

Briefing paper commissioned by Cabinet Office

UK cross-government international strategy on human pandemic and avian influenza

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This briefing paper aims at providing a background analysis of the global response to avian and human pandemic influenza and to identify gaps in response, as well as providing an analysis of strengths, weaknesses, opportunities and threats of the current global response. It presents a number of potential options for the UK strategy in supporting global preparedness and response to avian pandemic influenza in the context of the outlined analytical framework.

Strategic Context

UNSIC assessed that the risk of a global pandemic was similar in 2007 to what it was in 2005. We do not know which influenza strain will cause a future pandemic but H5N1 could be potentially the strain for the next influenza pandemic. To date 67 countries have reported Avian Influenza (AI) H5N1 outbreaks and the virus is now considered enzootic in 6 countries. A total of 368 human cases have occurred since 2003 with 234 deaths in 14 countries as of 27 February 2008. There is currently no or very limited human to human transmission, corresponding to WHO phase 3. However, the virus continues to evolve, mutate and poses a challenge to global public health, as evidence has shown that H5N1 viruses are proving more durable and infectious. See [Figure 1](#).¹

1. Global response to human pandemic and avian influenza

1.1 International strategy framework

The coordinated global response, outlined by the World Bank in 2005, was articulated around the three following priorities.²

1. Preventing the next human influenza pandemic by controlling H5N1 virus in birds and improving surveillance;
2. Containing the human influenza pandemic by rapid detection, care of human cases, and preventing human to human transmission of the pathogen;
3. Preparing to respond rapidly in the event of a pandemic to mitigate its social, economic, and health impacts.

The coordinated global response identified the need for a strong multisectoral approach and recognized that individual countries' responses were a key component of the global response. Whilst initially concentrating on short term (3 year) needs and gaps analyses, the initial coordinated response also highlighted at the time that a balance had to be struck between short and longer term actions.²

The UNSIC/WB international strategy to prepare and respond to human pandemic and avian influenza is wide ranging and promotes action at international, regional and national levels. The following themes are addressed through the coordination of the UN with various agencies supporting efforts to differing degrees (agencies playing a dominant role are bracketed):

1. Animal Health and Bio-security (FAO, OIE)
2. Sustaining Livelihoods (FAO)
3. Safeguarding Human Health (WHO)
4. Coordination of National, Regional and International Stakeholders (UNDP)
5. Communication; Public Information and Support for Behaviour Change (UNICEF)
6. Continuity under Pandemic Conditions (OCHA)
7. Humanitarian Common Services (WFP)

Key intergovernmental organizations have also spelt out their own global strategy to address an influenza pandemic:

- The WHO global strategy targeted at safeguarding human health involves:
 - reducing human exposure;
 - strengthening early warning systems;
 - building capacity to cope with a pandemic;
 - intensifying rapid containment operations; and
 - coordinating research and development efforts to help accelerate the development and expand the production of human influenza vaccine.³
- The FAO/OIE global strategy aims to minimize the global threat and risks of influenza in humans and domestic poultry through progressive control of highly pathogenic avian influenza (HPAI), particularly H5N1.⁴

UNSIIC is the coordinating body for the UN agencies' response to human pandemic and avian influenza. UNSIIC notes that the high number of actors involved at national, regional and global levels in the response to avian influenza and pandemic preparedness leads to complexity and raises many coordination challenges. The recent progress report of UNSIIC/WB notes in several instances that there is a need to better integrate activities of international stakeholders, notably of UN agencies.¹

An analysis of the financial situation regarding funds spent through international organizations shows that 13 main international organizations have received funds for human pandemic and avian influenza preparedness. Among those FAO and WHO rank highest, whilst other agencies have received more limited funding, typically <\$10 million. In 2006/2007, WHO received some \$86 million (out of \$99 million requested), a recognition of the seriousness that member states take of the threat. Disbursement rates of the WHO have been good with all funds disbursed. For FAO, the situation is less positive with \$205 million requested, \$137 million received and only \$71 million disbursed. It is not clear why FAO funds disbursement rate is not higher.⁵

For 2008, funding gaps identified by agencies remain substantial with WHO requesting \$90 million and \$127 million for FAO.⁵

1.2 Assessment of progress

In December 2007, UNSIC/WB issued the third progress report on ‘Response to avian influenza and state of pandemic readiness’.¹

The assessment of progress outlined the following conclusions:

