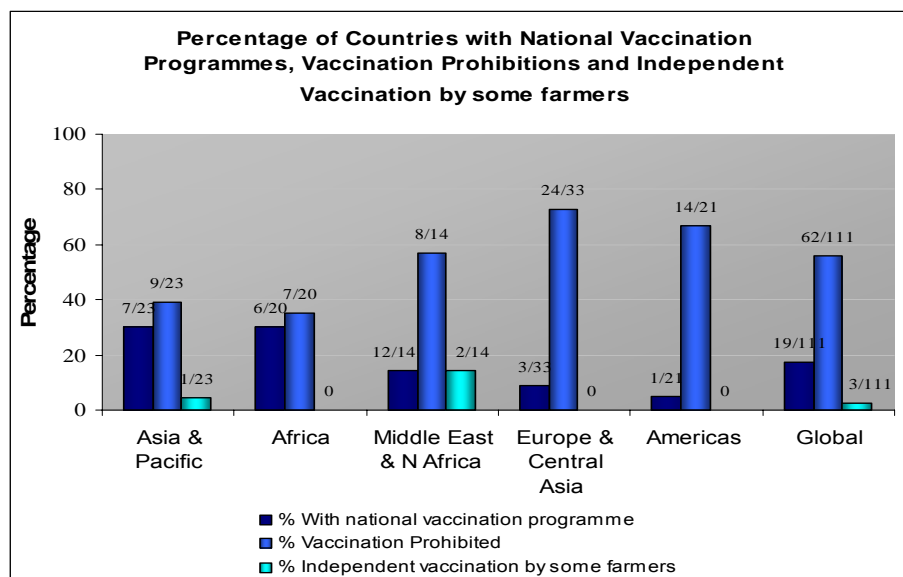
- 3.22 A major development in the last six months has been the recognition that H5N1 HPAI viruses will not be eradicated globally in the medium term. This requires modification of the approach of controlling the disease in countries where the virus has become entrenched, away from an emergency response, to a longer term strategy.²⁶
- 3.23 Increasingly, technical focus on the control and prevention of HPAI H5N1 is being directed towards bio-security throughout the poultry production chain, vaccination, the structure of the poultry industry and consequent engagement with the private sector and civil society. Changing poultry production processes and marketing systems through external interventions are potential solutions to many control and prevention problems.²⁷

Vaccination

- 3.24 Under the right circumstances, vaccination against avian influenza can be a valuable intervention for the control of HPAI H5N1. Careful assessment is required before the decision is made to vaccinate with consideration of the capacity to implement a sustained vaccination and monitoring program. However, when vaccination is used as an element of control strategies, it should be appropriately complemented by other interventions.²⁸
- 3.25 Evidence from the data gathering exercise suggests that vaccination remains an option for many countries. It does, however, vary greatly among regions, generally following global patterns of poultry trade and HPAI outbreaks: Highest percentages of countries with vaccination programs are found in Africa and the Asia & Pacific Region (Figure 3.6). Comparison of numbers of countries indicating that vaccination is planned or implemented in Oct 2006 with numbers of countries indicating that a national vaccination program exists now, suggests that only a few countries have implemented vaccination programs from those which may have been planning them in 2006 (Annex II, Figure 1).

- 3.26 In March 2007 OIE and FAO hosted a conference on vaccination as part of HPAI control in Verona.²⁹ Around 400 experts reviewed the recent experiences and achievements of vaccination programs carried out in different countries around the world. The conference recommended that vaccination against avian influenza be used in entrenched countries and countries where other control measures and lack of bio-security cannot stop the spread of the virus. A successful vaccination campaign depends mainly on the use of high quality vaccines complying with OIE standards and regularly adapted to the changing H5N1 strain, appropriate infrastructure to ensure the rapid and safe delivery of vaccines (cold chain), monitoring of vaccinated flocks, movement control of poultry, and adequate financial resources. Efficient veterinary services (complying with OIE standards on quality and evaluation) are also necessary when the use of vaccination is suspended. Any vaccination policy should include an exit strategy since costly long-term vaccination campaigns have proven not to be sustainable.
- 3.27 There is evidence that the successful use of vaccination has assisted in containing or preventing infection and disease, with large scale campaigns in China, Hong Kong (SAR) and Vietnam.³⁰ Vaccination also appears to have reduced the levels of infection and certainly reduced the need to cull poultry. In turn this has also had an effect on easing the complications of consequent compensation. However, it does not eliminate infection in poultry and the risk to humans (as recent human cases in Vietnam have shown) and it is unclear what it does to the risk of a pandemic emerging from H5N1 (for further detail see *Vietnam case study: Sustaining an Effective Response*).

Figure 3.6



Bio-security

- 3.28 In the data gathering exercise, most countries reported evidence of increased bio-security measures at some stage of the poultry production chain or farming system. Many countries also separately indicated that any increases in bio-security measures were isolated to the commercial sectors. The overall response is encouraging, but challenges remain where domestic backyard flocks and ingrained rearing practices (including FAO Sector 3 'small commercial') facilitate the spread of the virus amongst birds and expose humans (and other mammals) to infected birds.

Cross-Border Controls

- 3.29 Responses in the data gathering exercise also indicate a high degree of planned and implemented avian influenza border controls globally (96%) - a small increase compared with Oct 2006 (92%). The response was also high across all regions suggesting a high level of awareness of the risk of virus spread through cross-border trade. The majority of respondents (81%) also indicated controls were implemented as opposed to planned. The lowest regional response to implementation of border controls was Africa. Despite these high reported figures, cross-border controls may not be implemented effectively and remain a concern.

Indonesia – Strategic Planning and Development where the Virus is Deeply Entrenched

Avian influenza in birds was first reported in 2003. Now 31 out of 33 provinces have confirmed cases of HPAI. The incidence varies within the country; however, HPAI is entrenched in Java, Bali, Sumatra and South Sulawesi. Human cases continue to be reported since June 2005 with 90 fatalities from 112 confirmed cases as of November 5, 2007. Surveillance data and information on the incidence of HPAI outbreaks is generally insufficient. Participatory Disease Surveillance (PDS) is operating in 157/444 districts and 9 provinces. PDS teams have found that HPAI is entrenched in most areas where they operate. However, it is recognized that HPAI is more sporadic in smaller, more dispersed poultry populations.

The Government of Indonesia's National Strategic Work Plan for the Progressive Control of HPAI in Animals 2006 – 2008 has been developed with international organization technical assistance and contains 9 key elements:

- Program management coordinated through central and regional management units and 35 local disease-control centers;
- Enhancement of HPAI control in animals through stamping-out and emergency vaccination, bio-security, quarantine, movement control and tracing;
- Surveillance and epidemiology including early detection, an effective national system for management of surveillance information, vaccination program monitoring; surveillance following recognition of a human case and surveillance of potential virus reservoirs;
- Improved laboratory services especially diagnostic services, vaccine production and quality assurance;
- Strengthening the legislative base for all industry sectors to report disease in a timely manner and strengthen the involvement of district and provincial veterinary services in HPAI control;
- Effective communications processes to ensure that all stakeholders are informed of their role and committed to the campaign;
- Research and development designed to provide information needed to more effectively implement the control program; and
- Restructuring of the poultry production processes and marketing systems to help reduce interspecies exposure. This will also include identifying the most effective points for intervention in a complex market chain whilst recognizing the potential to create negative impacts for vulnerable people.

Whilst there has been substantial progress made in establishing a supportive basis for HPAI surveillance and control, it is evident that in order to achieve significant progress on the entrenched status of HPAI in Indonesia, a broader strategy, supported by relevant investments, needs to be designed and implemented. A concept paper has been developed to work in relation to the National Strategic Plan which sets out elements of a phased, progressive control program designed to lead to the eventual elimination of HPAI from the Indonesian archipelago, and a consultation process has been initiated with all strategic and technical partners to advance this.

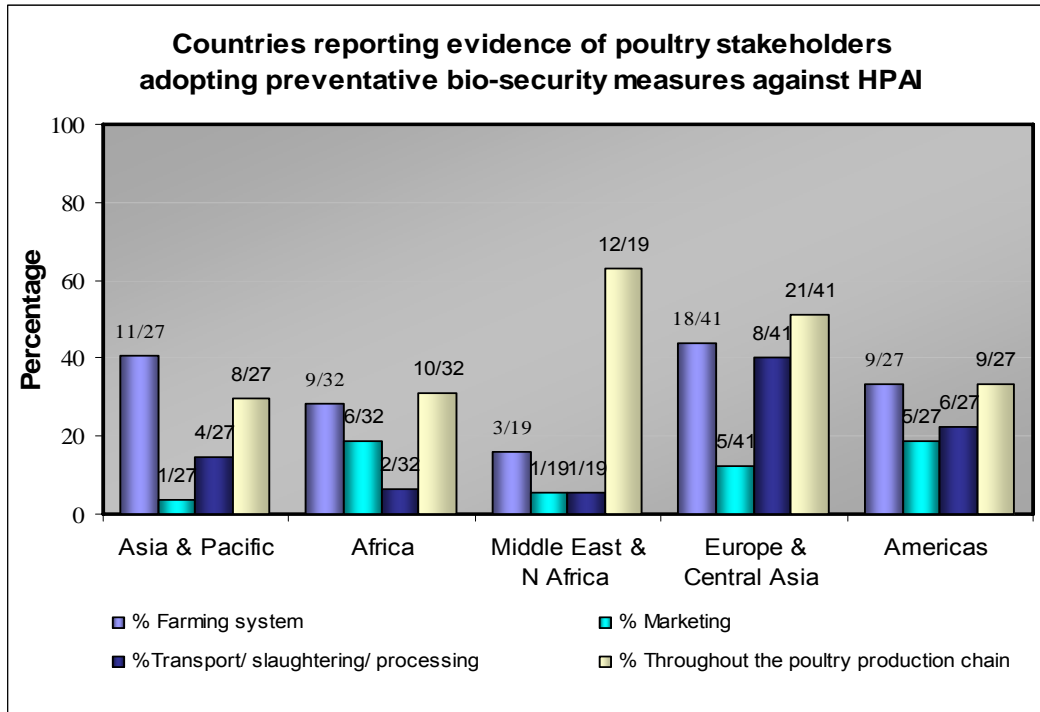
(Adapted from FAO Progress Report 2007)

Efforts to Change Poultry-rearing Practices

- 3.30 Bio-security measures are promoted (or introduced) through regulations, with the intention of reducing the risk of virus spread and incidence of outbreaks. When these measures are strictly applied, they inevitably bring about changes to the patterns of market chains, excluding small-scale commercial producers (sector 3) from their most lucrative markets. The poorest producers can be put at a particular disadvantage. Planned measures to adjust the poultry sector have in some cases combined stringent bio-security regulations with movement of farms, markets and processing facilities. Such rapid and dramatic sector adjustment can have severe consequences, especially for the livelihoods of vulnerable people. Mapping exercises that describe flows of product and profit and identify stakeholders along market chains and at the same time identify risk points, are becoming an increasingly important tool in planning HPAI control.
- 3.31 Reports to the data gathering exercise suggest awareness of bio-security and actions to implement measures are taking place (see Figure 3.7) However, a sustainable reduction in the risk of HPAI will come about only through changes in the way that people live with and manage poultry. While substantial investment has been made by the public sector, by far the larger investment in the long term will be made by private companies and individuals, who will be expected to provide financial inputs and to change their habits, often at considerable direct, opportunity or social cost. People are more likely to comply with control measures, or introduce changes in management, that enhance their livelihoods or at least do minimum damage and are implemented in ways that take account of cultural norms. Advocated changes in poultry rearing practices, particularly those that apply to small scale producers, traders or processors,

need to be crafted with a clear understanding of the short- and long-term impacts to livelihoods and small business development. There are three areas for concrete action. The first is protection of the most vulnerable people, and those who have least voice, such as poor women poultry owners in densely populated areas, who sometimes experience the harsh application of control measures, implemented with little consultation. The second is working to promote opportunities for small-scale entrepreneurs to upgrade their enterprises, so that poultry can continue to provide a pathway out of poverty for some. The third and supporting area is improved risk assessment so that targeted, affordable and effective action can be taken in promoting improved management practices appropriate to different groups.³¹

Figure 3.7



(Note: percentages taken as respondents to each section of bio-security separately compared to total number of respondents to the overall survey as multiple answers were available)

Conclusions and Recommendations

- 3.32 Outbreaks of HPAI H5N1 have continued to emerge during the past 9 months even among better-resourced countries. Reports indicate that most of the countries in which the disease has re-emerged during this period are now better prepared for early detection and rapid response (with more effective veterinary services and laboratories) than they were last time round.
- 3.33 There is substantive evidence to indicate enhancement of surveillance systems, improved laboratory capacity and epidemiological capacity globally. This has improved information for the detection and response to HPAI and other zoonotic diseases. Where there are recognized weaknesses in these capacities, strategies are in place at a global and regional level to improve the situation and they need continued support. However, constraints still remain and insufficient capacity still exists in all regions. Several countries are still having significant difficulties in bringing HPAI due to H5N1 under control. The entrenched nature of the virus in these locations represents a continuing threat to animal and human health.
- 3.34 A major development has been the wider acknowledgement that H5N1 HPAI viruses will not be eradicated globally in the short or medium term. This allows modification of the approach to control in places with entrenched infection to expand from an emergency response, to include longer-term sustainable strategies. Whilst evidence suggests some level of change in bio-security measures, sectoral change is needed in addition to short-term responses.

- 3.35 Progress achieved so far has been assisted by the openness and commitment to transparency from many national authorities, especially in regions where HPAI due to H5N1 is a major concern.
- 3.36 Initial evaluations of veterinary services by OIE highlight continued concerns of non-compliance between national and international standards with regard to regulations for disease prevention and control, synergy with the private sector, sustainable budgets for veterinary services, staff resources and laboratory capacity.

Vietnam: Sustaining an Effective Response

Since the first AI outbreak in 2003, Vietnam has been at the forefront of efforts to address a disease that has since spread across Asia, Western Europe, Africa and the Middle East. As in the SARS outbreak less than one year prior to the first AI infections, Vietnam's experience with HPAI has underscored the importance of early detection and response, backed by strong coordination within the human, animal and other sectors.

Despite considerable success with its response efforts, AI has proven costly to Vietnam. Since the first outbreaks, Vietnam has reported 100 human cases, 46 of which have proven fatal – figures exceeded only by Indonesia. In the poultry sector, successive outbreaks initially overwhelmed province-level veterinary services in a country with limited surveillance infrastructure and laboratory facilities for diagnosis and monitoring of the progress of the disease. Widespread outbreaks were contained but only through rapid and massive culling of diseased as well as unaffected birds and these efforts are estimated to have caused losses representing close to 15% of the national flock and come at a direct cost of more than US\$200 million or 1.5% of GDP.

The need to control successive AI outbreaks required the adoption of stringent containment measures including the establishment of regulations to close all live poultry markets, the introduction of movement controls at the district level, and bio-security measures in de-stocked commercial facilities. The enforcement of these measures was particularly challenging and required extraordinary political and organizational efforts to initiate and sustain the containment “package” at all levels.

At the central level, a high level Steering Committee has met weekly to guide the national response and ensured that directives were issued and disseminated effectively throughout the country. At the provincial level, AI Steering Committees reporting directly to the Provincial People's Committees (PCC), drew on various social mobilization mechanisms including mass organizations such as the Women's Unions and Fatherland Front, and were successful at coordinating the response, controlling activities across sectors, mobilizing resources for AI activities, and promoting accountability of the sectors involved to the highest provincial authority. The government also adopted nationwide poultry vaccination commencing late 2005, mobilizing tens of thousands of vaccinators at the local level. The application of this intensive—and distinctively Vietnamese approach—coincided with dramatic reductions in human and animal cases. No human cases were recorded in an 18-month period and, although the virus was still present in the environment, no poultry cases were reported during the period December 2005–December 2006.

However, the resurgence of infection in late 2006 and again in May 2007, following this period of effective – or at least apparent – control has posed a substantial challenge for policymakers. Do these outbreaks point to “fatigue” in or weakening of the social mobilization mechanisms that appeared to have been so effective in initial emergency? Is the costly investment in mass poultry vaccination – previously associated with effective control of outbreaks – still warranted given that outbreaks have returned? Can veterinary services keep pace with the substantial increase in duck production now that the previous ban on duck hatching has been lifted? Can the nationwide response be reinvigorated and re-established on a more sustainable basis so that it can be as effective in – as well as in the absence of – an emergency?

Once again, Vietnam is gearing up to confront frontier issues in the response to AI. The main challenge is clear: To move from emergency response to medium and long-term integrated disease control and prevention measures addressing both human and poultry populations. There is also a need to consolidate the significant progress that has already been achieved whilst reducing the overall cost of control. In the animal health sector, the next challenge is to transition from mass vaccination to risk-based interventions such as targeted vaccination and surveillance that will maintain disease control at lower cost.

For the human health sector, it is encouraging that Vietnam's case fatality ratio is lower than both the global average (46% vs. 61%) and that of the other most affected country, Indonesia (81%). However, significant human resource and other constraints in the health system need to be addressed to ensure there is sufficient capacity to respond should the virus become more easily transmissible for humans or, even worse, become the next pandemic virus.

(Adapted from inputs from the World Bank, FAO, WHO and UNDP)

Turkey: From Emergency Response to Successful Detection and Containment

Poultry production in Turkey contributes about 1.7% to National GDP, has been growing by 14.4% each year, has an annual turnover of \$2.5-3.0 billion and employs about 500,000 people. In 2006 the 10,000-odd large commercial (sector 1) poultry holdings contained some 213 million poultry. In addition, 90% of the rural population keeps 23 million poultry in backyards, with flocks varying from 2 to 50 birds.

On October 1 2005 an outbreak of avian influenza was detected in the Manyas district of Balikesir province: three turkeys died in a flock of 1,800 in an outdoor grazing facility. Most of the rest of the flock died over the next three days. The district veterinary service diagnosed AI: laboratory confirmation was received on October 13. Control measures were initiated by the provincial veterinary service on October 7: a 3-km protection zone was set up with enforcement by military police. In the next 8 days all backyard poultry (10,000 birds) within the zone were culled, compensation provided to the affected farmers by the private poultry industry, and 16,000 birds from the remaining two commercial farms were slaughtered. A 10 km radius surveillance zone was established: this contained roughly 45,000 backyard poultry, and 10 active larger poultry farms with a stock of over 130,000 animals. The movement of live poultry was banned, transport of table and hatching eggs was regulated, market trade of poultry and hunting of wild birds was banned, and a local awareness campaign was initiated.

The outbreak was quickly contained, with no signs of transmission to humans. But the economic impact was severe. Within the first week the market capitalization of the traded firms dropped by over 30%. Within two weeks, the consumption of poultry in Turkey (roughly 1.2 kg per capita per month) and egg demand (12 eggs per capita per month) dropped substantially and retail poultry prices fell by 30%. The Turkish poultry and egg sector incurred losses of roughly \$900,000 daily in October-December 2005.

In January 2006, a widespread outbreak occurred, starting initially in northeastern Turkey along the border areas with Georgia, Armenia, and Iran. This area is directly on the flight path of migrating birds (the so-called Central Asia Flyway) and sits between three large lakes: Sevan in the east (Armenia), Van in the eastern Anatolia (Turkey), and Urmia in the south (Iran). The response to the initial outbreak in the provinces of Ardahan, Kars, Erzurum, Ağrı, Iğdır, and Van was rapid with culling of over 50,000 birds in a week. In the second week of January, the number of provinces reporting suspected or confirmed cases of AI in poultry rose quickly. As of mid-March, its presence was confirmed in 58 of Turkey's 81 provinces. To combat this rapid spread, the authorities culled birds in protection zones around affected villages and monitored spread in surveillance zones. A phone hotline was set up for people to report loose or sick poultry, and bazaar market trade of live poultry was prohibited throughout the country. By mid-March, over 2.3 million birds had been culled. The rapid spread of the AI in January 2006 is thought to be due to challenges with enforcing bans on the movement of birds in the surveillance zones and some well-reported instances of delayed compensation payments.

There was associated animal-to-human transmission of H5N1. Up to January 19, there were 21 suspected human cases, including four deaths. 38% of the cases were female, and seventeen of the 21 patients were younger than 15 years old. Most of the cases were transferred to, and treated at, the University Hospital in Van. The prompt response led to the early control of the outbreaks nationally and the early detection and the treatment helped keep the case fatality ratio low.

2007 outbreak. During an outbreak in Batman Province (February 8-15, 2007), a total of 1,508 poultry of various species were culled. The HPAI contingency plan was implemented. Central and local crisis centres were established. Quarantine measures were introduced, and both protection and surveillance zones were established. Poultry were culled and compensation was provided. Live poultry markets were closed, and strict quarantine measures and road checks implemented. Epidemiological studies suggest that wild birds were the source of infection.

International support. The government has sought assistance from the UN systems agencies (FAO, WHO, UNICEF), the OIE, and members of the EU, the US and other nations and also developed an Avian Influenza and Human Pandemic Preparedness and Response (AIHP) Project for financing by the World Bank. Good progress has been made with building links between the line agencies, NGOs and local communities; expenditures from counterpart funds; donor parallel financed actions; providing protective gear and laboratory equipment; training of animal health and human health staff; laboratory rehabilitation and public awareness activities. In particular, the joint efforts related to communication and public awareness have contributed significantly to the early warning and containment of the Batman outbreak.

A "Biosecurity Working Group", led by the Agriculture Ministry (MARA) with the participation of FAO, donors and poultry growers associations, is examining options to improve poultry sector bio-security (particular emphasis on backyard flocks). Five types of pilot project have been initiated in selected provinces with co-financing from donors.

Evaluation of responses to the Batman HPAI outbreaks in February 2007 suggested that initial response and containment activities by local and national authorities were rapid and effective, the MARA and Ministry of Health teams coordinated well together, timely support was provided by FAO and the EU, \$450,000 compensation was paid – promptly – to the owners of birds culled, and adequate information was provided to the public. Compared with the previous (2005 and 2006) outbreaks, overall poultry consumption and tourism were not affected and the economic impact was negligible.

This kind of effective application of control measures by national and local authorities, with prompt and effective support from other nations, regional bodies and UN agencies, minimizes the risk of (a) dramatic HPAI spread (of the kind which occurred in January 2006) and (b) major economic consequences of HPAI outbreaks.

(Based on the World Bank AIHP PAD; March 2007 Aide Memoire and ISR; "Population estimates and geographic distribution of backyard poultry and poultry keeping system," April 2007, Nedret Durutan and Cuneyt Okan; and "Rapid assessment of HPAI Socio-economic impacts in Turkey," December 2006, Ellen Geerlings, FAO/AGAL)

4. IMPROVING THE CAPACITY OF HUMAN HEALTH SYSTEMS TO DETECT AND RESPOND TO AN INFLUENZA PANDEMIC

Context

- 4.1 Almost four years after the re-emergence of H5N1 infections in poultry populations in South East Asia, the virus is still circulating and threatening human health. It poses threats in two separate, yet related, ways:
- As a zoonotic disease caused by the highly pathogenic avian influenza (H5N1) virus itself; and
 - As the potential source of an influenza virus with pandemic potential (this could emerge from the H5N1 strain or from any other influenza virus).³²
- 4.2 From November 2003 to November 5, 2007, a total of 334 laboratory confirmed cases of human H5N1 infection and 205 fatalities have been reported by 12 countries (Table 1, Annex II). In 2007 alone, Indonesia has reported 37 cases and 32 fatalities and Egypt 20 cases, 5 fatal. New countries with human cases in 2007 are Nigeria (1 case, 1 fatality) and Lao PDR (2 cases, 2 fatalities). Human cases have also re-emerged in Vietnam for the first time since 2005. Whilst there has been the appearance of some decrease in human cases in the last 8 months, the threat continues as highlighted by new human cases in countries with previous successful suppression of virus transmission to humans.
- 4.3 There is currently no or very limited human-to-human transmission of H5N1, corresponding to WHO Pandemic Alert Phase 3. In this phase, the main goal is the early detection of possible expanding clusters that might indicate increasingly efficient human to human transmission to ensure both rapid detection of the first emergence of a possible pandemic strain and equally rapid characterization of the new virus subtype and early detection, notification, and response to additional cases. During Phases 4 and 5, evidence of human to human transmission is increased and significant. In these advanced pandemic stages, the goal is to contain and eliminate the new virus within limited areas and maximize efforts to delay spread to gain time to implement response measures, including vaccine development.³³
- 4.4 The WHO strategy being adopted to improve global health security in relation to threats posed by H5N1 and an influenza pandemic is to:
- 1) Reduce human exposure to the H5N1 virus and limit opportunities for human infection.
 - 2) Strengthen the early warning system by ensuring that all affected countries, WHO and the international community have the data and clinical specimens needed for an accurate risk assessment regarding influenza.
 - 3) Prepare for intense rapid containment operations in the event of the first emergence of an influenza-like illness, associated with a transmissible virus with pandemic potential in order to limit transmission and delay international spread.
 - 4) Build capacity to mitigate the impact of a pandemic by ensuring that all countries have formulated and tested pandemic response plans and that the WHO is fully able to perform its leadership role under these conditions to implement the Rapid Containment Strategy.³⁴
 - 5) Coordinate global scientific research and development by ensuring that pandemic vaccines and antiviral drugs are rapidly and widely available shortly after the start of a pandemic and that scientific understanding of the virus evolves quickly.
- 4.5 A major strategic development in this regard has been the coming into force of the International Health Regulations (2005) or IHR (2005). The purpose and scope of these regulations is to prevent, protect against, control and provide a public health response to the international spread of disease. This should help ensure the immediate sharing of viruses from suspicious outbreaks that may indicate pandemic emergence.

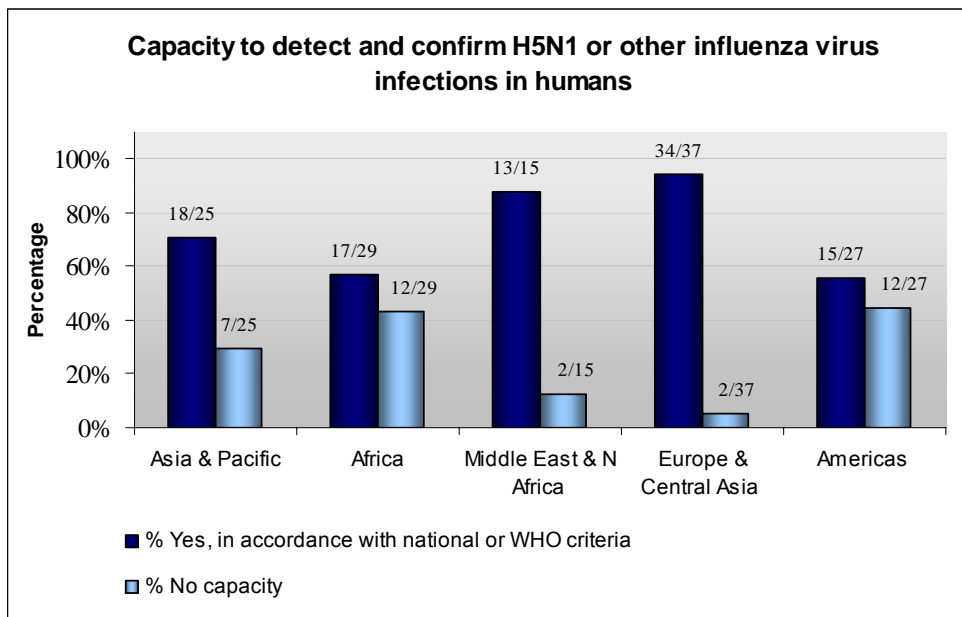
4.6 This section will concentrate on assessing the preparedness of global and regional capacity with attention to activities in the first three strategic actions listed above, concentrating on early detection of human cases, rapid response and potential rapid containment.