- Countries report improved capacity to respond to Highly Pathogenic Avian Influenza (HPAI) infection (more rapid and more effective)
- Veterinary capacity in many countries remains insufficient, notably in Africa
- Insufficient coordination between animal and human health surveillance and response networks within most regions
- Evidence indicates an improvement in human influenza virus diagnostic and surveillance capacity globally. However, capacity varies significantly between countries
- Over 90% of countries report that they have developed pandemic preparedness plans
- National preparedness for a pandemic responses is patchy
- Few countries have (a) sufficiently tested their plans, (b) included wider social and economic impacts and planning for non-health essential services or (c) few have integrated pandemic planning into national disaster management plan
- 73% of countries have implemented communication strategies to create awareness around the threat posed by HPAI H5N1: the impact varies as awareness does not always translate into behaviour change

1.3 Analysis of international and bilateral strategies

1.3.1 A rapid analysis of expenditures by various national and international agencies other than banks shows that the rate of commitment is very high (97%).¹ For disbursements, the rate is lower with 74% of committed funds disbursed if banks are excluded and 61% if included. International banks largely provide loans rather than grants and loans tend to be undersubscribed and disbursement rates for loans low. For example, only 9% of the World Bank committed funds had been disbursed at the end of 2007.¹ See [Table 1](#)

1.3.2 The percentage of funds provided directly to countries amounts to a third of disbursed funds.², However, it must be noted that a portion of the funds allocated by donors to international agencies such as the WHO are partly redirected towards WHO regional and country offices, indirectly benefiting recipient countries. WHO estimated in 2006 that 77% of total funds had been allocated to regional and country offices.⁶ The ‘Other’ category rates quite high with \$220 million disbursed.³

1.3.3 An analysis of countries that have been affected by human cases of H5N1 (presented in [Table 2](#)) shows that overall funds received by these countries represent a relatively small proportion of the overall funding. This does not take into account investments made by national governments of these countries which may be substantial or funds that have transited through WHO and FAO.

1.3.4 Strategic choices of donors differ, reflecting donors’ priorities and financial mechanisms and opportunistic choices to fill critical gaps. Countries such as the US provide significant funds to

¹ World bank, Asian Development Bank and African Bank

² Including AHI facilities but excluding funds provided through WHO to countries

³ Includes primarily R&D and in kind donations of non-pharmaceutical stockpiles

recipient countries whilst others such as Canada provide most of their funds to international organizations. Australia favours bilateral and regional support, mostly in South-East Asia. Japan splits funds between international organizations, regional bodies and Research and Development. The EC favours country support but maintains a balance between international, regional and R&D priorities. See [Figure 2 and 3](#)

1.3.5 Of note the AHI financial facility has been funded by a limited number of donors, including Australia, the UK and, to a large extent, the European Commission. An evaluation of the work of the AHI facility might be advisable as it is the main mechanism for the UK to support particular countries.

1.3.6 UK investment and disbursement profile

The WB reports that the UK has provided 50% of its budget to international organizations, and more than 40% to research and development or capacity building of UK surveillance infrastructure. The UK spent \$13 million to support country capacity building through the Avian and Human Influenza AHI facility that is administered by the World Bank. According to the WB, the UK had disbursed 56% of its committed funds of \$51.4 million at end 2007, reflecting its strategy of spreading disbursements over a number of years.¹

Specific commitments by DFID have included contributions to programmes run by the WHO, FAO, and the Red Cross, together with technical support (worth £1.3 million) to UNSIC, OCHA, and the OIE. In addition, DFID has redirected its bilateral programmes to focus on animal and influenza projects in China, Ethiopia, Kenya, Malawi, Nigeria and Uganda by supporting national programmes devised by WHO and FAO. DFID is one of the major donors to the AHI facility, which is about the only mechanism that can invest in planning in sub-Saharan Africa, where there is still poor capacity.⁷

1.4 A changing context and the New Delhi Roadmap

The World Bank and UNSIC recognize that interest in supporting influenza activities is waning within the international community and with bilaterals, although the actual risk assessment of a pandemic has not changed. Their recent report highlights that in addition to short term responses, including early detection and containment, a medium to long term strategy is now needed to ensure a sustainable global response to pandemic. **The document redirects the response strategy towards what is in effect a more generic capacity-building, that will ensure that control efforts regarding influenza pandemic embedded in public health and health systems, rather than treated as a new vertical priority programme.**

The New Delhi conference that took place in December 2007 highlighted new challenges and proposed a road map for 2008 that outlined a template aimed at addressing key fundamentals in responding to the threat of human pandemic and avian influenza by the end of 2008.