Detection and Prevention of Human H5N1 Infections

Human Diagnostic Capacity and Surveillance

4.7 Existing surveillance systems in many countries on the frontline of avian influenza remain inadequate. There have been specific gains made in the identification of clinical human cases and clusters of H5N1 infection in a number of countries.³⁵ Evidence from the data gathering exercise suggests progress during the past 6 months but there remains a mixed level of surveillance and diagnostic capacity to detect and confirm H5N1 or other influenza virus infections in humans.

Figure 4.1



4.8 Figure 4.1 above, shows capacity to detect and confirm H5N1 in humans. ECA is the region with the highest proportion of countries with diagnostic capacity 92% (34/37), followed by MNA 86% (13/15), Asia & Pacific 72% (18/25), Africa 59% (17/39) and the Americas 56% (15/27). When further disaggregating the regions, those countries responding from the ASEAN and CAREC+ indicate diagnostic capacity in all member countries. All but one of the countries which have had H5N1 cases report sufficient diagnostic capacity globally.

4.9 Assessments of pandemic preparedness plans in the Asia & Pacific Region identify two general types of plans. The first grouping includes plans which state the presence of national surveillance systems and sentinel systems. This includes the ability to adapt surveillance as a pandemic unfolds and test for antiviral resistance. A second group of countries plans is much less detailed with no national human influenza surveillance systems in place indicating continued gaps in capabilities.³⁶

4.10 Data from country assessment visits by ECDC of the 30 European Union – European Economic Area countries concluded that good linkages were documented between human and animal surveillance and response systems. The field assessments found that operationally linkages were much stronger than appeared on paper though veterinary plans lacked human health elements.

Iran: Preparing Detection and Prevention of Human H5N1 Infections

OIE has confirmed H5N1 in wild fowl, but to date no outbreaks in domestic poultry or notified human cases of Avian Influenza have been reported in Iran. The government of Iran (GOI) has taken necessary regulatory and institutional steps to form a national inter-ministerial HPAI Steering Committee headed by the Iranian Veterinary Organization and a national HPAI contingency plan has been established and simulated under field conditions.

Iran has a fairly developed and extensive Seasonal Human Influenza Surveillance system under the oversight and coordination of the Centers for Disease Control. There is no active influenza-like-illness (ILI) surveillance, and further investments are needed to train health workers in health posts, centers and private doctors, as well as CDC staff who work at sub-national level, to increase their capabilities to detect a possible index case and investigate a possible outbreak.

A well-equipped BSL-II level National Influenza Center (NIC) reference laboratory is based in Tehran. This laboratory routinely analyzes samples and has proven to be reliable in its diagnostic capacity but can currently only handle up to 100 samples per week in order to respond within 48 hours, and may not be able to cope in case of an outbreak. The Iranian Ministry of Health has decided to implement a capacity enhancement of the sentinel laboratories in the provinces and to upgrade the reference laboratory to bio-safety level III in the event of an outbreak for virus isolation and culture.

As for case management, Iran has about 1,320 hospital beds for the treatment and case management of infectious diseases. While these hospitals often have an intensive care unit, these are not accessible to patients suffering from highly contagious infectious diseases, because none have isolation rooms with negative pressure to contain contagion and contamination. Efforts are underway to map out all provincial and central infectious diseases units which are designated for patient referral and case management to assess their needs in terms of medical equipment, consumables and training for patient isolation. A few key units will be selected for infrastructure and equipment upgrade in case of a pandemic. On the other hand, the country appears to have the necessary supplies of anti-virals for prophylactic use in healthcare workers, suspected ILI cases and the high risk population groups.

In response to the threat to humans posed by the H5N1 virus, the World Bank's Second Primary Health Care & Nutrition Project was amended in December 2006 for financial assistance to the Iranian Ministry of Health to upgrade its medical and laboratory facilities, train health care workers in surveillance and case detection, and provide seed funding for related medical consumables and pharmaceuticals with a view to strengthening its preparedness for a potential outbreak of H5N1 in humans or a possible pandemic.

(Provided by the World Bank)

Laboratory and Human Health Surveillance Networks

- 4.11 There has been progress in the development of generic laboratory and surveillance facilities which include the capacity to detect H5N1 and other viruses in humans. The latest data gathering results suggest weaknesses in surveillance and detection of human cases in Africa in particular, where 43% (13/30) of responding countries report having no diagnostic capacity to detect and confirm human cases. Within Africa, Integrated Disease Surveillance and Response (IDSR) networks are recommended by the WHO as the means for detection of human infection by HPAI. IDSR serves as a vehicle for International Health Regulation (IHR 2005) implementation and surveillance of H5N1 has been incorporated into the networks. They strengthen regional surveillance and ensure timely provision and utilization of information in all countries. IDSR collects data on high-priority diseases, analyzes, interprets and generates information to take appropriate public health action at the district level. An IDSR strategic plan has been implemented in 93% of African countries. The WHO reports that progress, such as improved outbreak detection and rapid response, has been seen in countries like Mali, Burkina Faso, Eritrea, and Uganda. However, despite progress in planning, laboratory capacity and surveillance is still considered by WHO to be less than what is required in the region.³⁷
- 4.12 The WHO Global Influenza Surveillance Network (GISN) comprises National Influenza Centers and WHO Collaborating Centers which operate under defined Terms of Reference. The success of GISN depends on the participation of these laboratories across the world. For the short-term, regional capacity to diagnose and respond to H5N1 outbreaks has been strengthened through designation of specialized H5 influenza laboratories. For the long-term, WHO is working with individual Member States to build and strengthen local H5 diagnostic capacity so that H5 diagnosis becomes as routine as seasonal influenza.³⁸
- 4.13 The Global Outbreak Alert and Response Network (GOARN) is a technical collaboration of existing institutions and networks that pool human and technical resources for the rapid identification, confirmation and response to outbreaks of international importance. The Network provides an operational framework

to link this expertise and skill to keep the international community constantly alert to the threat of outbreaks and ready to respond. During late 2006 and early 2007, training for participants in the network has been conducted on international outbreak response, specifically including avian influenza in humans.³⁹

Mekong Basin Disease Surveillance (MBDS) Network

The Mekong Basin Disease Surveillance (MBDS) is a network of six Mekong countries (Cambodia, China (Yunnan Province), Lao PDR, Myanmar, Vietnam and Thailand) which since 2001 has been collaborating successfully in disease surveillance and outbreak response and control. The partnership was reinforced in May 2007 through renewal of an MOU among Health Ministers in the six countries. The collaboration provides a neutral mechanism for information exchange and joint response between countries with different political structures. It encourages sharing of information and strengthens disease surveillance and response to outbreaks of priority diseases such as avian influenza and dengue hemorrhagic fever.

Main aims:

1. Strengthening national capacity in disease surveillance, outbreak investigation and response.
2. Strengthening health manpower, development in field epidemiology.
3. Establishment of a sub regional surveillance network.

Recent activities of MBDS Network include:

- Cross-border information exchange
 - Information exchange is carried out daily to quarterly depending on the disease.
- Joint outbreak investigation and response.
 - A joint avian influenza investigation was triggered when infected Lao citizen was found in Thailand. Investigation support from Thailand reached Laos within 24 hours after discovery.
 - Vietnam and Lao PDR carried out joint investigations for outbreaks of typhoid and malaria.
- Training of health personnel.
 - During 2006-2007 110 workers were trained in either field epidemiology and disease surveillance, analytical techniques or social, political and economic aspects of border health.
- Disaster preparedness and table top exercises.
 - Each country conducted table top exercise on an effective response to an influenza pandemic in 2006, and a regional table top exercise took place in March 2007 by convening multi-sectoral officials from six countries.

Overall Impact and Achievements:

- MBDS provides a policy framework for cross-border cooperation and model for collaboration.
- Demonstrates systems that facilitate International Health Regulations.
- Ministries of Health in the network have empowered bilateral and multilateral investigations of disease outbreaks through MBDS.

(Adapted from information supplied by MBDS Project office and Rockefeller Foundation)

Rapid Response

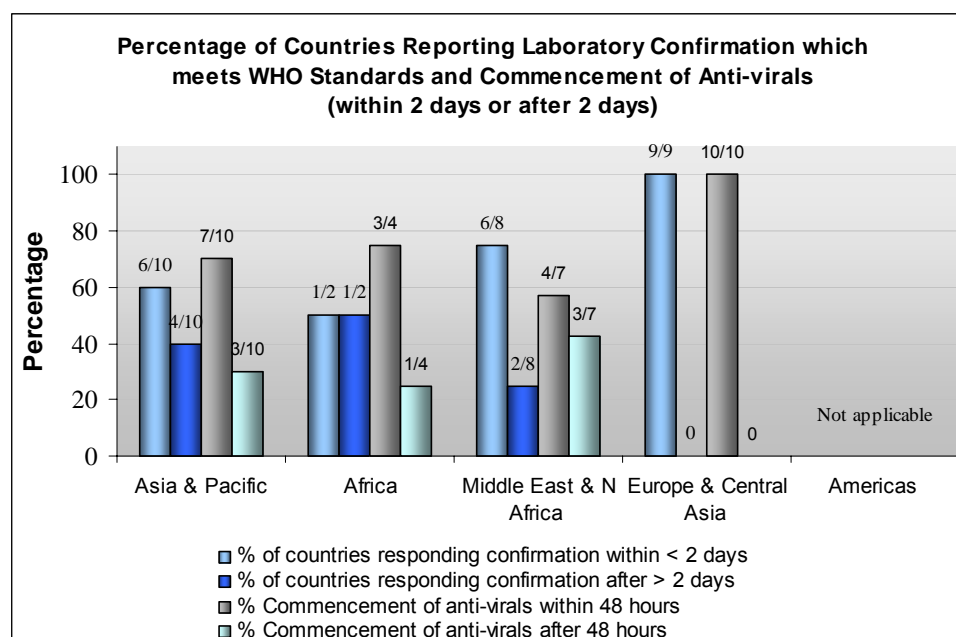
- 4.14 Rapid response entails what should be routine procedures including early detection of human cases, initial field investigation, standard control measures and notification of national and international authorities.

Commencement of Treatment

- 4.15 The speed of laboratory confirmation and the interval before commencement of anti-viral treatment in cases of H5N1 infection may serve as an indicator of national authorities' ability to detect and respond (as seen in Figure 4.2 below). ECA countries report that 100% of cases were confirmed and anti-virals commenced within 2 days.^{40 41} In the Asia & Pacific Region, 60% (6/10) of countries indicate laboratory confirmation within 2 days while 70% report anti-viral treatment within 2 days of the onset of symptoms. Of the ASEAN member countries 3 out of 4 indicate laboratory confirmation within 2 days whilst only one suggests commencement of anti-viral treatment within 2 days. In MNA, the region second to Asia & Pacific for human cases, 3 out of 7 of respondents report a commencement of anti-viral therapy after 48 hours.

- 4.16 However, despite these responses to the data collection exercise, case fatality rates in 2007 continue to remain high (up to 87% in Indonesia) except for Egypt (25%). In many countries the target for laboratory confirmation and treatment will be a challenge, especially as human H5N1 symptoms are unspecific and diagnostic delays are likely in countries without reported infections in poultry.

Figure 4.2



Note: Notification of laboratory results < 2 days > is used in line with IHR 2005. Commencement of anti-virals within 48 hours is proposed by WHO as the maximum interval for treatment to be most likely to succeed. National authorities responses have not been independently verified and responses to this questions could also include data from protocols as opposed to actual achievements in actual cases.

Access to Anti-virals and Quantity

- 4.17 As an indicator of potential ability to rapidly respond to and potentially contain early outbreaks of human cases, information was collected via the survey of PPE kits, trained public health workers in detection and management of cases and anti-viral purchasing.
- 4.18 In an effort to increase outbreak investigation and risk assessment at the country level, WHO has dispatched investigation kits including Personal Protective Equipment (PPE), material to collect and transport virus samples, courses of anti-viral drugs and guidelines. A total of 14,000 sets of PPE and 30,000 courses of anti-virals have been dispatched.⁴² These complement the substantial volume of PPE material purchased by countries and distributed as in-kind international assistance by bilateral donor agencies.
- 4.19 In the data gathering exercise, all responding countries in the MNA (15) and ECA (39) regions have either purchased or planned to purchase antiviral medicines (approximately 90% in both regions indicate they have already purchased). In remaining regions the proportions vary between 83% and 91%. In the Africa region, despite 83% (25/30) of countries indicating the intention to purchase or plan to purchase anti-virals, only 37% of countries report that national authorities have made purchases. The figures for antiviral purchase in the Americas are similarly low (but the high proportion of countries planning to purchase anti-virals in the Americas is in line with increased overall planning as reported in section 2).
- 4.20 From the June 2006 figures to June 2007 (purchased or planned purchase of anti-virals) there are indications of an increase in the average percentage of the global population to be covered in the event of a pandemic. However, Table 4.1 below shows that a substantial number of countries are reporting less than 1% of population coverage. In many cases respondents have outlined their policy for using anti-viral stockpiles – primarily for the protection of animal or human health workers responding to an outbreak rather than for wider population use. Analysis suggests that within some countries there is still a need to plan how stocks of anti-virals will be used; distinguishing between treatment pre/ post exposure, prophylactic use and

priority groups in the population. The logistics of distribution remain to be finalized. In addition, whilst antiviral drugs offer hope for treatment and reducing the spread of the virus, they also potentially incur costs and can encourage unrealistic complacency (especially by nations with substantial stockpiles). Anti-virals remain unproven in a pandemic, and the threat of rapidly evolving resistance remains a profound concern.

Table 4.1. Anti-viral Purchase and Coverage

Countries purchased or planning the purchase of antiviral drugs			Coverage of the population represented					
	<i>% of countries purchased antiviral drugs</i>	<i>% of countries planning to or have purchased antiviral drugs</i>	<i>n=</i>	<i>Percentage of respondents < 1 %</i>	<i>Percentage of respondents 1 - 20 %</i>	<i>Percentage of respondents 20 - 40 %</i>	<i>Percentage of respondents > 40 %</i>	<i>n=</i>
Asia & Pacific	77	85	26	56	28	11	6	18
Africa	37	83	30	47	37	5	11	19
Middle East & N Africa	87	100	15	38	38	23	0	13
Europe & Central Asia	92	100	39	22	34	38	6	32
Americas	50	85	26	29	53	6	12	17
Global	68	90	136	36	37	19	7	99

Reporting Times

- 4.21 Results of the June 2007 data gathering exercise indicate that globally 76% (22/29) of countries report laboratory confirmation of human H5N1 cases within 2 days (60% in Asia & Pacific and 75% in MNA). The average interval between recognition of symptoms and laboratory confirmation is 4 days. ECA region countries report the shortest interval at one day. Consistent with the observation that diagnostic capacity is insufficient, countries in Africa and Asia & Pacific report a prolonged average interval to laboratory confirmation of as long as 7 days. (See Table 4.2).
- 4.22 Eighty-nine percent (8/9) of Middle East and North Africa countries and 71% (5/7) of Asia & Pacific countries, regions where nearly all human cases have occurred, provided data suggesting that they report probable cases of H5N1 to WHO within 2 days (See Table 4.3). This follows the trend of used and tested reporting processes actually in place where the majority of human cases have occurred (See Table 4.3). A comparison of results from previous reports does not reveal a consistent pattern.⁴³

Table 4.2. Time to Laboratory Confirmation

Time between the recognition of symptoms and laboratory confirmation which meets WHO standards for suspected human cases of H5N1 infection				
<i>Days:</i>	<i>Recognition of symptoms to laboratory confirmation (Average days):</i>	<i>% of countries responding confirmation within < 2 days</i>	<i>% of countries responding confirmation after > 2 days</i>	<i>n=</i>
Asia & Pacific	4	60	40	10
Africa	7	50	50	2
Middle East & N Africa	3	75	25	8
Europe & Central Asia	1	100	0	9
Americas	n/a	n/a	n/a	
Global	4	76	24	29

Note: population for analysis restricted to those countries confirming outbreaks in animals or humans (Q4)

Table 4.3. Time to Report to the WHO

Time between recognition of a probable H5N1 case and reporting to WHO				
<i>Days:</i>	<i>Recognition of H5N1 case to reporting to WHO (Average days):</i>	<i>% of countries responding confirmation within < 2</i>	<i>% of countries responding confirmation after > 2 days</i>	<i>n=</i>
Asia & Pacific	2	71	29	7
Africa	5	33	67	3
Middle East & N Africa	1	89	11	9
Europe & Central Asia	1	100	0	10
Americas	n/a	n/a	n/a	
Global	2	83	17	29

Note: population for analysis restricted to those countries confirming outbreaks in animals or humans (Q4)

International Health Regulations (2005)

- 4.23 The International Health Regulations (2005) or IHR (2005) came into force generally on 15 June, 2007. The purpose and scope of the IHR (2005) are to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade. The IHR (2005) provide *inter alia* a framework for WHO epidemic alert and rapid response activities already being implemented in collaboration with countries to control international outbreaks and to strengthen international public health security.
- 4.24 The IHR (2005) introduce new operational concepts including:
- Specific obligations to detect assess, notify and report public health events that may constitute public health emergencies of international concern within 24 hours of assessment by the country);
 - Specific obligations to develop, strengthen and maintain the capacity to respond to public health risks and public health emergencies of international concern;
 - Requests by WHO for verification of public health events occurring within countries;
 - Rapid collaborative risk assessment with and assistance to countries;
 - Determination by the Director-General of WHO as to whether an event constitutes a public health emergency of international concern; and
 - Coordination of international response.⁴⁴

Several of the key provisions of the IHR (2005) apply to, and support, a containment operation as discussed below.

Virus Sharing

- 4.25 Sharing of virus information and samples enables the international community to:
- Track the evolution of the virus and its geographic spread;
 - Determine if the virus has acquired genes of human influenza viruses or made other significant changes;
 - Identify potential vaccine strains;
 - Develop and update diagnostic tests to determine if the virus is likely to remain vulnerable to the recommended class of anti-virals; and
 - Develop strain specific vaccines as well as pandemic vaccines as soon as a pandemic strain has emerged.
- 4.26 It has been recognized that efforts to ensure that developing countries share in the benefit derived from sharing viruses must continue as forcefully as the sharing of influenza viruses for risk assessment and for vaccine development so as not to compromise global public health security.
- 4.27 The World Health Assembly Resolution 60.28, passed in May 2007, requests that the WHO establish, in close consultation with its Member States, an international stockpile of vaccines for H5N1 or other potential pandemic viruses and formulate mechanisms and guidelines aimed at ensuring fair and equitable distribution of pandemic influenza vaccines at affordable prices in the event of a pandemic.⁴⁵

Rapid Containment

- 4.28 Rapid containment of early pandemic influenza differs from rapid response to outbreaks of avian influenza. Rapid containment is an extraordinary measure which includes joint risk assessment by the country and WHO; additional field assessments, and the large scale use of anti-virals and public health measures within a zone of containment.
- 4.29 WHO has developed an interim protocol for rapid operations to contain the initial emergence of pandemic influenza.⁴⁶ This protocol provides guidelines, which have been updated in May 2007, for the decision making process needed to launch a rapid containment operation and the management and release of supplies from WHO/international antiviral stockpiles.⁴⁷

- 4.30 The WHO WPRO (Western Pacific Regional Office) has been leading efforts to build rapid containment strategies and plans by putting into practice the theory that containment is possible.⁴⁸ This has involved the successful lobbying of government and coordinating bodies such as ASEAN and conducting training sessions for member states. WPRO has also hosted the first ever rapid containment functional exercise (PanStop 2007 *see case study below*).
- 4.31 WPRO has surveyed countries in its region according to their ability to complete essential public health measures for pandemic preparedness planning including rapid containment. The results indicate that more efforts are needed in developing countries to address weaknesses in surveillance and risk communication. In developing countries, the responses indicated a higher completion of essential activities for preparedness in rapid containment although some countries identified continued gaps in laboratory capacity and risk communication.⁴⁹

Rapid Containment Exercise: PanStop 2007

Rapid delivery of antiviral drugs and personal protective equipment is the cornerstone of the rapid containment strategy. To be effective, rapid containment would require the use of extraordinary measures within a narrow time frame.

The Government of Japan has provided the Association of Southeast Asian Nations (ASEAN) Secretariat with a stockpile of 500,000 courses of Oseltamivir (Tamiflu) and personal protective equipment (PPE) for 700,000 people. These resources, which are located in Singapore, will be dispatched to the outbreak location with the goal of containing a human influenza pandemic before it has the opportunity to spread, or long enough to facilitate more widespread containment efforts.

PanStop was a pandemic influenza preparedness exercise which took place in April 2007 and tested specific aspects of the rapid containment protocols in the Asia & Pacific region. As such, the exercise was the first in a series of rehearsals of a full rapid containment plan.

The exercises tested:

- the intricate process of moving licensed commercial goods (antiviral drugs) in an accelerated time frame by participating governments and organizations jointly;
- rapid notification and reporting of an outbreak event and accurate tracking of outbreak information in an unpredictable manner;
- procedures for tracking resource requests and deployment status, assembling technical experts, and facilitating communications with decision-makers, stakeholders and responders; and
- procedures to initiate ground and air transport of stock from warehouses to the outbreak area.

The resources and protocols for a potential rapid containment strategy are in place for the region and the exercise yielded practical information about the efficiency of procedures, strengths and potential opportunities for the improvement of rapid containment planning.

(Adapted from The State of Readiness: Pandemic Influenza WHO WPRO Progress Report, July 2007)

Conclusions and Recommendations

- 4.32 Progress has been made with regard to enhanced integrated planning and synergy with the livestock sector. However, assessments suggest there is still far too little joint working of animal and human health surveillance and response networks within some regions.
- 4.33 Results obtained from the UNSIC data collection are in line with the conclusion from the Rome Technical Workshop, namely that specific gains have been made in identification of clinical human cases and clusters of H5N1 infection in some countries while difficulties remain in rapid clinical and laboratory identification of cases. However, the data suggests that there is still insufficient detection capacity in a number of countries/ regions (in particular in Africa).⁵⁰
- 4.34 In line with the need for sustainable development of public health and animal health capacities for emerging zoonotic threats, several global and regional networks for disease surveillance and response have integrated detection of cases of influenza-type illness into their systems and tasks. These have contributed to progress in rapid detection and responses to human H5N1 cases.

- 4.35 Reporting to and sharing data with international agencies has improved to some extent but even more transparent collaboration between all stakeholders is required. With the entering into force of the IHR (2005) a framework is in place to guide surveillance, reporting and response activities concerning the international spread of disease. Capacities developed in accordance with the IHR (2005) will be appropriate for the detection and response to influenza-type illnesses and the early stage of pandemic containment, and it is now important to encourage, support and monitor their quick and efficient implementation.
- 4.36 Early detection of human cases and the consequent treatment with anti-viral drugs within 48 hours (as advised by WHO) has not happened widely: for several regions it remains a great challenge to start anti-viral treatment within the recognized time frame for intervention and case fatality rates remain high.
- 4.37 While the number of countries planning to purchase and use anti-virals has increased, the actual volume of purchased medicines is still lower than planned. This may suggest a lack of resources for purchase and storing. At the same time, some national authorities need to clarify the way they intend to use, allocation and logistical distribution of anti-virals for early containment.
- 4.38 Progress has been made in establishing rapid response protocols, developing guidelines and carrying out containment exercises. This positive development should be sustained and results used to deepen understanding of the challenges faced by countries as they prepare to detect and respond to influenza-type illness with pandemic potential.

Egypt: Close Human-to-Poultry Contact Heightens Pandemic Risk

On February 2006, Egypt confirmed its first cases of Highly Pathogenic Avian Influenza (HPAI) in domestic poultry. Since then the number of outbreaks in poultry has reached 341, affecting 860 farms and 285 backyard poultry holders. Thus far, 34.4 million birds have been culled, and outbreaks have badly damaged the local poultry industry with costs estimated at between US\$2 billion to 3 billion. Egypt has also registered the highest number of human infections and fatalities on the African continent with 38 confirmed human infections of H5N1, including 15 deaths.

Combating this disease is made more difficult given Egypt's poultry systems and the social and cultural factors that have assisted the disease's rapid spread in the country. Nearly one-third of Egyptian households own poultry. These households, together with many small-scale commercial units, rely on centralized live bird markets for sales as a result of the lack of refrigeration, the limited processing capacity, and the traditional and cultural preference for purchasing live birds. These markets, along with the proximity observed between poultry and humans in traditional rearing systems, present a high risk of virus dissemination. A serious public health risk has been demonstrated if the disease "spills over" into humans in these settings.

The overall government response to the outbreaks in poultry, and in humans, has been swift despite limited resources and logistical difficulties on the ground. The Ministry of Health and Population (MOHP) rapidly took the lead in combating the spread of the disease. In terms of laboratory capacity for influenza, there now exists a good capacity at the MOHP Central Public Health Laboratory (CPHL) to perform accurate RT-PCR diagnosis in a timely manner. Laboratory-based surveillance for influenza has been implemented in three sentinel sites. A collaboration program is also in place to share specimens and products among the CPHL and the WHO regional reference laboratory. Though governorate laboratories do not have the capacity for HPAI diagnosis, their personnel have already received training in specimen collection and use of necessary laboratory supplies.

In terms of clinical management, each governorate currently has two designated hospitals to manage suspected human HPAI cases with isolation wards of about 18 to 24 beds per governorate. On the community awareness side, a USAID-funded project provided technical assistance at MOHP's request to implement a national public health campaign. Print materials were widely distributed to different audiences and hospitals centrally and at the governorates level. Basic information has been communicated through seminars at governorate levels and specific sessions have been conducted for university students and women's groups. MOHP has also launched a national radio campaign with the support of UNICEF. In addition, social mobilization campaigns have been conducted in most affected governorates providing house-to-house educational activities in high-risk areas. Although new cases continue to be reported, awareness and social mobilization campaigns initiated by MOHP appear to be successful in encouraging more rapid reporting and diagnosis, and hence limiting fatalities and the possible spread of the disease.

Much more remains to be done and MOHP has been very proactive in expanding its diagnosis and surveillance capacity for HPAI in humans. In support the World Bank has approved a reallocation of funds for HPAI activities through its ongoing Health Sector Project in Egypt. More than \$6 million has been disbursed so far to help strengthen HPAI surveillance, improve public sector response and support a national communication strategy. In addition, a \$7.1 million grant from the multidonor Avian and Human Influenza Facility was approved to support disease surveillance, diagnostic, control and management capacity in the animal health sector.