Here we outline the key themes and draw out some specific objectives identified;

1. Building commitments
 - Establishment of inter-ministerial oversight and coordination mechanism
2. Assessments
 - Assessment of needs in animal and health sectors
 - Identify priority areas for attention
 - Identify resource gaps
 - Ensure legislation fit for purpose
3. Strengthen surveillance
 - Effective animal disease surveillance systems
 - Intensive action in the event of entrenched H5N1
 - Active surveillance of early human cases of influenza-like illness and laboratory confirmation
 - Protocols for sharing information
4. Effective response
 - Operational plans for
 - Control AI
 - Rapid containment of human cases
 - Mitigation
 - Early resumption of livelihoods
 - Communication
 - Multisectoral approach to pandemic preparedness
 - Tested plans
5. Bio-security and livestock
6. Ensure human health security
 - Established protocols for pandemic containment
 - Hospitals prepared
 - Communities prepared to implement non-pharmaceutical interventions
7. Coordination
 - Pandemic preparedness plans incorporated into national disaster management structures
 - Established platforms for dialogue between government, civil society and private sector
8. Communication
 - Communications programmes should address
 - Awareness about livestock and dangers
 - Actions to be taken if poultry outbreaks
 - Guide actions in event of pandemic in humans

1.5 Challenges to sustainable global influenza pandemic control

The WB/UNSIC third progress report identifies important challenges to sustain preparation efforts towards an influenza pandemic.¹ These include the need to expand from a short term focused approach towards a medium and long term strategy, while continuing to provide effective response

in regions where the virus is entrenched. The report also outlines the need to continue strengthening the surveillance and detection capacity of countries in order to ensure that the IHR 2005 can be implemented effectively. Finally the report highlights the need to improve containment and response capacity, while fostering a better integration in disaster management structures.

In order to focus the UK's strategic opportunities, and drawing upon recent analyses of global preparedness and progress, we have conducted a summary SWOT analysis.

SWOT analysis of global response to AHI

strengths	weaknesses
<p>The global response and financial commitments have been significant since 2005</p> <p>Pandemic response has enabled the development of multi-layered collaboration, at international, regional and country levels</p> <p>International surveillance, early detection and investigation of H5N1 outbreaks through GLEWS and GOARN have been tested and strengthened. Joint surveillance and detection by international organizations such as WHO, FAO and OIE has been strengthened</p> <p>Reporting intervals for AI and HI have decreased</p> <p>Improvement in human influenza virus diagnostic and surveillance capacity have occurred</p> <p>Improved capacity reported by countries to respond to HPAI</p> <p>Improved capacity to conduct investigations and increased access to equipment and stockpiles</p> <p>Regional preparations for containment responses have been strengthened,</p> <p>Most countries have developed a multisectoral pandemic preparedness strategic plans</p>	<p>Veterinary capacity in countries remains inadequate, notably in poorer countries</p> <p>Weakness in bio-security, especially in poorer countries persists</p> <p>Maintenance of livelihoods is not emphasized sufficiently and limitations of compensation provisions has deleterious consequences</p> <p>Insufficient coordination between animal and human health surveillance exists</p> <p>Human diagnostic and surveillance capacity is lacking in some countries (notably Africa). Need for training of laboratory staff</p> <p>Lack of resources to prepare health care systems in many lower resource countries</p> <p>Legislations and regulations for animal and human influenza control not fit for purpose, notably regarding compensation policies</p> <p>Communication does not always translate in terms of behaviour changes at country level</p> <p>Many preparedness plans prepared by countries are not operational and have not been tested</p> <p>A global response to an outbreak has not been tested</p>

<p>The number of countries that have tested their plan has increased in recent years</p> <p>A large number of countries have implemented a communication strategy to raise awareness of the threat</p>	<p>Many plans are not integrated within disaster management structures</p> <p>Preparedness of non health sectors are inadequate, notably in regards to essential services notably in relation to food security.</p> <p>Limited financial commitment/investment by international community in some countries with or at high risk for H5N1</p> <p>Financial gap identified in Africa and in Asia⁸</p> <p>Lack of a systematized research agenda</p> <p>Lack of evaluations of preparedness and response policy, notably in areas of high risk for avian influenza</p> <p>Lack of evaluations of operational capacity</p> <p>Lack of epidemiological research including a H5N1 human case-control study</p>
<p>opportunities</p>	<p>threats</p>
<p>Investment in AI has wider benefits beyond AI:</p> <ul style="list-style-type: none"> • Strengthening of implementation of IHR and Integrated Disease Surveillance and Response (IDSR) systems • Develops generic laboratory capacity • Health systems strengthening • Generic disaster preparedness • Implementation and testing of the early containment protocol <p>Many country assessments produced by multilateral agencies</p>	<p>H5N1 remains enzootic in 6 countries</p> <p>The virus is spreading to new countries and mutating</p> <p>Antiviral resistance increasing?</p> <p>Waning interest of the global community for H5N1 threat and decreasing financial commitments</p> <p>Operational and logistical issues remain for a successful containment of outbreaks</p>