(Adapted from the World Bank staff sources)

5. PREPAREDNESS FOR MITIGATING THE IMPACTS OF THE NEXT INFLUENZA PANDEMIC

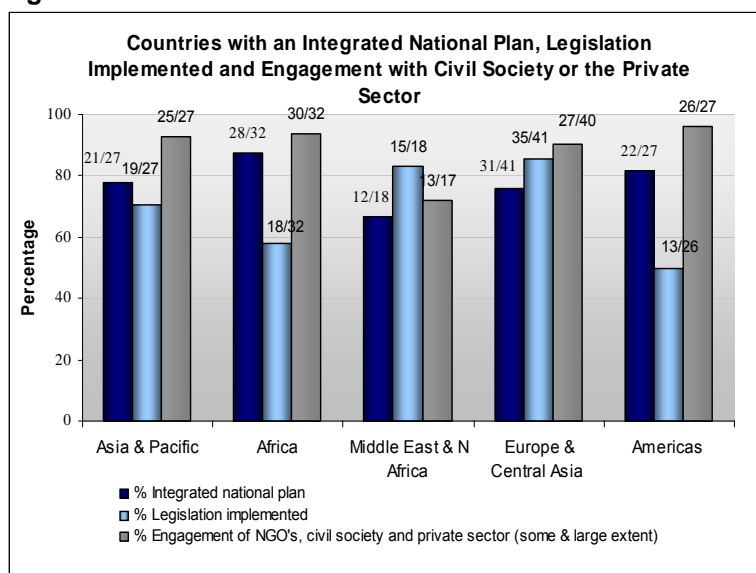
- 5.1 The threat of an influenza pandemic has led to increased global interest in, and efforts for, pandemic preparedness planning. Pandemic preparedness combines a capable and responsive health sector with efforts to ensure continuity of services essential for people's well-being.
- 5.2 Interventions include preventing human infection with H5N1, rapid containment of an early outbreak with pandemic potential and mitigating the pandemic's wider health, social and economic impact. The first two phases of this have been covered in sections 3 and 4 above; this section focuses on the third stage; preparedness for responding to wider impacts.
- 5.3 Pandemic preparedness should prioritize the continuity of essential services within the context of existing procedures for crisis and disaster management. Pandemic preparedness work should help strengthen systems and improve responses to other large-scale crises and disasters.

National Pandemic Preparedness Planning

- 5.4 The data gathering exercise identified that 95% (112/118) of countries have made some effort in pandemic preparedness and that 88% (118/134) of countries report the existence of a national multi-sectoral body responsible for pandemic preparedness which has met in the last 6 months.
- 5.5 While evaluating pandemic preparedness plans is not a comprehensive determination of a countries' actual preparedness for an influenza pandemic, the plans serve as an important indicator for the scope planning processes and the stage of operationalization. Progress has been made over the last year in the preparation of national pandemic preparedness plans: 83% (120/144) of countries responding to the data gathering exercise reported that they have an integrated national plan for both AHI and pandemic preparedness or a specific pandemic preparedness plan (these figures include countries who indicated separate plans in all 3 areas of avian, human and pandemic – the extent of integration is unknown).⁵¹ At the time of our previous report in October 2006, only 55% (42/76) of countries indicated finalized integrated plans. Figures provided by WHO reveal that 178 countries possess pandemic plans for the health sector.⁵²

- 5.6 A technical report on pandemic influenza preparedness in the European Union, published by the European Centre for Disease Prevention and Control (ECDC) in January 2007 (reflecting status in the autumn of 2006), concludes that all Member States of the EU have made considerable progress in strengthening their preparedness for pandemic influenza. The health sectors in all countries have developed preparedness plans and, at a national level, much is being done to make these plans operational. However, the report highlights the need to sustain this approach and further engage with the non-health service sectors.⁵³

Figure 5.1



- 5.7 A detailed analysis of pandemic preparedness plans in Africa by Richard Coker and colleagues at the London School of Hygiene & Tropical Medicine (LSHTM) found that most plans lacked evidence of preparedness for responses to pandemic influenza and that the human health care sector is mostly ill-prepared for a pandemic.⁵⁴

Implementation of Plans

- 5.8 In response to the data gathering exercise 87% (111/127) of all countries reported that their pandemic preparedness plans specify responsibilities for implementing particular actions. Legislation or legal standards to aid implementation of plans have been issued in 70% (100/142) of all countries responding to the data gathering exercise. At the regional level however, legislation or legal standards are present in 56% of countries in Africa, 70% in Asia-Pacific, 83% in MNA, 85% in Europe and 50% in the Americas.⁵⁵ However, the extent and scope of legislation implemented is unknown.
- 5.9 An assessment of pandemic preparedness plans in the Asia-Pacific Region, also carried out by the Richard Coker and his colleagues at the London School of Hygiene and Tropical Medicine, also examined the extent to which each plan focused on implementation. While the plans of Hong Kong, Australia and New Zealand are comprehensive guidance manuals for the countries' existing key institutions, the plans of Thailand, China and to a lesser extent Vietnam, serve more as developmental guides aimed at developing capacity for the future.⁵⁶ In Africa, operational planning is almost entirely absent from countries' plans for pandemic influenza with limited operational connection including lack of clarity of the source of funding and budgets.

France: National Plan for Prevention and Control of Influenza Pandemic

The French national plan for prevention and control of influenza pandemic is a multisector plan to protect the French mainland population as well as French citizens abroad. The aims for preparedness and response focus on the preparation of the country to deal with a pandemic through a) detecting manifestation of a pandemic virus, curbing its spread and limiting number of infected individuals during the pandemic alert phase and b) slowing down the progress of the virus while ensuring the essential functions continue for governmental action, law and order, economic activity and security of the population during the pandemic period. The plan also focuses on the fulfilling of France's international commitments and the importance of preserving trust between the population and the authorities through transparent and continuous communication. This involves action on many levels from the Prime Minister to the local authorities. Each ministry is obliged to prepare for communication before the crisis within its area of responsibility.

The plan provides principles guiding operational conduct of the crisis response in three areas, which include clear directions of which legislators and officials are responsible in different phases of the pandemic alert period;

1. Governmental Management of the Crisis

- *WHO alert phase 1-2:* Minister of Agriculture leads work for preventing epizootics.
- *WHO alert phase 3 onwards:* The Prime Minister entrusts the operational conduct of action to the minister of Health. An inter-ministerial crisis committee is set up, including a communication bureau, which functions as a decision-making body and is supported by all ministries and their services.
- *WHO alert phase 4 onwards or when issues such as civil defense and public order become predominant:* The Prime Minister may delegate operational conduct of governmental action to Minister of the Interior. Responsibility for health issues remains with the Minister of Health. Committees of anticipation, public health and continuity of economic activity are set up.

2. Territorial Management of the Crisis

Guiding principles for Prefects, Regional and General Councils, mayors as well as each citizen are included in the plan to aid management of the crisis at a territorial level.

3. International Management of the Crisis

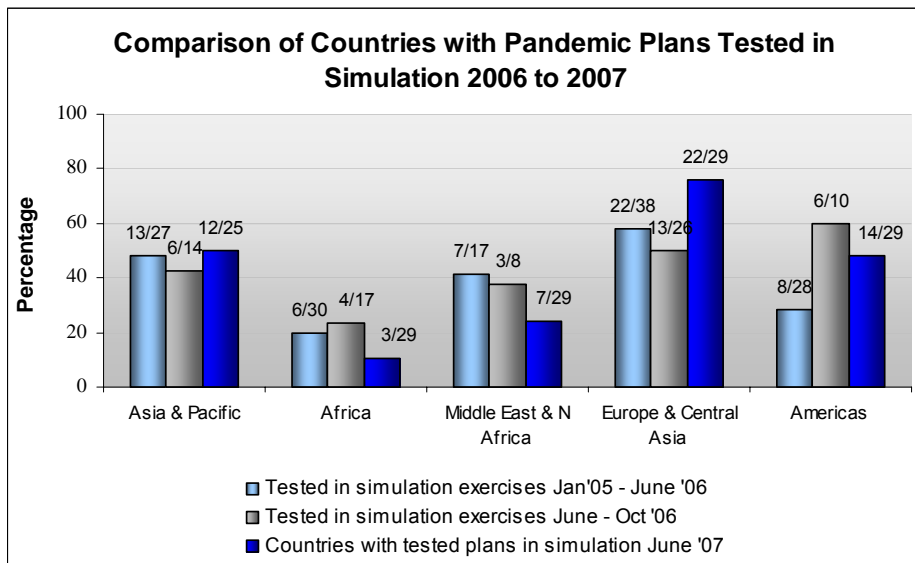
For international management of crises, communications channels are set including political and technical communication with United Nation agencies, communication with international financial institutions and contacts within the EU regarding health operational issues.

(Adapted from http://www.grippeaviaire.gouv.fr/IMG/pdf/plan_national_version_anglaise.pdf)

Testing Plans through Simulations

5.10 Progress in undertaking simulation exercises on pandemic plans has remained broadly stable over the last six months (See Figure 5.2). Further disaggregating of the reports suggest countries within ASEAN have a higher rate of testing plans in simulations than the Asia and Pacific region, 63% (5/8) compared to 50% (12/24). EEA member countries have a slightly higher rate of simulation testing (18/23) than the Europe and Central Asia region whereas only 43% (3/7) of CAREC+ countries reported testing plans.

Figure 5.2



UK Pandemic Influenza Exercise: Winter Willow

The United Kingdom Government staged a national pandemic influenza exercise, Exercise Winter Willow, in January and February 2007. The exercise was designed to enhance the UK's ability to manage the effects of an influenza pandemic by practising, testing and validating the government's response policies and the decision-making process at National, Regional and Local levels. The scenario was based around the WHO declaration of Pandemic Phase 6 and the UK's subsequent declaration of UK Alert Level 2 of their pandemic preparedness plan, the first cases of the disease confirmed in the country. Twenty four Government Departments and Agencies, including thirteen Government Ministers, were involved in the exercise over three days. All nine Regional Civil Contingencies Committees in England and Emergency Coordination Centres in Scotland, Wales and Northern Ireland were convened. Fifty one Strategic Coordination Groups took part at local level across the UK and ten collective Health Communities (Primary Care, Acute Trusts and Social Services). In all, it is estimated that over 5,000 people took part in the exercise.

The Exercise stimulated and analyzed the impact upon key elements of the UK's critical infrastructure such as transport, food and healthcare and their influence on the delivery of the UK national response.

Lessons identified in the evaluation of the exercise focused on crisis management and co-ordination, public advice and communications, business continuity issues for both government and industry and areas where further policy development was needed such as medical countermeasures, travel advice, school closures and the relaxation of regulations.

(Provided by UK Government)

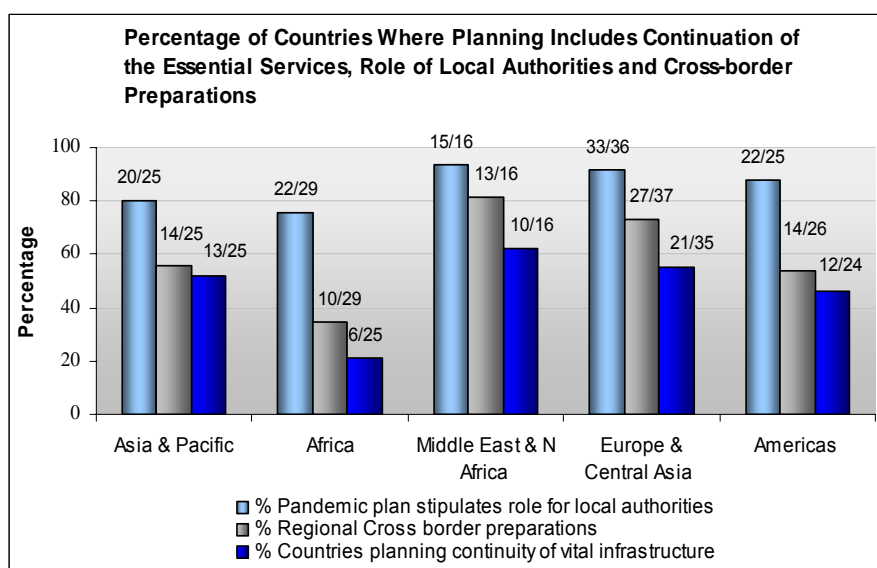
Role of Local Authorities

5.11 In their responses to the data gathering exercise, 85% (112/131) of all countries with pandemic preparedness plans indicated that their plans stipulate the role of local authorities (Africa, with 76%, and the Asia-Pacific Region, with 79% are slightly below the global average). The evidence from the data gathering exercise also indicates that 63% (5/8) of ASEAN member countries have such plans (Figure 5.3). Assessments of pandemic preparedness plans, including for the Asia-Pacific Region and the European Union, stress the need for further work to make plans operational at the local level.⁵⁷

Regional and Cross-border Preparations

- 5.12 Collaboration among countries within regions and preparations jointly by neighbouring countries are both essential elements of preparedness planning for infectious disease pandemics. However, evidence from the data gathering exercise indicates that 59% (78/133) of countries with pandemic preparedness plans have responded that they include details about regional/ cross-border preparations 34% (10/29) in Africa, 54% (14/2) in the Americas and 56% (14/25) in the Asia-Pacific Region (see Figure 5.3). Further analysis would be required to determine the extent or comprehensiveness of inclusion.
- 5.13 Despite the interconnectedness of member states of the EU, the ECDC reports that there is insufficient “interoperability” between countries.⁵⁸ This finding is consistent with an analysis of national plans in the EU done by the London School of Hygiene and Tropical Medicine, which suggests that only a handful of countries are explicit about the ways in which they expect to cooperate with other EU countries, including near neighbors, in the event of a pandemic. A lack of preparedness for cross-border synergy would have important repercussions during a pandemic: issues to be handled include cross-border population movements and the provision of scarce public goods.⁵⁹

Figure 5.3



Vaccines and Anti-viral Medicines

- 5.14 WHO, together with other international partners, has taken measures with a view to enabling countries to be able to access relevant vaccines and anti-virals in the event of a human influenza pandemic. The “Global Pandemic Influenza Action Plan to Increase Vaccine Supply”, published by WHO in October 2006, identifies strategies for the short, medium and long term, aiming to increase influenza vaccine production and surge capacity before and during an influenza pandemic. The three main approaches include (a) the increase in seasonal vaccine use, (b) the increase in production capacity and (c) further research and development.
- 5.15 In the EU, availability of a vaccine is recognized as an important part of national responses to a pandemic. However, assessments indicate plans are not always specific on operational strategy and procurement.⁶⁰ A similar assessment of the Asia-Pacific region indicates all of the country plans evaluated include a vaccination strategy, but there is insufficient detail on how this aspect of strategy will be implemented.⁶¹
- 5.16 Information from the latest data gathering exercise on anti-viral medicine stockpiles indicates an increase in purchasing and planning to purchase. Globally respondents indicated that 19% (19/99) were planning to or had purchased a stockpile between 20-40% of population and 7% (7/99) responding greater than 40% (See Table 4.3). Further data collection would be required to enable comment upon allocation and distribution, such as distinguishing between prophylactic use or treatment, prioritization or planning the logistics of storage.

Non-Pharmaceutical Measures

- 5.17 WHO recommends specific public health interventions to limit the spread of a pandemic virus. These interventions include those targeted at limiting the spread of the disease (screening, travel restrictions), reducing its spread nationally (isolation, quarantine, closure of schools) and reducing an individual's risk of infection (hygiene, masks).⁶²
- 5.18 In EU countries' plans there is a lack of coherence between EU countries regarding travel restrictions, border interventions, the use of masks and intentions to close schools.⁶³ A similar assessment for Asia-Pacific countries concluded that nearly all plans include proposals for early containment via closing educational facilities, restricting mass gatherings of people, the possibility of mandatory quarantine measures, the use of face masks and personal hygiene and travel restrictions. However, the level of detail varies considerably.⁶⁴ Among the most prescriptive plans is that of the United States with its recommendation according to the severity of the pandemic and a corresponding index of likely measures.⁶⁵ In contrast recognizing the diversity of circumstances in Europe, the ECDC has issued for consultation a 'menu' guide to the different options to assist individual states and EU bodies in choosing their actions.
- 5.19 Non-pharmaceutical measures are likely to be a key intervention, especially in low resource countries. However, evidence of the likely effectiveness remains an area for continued research. The uncertainty of the effectiveness may help explain the range of interventions in preparedness by countries and the different stages of planning with regard to this issue. Clearer guidance is needed to ensure that interventions are properly sequenced, with agreed trigger factors, with attention paid to the legal framework within which operations take place and that interventions are coordinated at the global level. The Pandemic Severity Index, developed by the US Center for Disease Prevention and Control, or similar tools may help national authorities to scale their responses in line with the potential level of the threat to public health.

Ethical Considerations for Pandemic Preparedness Planning

- 5.20 During an influenza pandemic, people who are economically and socially disadvantaged are likely to suffer most, not only from the impact on human health but also from the potential social and economic disruption. A recent assessment of national pandemic preparedness plans, using the Bellagio Group's "Checklist for pandemic influenza preparedness and response plans", found little evidence that national planning efforts are addressing the rights and interests of disadvantaged groups, despite the likelihood that these groups will be disproportionately affected. None of the reviewed plans suggested any systematic attempt to identify such groups and less than a quarter made references to one or more economically or socially disadvantaged groups.⁶⁶
- 5.21 There is increasing recognition that a range of challenging ethical issues will arise from the next influenza pandemic and there are some important initiatives, including the Bellagio Group's checklist and WHO documents on ethical considerations in pandemic influenza planning.⁶⁷ However, countries need to actively address ethical questions now in order to be prepared for the eventuality of a pandemic.

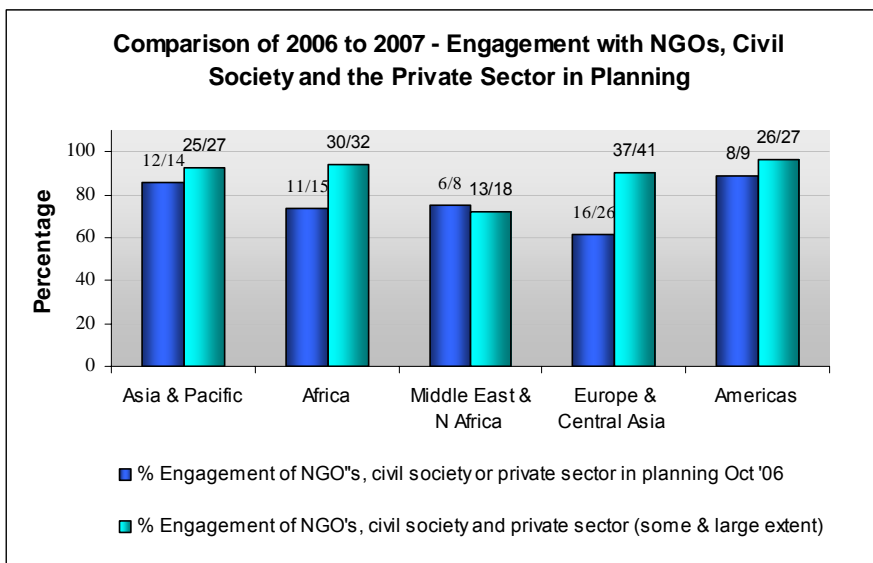
Pandemic Preparedness Planning within National Disaster Management Structures

- 5.22 Clear direction (command and control) systems, as well as communications to and from communities, are essential for immediate and efficient action during a pandemic. Information from the data gathering exercise indicates that 64% (85/132) of all responding countries implied they have a clear command and control structure for a pandemic, while 29% (38/132) of countries are still in the process of defining arrangements. It is a positive development that their definition process has started—now it needs to be sustained.
- 5.23 To ensure its sustainability, pandemic preparedness planning should be incorporated within existing national disaster management systems. In response to the data gathering exercise, 63% (83/131) of countries reported to have integrated pandemic planning into existing national disaster management structures and 23% (30/131) of countries have achieved partial integration (see Annex II Figure 4). While this is particularly advisable in countries with limited implementation capacity, the data gathered indicates that 33% (10/30) of countries responding from Africa have reported they have integrated pandemic preparedness into existing disaster structures (another 33% (10/30) responded this is happening at least partially). The extent of reported integration is unknown.

Engagement with Civil Society and the Private Sector

- 5.24 The engagement with civil society, non-governmental organizations and the private sector in pandemic planning is crucial for an inclusive response to a pandemic. Since the last UN-World Bank report, the data gathering exercise suggests increased engagement in most regions (Figure 5.5). Comparing the engagement when further disaggregating the Europe and Central Asia region, the CAREC+ grouping, indicated a significantly lower rate of engagement (67%) than EEA in 2007 (Annex II Figure 7).

Figure 5.5



Planning for Non-Health Aspects of a Pandemic: Operational Continuity of Vital Infrastructure

- 5.25 Without the sustained engagement of the health sector with other sectors, the social, economic and security impacts of pandemic influenza will be significant. These impacts can be mitigated if prevention and response reflect a multi-sector perspective. Fifty percent (62/125) of countries responding to the data gathering exercise indicated that there has been planning to ensure operational continuity of vital infrastructure, however, the extent and scope of this planning is unknown. This highlights the need for further attention to multi-sectoral planning for a pandemic. From the data gathered 21% (6/25) of countries in Africa have considered continuity of infrastructure.
- 5.26 The UNSIC Pandemic Influenza Contingency (PIC) team was created in early 2007 to address the non-health aspects of pandemic preparedness by supporting the UN at country level to improve its own readiness as well as to provide assistance to national authorities to advance their standards of influenza pandemic preparedness. Several more detailed analyses of national pandemic influenza preparedness plans reveal that very little attention has been given so far to non-health aspects of pandemic preparedness in all assessed regions.
- 5.27 For the Asia-Pacific region, 29 national plans were evaluated: While 59% of plans address the preparedness of burial/mortuary services and 52% comment on law enforcement, only 3% consider finance and banking and only 14% mention food distribution and production (See Annex II Figure 6). The review of seven other national plans, mainly in Africa, showed that there is considerable variance in the readiness of different countries. While all of this sample have made health sector preparations and developed a communications strategy, none indicate any business continuity planning for energy, food, telecommunications or water. Plans from the Middle East and North Africa region follow a similar trend. The lack of integrated planning is also observed in countries of the EU: The assessment undertaken by the LSHTM concludes that many plans focus heavily on the health sector and fewer than half of the plans address the maintenance of essential services beyond health.⁶⁸ It has been estimated by ECDC that EU

Member States need two to three years of sustained effort and investment to achieve the level of preparedness needed to respond well in all areas to a pandemic.⁶⁹

Business Continuity Planning in the Private Sector

- 5.28 UNSIC and the APEC Business Advisory Council undertook a survey in August 2007 of 101 private sector companies in the Asia-Pacific region to assess their state of pandemic preparedness. Forty-six percent of these companies had planned for pandemic, and 17% were in the process of developing plans. The main reasons cited by those who had not made plans were that they lacked the knowledge, time or human resources to do so; or that they did not believe that pandemic would have a significant impact on their business. Eighty-nine percent of companies surveyed said that they would welcome the availability of new tools to help them to plan for pandemic. The main conclusions emerging from this survey included that there is high awareness of the risk of a pandemic but there is a need for more attention to business continuity.
- 5.29 Mercer Human Resource Consulting undertook a survey of 450 private sector companies from 38 countries and 26 industries to assess pandemic preparedness. The key findings were that there is a gap between high levels of concern and awareness about the threat of pandemic, and low levels of actual preparedness. For example, 29% of Chinese companies and 25% of Asia-Pacific companies in the survey had established a budget for pandemic preparedness, compared to 12% of European companies and 7% of American companies. Overall 47% of companies had prepared a business continuity plan. Mercer made 5 key recommendations to companies in the light of the survey: establish a preparedness budget; establish a crisis management team; develop a workforce plan; review Human Resources policies; and develop an employee communications strategy.⁷⁰ Mapping by the UNSIC New York team reveals that – globally – a variety of business concerns has started to develop pandemic continuity plans – including those engaged in livestock production and meat marketing; manufacture of health commodities and provision of health services; financial services and banking; supplying basic services, post, telecommunications, logistics and retailing; travel, sports and leisure; law and order and security; media, environmental services, cleaning and maintenance.

Public Information and Pandemic Communications

- 5.30 The information derived from the data gathering exercise suggests positive developments in the preparation of communications strategies: 90% (119/132) of countries report progress in agreeing how and what to communicate to the public about preparing for a pandemic. Communications planning is most advanced in Europe and Central Asia (34/35) and the Middle East and North Africa (15/15). Further progress is required in Africa, where the data states approximately 20% (6/30) of countries responding have not begun developing pandemic communications. The limited spread of avian influenza in some regions of Africa has meant that some countries do not see pandemic as a priority or doubt that it is likely to happen. More donor finance has been available to support pandemic preparedness interventions in Asia than in Africa.

Mitigating Humanitarian Impacts of a Pandemic

- 5.31 As national capacities are likely to be overstretched by pandemic conditions, countries need to have the necessary humanitarian services to support emergency responses and enable vulnerable populations to have access to basic needs. So far, humanitarian preparedness has been addressed very little by countries as the analysis of non-health aspects of national plans shows (e.g. food distribution and production, water supply). The international humanitarian community will have a great responsibility in providing effective humanitarian support to societies that are not able to cover for their own populations. Given the likely international logistical difficulties at the time of a pandemic, local actors will particularly have important role to play. This applies particularly to vulnerable groups, including refugees and internally-displaced populations, whose survival and well-being will be endangered by a pandemic. To this end, the UNSIC Pandemic Influenza Contingency team (PIC) team has started a process in collaboration with the International Federation of Red Cross and Red Crescent Societies (IFRC) to build a consensus among key humanitarian partners on preparing to meet humanitarian needs in a pandemic.

Conclusions and Recommendations

- 5.32 Recognition of the threat of an influenza pandemic has led to increased interest in worldwide pandemic preparedness. Substantial efforts have been made by many national governments to establish both local and national level response capacities. Data obtained from national authorities indicate and additional sources indicate an increase in the number of countries planning to respond to an influenza pandemic but suggest details lack comprehensiveness, including implementation at the local level and operational readiness.
- 5.33 There are variations in progress between regions. Reports from countries in Central Asia and Europe region suggest strengthening levels of pandemic preparedness though much work remains to be done, whereas a number of countries in Africa have made much less progress.
- 5.34 Countries with very limited resources face difficulties in securing commitment to pandemic readiness in, the face of many more conspicuous and immediate challenges. In such cases, it is important to demonstrate and ensure that pandemic preparedness efforts help to strengthen resilience to a range of future threats. Very poor countries need support from donors to finance pandemic readiness.
- 5.35 An effective response to infectious disease threats calls for strong political leadership that goes beyond immediate national interests and supports long-term intergovernmental approaches. Pandemic influenza preparedness should continue to be incorporated into, and support, existing disaster management structures.
- 5.36 National leaders are paying increased attention to the interdependence of nations in relation to communicable disease threats. They will want to be sure that regional and cross-border planning has taken place and that necessary lessons have been learned.
- 5.37 The key challenges in many of the industrialized countries with progress in planning are:
(a) evaluating the efforts made thus far to ensure that professionals and the general public are ready for a pandemic;
(b) monitoring preparations to ensure that they will yield the expected benefits when pandemic strikes especially for individual citizens; and
(c) sustaining preparedness so that when crisis does strike, its consequences are minimized.
- 5.38 Whilst there is strong progress in the health sector, awareness of the importance of other sectors is significantly lacking. Organizations responsible for banking, power, telecommunications, food and fuel distribution, water and maintaining the rule of law should develop business continuity plans to continue working in the face of significant absenteeism of staff.
- 5.39 For the health sector, stronger focus needs to be placed on the resilience of health systems (e.g. surge capacity, continuity of normal health services). The Rapid Containment Protocol, as advised by WHO, should be integrated into national plans.
- 5.40 Many plans lack details about how they will be put into practice, especially at the local level. They serve to provide strategic guidance for capacity development rather than indicating how currently existing capacity will be used during a pandemic.
- 5.41 Progress has been made by testing plans in simulations; this should be continued in ways that involve all stakeholders across sectors and at all levels of society: ideally they should extend to neighboring countries.

6. COMMUNICATION WITH COMMUNITIES TO INFORM, PROTECT AND MOBILIZE

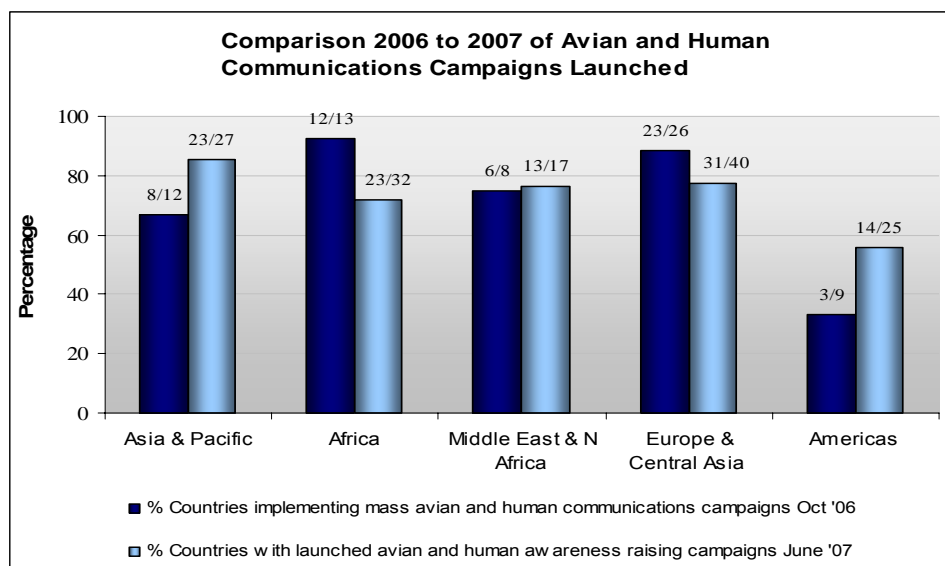
Role of Communications and Public Information

- 6.1 Given the spread of the HPAI virus H5N1 since 2003, national authorities have pursued communications strategies to (a) manage public reaction following an outbreak of H5N1 in poultry, (b) engage with communities, families and various other stakeholders to ensure preventive and protective behaviors are practiced, and (c) underpin all aspects of the overall response helping to ensure that actions are complimentary and consistent with principles and objectives set out in the integrated national plan. Engagement with the public following an outbreak involves work with local, national, and international media to alert and build confidence in the abilities of authorities to deal with the outbreak. Communication strategies that mobilize and engage societies for the overall response rely on the use of long-term approaches to encourage risk-reducing behaviors. Advocacy with national and sub-national government counterparts underpins the success of both the communication strategies.
- 6.2 In March 2006 Communicators from WHO, FAO, and UNICEF identified the four key messages that remain the basis for the many HPAI communications strategies being implemented worldwide: Report (report suspected HPAI cases to authorities); Cook (ensure that birds are hygienically slaughtered, safely prepared for consumption and thoroughly cooked); Separate (ensure that newly-acquired poultry is kept separate from the established flock and that ducks and chickens are reared separately); and, Wash (ensure those in contact with poultry or poultry products wash their hands regularly). Despite widespread consensus on the soundness of these “four messages” there remains concern that, for many poor communities the message will be easier to disseminate than to put into practice.
- 6.3 In December 2006, WHO and UNICEF also developed suggested behaviors for pandemic preparedness (Flu-WISE) and pandemic recovery (Flu-CARE) that individuals would need to engage in to protect themselves and their families and community. Governments are now being encouraged to focus their communication strategies on these behavioral outcomes in the eventuality of an influenza pandemic.⁷¹

Progress of Strategies and Campaigns

- 6.4 Growing recognition of the important role of communications is evidenced by the increasing number of national response strategies that include communications as a core element. In 2006, 52 out of 68 countries replying to the data gathering exercise had implemented mass avian and human influenza campaigns, in June 2007 104 out of 141 countries indicated campaigns had been launched to raise awareness of avian and human influenza (see Figure 6.1). Since Americas is the only region that is free of the H5N1 virus, it is not surprising that fewer countries in that region are engaged in avian influenza communication. Data from the survey also indicates a high level of strategies prepared and procedures in place for communication in the event of avian (91% global) or Human (85% global) outbreaks.⁷² Agencies including UNICEF, WHO, FAO – working closely together and in collaboration with international NGOs and other civil society and mass organizations – continue to assist governments in structuring effective communications activities.

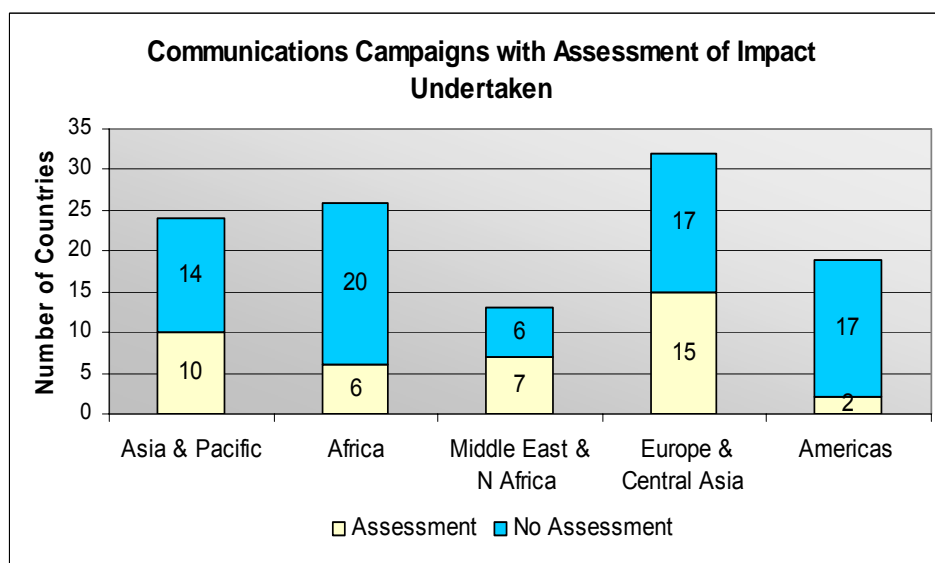
Figure 6.1



Evidence of Impact and Assessments

- 6.5 Given the short implementation experience in most countries, it is difficult to deliver a definitive judgment on the efficacy of communications efforts to date. But the need for reliable evidence to inform and sustain future communications activities with representative data emerges as a major challenge for many affected countries. Due to the initial focus in many countries on responding rapidly to outbreaks, conducting Knowledge, Attitude and Practice (KAP) surveys that provide a baseline has not been a priority. Only 20 KAP surveys were undertaken in the period 2006-2007.
- 6.6 The figures from the data gathering exercise where responses indicated assessments are taking place of communications strategies are highest in Asia & Pacific 41% (10/24), ECA 47% (15/32) and Middle East and North Africa 54% (7/13) regions (See Figure 6.2 below).⁷³ Evaluating disaggregated regions, CAREC+ indicated that 88% (7/8) have conducted an assessment. The high figures in Asia & Pacific and Middle East and North Africa regions follow the trend of where most communications campaigns have been launched and the regions with most avian outbreaks and consequent impact on human and animal welfare. However, even partial assessments (as in paragraph 6.7 onwards below) can provide significant guidance to aspects of the response.

Figure 6.2



Country level Assessment of Communications and Public Information

- 6.7 Evidence of the impact of these awareness raising activities at the country level is mixed and underscores the difficulty of effecting behavior change, a long-term objective when responding to unfolding emergencies, and identifying necessary changes to communication strategies. Analysis of available country specific data on the impact of communication strategies for avian influenza control and prevention reveals considerable progress as well as several gaps, issues and challenges that need to be addressed accompanied by structural and policy level changes. Major outcomes and gaps can be clustered around the following themes:
- 6.8 Communication has helped create awareness around the threat posed by HPAI H5N1 but variation exists and awareness does not always translate into behavior change.
- The majority of the countries that have implemented a national and sub-national level communication response have demonstrated that awareness of avian influenza is high across population groups. Data indicates 70% of the people in affected countries (over 90% in some countries like Indonesia, Cambodia, and Thailand) are aware of AI and know how to reduce risks.⁷⁴
 - Taking an example from Lao PDR, data from the four most heavily affected provinces indicated that levels of AI awareness varied significantly – from 100% in Vientiane Province to 35% in the Champassak Province. Only 12% of respondents indicated they were practicing three or more behaviors to protect their poultry or families from HPAI.
 - After long periods without outbreaks in poultry or humans, Vietnam recently experienced resurgence in infection. Although this reversal was likely the result of many factors, there is concern amongst policy makers that lack of vigilance and the inability to sustain public attention in the absence of cases may have contributed.
- 6.9 Communication of new information is not enough, in itself, to change engrained social and cultural practices.
- In over 20 countries where knowledge, attitude and practice (KAP) surveys were conducted in 2006 and 2007, it was found that knowledge and awareness of AI is high in the general population and in high-risk groups.⁷⁵ However, people continue to practice high-risk behaviors when handling poultry as their perception of risks due to AI is quite low. In many instances, people also reported not practicing preventive behaviors due to lack of resources, difficult living conditions (which often pose other substantial risks to health and human welfare), and deep-rooted cultural practices.
 - Data developed by UNICEF in a rapid assessment in Laos indicated that Village Veterinary Workers (VW), the cadre responsible for surveillance at the community level, were neither viewed by most respondents as a primary source of information on AI nor necessarily the first people farmers would turn to in the event of an outbreak. Determining this early during program design enabled animal health specialists to take measures to ensure that VW had the training and understanding of their operating context to fulfill their critical surveillance role.
 - Even in countries where H5N1 continues to recur in poultry and at times infects humans, awareness of specific preventive practices such as burying or burning dead poultry, separating new and old and healthy and sick poultry and reporting sick poultry to local authorities is relatively low.
 - Given that relatively few humans have been infected by H5N1 virus globally (322 since 2003 of which 195 have died) the overall risk perception of getting infected with the avian influenza virus remains very low.
- 6.10 Behavior change depends on multiple factors including identifying and targeting the correct audience
- Data point that communication promoting desired behaviors to control avian influenza are dependent on factors such as compensation policies, surveillance systems and veterinary and animal health infrastructure. For instance, a 2007 survey from Cambodia revealed that some 60% of the rural households have experienced high numbers of poultry deaths, but only 15% of them reported it to the authorities and almost none of the households affected expected any compensation from the government.⁷⁶ Similar perceptions are reflected in other countries as well which reinforce the need to strengthen surveillance systems and better implementation of compensation policies, including a significant emphasis on and resources for associated communications.
 - As countries seek to refine their communications strategies the issue of targeting audiences becomes increasingly significant. The “public” that is the stated target for awareness raising activities, covers a

range of societal groups, many of which are difficult to reach using traditional communication mechanisms. Provision of materials in appropriate formats, in minority languages and through appropriate media is essential. Where women and children are responsible for raising backyard poultry, or where migrant laborers travel back and forth across borders in search of employment, targeting these audiences and encouraging behavior change remains a daunting prospect. There are many other audiences than the rural poor and HPAI communications strategies will also need to address such issues as: Finding ways to sustain high-level political engagement; ensuring that the private sector takes leadership in areas like bio-safety and bio-security; and providing training to local media so that they can report professionally on HPAI

Pandemic Risk Communication

6.11 Pandemic preparedness which emphasizes what can be done locally regardless of access to vaccines or antiviral drugs is crucial to enable citizens to take appropriate action to protect themselves and their families, before, during and after a pandemic in order to reduce transmission and minimize illness and death, as well as social and economic disruption.⁷⁷ But the data gathering exercise for this report indicates that less than 50% of the 132 countries responding have yet agreed on an approach to pandemic risk communications (see Table 6.1). The continuing uncertainty over whether, when and where a human pandemic might occur – and the impacts that might result – make detailed preparation difficult. In countries already facing significant health challenges – especially from other infectious diseases – there can be some confidence that existing mechanisms and response plans can be adapted to respond in the face of an influenza pandemic. But this will not be true in all cases and it is clear that greater emphasis on this aspect of the integrated response is warranted.

Table 6.1. Communication to Prepare for a Pandemic

National level agreement on how and what to communicate to the public about <i>preparing themselves for a pandemic</i>				
	<i>% yes</i>	<i>% partial</i>	<i>% no</i>	<i>n=</i>
Asia & Pacific	38	50	12	26
Africa	50	31	19	32
Middle East & N Africa	57	43	0	14
Europe & Central Asia	57	40	3	35
Americas	40	48	12	25
Global	48	42	10	132

Conclusions and Recommendations

- 6.12 Communication has helped create awareness around the threat posed by HPAI H5N1 but variation exists and awareness does not always translate into behavior change. Evidence of the impact of these awareness raising activities is mixed and underscores the difficulty of effecting behavior change. Consequently communication is yet to address risk perception and change many engrained socio-cultural practices. Behavior change depends on multiple factors including identifying and targeting the correct audience.
- 6.13 The absence of the H5N1 virus in a country or region such as parts of Africa and the Americas does not justify complacency or immunity to getting the virus. Communication plans should therefore be proactive in preparing necessary strategies and materials, and in training media and communicators.
- 6.14 There should be a review of existing communication strategies, especially in areas with entrenched HPAI infection. National-level planning processes should be supported through a global, trans-disciplinary and interagency Technical Advisory Group on HPAI and pandemic communication with responsibility for ensuring a unified vision and long-term strategic communication framework. Systematic evaluation of impact and outcomes of AI communications in country should be supported.
- 6.15 Communications strategies must continually adjust and correct their messages and approach to respond to changing circumstances. The threat posed by AI and other zoonoses represent long-term challenges requiring long-term solutions. Given that all country governments have competing national priorities, avian

and pandemic influenza communication needs to become integrated into on-going efforts such as promoting hygiene, being prepared to deal with influenza, and protection from animal diseases in general.

- 6.16 AI communication strategies should ensure that marginalized and hard to reach audiences receive the information they need to protect themselves from HPAI. Technical solutions should be modified to address the particular characteristics of that audience.
- 6.17 Communication is essential to successful implementation of an integrated national plan and National governments should ensure that adequate communications' capacity – extending from the national level to local communities – is fully integrated into preparations, tested and modified as necessary.
- 6.18 As they communicate with the public on the need to be prepared for a pandemic national authorities must contend with the many uncertainties regarding the timing, severity and start point for the next influenza pandemic. The data they provided reveal the kinds of challenge they face.

Nigeria: Communication Strategies

Following the first confirmed case of avian influenza outbreak in Nigeria in January 2006, intense advocacy by UN agencies and bi-lateral donors resulted in an early response by the government. As a first step, a multi-sectoral National Steering Committee was established to provide policy direction to control the spread of AI.

The Nigerian government developed an Avian Influenza Control Program (AICP) with support from the UN and the World Bank. Under the AICP, the National Public Enlightenment Committee was tasked with the planning, coordination, implementation and monitoring of AI outbreak communication and behaviour change communication/social mobilization activities.

A communication structure similar to the National Public Enlightenment Committee was established in all 36 states and the Federal Capital Territory. The objective was to ensure that there is sufficient technical capacity at the national and the sub-national level

- to implement mass awareness campaigns,
- to design and roll out inter-personal communication packages for health workers,
- to establish a community surveillance system, and
- to carry out training of trainers at the Local Government and community levels in promoting AI preventive behaviors.

A Participatory Action Research supported by the UNICEF West and Central Africa Regional Office and implemented by the Academy for Educational Development in late 2006 confirmed the efficiency of the Nigerian avian influenza communication strategy in reaching over 60% of the 140 million population with appropriate behavioral actions to protect humans from AI within a very short period.

While awareness of AI is high, people's perception of the risk of getting infected with AI was low. To address this issue, emphasis has been placed on community level partnerships with key influential groups such as traditional rulers, religious groups, community development associations, educational institutions, and women's groups. These leaders and opinion makers are being encouraged through training and continued engagement to use their networks to re-enforce preventive behaviors promoted through the mass media. A draft risk communication strategy has also been developed and is being finalized to complement the communication strategy developed in 2006.

Avian influenza outbreaks in Nigeria have been largely confined to birds, but there was one human fatality in January 2007. On-going communication and social mobilization activities reaching various stakeholders and community and household members are being strengthened to limit the further spread of AI among humans.

Nigeria's challenges in fighting avian influenza in poultry include; weak bio-security measures across the poultry sector, widespread backyard poultry rearing practice, continued operation of live-bird markets that do not promote bio-security measures, and cultural practices which result in use of live birds for rituals and co-habitation of birds and humans. Consequently the achievement of behaviour change remains of great importance.

(Adapted from UNICEF information)

7. ASSESSMENT OF PROGRESS ATTAINED TO DATE AND RECOMMENDATIONS

The Status of Funds Pledged, Committed and Disbursed

- 7.1 The report takes stock of the support provided for responses to HPAI and for influenza pandemic preparations by individual countries, by multilateral organizations, at the global political levels, and through the flexible financing framework. The report provides an overview of funds pledged, committed, and disbursed to help countries tackle this global threat, and analyzes the volume of funds that remain uncommitted. Of the \$2.3 billion pledged by bilateral donors, the European Commission, and multilateral development banks (MDBs) at the international meetings in Beijing in January 2006 and in Bamako in December 2006, \$1.7 billion (72%) has been committed and over \$1.0 billion (43%) has been disbursed to recipient bodies. As of June 30, 2007, about \$600 million remained uncommitted.
- 7.2 However, a more detailed analysis of this information yields a more nuanced picture about the external funding available. The original pledge included \$1,326 million in grant funding from bilateral donors and the European Commission and \$983 million from the MDBs, largely in the form of loans. The report reveals that of the \$1,326 million in grant funding that was pledged; nearly all has been committed, leaving a mere \$57 million of the current pledge available for commitment globally as of mid-2007. Moreover, \$955 million (74%) of the committed grant funds have already been disbursed. Out of the total grant funds committed, \$282 million is destined directly for countries (\$215 million disbursed), \$433 million is for international organizations (\$317 million disbursed), \$206 million is for regional organizations (\$157 million disbursed), and \$333 million is for other purposes. As the availability of grants has declined, developing countries have become more dependent on loans. However, of the \$983 million in loans made available by the MDBs, approximately \$592 million remained uncommitted as of end-June 2007.
- 7.3 There are two reasons for this relatively slow rate of commitment of loans. First, loans are used to finance medium- to long-term integrated country programs, which take time to prepare, and second, developing countries prefer to use grants, rather than loans, to finance their integrated programs as they seek to avoid borrowing funds to address what is perceived as a global public good as well as a national issue. Grant funds are also essential for funding international and regional bodies.
- 7.4 The majority of the country-specific funds committed to date are destined for countries in East and South Asia (56%), and Europe and Central Asia (24%). Comparatively small amounts of funding have been committed to countries in Africa and the Middle East and North Africa (18% of the total), and in Latin America and the Caribbean (2%).

The Status of HPAI Control and Pandemic Preparedness

Improving the Health of Poultry and other Birds by Reducing the Threats of Avian Influenza and Similar Conditions

- 7.5 There is substantive evidence to indicate global enhancement in the performance of animal disease surveillance systems and laboratory capacity. Country reports suggest capacity to respond to HPAI has improved and the virus has been successfully eliminated from most of the settings where it has been detected. Where there are recognized weaknesses in these capacities, strategies are in place at a global and regional level to improve the situation and they need continued support. However, constraints still remain and the veterinary capacity in most countries remains substandard. Animal health services lack the necessary legislation and regulations for safeguarding animal health. Functioning relations between official veterinarians, private practitioners and farmers are rare. Most countries provide insufficient budget both to their veterinary and animal health laboratory services and regional capacity is under-supported. Whilst

evidence suggests that there has been some improvement in the adoption of bio-security measures within poultry production facilities, sustained improvement calls for long-term sectoral change.

Improving the Capacity of Human Health Systems to Detect and Respond to an Influenza Pandemic

7.6 Data collected by UNSIC suggest that globally there has been an improvement in human influenza virus diagnostic and surveillance capacity. However, capacity varies significantly and is clearly insufficient in a number of countries and regions (in particular Africa). Reporting of information to international agencies has improved to some extent but even more transparent collaboration between all stakeholders is required. With the entering into force of the International Health Regulations (IHR 2005) a framework is in place to guide surveillance, reporting and response activities concerning the international spread of disease. Capacities developed in accordance with the IHR (2005) will be appropriate for the detection and response to influenza-type illnesses and the early stage of pandemic containment, and it is now important to encourage, support and monitor their quick and efficient implementation. The WHO Rapid Response protocol needs widespread backing so that it can be applied and sustained internationally. Progress has been made with regard to enhanced integrated planning and synergy with the livestock sector. However, assessments suggest there is still far too little joint working of animal and human health surveillance and response networks within some regions.

Preparedness for Mitigating the Health, Social, Economic and Humanitarian Impacts of the next Influenza Pandemic

7.7 Many countries report that they have developed pandemic preparedness plans. However, national preparedness for a substantive pandemic response is patchy: there is insufficient attention to sectors other than health and to making pandemic plans operational, especially at the local level. In some countries the institutional capacity to bring together the highest levels of government and different sectors and to maintain engagement in pandemic preparedness are insufficient. Pandemic influenza preparedness should continue to be incorporated into, and support, existing disaster management structures. Few countries have fully tested their ability to make their plans operational. In many countries much more work is needed to ensure that local and national stakeholders with experience in crisis response and humanitarian action are ready to respond to a full blown influenza pandemic. National leaders are paying increased attention to the interdependence of nations in relation to communicable disease threats and further cross-border planning needs to take place.

Communication with Communities to Inform, Protect and Mobilize

7.8 Communication underpins much of the implementation of any integrated national plan. Communication strategies have helped create awareness around the threat posed by HPAI H5N1 but this awareness does not always translate into behaviour change. People change behaviour if they consider the change to be worthwhile, but incentives do not always trigger the kinds of behaviour change being sought. Systematic evaluation of impact and outcomes of AI communications in country should be supported to enable the identification of target groups and how best to reach them.

Implications of Progress to Date and Recommendations

7.9 **The underlying threat of a pandemic remains.** The World Health Report 2007 states that “There will be an influenza pandemic, sooner or later” with the potential to result in millions of deaths and severe social, economic and humanitarian consequences.⁷⁸ It is prudent for nations to prepare for an influenza pandemic as it represents a threat to human security as do other existing and potential health crises. Even if the next pandemic does not originate from HPAI, the activities to address HPAI in the short, medium and long term will also better equip countries to respond to similar infectious diseases.

7.10 **Progress has been made but there are still gaps to be filled.** Influenza-related threats to public health are far more widely appreciated now than during 2005. Reports from countries suggest that they are better able to respond to HPAI outbreaks than they were a year ago. However, too many countries lack sufficient veterinary services for the response to be reliable and sustained improvements are needed.

- 7.11 **All countries require capacity and access to systems of international standards to detect, contain and eliminate HPAI infection.** The H5N1 virus continues to circulate, evolve and pose threats to humanity. There is also emerging evidence that the H5N1 viruses are proving more durable and infective for humans as well as birds. The present situation in which HPAI is generally controlled outside the settings where it is entrenched could be reversed at any time: complacency would be most unwise.
- 7.12 **Entrenched H5N1 infection poses a major threat to human health; not just to the affected countries but to the world as a whole.** HPAI is currently entrenched in Indonesia, Egypt and Nigeria, and possibly in some locations in China and Bangladesh. Once the virus is entrenched, control and elimination become a major challenge, and the risk of human infection with H5N1 increases. A nation's response to entrenched infection should reflect the "strategy most likely to succeed" with a basket of interventions implemented consistently throughout the country and monitored at regular intervals: this can be particularly challenging when government is decentralized. The interventions should include actions (a) to detect, contain and eliminate foci of infection and (b) to reduce risk of transmission both between animals and from animals to humans.
- 7.13 **Animal health services continue to be substandard, particularly in poorer countries.** Formal evaluations of veterinary services have been undertaken by OIE in more than 30 countries. They conclude that legislation and regulations related to the prevention and control of animal diseases are often lacking. Synergies between official veterinarians, private practitioners and farmers are only found in a few countries. National budgets for Veterinary Services are often far below what might be expected given the contribution of animal farming to the national GDPs or the total number of livestock. Laboratory capacity is often limited, both at national and at inter-country level.
- 7.14 **Integrated multi-sectoral strategies are essential – at local, national, regional and global levels.** Surveillance and monitoring of the circulating avian influenza viruses including H5N1 and pandemic preparedness (within and beyond the health sectors) go hand in hand: both must be backed by good evidence, strong communications and long term strategic planning that cuts across sectors and is based on an analysis of economic realities with the ultimate goal of decreasing human deaths and preventing suffering.
- 7.15 **Implementation of the International Health Regulations (IHR 2005) requires that countries have the capacity to reliably detect, confirm and contain influenza-like illness that might herald the start of a human pandemic.** National authorities should seek ways to work together, within the framework of the IHR (2005), to agree and plan to use protocols for early containment and longer-term mitigation of a human pandemic. Existing experience has shown the importance of these protocols extending beyond the health sector to prepare for continuity of priority economic, governance, societal and humanitarian functions. Sufficient funds must be made available by national authorities for the implementation of priority functions – both in the immediate future and the longer term.
- 7.16 **The world's nations are not ready to minimize the wider social and economic consequences of a pandemic.** The readiness of nations to mitigate a pandemic's social and economic impact is variable, although the necessity for sectors other than health to be prepared is now widely accepted. Experience suggests that joint working by governments using agreed protocols for containment and mitigation helps all to achieve optimal containment capacity. Much more work is needed to guarantee that countries have plans to ensure that public, private and voluntary sector stakeholders work together, that essential functions are maintained and that government and the rule of law are not compromised. More attention is also needed to ensure that crisis responders and humanitarian actors are ready to respond to an established pandemic.
- 7.17 **Virus samples need to be shared among scientists.** Given the continued genetic evolution of H5N1 and other influenza viruses it is essential that the WHO-managed system for sample sharing be maintained. Countries have understandable concerns about the extent to which they will benefit from scientific discoveries made using this viral material (vaccines, diagnostics etc). Such issues need speedy resolution but through means that do not impair efficient sample sharing and scientific cooperation.