<p>outline specific gaps to be addressed (<i>see AnnexB</i>)</p> <p>Research and development. Few truly systematic research strategies have been developed (see below) (Many focus on narrow bio-medical developments or are ad-hoc lists apparently based upon intellectually interesting disciplinary interests rather than strategically defined purpose) Opportunities exist to develop the evidence base of policies</p> <p>Collaboration. Regional networks developed allow best practices to be exchanged between countries, notably those which have successfully controlled H5N1. Drawing from these examples in other regions offers potential benefits</p> <p>Focus resources based on risk assessments (H5N1 prevalence, response capacity etc)</p>	<p>In non affected countries, H5N1 not perceived as a major threat in comparison to other health issues</p> <p>Lack of medium-long term planning in the international community</p> <p>Multiplicity of donors and processes of allocation leading in inefficient allocation and fragmentation of resources and coordination inefficiency at country level</p> <p>Lack of collaboration by some affected countries in surveillance, response efforts, and virus sharing</p>
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One area that, though there is considerable effort and resources being invested in globally, appears to lack strategic focus is the research agenda to support effective policy. The table below illustrates a schema representing early thoughts on a systematic research strategy for SE Asia, for example, and outlines themes that might demand attention, the audience for such research and the impact. This was developed for Dr Nabarro by one of the authors and during the course of this work a review of existing research strategies failed to highlight a systematic approach to addressing policy-makers needs in the region. Similar challenges may be present in other regions of the world.

DRAFT MODEL STRATEGIC HUMAN PANDEMIC INFLUENZA RESEARCH FRAMEWORK FOR MEKONG BASIN COUNTRY (Cambodia, China [Yunnan], Laos, Myanmar, Thailand, Vietnam)						
Illustrative Theme/Discipline	Funder	Principle audience for research (multilateral, bilateral, national policy makers, academic, implementers etc)	Urgency	Likely timeline for meaningful, policy-relevant results	Likely impact (Public health, Economic, Security)	Geographic focus
social, individual, institutional behaviour						
individual (KAP) etc	UNICEF, WHO					SE Asia/global
epidemiology	FAO, WHO					SE Asia
basic science	MRC, NIH, EC					Global
drug development	Drug manufacturers					Global
vaccine development	EC, NIH, vaccine manufacturers					Global
policy process analysis	IDRC					SE Asia
legal studies	EC, Wellcome Trust					EU/UK
economic analyses	WB, FAO, IFPRI, EC					SE Asia/Global
health systems	EC, Rockefeller					SE Asia
surveillance development/informatics	Rockefeller, Google					SE Asia
political science						
ecology						
clinical	WHO					SE Asia
operational capacity and resource needs mapping	Rockefeller, EC					SE Asia

2. Current UK international influenza strategy

2.1. UK international influenza strategy

The UK international strategy on avian and pandemic influenza issued in 2006 outlined 5 objectives:

- i. To support international collaboration in tackling the disease [highly pathogenic avian influenza] and its underlying causes and conditions through building a strong and effective multilateral system with a clear structure, strong expertise; transparency and accountability.
- ii. In terms of near-term priorities, to support efforts to build rapid response capabilities, especially to target areas where there are good prospects of containing and eradicating avian influenza outbreaks; and to build better surveillance systems to allow rapid reporting and alerting.
- iii. To support efforts across the medium term which help to build capacity in both animal husbandry and public health in potentially affected countries and regions.
- iv. To develop a better understanding of the international position on aid commitments, as a contribution to efforts to stimulate the commitment of expenditure by donors and the distribution of funds to areas with the highest immediate need.
- v. In all this to ensure flexibility in the UK's approach, including the commitment of funds, to reflect our inability to predict how the avian and human influenza threat will evolve and associated response priorities.

A review of the strategy initiated in 2007 by the Cabinet Office raises a number of issues that are worth highlighting:

1. What is the marginal impact and added value of UK specific contributions? Is it measurable?
2. An acknowledgement that a medium term to long term strategy (road map) must be developed.
3. The initial 5 objectives could be maintained perhaps with marginal adjustment.
4. Governance options related to appropriate mechanisms for effective coordination are discussed.

This review prompted the commissioning of this briefing paper to reflect on international strategy and highlight strategic options for consideration regarding the UK's ongoing commitment to supporting global efforts in the field of avian and human pandemic influenza.