Implications of External Technical and Financial Support and Recommendations

- 7.18 **Strong continued political and financial commitments are essential to sustaining success.** The capacity of national, regional and global institutions to initiate actions that will improve health security in relation to HPAI and pandemic threats is influenced by leadership and commitment from those with responsibility for the institutions, effective partnerships between legislators, professionals and private sector stakeholders, and a broad-based understanding of the actions that can be taken to reduce risk.
- 7.19 **Adequate financial support for long term technical assistance and for integrated country programs is essential.** This will enable countries to build programs with a 5 to 10 year time horizon, to implement the structural changes in their poultry industries, and to build systems for safeguarding animal health, public health and resilience at times of crisis. These are needed to face the current threat posed by H5N1 and will serve, by extension, for facing other zoonotic diseases. Support for the expansion of strategies to include long term approaches is essential for ensuring that regional and global institutions have the capacity to support national program implementation.
- 7.20 **The analysis in the report suggests that priority must be given for support to (a) country-level avian and human influenza actions within Africa, the Middle East and the Americas as well as in Asia and Eastern Europe; and (b) focusing on improving bio-security in poultry rearing, the impact of veterinary services, implementation of the IHR (2005) and mobilization of societies to prepare for threats to animal and human health security.**
- 7.21 **Financial support is needed to ensure adequate stockpiles of pre-pandemic vaccine, procurement and deployment of non-pharmaceutical pandemic mitigation items and for manufacture of vaccines, diagnostic tests and other essential materials.**
- 7.22 **Countries affected by entrenched H5N1 infection must implement the intensive strategies required to bring it under control.** They are likely to need financial support for a period of several years.
- 7.23 **Those who provide assistance must continue to ensure their support for national institutions harmonizes with national strategies, is aligned with in-country objectives, empowers those who make use of the assistance and contributes to a sustainable strengthening of countries' own capacity to deal with animal and human health challenges.** At the same time, those who provide the assistance should do all in their power to minimize the burden (and delays) that their procedures impose on national authorities, seeking synergized approaches and task sharing whenever possible. When providing financial support, monies should be supplied in a timely manner and as grants rather than loans. In this regard, grant funding available to countries through the multi-donor trust fund (AHI Facility) remains in short supply.
- 7.24 **Many national authorities use their integrated program plans to serve as the strategic basis for coordinated action and have set up small national-level coordination bodies.** Donors have generally supported this emphasis on efficient coordination and in some countries have requested that UN country teams support (with as light a footprint as possible) the National Authorities taking the lead in this action. There should be a more inclusive approach to coordination (combining international agencies, development banks, bilateral local actors as well as private and voluntary organizations) and greater emphasis on in-country joint programming, where this is appropriate.
- 7.25 **Co-operation at the regional level is increasing.** Reliable and timely exchanges of information and sound pandemic preparedness, consistent across countries, are essential for inter- country disease surveillance and monitoring. However, some regions are more advanced than others and the needs appear to be substantial in Africa and Latin America and the Caribbean. Also, enhanced collaboration between regions and exchange of lessons learned is desirable, but incentives are needed to make this happen.

Points for Action

- 7.26 **Effective implementation of strategies for the prevention of, and preparedness for, influenza pandemic as a multi-country public health crisis requires (a) continued commitment, joint working and accountability from national leaders, (b) public understanding of the threats to health from animals, the environment and food, and (c) effective partnerships between legislators, professionals and private sector stakeholders. Success depends on nations working in synergy: this requires them to support the strategies both now and for the decades to come. In this connection the following actions should be considered:**
- 7.27 **Action 1: The scientific strategies developed in 2005, and reviewed in mid-2007, are valid but must continue to be implemented in all countries, particularly where H5N1 infection remains entrenched.**
- 7.28 **Action 2: Any efforts to intensify and sustain implementation will depend on continued commitment of political leaders, inter-sectoral synergy, public, private and voluntary sector alliances, adequate capacity, incentives for institutions to act and engagement of the wider public. All are vital for success.**
- 7.29 **Action 3: Coordination must be sustained as a critical input to ensure synergy of contributions by multiple actors and the quality and impact of coordination must be subject to regular review.**
- 7.30 **Action 4: Nations should seize the opportunity of this extraordinary momentum to expand from short-term responses to longer-term strategies, focusing on bio-safe livestock production and multi-sector pandemic preparedness, concentrating on combined capacities for animal health, human health, environmental health, food safety and crisis readiness.**
- 7.31 **Action 5: Considering these emerging challenges, a three- to five-year road map is needed – now – to build on and strengthen efforts to date and to drive inter-governmental action, both for the control of avian influenza (as well as other zoonoses) and to ensure a better readiness for future health crises.**

ANNEX I: AUTHORITIES REPRESENTED IN DATA GATHERING EXERCISES

Countries & Territories addressed for the January – June 2007 information-gathering exercises on avian, human and pandemic influenza preparedness, listed by region.

Asia & Pacific	Africa	Middle East & North Africa	Europe & Central Asia	Americas
Afghanistan	<i>(Angola)</i>	Algeria	Albania	Argentina
Australia	Benin*	Bahrain	Armenia	Bahamas, The
Bangladesh*	Botswana	Djibouti	Austria	Barbados*
Bhutan	<i>(Burkina Faso)</i>	Egypt	Azerbaijan	Belize
Cambodia*	Burundi	Iran	<i>(Belarus)</i>	Bolivia*
China	Cameroon	Iraq*	Belgium	Brazil
<i>(DPR Korea)</i>	Cape Verde	Israel	Bosnia and Herzegovina	Canada
India	<i>(Central African Republic)</i>	Jordan	Bulgaria	Chile
Indonesia	<i>(Chad)</i>	Kuwait	Croatia	Colombia
Japan	<i>(Comoros)</i>	Lebanon	Czech Republic	Costa Rica
Lao PDR	<i>(Republic of the Congo)</i>	Morocco	Cyprus	<i>(Cuba)</i>
Malaysia	Cote d'Ivoire	Oman	<i>(Denmark)</i>	Dominican Republic
Maldives	DR Congo *	Qatar	Estonia	Ecuador
Mongolia	<i>(Equatorial Guinea)</i>	Saudi Arabia	Finland	El Salvador
Myanmar	Eritrea	<i>(Somalia)</i>	France	Guatemala
Nauru	<i>(Ethiopia)</i>	Sudan	Georgia	Guyana
Nepal	Gabon	Syria	Germany	Haiti
New Zealand	Gambia	Tunisia	<i>(Greece)</i>	Honduras
Pakistan	Ghana	<i>(United Arab Emirates)</i>	Hungary	<i>(Jamaica)</i>
Papua New Guinea	Guinea	West Bank & Gaza	Ireland	Mexico
Philippines	Guinea-Bissau	Yemen	Italy	Nicaragua*
Republic of Korea	Kenya*		<i>(Kazakhstan)</i>	Panama
Singapore	Lesotho		Kosovo	Paraguay*
<i>(Solomon Islands)</i>	Liberia		Kyrgyz Republic	Peru
Sri Lanka	Madagascar		Latvia	Suriname
Thailand	<i>(Malawi)</i>		<i>(Lithuania)</i>	Trinidad and Tobago*
Timor-Leste	<i>(Mali)</i>		Luxembourg	U.S.A.
Vanuatu	Mauritania		Macedonia	Uruguay
Vietnam	Mauritius		<i>(Malta)</i>	Venezuela
	Mozambique		Moldova	
	Namibia		Netherlands	
	Niger		Norway	
	Nigeria		Poland	
	<i>(Rwanda)</i>		Portugal	
	<i>(Sao Tome and Principe)</i>		<i>(Romania)</i>	
	Senegal		Russian Federation	
	Seychelles		St Helena	
	Sierra Leone		Serbia	
	South Africa		Slovakia	
	Swaziland		Slovenia	
	Tanzania		Spain	
	<i>(Togo)</i>		Sweden	
	Uganda		Switzerland	
	Zambia		Tajikistan	
	Zimbabwe		Turkey	
			Turkmenistan	
			United Kingdom	
			<i>(Ukraine)</i>	
			Uzbekistan	

(...) The country did not participate in the exercise

* UN or donor agencies responded to the information gathering exercise

ANNEX II: ILLUSTRATIVE GRAPHS AND TABLES

Table 1. Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO 5 November 2007

Country	2003		2004		2005		2006		2007		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	8	5
Cambodia	0	0	0	0	4	4	2	2	1	1	7	7
China	1	1	0	0	8	5	13	8	3	2	25	16
Djibouti	0	0	0	0	0	0	1	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	20	5	38	15
Indonesia	0	0	0	0	20	13	55	45	37	32	112	90
Iraq	0	0	0	0	0	0	3	2	0	0	3	2
Lao PDR	0	0	0	0	0	0	0	0	2	2	2	2
Nigeria	0	0	0	0	0	0	0	0	1	1	1	1
Thailand	0	0	17	12	5	2	3	3	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	12	4
Vietnam	3	3	29	20	61	19	0	0	7	4	100	46
Total	4	4	46	32	98	43	115	79	71	47	334	205

Total number of cases includes number of deaths.

WHO reports only laboratory-confirmed cases.

All dates refer to onset of illness.

Table 2. OIE- PVS Evaluations - State of Play

OIE Regions	OIE Member countries	Official country requests received	PVS missions done	Draft mission reports received
Africa	51	25	18	13
America	29	8	6	5
Asia and Pacific	27	6	5	4
Europe	50	6	5	3
Middle East	13	6	2	2
TOTAL	170	51	36	27

Situation as of September 05, 2007

Table 3. OIE- PVS Evaluations - Country Requests Received ¹

<i>Africa</i>	<i>America</i>	<i>Asia and Pacific</i>	<i>Europe</i>	<i>Middle East</i>
Algeria	Belize	Cambodia	Armenia	Kuwait
Benin	Brazil	Fiji	Kazakhstan	Lebanon
Burkina Faso	Colombia	Indonesia	Kyrgyz Rep.	Oman
Burundi	Costa Rica	Laos	Turkey	Saudi Arabia
Cameroon	Jamaica	Mongolia	Ukraine	Sudan
Chad	Mexico	Vietnam	Uzbekistan	Yemen
Cote d'Ivoire	Panama			
Dem Rep of Congo				
Djibouti				
Egypt				
Gabon				
Guinea				
Kenya				
Lesotho				
Madagascar				
Malawi				
Mali				
Mauritania				
Morocco				
Nigeria				
Senegal				
Swaziland				
Togo				
Tunisia				
25	8	6	6	6

51

¹ Situation as of September 05, 2007

Table 4. Expertise and Capacity to Detect HPAI, 2006 and 2007

	<i>% Countries with AI expertise and laboratory detection capacity June 2006</i>	<i>n=</i>	<i>% Countries with AI expertise and laboratory detection capacity Oct 2006</i>	<i>n=</i>	<i>% Countries quality veterinary capacity to detect HPAI sufficient at any level June 2007</i>	<i>n=</i>	<i>% Countries sufficient access on some level to lab facilities with sufficient HPAI diagnostic capacity June 2007</i>	<i>n=</i>
Asia & Pacific	59	22	79	14	74	27	77	26
Africa	38	29	65	17	58	31	74	31
Middle East & N. Africa	64	14	63	8	88	16	100	17
Europe & Central Asia	81	36	88	26	100	36	100	36
Americas	78	23	89	9	92	25	88	24
Global	65	12	75	74	82	13	87	13

Note: Sufficient access on some level includes central, local or international.

Note: Columns 1 and 2 include survey results from June 2006 and Oct 2006 for countries indicating AI expertise and laboratory capacity.

Column 3 and 4 include survey results from June 2007 for countries indicating veterinary capacity and sufficient laboratory facilities.

Table 5. Laboratory Confirmation Time in Regions and Globally

The average reporting time between the observation of the suspected HPAI outbreak and laboratory confirmation which meets OIE standards

	<i>Laboratory confirmation (average days)</i>	<i>< 3 days</i>	<i>3 - 7 days</i>	<i>>7 days</i>	<i>n=</i>
Asia & Pacific	5	7	4	3	14
Africa	5	3	1	1	5
Middle East & N Africa	3	5	3	0	8
Europe & Central Asia	3	12	4	1	17
Americas	n/a	n/a	n/a	n/a	
Global	4	27	12	5	44

Note: The table is restricted to countries that have experienced outbreaks of HPAI H5N1 virus.

Table 6. Lag Between Reporting of Outbreak and Reporting of Laboratory Confirmation to OIE

The average reporting time between the observation of the suspected HPAI outbreak and laboratory confirmation reported to OIE					
	<i>OIE notification (average days)</i>	<i>< 3 days</i>	<i>3 - 7 days</i>	<i>>7 days</i>	<i>n=</i>
Asia & Pacific	8	7	2	5	14
Africa	8	1	0	2	3
Middle East & N Africa	5	4	3	1	8
Europe & Central Asia	3	15	1	2	18
Americas	n/a	n/a	n/a	n/a	
Global	6	27	6	10	43

Note: The table is restricted to countries that have experienced outbreaks of HPAI H5N1 virus.

Figure 1.

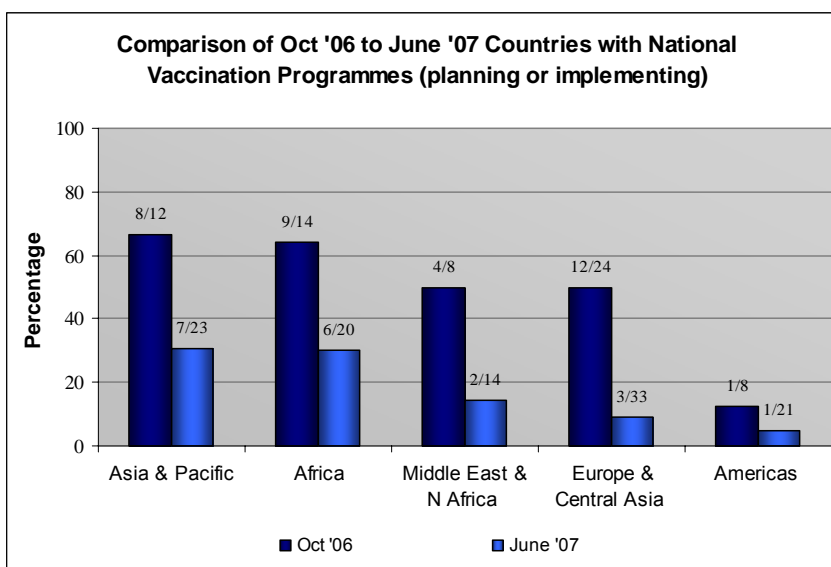
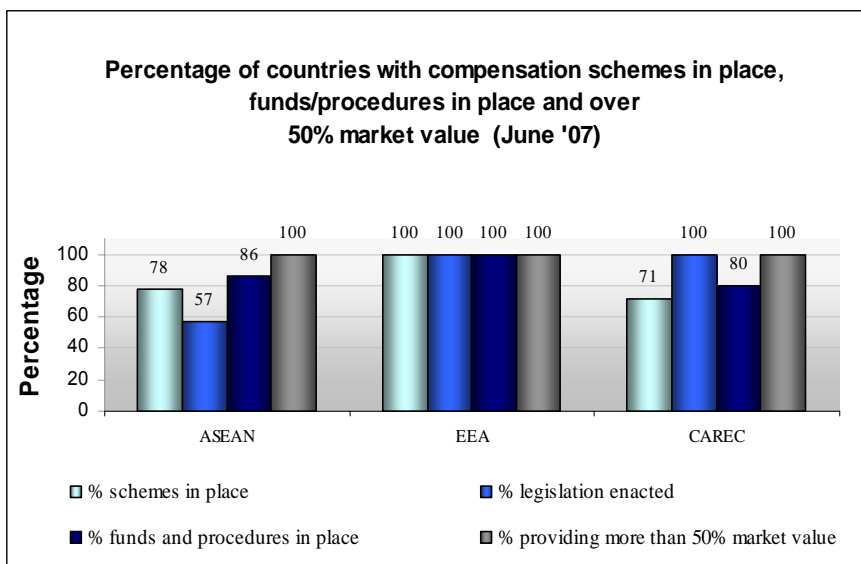


Figure 2.



Number of countries responding: ASEAN (7), EEA (22), CAREC+ (5)

Figure 3.

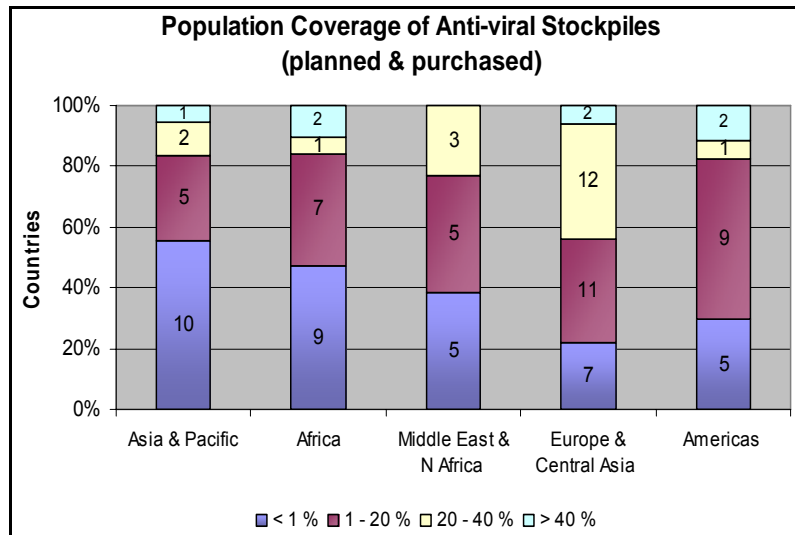


Figure 4.

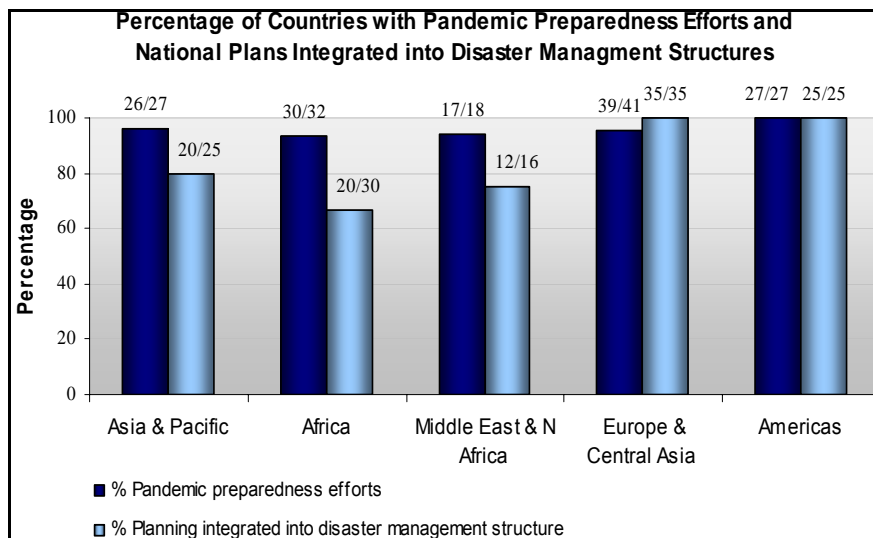
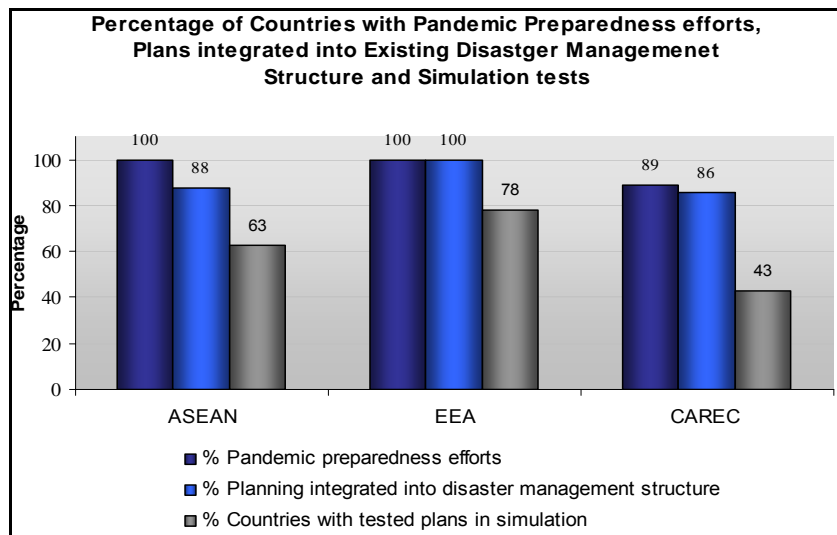


Figure 5.



Number of countries responding:

Efforts: ASEAN (9), EEA (23), CAREC+ (8)

Integration into disaster management: ASEAN (8), EEA (23), CAREC+ (6)

Plans tested in simulation: ASEAN (8), EEA (24), CAREC+ (7)

Figure 6.

Non health sector coverage in sample of 29 Asia & Pacific national plans

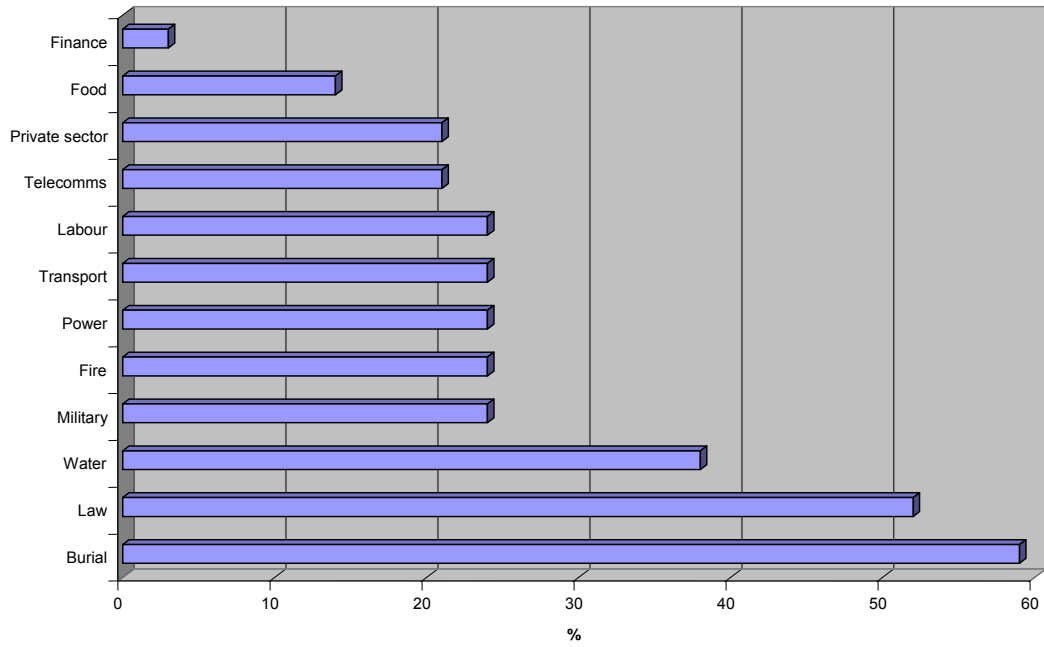
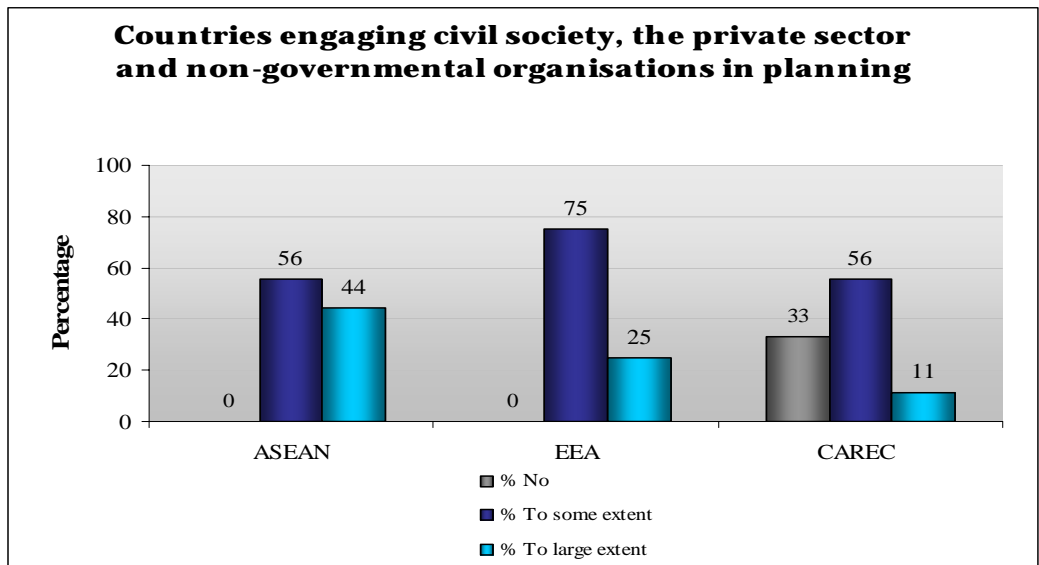


Figure 7.



Number of countries responding: ASEAN (9), EEA (24), CAREC+ (9)

ANNEX III: WORLD BANK OPERATIONS UNDER THE GLOBAL PROGRAM FOR AVIAN AND HUMAN INFLUENZA CONTROL AND PREVENTION (GPAI)

Projects Approved up to June 30, 2007							
Region	Country/Territory	Total Project		Funding Sources (US\$ millions)			
		Cost	Approval Date	IBRD	IDA	PHRD	AHIF
Africa	Liberia	0.09	28-Nov-06	-	-	-	0.09
	Malawi	1.00	16-Apr-07	-	-	-	1.00
	Mauritania	0.03	20-Feb-07	-	-	-	0.03
	Mozambique	0.10	7-Jun-07	-	-	-	0.10
	Nigeria	62.20	29-Mar-06	-	50.00	-	-
	Sierra Leone	0.09	29-Nov-06	-	-	-	0.09
	Uganda	0.10	26-Feb-07	-	-	-	0.10
	Zambia	1.00	26-Sep-07	-	-	-	1.00
East Asia & Pacific	Cambodia	5.00	5-Mar-07	-	-	3.00	2.00
	China	2.65	18-Oct-06	-	-	-	2.65
	Indonesia	15.00	15-Dec-06	-	-	5.00	10.00
	Lao PDR	13.56	29-Jun-06	-	4.00	2.00	2.00
	Myanmar	1.32	16-May-07	-	-	-	1.32
	Vietnam	6.20	3-Aug-04	-	5.00	-	-
	Vietnam	38.00	13-Mar-07	-	20.00	5.00	10.00
Europe & Central Asia	Albania	6.10	27-Jun-06	-	5.00	0.80	-
	Armenia	11.33	2-Jun-06	-	6.25	0.80	2.00
	Azerbaijan	6.12	28-Mar-06	-	5.15	-	-
	Bosnia-Herzegovina	6.40	20-Jun-07	-	5.00	-	-
	Georgia	11.87	31-May-06	-	7.00	1.40	1.60
	Kosovo	3.00	1-Feb-07	-	3.00	-	-
	Kyrgyz Republic	9.00	9-Feb-06	-	4.00	1.00	-
	Moldova	11.60	9-Jun-06	-	8.00	0.50	1.00
	Romania	47.70	8-Sep-06	37.70	-	-	-
	Tajikistan	6.80	29-Jun-06	-	5.00	-	1.50
Turkey	55.19	24-Apr-06	34.40	-	-	-	
Uzbekistan	3.21	2-May-07	-	-	-	2.96	
Latin America & Caribbean	Argentina	2.00	23-Jan-07	2.00	-	-	-
	Argentina, Bolivia, Brazil, Chile, Paraguay & Uruguay	0.50	22-Dec-06	-	-	-	0.50
	Uruguay	9.55	19-Dec-06	0.50	-	-	-
Middle East & North Africa	Djibouti	2.54	5-Jun-06	-	0.43	-	2.11
	Egypt	13.14	13-Jun-07	6.00	-	-	7.14
South Asia	Iran	6.10	29-Dec-06	6.10	-	-	-
	Middle East Regional	0.98	19-Dec-06	-	-	-	0.98
	West Bank & Gaza	13.00	7-Sep-06	10.00	-	-	3.00
	Yemen	0.06	5-Feb-07	-	-	-	0.06
	Afghanistan	13.00	11-Jan-07	-	8.00	-	5.00
Total	Bangladesh	16.00	28-Jun-07	-	16.00	-	-
	India	88.64	13-Feb-07	-	32.63	-	-
	Nepal	18.20	19-Jan-07	-	18.20	-	-
	Total	508.35		96.70	202.65	19.50	58.22
Number of projects		40		7	18	9	25

Pipeline for fiscal 2008:

IBRD/IDA: Cambodia, Niger, Pakistan.

AHIF/PHRD: Bangladesh, Bhutan, Cameroon, Colombia, Dominican Republic, Eritrea, Haiti, Honduras, Kyrgyz Republic, Lao PDR, Mongolia, Morocco, Paraguay, Peru, Republic of Congo, Sri Lanka, Syrian Arab Republic, Tunisia, Turkmenistan.

ANNEX IV: TABLES ON PLEDGES, COMMITMENTS AND DISBURSEMENTS

Annex Table 1: Commitments and Disbursements Summary by Donor																	
AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)																	
Donor	Beijing Pledges	Bamako Increased	Cumulative Pledges	Country or Territory		AHI Facility		Regional		International Organizations		Other		Unallocated	Total		Total
				Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements		Commitments	Disbursements	
Australia *	55.91	55.10	111.00	42.78	19.94	6.11	6.11	30.56	17.95	13.90	3.44	0.00	0.00	17.65	93.35	47.44	
Austria	1.24		1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24	0.00	0.00	
Belgium	3.11		3.11	0.00	0.00	0.00	0.00	0.25	0.25	2.86	2.61	0.00	0.00	0.00	3.11	2.86	
Canada	0.00	87.05	87.05	0.00	0.00	0.00	0.00	9.08	2.48	78.82	37.26	3.30	0.00	0.00	91.20	39.73	
China	10.00		10.00	0.00	0.00	2.00	2.00	0.00	0.00	1.00	1.00	0.00	0.00	7.00	3.00	3.00	
Cyprus	0.03		0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.03	0.03	
Czech Republic	0.20		0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20	
Estonia	0.04		0.04	0.04	0.01	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04	
Finland	3.36	6.59	9.95	8.08	8.08	0.00	0.00	0.00	0.00	1.87	1.87	0.00	0.00	0.00	9.95	9.95	
France	31.09	9.95	41.04	0.89	0.63	0.00	0.00	0.00	0.00	32.14	22.41	12.01	3.37	0.00	45.05	26.41	
Germany	28.61	8.33	37.09	16.32	7.01	0.00	0.00	1.00	0.50	1.93	1.30	17.42	14.06	0.00	36.67	22.87	
Greece	0.75		0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.37	0.38	0.38	
*Hungary	*0.04		*0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	
Iceland	0.40		0.40	0.00	0.00	0.20	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.40	0.00	
Ireland	1.24		1.24	0.25	0.25	0.00	0.00	0.00	0.00	0.99	0.99	0.00	0.00	0.00	1.24	1.24	
Italy	6.96		6.96	0.00	0.00	0.00	0.00	0.00	0.00	4.50	0.00	0.00	0.00	2.46	4.50	0.00	
Japan	155.00	67.00	222.00	8.81	8.81	0.00	0.00	56.85	56.85	112.63	111.94	53.98	53.98	0.00	232.27	231.58	
Korea, Republic of	5.71		5.71	1.10	1.10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61	2.10	1.10	
Luxembourg	1.24	0.25	1.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.00	0.00	
Netherlands	13.68	6.97	20.64	14.45	3.75	0.00	0.00	0.00	0.00	1.40	1.40	1.60	0.50	3.19	17.45	5.65	
Norway	7.90	3.40	11.30	0.00	0.00	0.00	0.00	0.00	0.00	10.45	10.45	0.00	0.00	0.85	10.45	10.45	
Russia	23.70	8.16	31.86	4.86	1.00	3.00	2.00	0.00	0.00	24.00	17.00	0.00	0.00	0.00	31.86	20.00	
Saudi Arabia	1.00		1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	
Singapore	0.60		0.60	0.60	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.31	
Slovenia	0.04		0.04	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	
Spain	2.98	0.58	3.56	0.00	0.00	0.00	0.00	0.00	0.00	3.56	2.98	0.00	0.00	0.00	3.56	2.98	
Sweden	9.37	3.35	12.72	0.00	0.00	0.00	0.00	0.00	0.00	12.72	12.58	0.00	0.00	0.00	12.72	12.58	
Switzerland	4.76	1.03	5.79	0.50	0.50	0.00	0.00	0.00	0.00	4.98	4.98	0.00	0.00	0.31	5.48	5.48	
Thailand	2.50		2.50	0.00	0.00	0.00	0.00	2.50	1.59	0.00	0.00	0.00	0.00	0.00	2.50	1.59	
United Kingdom	36.36	18.18	54.55	0.00	0.00	6.60	6.60	0.00	0.00	25.00	13.30	19.81	8.99	3.14	51.41	28.89	
United States	334.00	100.00	434.00	152.48	145.68	0.00	0.00	65.15	64.20	44.57	44.22	170.95	120.43	0.85	433.15	374.53	
European Commission	124.36	83.33	207.69	31.22	17.26	58.42	42.93	38.73	12.95	28.80	13.76	35.56	17.78	14.96	192.73	104.68	
African Development Bank	0.00	15.00	15.00	6.50	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.50	6.50	4.05	
Asian Development Bank	468.00		468.00	40.95	1.71	0.00	0.00	0.34	0.15	24.35	10.99	17.53	0.48	384.83	83.17	13.33	
*World Bank	500.50		500.50	299.35	44.17	0.00	0.00	1.48	0.00	1.00	1.00	0.00	0.00	198.67	301.83	45.17	
GRAND TOTAL	1,834.64	474.26	2,309.05	629.38	264.45	77.40	59.67	205.93	156.93	433.09	316.89	332.16	219.58	649.16	1,677.96	1,017.52	

Total Committed (US\$ million) : 1,677.96
 Total Disbursed (US\$ million) : 1,017.52

* Hungary has retracted their pledge due to lack of response from recipient country. 'Bamako increased' includes new contributions and commitments in excess of pledged amounts as of December 2006.
 * The commitment amount under World Bank regional column (\$1.48 million) is funded from AHIF, and not by World Bank. It was placed here due to space limitations.

Annex Table 2: Details by Recipient Country or Territory
 AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Region	Recipient Country/Territory	Donor	Committed			Disbursed			Total Commt.	Total Disb.
			a/ In Kind	b/ Grants	c/ Loans	a/ In Kind	b/ Grants	c/ Loans		
SAR	Afghanistan	AHIF	0.00	5.00	0.00	0.00	0.00	0.00	14.13	1.13
		US	0.00	1.13	0.00	0.00	1.13	0.00		
		World Bank	0.00	0.00	8.00	0.00	0.00	0.00		
		Total	0.00	6.13	8.00	0.00	1.13	0.00		
ECA	Albania	PHRD	0.00	0.80	0.00	0.00	0.08	0.00	6.30	1.39
		US	0.50	0.00	0.00	0.50	0.00	0.00		
		World Bank	0.00	0.00	5.00	0.00	0.00	0.81		
		Total	0.50	0.80	5.00	0.50	0.08	0.81		
AFR	Angola	US	0.00	0.82	0.00	0.00	0.82	0.00	0.82	0.82
		Total	0.00	0.82	0.00	0.00	0.82	0.00		
LCR	Argentina	US	0.00	0.90	0.00	0.00	0.90	0.00	2.90	0.90
		World Bank	0.00	0.00	2.00	0.00	0.00	0.00		
		Total	0.00	0.90	2.00	0.00	0.90	0.00		
ECA	Armenia	AHIF	0.00	2.00	0.00	0.00	0.00	0.00	12.53	4.83
		PHRD	0.00	0.80	0.00	0.00	0.13	0.00		
		Russia	0.54	0.00	0.00	0.00	0.00	0.00		
		US	2.56	0.38	0.00	2.56	0.38	0.00		
		World Bank	0.00	0.00	6.25	0.00	0.00	1.77		
		Total	3.10	3.18	6.25	2.56	0.50	1.77		
ECA	Azerbaijan	ADB	0.05	0.00	0.00	0.05	0.00	0.00	6.69	1.20
		Russia	0.54	0.00	0.00	0.00	0.00	0.00		
		US	0.95	0.00	0.00	0.95	0.00	0.00		
		World Bank	0.00	0.00	5.15	0.00	0.00	0.20		
		Total	1.54	0.00	5.15	1.00	0.00	0.20		
SAR	Bangladesh	US	0.53	1.93	0.00	0.52	1.93	0.00	18.46	2.44
		World Bank	0.00	0.00	16.00	0.00	0.00	0.00		
		Total	0.53	1.93	16.00	0.52	1.93	0.00		
ECA	Belarus	Russia	0.54	0.00	0.00	0.00	0.00	0.00	0.54	0.00
		Total	0.54	0.00	0.00	0.00	0.00	0.00		
AFR	Benin	AfDB	0.00	0.50	0.00	0.00	0.38	0.00	0.50	0.38
		Total	0.00	0.50	0.00	0.00	0.38	0.00		
LCR	Bolivia	US	0.22	0.00	0.00	0.22	0.00	0.00	0.22	0.22
		Total	0.22	0.00	0.00	0.22	0.00	0.00		
ECA	Bosnia-Herzegovina	US	0.20	0.00	0.00	0.20	0.00	0.00	5.20	0.20
		World Bank	0.00	0.00	5.00	0.00	0.00	0.00		
		Total	0.20	0.00	5.00	0.20	0.00	0.00		
LCR	Brazil	US	0.02	0.90	0.00	0.01	0.90	0.00	0.92	0.91
		Total	0.02	0.90	0.00	0.01	0.90	0.00		
ECA	Bulgaria	US	0.89	0.00	0.00	0.81	0.00	0.00	0.89	0.81
		Total	0.89	0.00	0.00	0.81	0.00	0.00		
AFR	Burkina Faso	AfDB	0.00	0.50	0.00	0.00	0.38	0.00	0.70	0.58
		Total	0.20	0.50	0.00	0.20	0.38	0.00		
AFR	Burundi	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	0.00	0.00	0.00	0.00	0.00	0.00		
EAP	Cambodia	ADB	0.00	0.00	9.00	0.00	0.00	0.45	28.00	13.32
		AHIF	0.00	2.00	0.00	0.00	0.00	0.00		
		Australia	0.00	1.45	0.00	0.00	1.45	0.00		
		Germany	0.00	3.11	0.00	0.00	2.01	0.00		
		US	6.00	3.45	0.00	5.97	3.45	0.00		
		PHRD	0.00	3.00	0.00	0.00	0.00	0.00		
		Total	6.00	13.01	9.00	5.97	6.91	0.45		
		AfDB	0.00	0.50	0.00	0.00	0.38	0.00		
US	0.21	0.00	0.00	0.20	0.00	0.00				
AFR	Chad	Total	0.21	0.50	0.00	0.20	0.38	0.00	0.71	0.58
		Total	0.00	0.50	0.00	0.00	0.38	0.00		
LCR	Chile	US	0.04	0.00	0.00	0.00	0.00	0.00	0.04	0.00
		Total	0.04	0.00	0.00	0.00	0.00	0.00		
EAP	China	AHIF	0.00	2.65	0.00	0.00	0.00	0.00	10.82	7.63
		Australia	0.00	0.38	0.00	0.00	0.38	0.00		
		Netherlands	0.00	0.04	0.00	0.00	0.04	0.00		
		US	1.16	6.58	0.00	0.93	6.28	0.00		
		Total	1.16	9.66	0.00	0.93	6.70	0.00		
LCR	Colombia	US	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.01
		Total	0.01	0.00	0.00	0.01	0.00	0.00		
AFR	Congo (DRC)	US	0.12	1.01	0.00	0.12	1.01	0.00	1.37	1.37
		Total	0.12	1.25	0.00	0.12	1.25	0.00		
AFR	Congo (ROC)	US	0.01	0.15	0.00	0.00	0.00	0.00	0.16	0.00
		Total	0.01	0.15	0.00	0.00	0.00	0.00		

Annex Table 2: Details by Recipient Country or Territory
 AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Region	Recipient Country/Territory	Donor	Committed			Disbursed			Total Commt.	Total Disb.
			a/ In Kind	b/ Grants	c/ Loans	a/ In Kind	b/ Grants	c/ Loans		
LCR	Costa Rica	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	0.00	0.00	0.00	0.00	0.00	0.00		
AFR	Cote D'Ivoire	AfDB	0.00	0.50	0.00	0.00	0.23	0.00	1.75	0.66
		European Commission	0.00	0.76	0.00	0.00	0.00	0.00		
		US	0.05	0.43	0.00	0.00	0.43	0.00		
		Total	0.05	1.69	0.00	0.00	0.66	0.00		
ECA	Cyprus	US	0.50	0.00	0.00	0.50	0.00	0.00	0.50	0.50
		Total	0.50	0.00	0.00	0.50	0.00	0.00		
MNA	Djibouti	AfDB	0.00	0.50	0.00	0.00	0.00	0.00	3.14	0.73
		AHIF	0.00	2.11	0.00	0.00	0.20	0.00		
		US	0.10	0.00	0.00	0.10	0.00	0.00		
		World Bank	0.00	0.00	0.43	0.00	0.00	0.43		
Total	0.10	2.61	0.43	0.10	0.20	0.43				
LCR	Dominican Republic	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EAP	East Timor	Australia	0.00	3.82	0.00	0.00	1.83	0.00	4.20	2.21
		US	0.38	0.00	0.00	0.38	0.00	0.00		
		Total	0.38	3.82	0.00	0.38	1.83	0.00		
LCR	Ecuador	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MNA	Egypt	AfDB	0.00	0.50	0.00	0.00	0.38	0.00	14.63	7.00
		AHIF	0.00	7.14	0.00	0.00	0.00	0.00		
		US	0.94	0.00	0.00	0.58	0.00	0.00		
		Korea, Republic of	0.00	0.05	0.00	0.00	0.05	0.00		
		World Bank	0.00	0.00	6.00	0.00	0.00	6.00		
		Total	0.94	7.69	6.00	0.58	0.43	6.00		
LCR	El Salvador	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AFR	Eritrea	European Commission	0.00	1.02	0.00	0.00	0.00	0.00	1.03	0.00
		US	0.01	0.00	0.00	0.00	0.00	0.00		
AFR	Ethiopia	Ireland	0.00	0.12	0.00	0.00	0.12	0.00	2.15	2.08
		US	1.63	0.40	0.00	1.56	0.40	0.00		
		Total	1.63	0.52	0.00	1.56	0.52	0.00		
ECA	Georgia	AHIF	0.00	1.60	0.00	0.00	0.28	0.00	11.19	3.09
		PHRD	0.00	1.40	0.00	0.00	0.15	0.00		
		US	0.81	0.38	0.00	0.81	0.38	0.00		
		World Bank	0.00	0.00	7.00	0.00	0.00	1.48		
Total	0.81	3.38	7.00	0.81	0.80	1.48				
AFR	Ghana	AfDB	0.00	0.50	0.00	0.00	0.38	0.00	4.92	2.99
		European Commission	0.00	3.62	0.00	0.00	1.81	0.00		
		US	0.80	0.00	0.00	0.80	0.00	0.00		
Total	0.80	4.12	0.00	0.80	2.19	0.00				
ECA	Greenland	US	0.09	0.00	0.00	0.00	0.00	0.00	0.09	0.00
LCR	Guatemala	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LCR	Haiti	US	0.10	0.00	0.00	0.10	0.00	0.00	0.10	0.10
		Total	0.10	0.00	0.00	0.10	0.00	0.00		
ECA	Hungary	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SAR	India	US	0.55	1.97	0.00	0.54	1.97	0.00	35.15	2.51
		World Bank	0.00	0.00	32.63	0.00	0.00	0.00		
		Total	0.55	1.97	32.63	0.54	1.97	0.00		
EAP	Indonesia	ADB	0.40	0.00	0.00	0.09	0.00	0.00	96.60	52.51
		AHIF	0.00	10.00	0.00	0.00	0.00	0.00		
		Australia	0.00	25.97	0.00	0.00	11.31	0.00		
		Germany	0.00	4.98	0.00	0.00	2.61	0.00		
		Netherlands	12.00	0.00	0.00	2.20	0.00	0.00		
		PHRD	0.00	5.00	0.00	0.00	0.00	0.00		
		Singapore	0.00	0.60	0.00	0.00	0.31	0.00		
		US	30.70	6.95	0.00	29.25	6.75	0.00		
		Total	43.10	53.50	0.00	31.53	20.98	0.00		
		World Bank	0.00	0.00	6.10	0.00	0.00	0.18		
Total	0.00	0.00	6.10	0.00	0.00	0.18				
MNA	Iran	Korea, Republic of	0.84	0.00	0.00	0.84	0.00	0.00	6.10	0.18
MNA	Iraq	US	0.81	0.00	0.00	0.48	0.00	0.00	1.65	1.32
		Total	1.65	0.00	0.00	1.32	0.00	0.00		
LCR	Jamaica	US	0.02	0.00	0.00	0.01	0.00	0.00	0.02	0.01
Total	0.02	0.00	0.00	0.01	0.00	0.00				

Annex Table 2: Details by Recipient Country or Territory
AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Region	Recipient Country/Territory	Donor	Committed			Disbursed			Total Commt.	Total Disb.
			a/ In Kind	b/ Grants	c/ Loans	a/ In Kind	b/ Grants	c/ Loans		
MNA	Jordan	US	0.02	0.00	0.00	0.01	0.00	0.00	0.02	0.01
		Total	0.02	0.00	0.00	0.01	0.00	0.00		
ECA	Kazakhstan	Russia	0.54	0.00	0.00	0.50	0.00	0.00	1.24	1.20
		US	0.45	0.25	0.00	0.45	0.25	0.00		
AFR	Kenya	Total	0.99	0.25	0.00	0.95	0.25	0.00	5.88	5.22
		US	1.06	4.83	0.00	1.00	4.23	0.00		
EAP	Korea, DPR	Australia	0.00	0.38	0.00	0.00	0.38	0.00	1.01	0.38
		European Commission	0.00	0.63	0.00	0.00	0.00	0.00		
EAP	Korea, ROK	Total	0.00	1.01	0.00	0.00	0.38	0.00	0.33	0.33
		US	0.00	0.33	0.00	0.00	0.33	0.00		
ECA	Kosovo	World Bank	0.00	0.00	3.00	0.00	0.00	0.00	3.00	0.00
		Total	0.00	0.00	3.00	0.00	0.00	0.00		
ECA	Kyrgyzstan	PHRD	0.00	1.00	0.00	0.00	0.15	0.00	5.64	1.26
		Russia	0.54	0.00	0.00	0.00	0.00	0.00		
EAP	Lao PDR	US	0.10	0.00	0.00	0.10	0.00	0.00	24.68	11.50
		World Bank	0.00	0.00	4.00	0.00	0.00	1.01		
EAP	Lao PDR	Total	0.64	1.00	4.00	0.10	0.15	1.01	4.58	10.10
		ADB	0.00	0.00	6.00	0.00	0.00	0.82		
AFR	Lesotho	AHIF	0.00	2.00	0.00	0.00	0.33	0.00	0.12	0.12
		Germany	0.00	3.11	0.00	0.00	2.00	0.00		
AFR	Liberia	PHRD	0.00	2.00	0.00	0.00	0.20	0.00	0.09	0.01
		US	4.58	2.99	0.00	4.49	2.99	0.00		
MNA	Libya	World Bank	0.00	0.00	4.00	0.00	0.00	0.66	1.01	1.00
		Total	0.01	1.00	0.00	0.00	1.00	0.00		
ECA	Macedonia, FYR	US	0.20	0.00	0.00	0.20	0.00	0.00	0.20	0.20
		Total	0.01	1.00	0.00	0.00	1.00	0.00		
AFR	Malawi	AHIF	0.00	1.00	0.00	0.00	0.00	0.00	1.15	0.15
		US	0.15	0.00	0.00	0.15	0.00	0.00		
EAP	Malaysia	Total	0.15	1.00	0.00	0.15	0.00	0.00	1.37	1.04
		ADB	0.40	0.00	0.00	0.09	0.00	0.00		
AFR	Mali	US	0.02	0.96	0.00	0.00	0.96	0.00	3.30	1.75
		AfDB	0.00	0.50	0.00	0.00	0.23	0.00		
AFR	Mauritania	European Commission	0.00	2.54	0.00	0.00	1.27	0.00	0.03	0.00
		US	0.26	0.00	0.00	0.26	0.00	0.00		
LGR	Mexico	Total	0.00	0.03	0.00	0.00	0.00	0.00	6.50	6.14
		US	0.42	6.08	0.00	0.06	6.08	0.00		
ECA	Moldova	AHIF	0.00	1.00	0.00	0.00	0.00	0.00	10.90	2.11
		PHRD	0.00	0.50	0.00	0.00	0.15	0.00		
EAP	Mongolia	Russia	0.54	0.00	0.00	0.00	0.00	0.00	1.55	1.55
		US	0.86	0.00	0.00	0.86	0.00	0.00		
MNA	Morocco	World Bank	0.00	0.00	8.00	0.00	0.00	1.11	0.63	0.63
		Total	1.40	1.50	8.00	0.86	0.15	1.11		
AFR	Mozambique	Korea, Republic of	0.01	0.00	0.00	0.01	0.00	0.00	0.78	0.68
		US	0.45	1.10	0.00	0.44	1.10	0.00		
EAP	Myanmar	Total	0.45	1.10	0.00	0.45	1.10	0.00	3.42	0.80
		US	0.00	0.63	0.00	0.00	0.63	0.00		
SAR	Nepal	AHIF	0.00	0.10	0.00	0.00	0.00	0.00	18.53	1.32
		US	0.68	0.00	0.00	0.68	0.00	0.00		
EAP	Nepal	Australia	0.00	1.32	0.00	0.00	0.00	0.00	0.07	0.80
		European Commission	0.00	0.76	0.00	0.00	0.76	0.00		
SAR	Nepal	US	0.07	0.00	0.00	0.04	0.00	0.00	18.20	0.00
		Total	0.33	0.00	18.20	0.32	0.00	1.00		

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 AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Region	Recipient Country/Territory	Donor	Committed			Disbursed			Total Commt.	Total Disb.
			a/ In Kind	b/ Grants	c/ Loans	a/ In Kind	b/ Grants	c/ Loans		
LCR	Nicaragua	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	0.00	0.00	0.00	0.00	0.00	0.00		
AFR	Niger	AfDB	0.00	0.50	0.00	0.00	0.38	0.00	0.83	0.71
		US	0.20	0.00	0.00	0.20	0.00	0.00		
		France	0.00	0.13	0.00	0.00	0.13	0.00		
		Total	0.20	0.63	0.00	0.20	0.51	0.00		
		AfDB	0.00	0.50	0.00	0.00	0.38	0.00		
AFR	Nigeria	Japan	0.00	0.73	0.00	0.00	0.73	0.00	54.27	24.80
		Korea, Republic of	0.00	0.20	0.00	0.00	0.20	0.00		
		US	1.80	1.04	0.00	1.50	1.04	0.00		
		World Bank	0.00	0.00	50.00	0.00	0.00	20.96		
		Total	1.80	2.47	50.00	1.50	2.35	20.96		
		US	0.01	0.83	0.00	0.00	0.83	0.00		
SAR	Pakistan	Total	0.01	0.83	0.00	0.00	0.83	0.00	0.83	0.83
LCR	Panama	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	0.00	0.00	0.00	0.00	0.00	0.00		
EAP	Papua New Guinea	Australia	0.00	4.66	0.00	0.00	0.76	0.00	4.66	0.76
		Total	0.00	4.66	0.00	0.00	0.76	0.00		
LCR	Peru	US	0.01	0.83	0.00	0.00	0.83	0.00	0.83	0.83
		Total	0.01	0.83	0.00	0.00	0.83	0.00		
EAP	Philippines	ADB	0.40	0.00	0.00	0.09	0.00	0.00	2.06	1.69
		US	0.73	0.93	0.00	0.68	0.93	0.00		
		Total	1.13	0.93	0.00	0.77	0.93	0.00		
		European Commission	0.00	0.63	0.00	0.00	0.63	0.00		
ECA	Romania	Germany	0.00	0.15	0.00	0.00	0.15	0.00	41.61	4.22
		US	2.51	0.63	0.00	2.51	0.00	0.00		
		World Bank	0.00	0.00	37.70	0.00	0.00	0.94		
		Total	2.51	1.41	37.70	2.51	0.78	0.94		
		US	1.10	0.45	0.00	1.00	0.45	0.00		
ECA	Russia	Total	1.10	0.45	0.00	1.00	0.45	0.00	1.55	1.45
AFR	Rwanda	US	0.10	0.40	0.00	0.10	0.40	0.00	0.50	0.50
		Total	0.10	0.40	0.00	0.10	0.40	0.00		
MNA	Saudi Arabia	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	0.00	0.00	0.00	0.00	0.00	0.00		
AFR	Senegal	European Commission	0.00	2.53	0.00	0.00	1.26	0.00	2.99	1.66
		US	0.46	0.00	0.00	0.40	0.00	0.00		
		Total	0.46	2.53	0.00	0.40	1.26	0.00		
AFR	Sierra Leone	AHIF	0.00	0.09	0.00	0.00	0.01	0.00	0.09	0.01
		Total	0.00	0.09	0.00	0.00	0.01	0.00		
AFR	South Africa	US	0.24	1.00	0.00	0.23	1.00	0.00	1.24	1.23
		Total	0.24	1.00	0.00	0.23	1.00	0.00		
SAR	Sri Lanka	US	0.41	0.00	0.00	0.40	0.00	0.00	0.41	0.40
		Total	0.41	0.00	0.00	0.40	0.00	0.00		
AFR	Sudan	AfDB	0.00	0.50	0.00	0.00	0.23	0.00	8.32	4.24
		European Commission	0.00	7.62	0.00	0.00	3.81	0.00		
		US	0.20	0.00	0.00	0.20	0.00	0.00		
		Total	0.20	8.12	0.00	0.20	4.04	0.00		
EAP	Taiwan, China	US	0.00	0.05	0.00	0.00	0.01	0.00	0.05	0.01
		AHIF	0.00	1.50	0.00	0.00	0.00	0.00		
		Total	0.00	0.05	0.00	0.00	0.01	0.00		
ECA	Tajikistan	Russia	0.54	0.00	0.00	0.00	0.00	0.00	7.34	0.95
		US	0.30	0.00	0.00	0.30	0.00	0.00		
		World Bank	0.00	0.00	5.00	0.00	0.00	0.65		
		Total	0.84	1.50	5.00	0.30	0.00	0.65		
AFR	Tanzania	US	0.82	0.44	0.00	0.82	0.44	0.00	1.27	1.27
		Total	0.82	0.44	0.00	0.82	0.44	0.00		
EAP	Thailand	Netherlands	0.00	0.10	0.00	0.00	0.10	0.00	8.84	8.33
		US	1.19	7.55	0.00	0.68	7.55	0.00		
		Total	1.19	7.65	0.00	0.68	7.65	0.00		
LCR	Trinidad & Tobago	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	0.00	0.00	0.00	0.00	0.00	0.00		
AFR	Togo	AfDB	0.00	0.50	0.00	0.00	0.38	0.00	0.50	0.38
		Total	0.00	0.50	0.00	0.00	0.38	0.00		
MNA	Tunisia	US	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		European Commission	0.00	10.60	0.00	0.00	8.48	0.00		
		US	1.36	0.33	0.00	1.00	0.33	0.00		
		World Bank	0.00	0.00	34.40	0.00	0.00	2.36		
ECA	Turkey	Total	1.36	10.93	34.40	1.00	8.81	2.36	46.68	12.16
ECA	Turkmenistan	US	0.10	0.00	0.00	0.10	0.00	0.00	0.10	0.10
		Total	0.10	0.00	0.00	0.10	0.00	0.00		

Annex Table 2: Details by Recipient Country or Territory
 AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Region	Recipient Country/Territory	Donor	Committed			Disbursed			Total Commt.	Total Disb.
			a/ In Kind	b/ Grants	c/ Loans	a/ In Kind	b/ Grants	c/ Loans		
AFR		AHIF	0.00	0.10	0.00	0.00	0.00	0.00		
		US	0.66	0.40	0.00	0.66	0.40	0.00		
	Uganda	Total	0.66	0.50	0.00	0.66	0.40	0.00	1.15	1.06
ECA		Estonia	0.00	0.04	0.00	0.00	0.01	0.00		
		Russia	0.54	0.00	0.00	0.50	0.00	0.00		
		US	3.65	0.99	0.00	3.65	0.99	0.00		
Ukraine	Total	4.19	1.03	0.00	4.15	1.00	0.00	5.21	5.14	
LCR		US	0.00	0.00	0.00	0.00	0.00	0.00		
		World Bank	0.00	0.50	0.00	0.00	0.00	0.00		
	Uruguay	Total	0.00	0.50	0.00	0.00	0.00	0.00	0.50	0.00
ECA		AHIF	0.00	2.96	0.00	0.00	0.00	0.00		
		Russia	0.54	0.00	0.00	0.00	0.00	0.00		
		US	0.30	0.35	0.00	0.30	0.35	0.00		
Uzbekistan	Total	0.84	3.31	0.00	0.30	0.35	0.00	4.15	0.65	
EAP		ADB	0.00	0.00	24.70	0.00	0.00	0.12		
		AHIF	0.00	10.00	0.00	0.00	0.00	0.00		
		Australia	0.00	5.35	0.00	0.00	3.06	0.00		
		Czech Republic	0.20	0.00	0.00	0.20	0.00	0.00		
		Finland	0.00	8.08	0.00	0.00	8.08	0.00		
		France	0.52	0.00	0.00	0.26	0.00	0.00		
		Germany	0.00	4.98	0.00	0.00	0.24	0.00		
		Japan	0.00	8.08	0.00	0.00	8.08	0.00		
		Netherlands	2.31	0.00	0.00	1.41	0.00	0.00		
		PHRD	0.00	5.00	0.00	0.00	0.00	0.00		
		Switzerland	0.00	0.50	0.00	0.00	0.50	0.00		
		US	8.40	4.96	0.00	8.37	4.96	0.00		
		World Bank	0.00	0.00	25.00	0.00	0.00	3.45		
	Vietnam	Total	11.43	46.95	49.70	10.24	24.92	3.57	108.07	38.73
MNA		AHIF	0.00	3.00	0.00	0.00	2.30	0.00		
		US	0.50	0.00	0.00	0.50	0.00	0.00		
		World Bank	0.00	0.00	10.00	0.00	0.00	1.18		
West Bank & Gaza	Total	0.50	3.00	10.00	0.50	2.30	1.18	13.50	3.98	
MNA		AHIF	0.00	0.06	0.00	0.00	0.00	0.00		
		US	0.00	0.00	0.00	0.00	0.00	0.00		
	Yemen	Total	0.00	0.06	0.00	0.00	0.00	0.00	0.06	0.00
AFR		AHIF	0.00	1.00	0.00	0.00	0.01	0.00		
	Zambia	Total	0.00	1.00	0.00	0.00	0.01	0.00	1.00	0.01
Grand Total			107.71	257.11	329.45	87.13	135.37	45.38	705.63	268.44

a/ In Kind may include technical assistance, supplies, equipments, commodities, workshops, training etc.

b/ All bilateral commitments and disbursements are in the form of **Grants** whereas ADB and WB amounts are **Loans and Credits**.

c/ ADB and WB amounts mainly include Loans and Credits.

d/ AHIF is a multidonor trust fund facility supervised by the World Bank. PHRD is primarily a Japanese trust fund supervised by the WB.

Both facilities allocate resources for Avian and Human Influenza and they are not included in direct World Bank contributions

Total Committed excluding AHIF and PHRD (US\$ million) : 629.47
Total Disbursed excluding AHIF and PHRD (US\$ million) : 264.46

AHIF Committed (US\$m) : 56.66
 PHRD Committed (US\$m) : 19.50
 AHIF Disbursed (US\$m) : 3.13
 PHRD Disbursed (US\$m) : 0.85

705.63

268.44

Annex Table 3 : Details by Recipient International Organizations
AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Donor	WHO		FAO		OIE		UNICEF		a/ Other		Total	Total
	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements	Commitments	Disbursements
Australia	10.08	0.92			1.91	0.99			1.91	1.53	13.90	3.44
Austria											0.00	0.00
Belgium	0.37	0.12	2.49	2.49							2.86	2.61
Canada	25.17	13.61	9.08	4.95	9.08	4.95	6.44	4.79	29.07	8.96	78.82	37.26
China	0.50	0.50	0.50	0.50							1.00	1.00
Cyprus	0.03	0.03									0.03	0.03
Czech Republic											0.00	0.00
Estonia											0.00	0.00
Finland	1.87	1.87									1.87	1.87
France	4.77	4.25	8.18	7.13	3.65	3.26			15.54	7.77	32.14	22.41
Germany			1.93	1.30							1.93	1.30
Greece	0.19	0.19	0.19	0.19							0.38	0.38
Hungary											0.00	0.00
Iceland	0.20										0.20	0.00
Ireland	0.99	0.99									0.99	0.99
Italy	1.50		3.00								4.50	0.00
Japan	21.71	21.71	11.40	11.28	9.32	8.75	62.10	62.10	8.10	8.10	112.63	111.94
Korea, Republic of											0.00	0.00
Luxembourg											0.00	0.00
Netherlands			1.00	1.00	0.20	0.20			0.20	0.20	1.40	1.40
Norway	2.89	2.89	3.72	3.72					3.84	3.84	10.45	10.45
Russia	24.00	17.00									24.00	17.00
Saudi Arabia			1.00	1.00							1.00	1.00
Singapore											0.00	0.00
Slovenia											0.00	0.00
Spain	2.49	2.49	1.07	0.49							3.56	2.98
Sweden	2.68	2.68	10.04	9.90							12.72	12.58
Switzerland	0.63	0.63	3.86	3.86					0.50	0.50	4.98	4.98
Thailand											0.00	0.00
United Kingdom	10.90	6.30	9.60	5.40	2.10				2.40	1.60	25.00	13.30
United States	33.38	33.38	7.37	7.01	1.20	1.20			2.63	2.63	44.57	44.22
European Commission	17.78	8.89	7.59	3.16					3.43	1.71	28.80	13.76
African Development Bank											0.00	0.00
Asian Development Bank	16.36	8.40	7.99	2.59							24.35	10.99
World Bank					1.00	1.00					1.00	1.00
GRAND TOTAL	178.48	126.84	90.00	65.98	28.46	20.35	68.54	66.89	67.62	36.84	433.09	316.89

a/ See table 4a for details

Total Committed for International Org. (US\$ million) :	433.09
Total Disbursed for International Org. (US\$ million) :	316.89

Annex Table 4a: Detailed Breakdown by Donors

AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Donor	Countries & Territories						Regional Organizations				International Organizations				
	Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Committed (USD million)		Disbursed (USD million)	
		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans
Australia	Cambodia	0.00	1.45	0.00	1.45	(ASEAN) Association of Southeast Asian Nat	0.00	3.82	0.00	1.91	WHO	0.00	10.08	0.00	0.92
	China	0.00	0.38	0.00	0.38	(APEC) Asia Pacific Economic Cooperation	0.00	7.64	0.00	3.51	OIE	0.00	1.91	0.00	0.99
	East Timor	0.00	3.82	0.00	1.83	Asian Development Bank	0.00	0.00	0.00	0.00	UNDP	0.00	0.38	0.00	0.38
	Indonesia	0.00	25.97	0.00	11.31	Regional Assistance- Asia	0.00	12.99	0.00	10.16	WFP	0.00	0.76	0.00	0.38
	Korea, DPR	0.00	0.38	0.00	0.38	Pacific Island Nations	0.00	6.11	0.00	2.37	IFRC	0.00	0.76	0.00	0.76
	Myanmar	0.00	0.76	0.00	0.76										
	Papua New Gui	0.00	4.66	0.00	0.76										
	Vietnam	0.00	5.35	0.00	3.06										
	Total	0.00	42.78	0.00	19.94	Total	0.00	30.56	0.00	17.95	Total	0.00	13.90	0.00	3.44
Austria															
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00
Belgium						ADB	0.00	0.25	0.00	0.25	WHO	0.00	0.37	0.00	0.12
											FAO	0.00	2.49	0.00	2.49
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.25	0.00	0.25	Total	0.00	2.86	0.00	2.61
Canada						(ADB) Asian Development Bank	0.00	4.13	0.00	2.48	FAO	0.00	9.08	0.00	4.95
						(AfDB) African Development Bank	0.00	4.95	0.00	0.00	FAO/WHO/OIE	0.00	12.38	0.00	2.48
											OCHA	0.00	0.41	0.00	0.41
											OIE	0.00	9.08	0.00	4.95
											PAHO	0.00	3.16	0.00	0.79
											UNDP (Egypt)	0.00	0.33	0.00	0.33
											UNDP/FAO/WHO (Vietnam)	0.00	0.83	0.00	0.83
											UNHCR	0.00	0.83	0.00	0.83
											UNICEF	0.00	3.30	0.00	1.65
											UNICEF (Indonesia)	0.00	3.14	0.00	3.14
											UNSCIC	0.00	4.13	0.00	2.48
											WHO	0.00	7.01	0.00	5.36
											WHO (Canadian-Asian Region Emerging Infectious Diseases	0.00	12.38	0.00	2.48
											WHO (Global Pandemic Influenza Action Plan to Increase	0.00	0.83	0.00	0.83
											WHO (Indonesia)	0.00	4.13	0.00	4.13
											WHO (Vietnam)	0.00	0.83	0.00	0.83
											IFRC (International Federation of Red Cross)	0.00	1.65	0.00	0.83
											CFIA (Technical Support for Avian Influenza)	5.36	0.00	0.00	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	9.08	0.00	2.48	Total	5.36	73.46	0.00	37.26
China											WHO	0.00	0.50	0.00	0.50
											FAO	0.00	0.50	0.00	0.50
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	1.00	0.00	1.00
Cyprus											WHO	0.00	0.03	0.00	0.03
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	0.03	0.00	0.03
Czech Republic	Vietnam	0.20	0.00	0.20	0.00										
	Total	0.20	0.00	0.20	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00
Estonia	Ukraine	0.00	0.04	0.00	0.01										
	Total	0.00	0.04	0.00	0.01	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00
Finland	Vietnam	0.00	8.08	0.00	8.08						WHO	0.00	1.87	0.00	1.87
	Total	0.00	8.08	0.00	8.08	Total	0.00	0.00	0.00	0.00	Total	0.00	1.87	0.00	1.87
France	Congo	0.00	0.24	0.00	0.24						WHO	1.04	3.73	0.52	3.73
	Niger	0.00	0.13	0.00	0.13						FAO	2.09	6.09	1.04	6.09
	Vietnam	0.52	0.00	0.26	0.00						OIE	1.04	2.61	0.52	2.73
											Institute Pasteur Network in Asia	0.00	15.54	0.00	7.77
	Total	0.52	0.37	0.26	0.37	Total	0.00	0.00	0.00	0.00	Total	4.18	27.97	2.09	20.32

Annex Table 4a: Detailed Breakdown by Donors
 AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Donor	Countries & Territories					Regional Organizations				International Organizations										
	Recipient	Committed		Disbursed		Recipient	Committed		Disbursed		Recipient	Committed		Disbursed						
		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans					
Germany	Cambodia	0.00	3.11	0.00	2.01	ILRI / AU-IBAR	0.00	1.00	0.00	0.50	FAO	0.00	1.93	0.00	1.30					
	Indonesia	0.00	4.98	0.00	2.61															
	Laos	0.00	3.11	0.00	2.00															
	Romania	0.00	0.15	0.00	0.15															
	Vietnam	0.00	4.98	0.00	0.24															
	Total	0.00	16.32	0.00	7.01											Total	0.00	1.00	0.00	0.50
Greece											WHO	0.00	0.19	0.00	0.19					
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	0.38	0.00	0.38					
Hungary																				
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00					
Iceland											WHO	0.00	0.20	0.00	0.00					
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	0.20	0.00	0.00					
Ireland	Lesotho	0.00	0.12	0.00	0.12						WHO	0.00	0.99	0.00	0.99					
	Ethiopia	0.00	0.12	0.00	0.12															
	Total	0.00	0.25	0.00	0.25											Total	0.00	0.00	0.00	0.00
Italy											WHO	0.00	1.50	0.00	0.00					
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	4.50	0.00	0.00					
											FAO	0.00	3.00	0.00	0.00					
Japan	Nigeria	0.00	0.73	0.00	0.73	(ASEAN) Association of Southeast Asian Nat	0.00	46.80	0.00	46.80	WHO	0.00	21.71	0.00	21.71					
	Vietnam	0.00	8.08	0.00	8.08	(ADB) Asian Development Bank	0.00	10.00	0.00	10.00	FAO	0.00	11.40	0.00	11.28					
						(ECOWAS) Economic Community of West A	0.00	0.05	0.00	0.05	OIE	0.00	9.32	0.00	8.75					
											UNICEF	0.00	62.10	0.00	62.10					
											UNHCR	0.00	5.00	0.00	5.00					
											WFP	0.00	1.10	0.00	1.10					
											IOM	0.00	1.00	0.00	1.00					
											OCHA	0.00	1.00	0.00	1.00					
	Total	0.00	8.81	0.00	8.81	Total	0.00	56.85	0.00	56.85	Total	0.00	112.63	0.00	111.94					
	Korea, Republic of	Egypt	0.00	0.05	0.00	0.05														
Iraq		0.84	0.00	0.84	0.00															
Nigeria		0.00	0.20	0.00	0.20															
Mongolia		0.01	0.00	0.01	0.00															
Total		0.85	0.25	0.85	0.25	Total											0.00	0.00	0.00	0.00
Luxembourg																				
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00					
Netherlands	China	0.00	0.04	0.00	0.04						FAO	0.50	0.50	0.50	0.50					
	Indonesia	12.00	0.00	2.20	0.00											OIE	0.20	0.00	0.20	0.00
	Thailand	0.00	0.10	0.00	0.10											UN	0.20	0.00	0.20	0.00
	Vietnam	2.31	0.00	1.41	0.00															
	Total	14.31	0.14	3.61	0.14											Total	0.00	0.00	0.00	0.00
Norway											FAO	0.00	3.72	0.00	3.72					
											WHO	0.00	2.89	0.00	2.89					
											UN Appeal	0.94	1.56	0.94	1.56					
											UNSCIC	0.00	1.34	0.00	1.34					
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.94	9.51	0.94	9.51					

Annex Table 4a: Detailed Breakdown by Donors
 AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Donor	Countries & Territories				Regional Organizations				International Organizations						
	Recipient	Committed		Disbursed		Recipient	Committed		Disbursed		Recipient	Committed		Disbursed	
		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans
Russia	Armenia	0.54	0.00	0.00	0.00						Establishment of the WHO collaboration centre in Russia	0.00	24.00	0.00	17.00
	Azerbaijan	0.54	0.00	0.00	0.00										
	Belarus	0.54	0.00	0.00	0.00										
	Kazakhstan	0.54	0.00	0.50	0.00										
	Kyrgyzstan	0.54	0.00	0.00	0.00										
	Moldova	0.54	0.00	0.00	0.00										
	Tajikistan	0.54	0.00	0.00	0.00										
	Ukraine	0.54	0.00	0.50	0.00										
	Uzbekistan	0.54	0.00	0.00	0.00										
Total	4.86	0.00	1.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00	24.00	0.00	17.00	
Saudi Arabia											FAO Global Program	0.00	1.00	0.00	1.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	1.00	0.00	1.00	
Singapore	Indonesia	0.00	0.60	0.00	0.31										
	Total	0.00	0.60	0.00	0.31	Total	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	
Slovenia															
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	
Spain											WHO	0.00	2.49	0.00	2.49
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	3.56	0.00	2.98	
Sweden											WHO	0.00	2.68	0.00	2.68
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	10.04	0.00	9.90	
Switzerland	Vietnam	0.00	0.50	0.00	0.50						WHO	0.00	0.63	0.00	0.63
	Total	0.00	0.50	0.00	0.50	Total	0.00	0.00	0.00	Total	0.00	4.98	0.00	4.98	
Thailand						ACMECS (Cambodia, Lao PDR, Myanmar)	2.50	0.00	1.59	0.00					
	Total	0.00	0.00	0.00	0.00	Total	2.50	0.00	1.59	0.00	Total	0.00	0.00	0.00	0.00
United Kingdom											WHO	2.80	8.10	2.80	3.50
											FAO	0.00	9.60	0.00	5.40
											OIE	0.00	2.10	0.00	0.00
											IFRC	0.00	0.90	0.00	0.90
											OCHA	0.00	1.10	0.00	0.30
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	2.80	22.20	2.80	10.50
United States	Afghanistan	0.00	1.13	0.00	1.13	NAMRU 2 (Indonesia)	2.40	0.00	2.40	0.00	WHO	33.38	0.00	33.38	0.00
	Albania	0.50	0.00	0.50	0.00	NAMRU 3 (Egypt)	2.35	0.00	2.35	0.00	FAO	6.25	1.12	5.90	1.12
	Angola	0.00	0.82	0.00	0.82	European CDC (personnel)	0.40	0.00	0.40	0.00	OIE	0.00	1.20	0.00	1.20
	Argentina	0.00	0.90	0.00	0.90	(SPC) Secretariat of the Pacific	0.30	0.00	0.30	0.00	UNSCIC	1.08	0.00	1.08	0.00
	Armenia	2.56	0.38	2.56	0.38	Almaty Regional Platform (Kazakhstan)	1.12	0.00	1.12	0.00	Institute Pasteur Network	1.55	0.00	1.55	0.00
	Azerbaijan	0.95	0.00	0.95	0.00	REDI Center (Singapore)	2.10	0.00	2.10	0.00					
	Bangladesh	0.53	1.93	0.52	1.93	Gorgas Institute (Panama)	3.28	0.00	3.28	0.00					
	Bolivia	0.22	0.00	0.22	0.00	NIH Research Activities in Southeast Asia	18.00	0.00	18.00	0.00					
	Bosnia-Herzegovina	0.20	0.00	0.20	0.00	African Regional Programs	2.62	0.00	2.55	0.00					
	Brazil	0.02	0.90	0.01	0.90	Latin America & the Caribbean Regional Programs	3.72	0.00	2.87	0.00					
	Bulgaria	0.89	0.00	0.81	0.00	Asia/Pacific/Near East Regional Programs	7.24	0.00	7.35	0.00					
	Burkina Faso	0.20	0.00	0.20	0.00	Eastern Europe & Eurasian Regional Programs	2.73	0.00	2.60	0.00					
	Burundi	0.00	0.00	0.00	0.00	Regional Disease Detection Site (China)	3.91	0.00	3.91	0.00					
	Cambodia	6.00	3.45	5.97	3.45	Regional Disease Detection Site (Egypt)	2.00	0.00	2.00	0.00					

Annex Table 4a: Detailed Breakdown by Donors
 AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Donor	Countries & Territories					Regional Organizations				International Organizations					
	Recipient	Committed		Disbursed		Recipient	Committed		Disbursed		Recipient	Committed		Disbursed	
		a/	b/	a/	b/		a/	b/	a/	b/		a/	b/	a/	b/
		In Kind	Grants / Loans	In Kind	Grants / Loans		In Kind	Grants / Loans	In Kind	Grants / Loans		In Kind	Grants / Loans	In Kind	Grants / Loans
United States	Cameroon	0.21	0.00	0.20	0.00	Regional Disease Detection Site (Guatemala)	2.00	0.00	2.00	0.00					
	Chad	0.00	0.00	0.00	0.00	Regional Disease Detection Site (Kenya)	4.50	0.00	4.50	0.00					
	Chile	0.04	0.00	0.00	0.00	Regional Disease Detection Site (Thailand)	6.48	0.00	6.48	0.00					
	China (including Hong Kong, Macao and Taiwan)	1.16	6.58	0.93	6.28										
	Colombia	0.01	0.00	0.01	0.00										
	Congo (DRC)	0.12	1.01	0.12	1.01										
	Congo (ROC)	0.01	0.15	0.00	0.00										
	Costa Rica	0.00	0.00	0.00	0.00										
	Cote D'Ivoire	0.05	0.43	0.00	0.43										
	Cyprus	0.50	0.00	0.50	0.00										
	Djibouti	0.10	0.00	0.10	0.00										
	Dominican Rep	0.00	0.00	0.00	0.00										
	East Timor	0.38	0.00	0.38	0.00										
	Ecuador	0.00	0.00	0.00	0.00										
	Egypt	0.94	0.00	0.58	0.00										
	El Salvador	0.00	0.00	0.00	0.00										
	Eritrea	0.01	0.00	0.00	0.00										
	Ethiopia	1.63	0.40	1.56	0.40										
	Georgia	0.81	0.38	0.81	0.38										
	Ghana	0.80	0.00	0.80	0.00										
	Greenland	0.09	0.00	0.00	0.00										
	Guatemala	0.00	0.00	0.00	0.00										
	Haiti	0.10	0.00	0.10	0.00										
	Hungary	0.00	0.00	0.00	0.00										
	India	0.55	1.97	0.54	1.97										
	Indonesia	30.70	6.95	29.25	6.75										
	Iraq	0.81	0.00	0.48	0.00										
	Jamaica	0.02	0.00	0.01	0.00										
	Jordan	0.02	0.00	0.01	0.00										
	Kazakhstan	0.45	0.25	0.45	0.25										
	Kenya	1.06	4.83	1.00	4.23										
	Korea, ROK	0.00	0.33	0.00	0.33										
	Kyrgyzstan	0.10	0.00	0.10	0.00										
	Laos	4.58	2.99	4.49	2.99										
	Libya	0.01	1.00	0.00	1.00										
	Macedonia	0.20	0.00	0.20	0.00										
	Malawi	0.15	0.00	0.15	0.00										
	Malaysia	0.02	0.96	0.00	0.96										
	Mali	0.26	0.00	0.26	0.00										
	Mexico	0.42	6.08	0.06	6.08										
	Moldova	0.86	0.00	0.86	0.00										
	Mongolia	0.45	1.10	0.44	1.10										
	Morocco	0.00	0.63	0.00	0.63										
	Mozambique	0.68	0.00	0.68	0.00										
	Myanmar	0.07	0.00	0.04	0.00										
	Nepal	0.33	0.00	0.32	0.00										
	Nicaragua	0.00	0.00	0.00	0.00										
	Niger	0.20	0.00	0.20	0.00										
Nigeria	1.80	1.04	1.50	1.04											
Pakistan	0.01	0.83	0.00	0.83											
Panama	0.00	0.00	0.00	0.00											
Peru	0.01	0.83	0.00	0.83											
Philippines	0.73	0.93	0.68	0.93											
Romania	2.51	0.63	2.51	0.00											
Russia	1.10	0.45	1.00	0.45											
Rwanda	0.10	0.40	0.10	0.40											
Saudi Arabia	0.00	0.00	0.00	0.00											
Senegal	0.46	0.00	0.40	0.00											
South Africa	0.24	1.00	0.23	1.00											
Sri Lanka	0.41	0.00	0.40	0.00											
Sudan	0.20	0.00	0.20	0.00											

Annex Table 4a: Detailed Breakdown by Donors
 AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Donor	Countries & Territories				Regional Organizations				International Organizations						
	Recipient	Committed		Disbursed		Recipient	Committed		Disbursed		Recipient	Committed		Disbursed	
		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans
United States	Taiwan, China	0.00	0.05	0.00	0.01										
	Tajikistan	0.30	0.00	0.30	0.00										
	Tanzania	0.82	0.44	0.82	0.44										
	Thailand	1.19	7.55	0.68	7.55										
	Trinidad & Tobago	0.00	0.00	0.00	0.00										
	Tunisia	0.00	0.00	0.00	0.00										
	Turkey	1.36	0.33	1.00	0.33										
	Turkmenistan	0.10	0.00	0.10	0.00										
	Uganda	0.66	0.40	0.66	0.40										
	Ukraine	3.65	0.99	3.65	0.99										
	Uruguay	0.00	0.00	0.00	0.00										
	Uzbekistan	0.30	0.35	0.30	0.35										
	Vietnam	8.40	4.96	8.37	4.96										
	West Bank/Gaza	0.50	0.00	0.50	0.00										
Yemen	0.00	0.00	0.00	0.00											
Total	85.81	66.67	80.93	64.75	Total	65.15	0.00	64.20	0.00	Total	42.26	2.32	41.90	2.32	
European Commission	Eritrea	0.00	1.02	0.00	0.00	EDF via African Union and Alive	0.00	38.10	0.00	12.32	FAO (Chad)	0.00	5.08	0.00	2.54
	Ghana	0.00	3.62	0.00	1.81	ACP Africa	0.00	0.63	0.00	0.63	FAO (Gabon)	0.00	1.27	0.00	0.00
	Ivory Coast	0.00	0.76	0.00	0.00						FAO (Nigeria)	0.00	0.99	0.00	0.50
	Korea DPR	0.00	0.63	0.00	0.00						FAO (Zambia)	0.00	0.25	0.00	0.12
	Mali	0.00	2.54	0.00	1.27						UNDP (Cameroon)	0.00	3.43	0.00	1.71
	Myanmar	0.00	1.27	0.00	0.00						WHO (Indonesia)	0.00	17.78	0.00	8.89
	Romania	0.00	0.63	0.00	0.63										
	Senegal	0.00	2.53	0.00	1.26										
	Sudan	0.00	7.62	0.00	3.81										
	Turkey	0.00	10.60	0.00	8.48										
	Total	0.00	31.22	0.00	17.26	Total	0.00	38.73	0.00	12.95	Total	0.00	28.80	0.00	13.76
African Development Bank	Benin	0.00	0.50	0.00	0.38										
	Burkina Faso	0.00	0.50	0.00	0.38										
	Cameroon	0.00	0.50	0.00	0.38										
	Chad	0.00	0.50	0.00	0.38										
	Côte d'Ivoire	0.00	0.50	0.00	0.23										
	Djibouti	0.00	0.50	0.00	0.00										
	Egypt	0.00	0.50	0.00	0.38										
	Ghana	0.00	0.50	0.00	0.38										
	Mali	0.00	0.50	0.00	0.23										
	Niger	0.00	0.50	0.00	0.38										
	Nigeria	0.00	0.50	0.00	0.38										
	Sudan	0.00	0.50	0.00	0.23										
	Togo	0.00	0.50	0.00	0.38										
Total	0.00	6.50	0.00	4.05	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	
Asian Development Bank	Azerbaijan	0.05	0.00	0.05	0.00	ASEAN	0.00	0.34	0.00	0.15	WHO	0.00	16.36	0.00	8.40
	Cambodia	0.00	9.00	0.00	0.45						FAO	0.00	7.99	0.00	2.59
	Indonesia	0.40	0.00	0.09	0.00										
	Lao PDR	0.00	6.00	0.00	0.82										
	Malaysia	0.40	0.00	0.09	0.00										
	Philippines	0.40	0.00	0.09	0.00										
	Vietnam	0.00	24.70	0.00	0.12										
	Total	1.25	39.70	0.31	1.39	Total	0.00	0.34	0.00	0.15	Total	0.00	24.35	0.00	10.99

Annex Table 4a: Detailed Breakdown by Donors
 AHI Pledge Results as of June 30, 2007 -- As Reported by Donors (US\$ millions)

Donor	Countries & Territories					Regional Organizations				International Organizations					
	Recipient	Committed		Disbursed		Recipient	Committed		Disbursed		Recipient	Committed		Disbursed	
		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans
World Bank	Albania	0.00	5.00	0.00	0.81	AHIF funding - Southern Agricultural Council	0.00	0.50	0.00	0.00	OIE	0.00	1.00	0.00	1.00
	Argentina	0.00	2.00	0.00	0.00	AHIF funding - (MECIDS) Middle East Conso	0.00	0.98	0.00	0.00					
	Afghanistan	0.00	8.00	0.00	0.00										
	Armenia	0.00	6.25	0.00	1.77										
	Azerbaijan	0.00	5.15	0.00	0.20										
	Bangladesh	0.00	16.00	0.00	0.00										
	Bosnia-Herzeg	0.00	5.00	0.00	0.00										
	Djibouti	0.00	0.43	0.00	0.43										
	Egypt	0.00	6.00	0.00	6.00										
	Georgia	0.00	7.00	0.00	1.48										
	India	0.00	32.63	0.00	0.00										
	Iran	0.00	6.10	0.00	0.18										
	Kosovo	0.00	3.00	0.00	0.00										
	Kyrgyzstan	0.00	4.00	0.00	1.01										
	Lao PDR	0.00	4.00	0.00	0.66										
	Moldova	0.00	8.00	0.00	1.11										
	Nepal	0.00	18.20	0.00	1.00										
	Nigeria	0.00	50.00	0.00	20.96										
	Romania	0.00	37.70	0.00	0.94										
	Tajikistan	0.00	5.00	0.00	0.65										
Turkey	0.00	34.40	0.00	2.36											
Uruguay	0.00	0.50	0.00	0.00											
Vietnam	0.00	25.00	0.00	3.45											
West Bank/Gaz	0.00	10.00	0.00	1.18											
Total	0.00	299.35	0.00	44.17	Total	0.00	1.48	0.00	0.00	Total	0.00	1.00	0.00	1.00	
Total	Total	107.80	521.58	87.16	177.29	Total	67.65	138.28	65.79	91.13	Total	56.43	376.66	48.63	268.26

a/ In Kind may include technical assistance, supplies, equipments, commodities, workshops, training etc.

b/ All bilateral commitments and disbursements are in the form of Grants whereas ADB and WB amounts mainly include Loans and Credits.

Total Committed Annex 4a +4b (US\$ million) : 1,677.96
Total Disbursed Annex 4a + 4b (US\$ million) : 1,017.52

	%	Disb.	%	Comm.
In Cash	67	683.68	75	1,256.13
In Kind	33	333.84	25	421.83
Total	100	1,017.52	100	1,677.96

Annex Table 4b: Detailed Breakdown by Donors

AHI Pledge Results as of June 30, 2007 (US\$ millions)

Donor	AHI Facility					Other					Unallocated	
	Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Committed (USD million)		Disbursed (USD million)		Recipient	Inkind / Grants / Loans
		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		
Australia	AHI Facility	0.00	6.11	0.00	6.11						Unallocated	17.65
	Total	0.00	6.11	0.00	6.11	Total	0.00	0.00	0.00	0.00	Total	17.65
Austria											Unallocated	1.24
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	1.24
Belgium											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Canada						Global Health Research Initiative	0.00	3.30	0.00	0.00	Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	3.30	0.00	0.00	Total	0.00
China	AHI Facility	0.00	2.00	0.00	2.00						Unallocated	7.00
	Total	0.00	2.00	0.00	2.00	Total	0.00	0.00	0.00	0.00	Total	7.00
Cyprus											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Czech Republic											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Estonia	AHI Facility	0.00	0.03	0.00	0.03						Unallocated	0.00
	Total	0.00	0.03	0.00	0.03	Total	0.00	0.00	0.00	0.00	Total	0.00
Finland											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
France						Diagnostic in Africa	0.00	0.97	0.00	0.65	Unallocated	0.00
						AI research in epidemiology (Asia and Africa)	0.00	4.47	0.00	0.00		
						AI research in virology and genetic resistance	0.00	1.86	0.00	0.37		
						Researchers	4.70	0.00	2.35	0.00		
	Total	0.00	0.00	0.00	0.00	Total	4.70	7.31	2.35	1.02	Total	0.00
Germany						Vaccination Development Project	0.00	12.44	0.00	12.44	Unallocated	0.00
						Task Force Development Network (developing countries)	0.00	4.98	0.00	1.62		
	Total	0.00	0.00	0.00	0.00	Total	0.00	17.42	0.00	14.06	Total	0.00
Greece											Unallocated	0.37
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.37
Hungary											Unallocated	0.04
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.04
Iceland	AHI Facility	0.00	0.20	0.00	0.00						Unallocated	0.00
	Total	0.00	0.20	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Ireland											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00

Annex Table 4b: Detailed Breakdown by Donors

AHI Pledge Results as of June 30, 2007 (US\$ millions)

Donor	AHI Facility				Other				Unallocated			
	Recipient	Committed		Disbursed		Recipient	Committed		Disbursed		Recipient	Inkind / Grants / Loans
		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans		
Italy											Unallocated	2.46
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	2.46
Japan						World Bank (through PHRD)	0.00	19.50	0.00	19.50	Unallocated	0.00
						Joint research with institutes, paid in yen (3.86 billion a year)	0.00	34.48	0.00	34.48		
	Total	0.00	0.00	0.00	0.00	Total	0.00	53.98	0.00	53.98	Total	0.00
Korea, Republic of	AHI Facility	0.00	1.00	0.00	0.00						Unallocated	3.61
	Total	0.00	1.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	3.61
Luxembourg											Unallocated	1.49
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	1.49
Netherlands						AI-firebrigade	1.60	0.00	0.50	0.00	Unallocated	3.19
	Total	0.00	0.00	0.00	0.00	Total	1.60	0.00	0.50	0.00	Total	3.19
Norway											Unallocated	0.85
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.85
Russia	AHI Facility	0.00	3.00	0.00	2.00						Unallocated	0.00
	Total	0.00	3.00	0.00	2.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Saudi Arabia											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Singapore											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Slovenia	AHI Facility	0.00	0.04	0.00	0.00						Unallocated	0.00
	Total	0.00	0.04	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Spain											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Sweden											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
Switzerland											Unallocated	0.31
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.31
Thailand											Unallocated	0.00
	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	0.00
United Kingdom	AHI Facility	0.00	6.60	0.00	6.60	Investment in AI World Reference Laboratory, VLA Weybridge	6.06	0.00	6.06	0.00	Unallocated	3.14
						National Institute of Biological Standards and Control (on vaccine development)	1.20	0.00	1.20	0.00		
						Research by Medical Research Council; some goes into collaboration with WHO cen	5.45	0.00	1.73	0.00		
						FAO/IFPRI/ILRI/Royal Veterinary College/ University of California at Berkeley: resear	0.00	7.10	0.00	0.00		
	Total	0.00	6.60	0.00	6.60	Total	12.71	7.10	8.99	0.00	Total	3.14

Annex Table 4b: Detailed Breakdown by Donors

AHI Pledge Results as of June 30, 2007 (US\$ millions)

Donor	AHI Facility					Other	Committed				Disbursed				Unallocated	
	Recipient	Committed		Disbursed			Recipient	Committed		Disbursed		Recipient	Inkind / Grants / Loans			
		a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans			a/ In Kind	b/ Grants / Loans	a/ In Kind	b/ Grants / Loans					
United States						Global funding for HHS country & regional cooperative agreements	48.00	0.00	0.00	0.00	Unallocated	0.85				
						Global wild bird surveillance	7.01	0.00	7.01	0.00						
						Global communications & outreach	9.27	0.00	7.96	0.00						
						International coordination	21.87	0.00	21.28	0.00						
						Stockpile (non-pharmaceuticals)	66.63	0.00	66.63	0.00						
						International technical assistance	10.10	0.00	9.50	0.00						
						Humanitarian assistance	4.00	0.00	4.00	0.00						
						International research (vaccines, flu modelling, human-animal, etc.)	4.07	0.00	4.07	0.00						
	Total	0.00	0.00	0.00	0.00	Total	170.95	0.00	120.43	0.00	Total	0.85				
European Commission	AHI Facility	0.00	58.42	0.00	42.93	6th Framework Programme - DG Research	0.00	35.56	0.00	17.78	Unallocated	14.96				
	Total	0.00	58.42	0.00	42.93	Total	0.00	35.56	0.00	17.78	Total	14.96				
African Development Bank	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	8.50				
Asian Development Bank	Total	0.00	0.00	0.00	0.00	Others: Emergency Fund for Developing Countries (ADB)	0.00	17.53	0.00	0.48	Unallocated	384.83				
Total	Total	0.00	0.00	0.00	0.00	Total	0.00	17.53	0.00	0.48	Total	384.83				
World Bank	Total	0.00	0.00	0.00	0.00	Total	0.00	0.00	0.00	0.00	Total	198.67				
Total	Total	0.00	77.40	0.00	59.67	Total	189.95	142.20	132.26	87.32	Total	649.16				

a/ In Kind may include technical assistance, supplies, equipments, commodities, workshops, training, etc.

b/ All bilateral commitments and disbursements are in the form of Grants whereas ADB and WB amounts mainly include Loans and Credits.

Total Committed Annex 4a + 4b (US\$ million) : 1,677.96
Total Disbursed Annex 4a + 4b (US\$ million) : 1,017.52

	%	Disb.	%	Comm.
In Cash	67	683.68	75	1,256.13
In Kind	33	333.84	25	421.83
Total	100	1,017.52	100	1,677.96

REFERENCES

- ¹ UNSIC and World Bank. Responses to Avian and Human Influenza Threats. Progress, Analysis and Recommendations, January – June 2006. http://www.undg.org/archive_docs/8288-Responses_to_Avian_and_Human_Influenza_Threats_Progress_Analysis_and_Recommendations_Jan_-Jun_06.pdf
- UNSIIC and World Bank. Responses to Avian and Human Influenza Threats. Progress, Analysis and Recommendations, Part 1. July – December 2006. http://www.undg.org/archive_docs/9045-Part_1_Progress_Analysis_and_Recommendations.pdf
- ² Copies of the questionnaires used in this and earlier surveys are available on request from UNSIC.
- ³ Responses received from UN and international agencies as supposed to national authorities from Bangladesh, Barbados, Benin, Bolivia, Cambodia, Iraq, Republique Democratique de Congo, Trinidad and Tobago, Kenya, Nicaragua, Paraguay
- ⁴ References to countries also include territories, where appropriate.
- ⁵ Avian and Human Influenza, Financing Needs and Gaps, The World Bank, January 12, 2006, available at www.worldbank.org/avianflu.
- ⁶ For further details please see “Avian and Human Influenza: Financing Needs and Gaps”, The World Bank, January 12, 2006.
- ⁷ For further details please see “Avian and Human Influenza: Update on Financing Needs and Framework”, The World Bank, November 2006, available at www.worldbank.org/avianflu.
- ⁸ See “Avian and Human Influenza: Update on Financing Needs and Framework”, The World Bank, November 2006, available at www.worldbank.org/avianflu.
- ⁹ The Review of the UN Consolidated Action Plan for AHI provides an overview of the financial situation of the contributing agencies and the progress made by the UN system agencies and their partners against the Action plan’s seven objectives. It asks what impact has been achieved through the efforts of the UN System and pinpoints gaps in the current response and makes recommendations on how to address these. <http://un-influenza.org/files/UNCAPAHIREVIEW2007.pdf>
- ¹⁰ At the scientific conference “Vaccination: a tool for the control of Avian Influenza” (co-organized by OIE, FAO and the Istituto Zooprofilattico Sperimentale delle Venezie, supported by the European Commission) participants reviewed the current methods and recent experiences in the use of vaccination as one of the tools to control and prevent losses due to avian influenza and concluded with a set of recommendations.¹⁰
- ¹¹ Compensation Study
- ¹² WHO/ UNICEF Informal discussion on behavioural intervention for the next influenza pandemic. Summary and Recommendations. http://www.unicef.org/avianflu/files/WHO_UNICEF_API_Mtg_Bangkok_Dec_06.pdf
- ¹³ Sims, L. Achievements, issues and options on strategies for HPAI control and prevention. Workshop paper, Technical Workshop on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome 27-29 June 2007. http://www.fao.org/avianflu/en/conferences/june2007/documents/3.2a_ii.pdf
- ¹⁴ These preliminary findings were provided by OIE.
- ¹⁵ Alive. Rapid Assessment Missions with regard to Avian and Human Influenza (Website). <http://www.alive-online.org/web/page/537/sectionid/341/pagelevel/3/parentid/486/interior.asp>
- ¹⁶ Sims, L. Achievements, issues and options on strategies for HPAI control and prevention. Workshop paper, Technical Workshop on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome 27-29 June 2007. http://www.fao.org/avianflu/en/conferences/june2007/documents/3.2a_ii.pdf
- ¹⁷ FAO, OIE and WHO. Final Report on the Technical Workshop on HPAI and Human H5N1 infection, Rome 27-29 June 2007. http://www.fao.org/avianflu/en/conferences/june2007/documents/HPAI_TechRep_020807.pdf
- ¹⁸ OFFLU is an acronym of an OIE/ FAO bird FLU network which include laboratories, epidemiology collaborating centers and expertise groups
- ¹⁹ Global Avian Influenza Network for Surveillance (GAINS). Narrative Report Activities April 1-June 30, 2007. http://www.gains.org/Portals/0/reports/GAINS_5thQuarterReport2007.pdf
- ²⁰ FAO Global Report 2007
- ²¹ Note that this does not mean that some countries are waiting for confirmation before taking bio-security and confinement measures. Many countries are starting as soon as the suspicion is known by veterinary services. The calculation is based on 27 records (where it is clearly indicated that a reference laboratory was used). For reporting to OIE the calculation is based on 95 records (any laboratory result). The data was collected via OIE World Animal Health Information System (WAHIS).
- ²² Sims, L. Achievements, issues and options on strategies for HPAI control and prevention. Workshop paper, Technical Workshop on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome 27-29 June 2007. http://www.fao.org/avianflu/en/conferences/june2007/documents/3.2a_ii.pdf
- ²³ World Bank, FAO, International Food Policy Research Institute and Office International des Epizooties. Enhancing control of highly pathogenic avian influenza in developing countries through compensation Issues and Good Practice. 2006. http://siteresources.worldbank.org/INTARD/Resources/HPAI_Compensation_Final.pdf
- ²⁴ Possible data bias due to greater population of respondents included in June 07 data gathering exercise.

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- ²⁵ Possible data bias due to greater population of respondents included in June 07 data gathering exercise.
- ²⁶ Sims, L Achievements, issues and options on strategies for HPAI control and prevention. Workshop paper, Technical Workshop on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome 27-29 June 2007. http://www.fao.org/avianflu/en/conferences/june2007/documents/3.2a_ii.pdf
- ²⁷ McLeod A. and Hancock J. Evidence on and lessons from short-term socio-economic impacts of HPAI. Workshop paper, Technical Workshop on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome 27-29 June
- ²⁸ Brusckhe C., Thiermann A. and Vallat B. Implementing FAO/OIE prevention measures in different country contexts. Workshop paper, Technical Workshop on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome 27-29 June 2007. http://www.fao.org/avianflu/en/conferences/june2007/documents/3.2a_i.pdf
- ²⁹ FAO. Combining poultry vaccination with other disease control measures to combat H5N1. Newsroom 2007. <http://www.fao.org/newsroom/en/news/2007/1000527/index.html>
- ³⁰ FAO, OIE and WHO. Final Report on the Technical Workshop on HPAI and Human H5N1 infection, Rome 27-29 June 2007. http://www.fao.org/avianflu/en/conferences/june2007/documents/HPAI_TechRep_020807.pdf
- ³¹ McLeod A. and Hancock J. Evidence on and lessons from short-term socio-economic impacts of HPAI. Workshop paper, Technical Workshop on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome 27-29 June
- ³² Croisier A, Mumford E and Fukuda K. Highly Pathogenic Avian Influenza A (H5N1) and Risks to Human Health. Workshop paper, Technical Workshop on Highly Pathogenic Avian Influenza and Human H5N1 Infection, Rome 27-29 June 2007. <http://www.fao.org/docs/eims/upload//229346/ah654e.pdf>
- ³³ PAHO/ WHO. PAHO/WHO Offer Advice on Pandemic Plans. PAHO Today, September 2005. http://www.paho.org/English/DD/PIN/ptoday08_sep05.htm
- ³⁴ WHO Pandemic Influenza Draft Protocol for Rapid Response and Containment. http://www.who.int/csr/disease/avian_influenza/guidelines/pandemicfluprotocol_17.03a.pdf
- ³⁵ FAO, OIE and WHO. Final Report on the Technical Workshop on HPAI and Human H5N1 infection, Rome 27-29 June 2007. http://www.fao.org/avianflu/en/conferences/june2007/documents/HPAI_TechRep_020807.pdf
- ³⁶ Coker R and Mounier-Jack S. Pandemic influenza preparedness in the Asia-Pacific region: an analysis of selected national plans. London School of Hygiene and Tropical Medicine 2006.
- ³⁷ Alemu, W. Presentation on Surveillance in Human Health. World Bank Africa Avian Influenza Task Force Workshop, Pemba, Mozambique, 4-6 June 2007.
- ³⁸ Martin S, Mumford E and Gully P. Assessments of efforts over the last three years to address HAI in poultry, reducing risk to humans, and pandemic preparedness. Workshop Paper, Technical workshop on highly pathogenic avian influenza and human H5N1 infection, Rome 27-29 June 2007. <http://www.fao.org/avianflu/en/conferences/june2007/documents/3.3a.pdf>
- ³⁹ WHO. Global Outbreak Alert and Response Network. <http://www.who.int/csr/outbreaknetwork/en/>
- ⁴⁰ Note: laboratory confirmation disbursement by <2 day> used in line with IHR 2005. Commencement of anti-virals within 48 hours is also the recognised timeline for the drug to be effective (as advised by WHO). http://www.who.int/csr/disease/avian_influenza/avian_faqs/en/index.html#drugs2
- ⁴¹ Population of respondents potentially includes data from respondents reporting estimated time as opposed to actual suspect case. However, as noted the pool of respondents for analysis was restricted to those countries with avian and/ or human outbreaks to mitigate the inclusion of estimated responses.
- ⁴² Martin S, Mumford E and Gully P. Assessments of efforts over the last three years to address HAI in poultry, reducing risk to humans, and pandemic preparedness. Workshop Paper, Technical workshop on highly pathogenic avian influenza and human H5N1 infection, Rome 27-29 June 2007. <http://www.fao.org/avianflu/en/conferences/june2007/documents/3.3a.pdf>
- ⁴³ Discrepancies in results may be due to different population of respondee sizes.
- ⁴⁴ WHO. International Health Regulations (IHR 2005) – Operational aspects. <http://www.who.int/csr/alertresponse/en/>
- ⁴⁵ Resolution WHA60.28 on the sharing of influenza viruses and access to vaccines and other benefits, adopted at the World Health Assembly in May 2007. http://www.who.int/csr/don/archive/disease/influenza/A60_R28-en.pdf
- ⁴⁶ WHO. WHO Interim Protocol: Rapid operations to contain the initial emergence of pandemic influenza. 2007. http://www.who.int/csr/disease/avian_influenza/RapidContProtMay07.pdf
- ⁴⁷ Dependent on a variety of factors including a low basic reproductive number, stochastic influenza simulation modeling for rural Southeast Asia suggests that containment is a viable strategy. (Longini et al, 2005. Containing pandemic influenza at the source. Science Vol 309, no. 573, 1083-1087) Modeling studies have also identified that with a low reproductive number, a geographically targeted prophylaxis from a rapidly available stockpile of approximately 3 million courses of antiviral medication combined with social distancing measures are likely to be successful in containing a pandemic. (Ferguson et al Nature. 2005 Sep 8; 437(7056):209-14. Strategies for containing an emerging influenza pandemic in Southeast Asia.) Interestingly, in the event of limited antiviral supplies and a relatively high reproductive rate, modeling also reveals that more cooperative strategies result in more effective containment globally, including countries which shared their resources for global use. (Coliza et al, Modeling the worldwide spread of pandemic influenza: baseline case and containment interventions. PLoS Med. 2007 Jan;4(1):e13
- ⁴⁸ Longini I et al. 2005. Containing pandemic influenza at the source. Science Vol 309, no. 573, 1083-1087.

-
- ⁴⁹ WHO Western Pacific Regional Office. The State of Readiness: Pandemic Influenza. Progress Report July 2007.
- ⁵⁰ FAO, OIE and WHO. Final Report on the Technical Workshop on HPAI and Human H5N1 infection, Rome 27-29 June 2007. http://www.fao.org/avianflu/en/conferences/june2007/documents/HPAI_TechRep_020807.pdf
- ⁵¹ Included in the integrated plans response were those countries who also indicated plans for avian, human and pandemic influenza i.e. all of the above.
- ⁵² Martin, S, Mumford, E and Gully, P (2007), Assessments of efforts over the last three years to address HAI in poultry, reducing risk to humans, and pandemic preparedness. Workshop Paper Technical workshop on highly pathogenic avian influenza and human H5N1 infection Rome, 27-29 June 2007. <http://www.fao.org/avianflu/en/conferences/june2007/documents/3.3a.pdf>
- ⁵³ European Centre for Disease Prevention and Control: Technical report on pandemic influenza preparedness in the European Union (January 2007) www.ecdc.eu.int/pdf/pandemic_preparedness.pdf
- ⁵⁴ Coker, R, Ortu, G and Mounier-Jack, S (2007 – released through GTZ), Pandemic Influenza Preparedness in the African continent: analysis of national strategic plans’ Africa is a profound challenge for an already distressed region: analysis of national preparedness plans.
- ⁵⁵ Potential data bias since this includes all plans, not just pandemic preparedness plans.
- ⁵⁶ Coker, R (2006), Pandemic Influenza Preparedness in the Asia-Pacific region: an analysis of selected national plans.
- ⁵⁷ Coker, R (2006), Pandemic Influenza Preparedness in the Asia-Pacific region: an analysis of selected national plans. European Centre for Disease Prevention and Control: Technical report on pandemic influenza preparedness in the European Union (January 2007).
- ⁵⁸ European Centre for Disease Prevention and Control: Technical report on pandemic influenza preparedness in the European Union (January 2007)
- ⁵⁹ Coker, R (2006), How prepared is Europe for Pandemic Influenza? An analysis of National Plans.
- ⁶⁰ Coker, R (2006), How prepared is Europe for Pandemic Influenza? An analysis of National Plans
- ⁶¹ Coker R and Mounier-Jack S. Pandemic influenza preparedness in the Asia-Pacific region: an analysis of selected national plans. London School of Hygiene and Tropical Medicine 2006.
- ⁶² World Health Organization writing group. Non-pharmaceutical Interventions for Pandemic Influenza, National Community Measures. Emerging Infectious Diseases 2006.
- ⁶³ Coker, R (2006), How prepared is Europe for Pandemic Influenza? An analysis of National Plans.
- ⁶⁴ Coker R and Mounier-Jack S. Pandemic influenza preparedness in the Asia-Pacific region: an analysis of selected national plans. London School of Hygiene and Tropical Medicine 2006
- ⁶⁵ <http://www.pandemicflu.gov/plan/community/mitigation.html>
- ⁶⁶ Uscher-Pines, L et al (2007) Planning for an Influenza Pandemic. Social Justice and Disadvantaged Groups.
- ⁶⁷ http://www.who.int/ethics/influenza_project/en/
- ⁶⁸ Coker, R (2006), How prepared is Europe for Pandemic Influenza? An analysis of National Plans. (p2)
- ⁶⁹ European Centre for Disease Prevention and Control: Technical report on pandemic influenza preparedness in the European Union (January 2007)
- ⁷⁰ Mercer Human Resource Consulting: Avian Flu Pandemic Preparedness Survey Report Spring 2007. <http://www.mercerhr.com/avianflu>
- ⁷¹ WHO and UNICEF. Summary and recommendations. Informal discussion on behavioural interventions for the next influenza pandemic. Bangkok, 12 -14 December 2006. http://www.unicef.org/avianflu/files/WHO_UNICEF_API_Mtg_Bangkok_Dec_06.pdf
- ⁷² UNSIC Survey data Q40 and Q41
- ⁷³ UNSIC Survey data Q42
- ⁷⁴ Chitnis, K and Mansor, O (2007). Role of Communication in Avian/ Pandemic Influenza Program. Workshop Paper Technical workshop on highly pathogenic avian influenza and human H5N1 infection Rome, 27-29 June 2007. <http://www.fao.org/docs/eims/upload//229374/ah659e.pdf>
- ⁷⁵ Chitnis, K and Mansor, O (2007). Role of Communication in Avian/ Pandemic Influenza Program. Workshop Paper Technical workshop on highly pathogenic avian influenza and human H5N1 infection Rome, 27-29 June 2007. <http://www.fao.org/docs/eims/upload//229374/ah659e.pdf>
- ⁷⁶ Information provided by UNICEF.
- ⁷⁷ WHO and UNICEF. Summary and recommendations. Informal discussion on behavioural interventions for the next influenza pandemic. Bangkok, 12 -14 December 2006. http://www.unicef.org/avianflu/files/WHO_UNICEF_API_Mtg_Bangkok_Dec_06.pdf
- ⁷⁸ The World Bank has estimated a severe influenza pandemic could cost the global economy up to about 4.8 percent of world gross domestic product - around \$2 trillion of a world GDP of \$40 trillion; see “Evaluating the Economic Consequences of Avian Influenza,” by Andrew Burns, Dominique van der Mensbrugge, Hans Timmer, June 2006, available at www.worldbank.org/avianflu.