2.2 Potential options for UK international AHI strategy

As noted above, the challenge is now to sustain a long term effort to tackle H5N1 and better prepare the world for a possible influenza pandemic, in a context where interest in the subject has been waning both at national and international levels over the past year. Hence, the reluctance of many donors in the 2007 New Delhi conference to maintain or increase pledges.

To promote a more sustainable approach, a revised UK strategy could promote actions that are reinforcing current and broader international priorities, while supporting countries to build up capacity.

We propose a number of strategic options. How did we arrive at these draft options for the UK government to consider? We reflected on specific issues raised by the New Delhi road map and cross-referenced these with the results of a SWOT analysis of the current global position reflected in recent progress reports including most notably the recent UNSIC/WB reports and expert knowledge and recognise that UK funding commitments are likely to continue to be principally through International Organizations.

Possible options:

1. Support operational capacity development linked to strategic planning in countries at greatest risk of being at the epicentre of pandemic influenza, including for developing containment response. Support ongoing audit of strategic and operational preparedness.
2. Support countries' implementation of IHR 2005, including the strengthening of information system capacity at national level. WHO is currently developing a strategic plan for implementation of IHR, including avian and human pandemic threat, with activities to strengthen existed integrated capacity for disease surveillance and response.⁵
3. Focus on supporting generic health threats through capacity building of animal and public health systems. Promotion of Integrated Disease Surveillance and Response (IDSR) systems in lower resources countries, notably in Africa as promoted by WHO, to strengthen generic surveillance as well as pandemic surveillance (only functional in a handful of 46 countries that have adopted it)⁹.
4. The pandemic strategy could reinforce general national preparedness systems through the strengthening of national disaster management response (only an estimated 23% of countries have done so).¹
5. Promotion of programmes that strengthen regional networks to focus on interdependence of nations in the prevention and control of communicable diseases, to encourage cross border planning and to support expertise transfer between countries. The Mekong Basin Delta Surveillance (MBDS) networks is one such effective network. Encourage cross learning between regions, for example drawing upon the work of MBDS.
6. Focus on reinforcing international control of avian and human influenza through selected intergovernmental organizations (promotes common good and global governance, address cross border issues, foster harmonization and dissemination of good practices- including containment strategies-, promotes generic preparedness and control of infectious diseases)
7. Promote UK support of countries where DFID is already active in strengthening health systems through other programmes, to maximise weight of interventions/leverage on health systems change.

8. Research and development. Generate and support a strategically focused research strategy to address short, mid and long term policy goals, define a research timeframe, and geographic focus and purpose, and determine likely beneficiaries based upon potential public health, economic and security impact.

Rapid analysis of options:

Options	Strengths	Weaknesses	Opportunities	Threats
1 Support countries at greatest risk of being at the epicentre of pandemic influenza	Can build on existing already successful programmes and strengthen specific national gaps Directly related to high risk assessment Foster human/animal interface	Absorption capacity weak within countries. Potentially, given geographic focus, incoherent with wider UK development policy strategies	Can build in regional component and transfer of best practices May use opportunities to strengthen and build containment response Use existing assessment of gaps (Annex B)	Perceived reduced risk
2 Implementation of IHR 2005 and strengthen capacity for disease surveillance and response	Link with WHO global programme on implementation of IHR Strengthen surveillance generic capacity Focus on legal aspect of pandemic and potential issues of inter-operability	Long term endeavour vs. need to respond to pandemic in the medium term?	Can build programmes with a long term view Focus on priority countries	Lack of long term core funds to strengthen generic capacity
3 Integrated Disease Surveillance and Response	Pertinent for Africa and builds on UK developmental strategy geographically. Potential synergy with existing capacity development programmes Focus on animal /human interface	Only relevant for some countries	Few donors are involved in Africa, so wide gaps Use existing assessment of gaps (Annex B)	Avian Influenza might not be a high priority for these countries
4 Strengthening of national disaster management response	Generic, long term sustainability of work Can reinforce preparation of essential services Maintenance of livelihood and food-security can be addressed Can focus on health systems strengthening Can address legal framework	Need for model and expertise, that might not be available in all settings	Need to identify target country/region in light of existing resources	Likely to be a low priority for some poorest governments
5 Promotion of programmes that strengthen regional networks	Build on lessons learnt in countries Allow to strengthen, to better coordinate and to test regional response Can focus on legal framework Increase inter-operability of plans Allow better coordination of various IGOs in surveillance and response	Governance issue: who leads?	Potential for UK to influence in range of regions and bring greater strategic coherence Potential for regions such as Africa to learn from lessons of other regions such as SE Asia	

<p>6 Reinforce international control of avian and human influenza through selected IGOs</p>	<p>Build coherent and consistent capacity at global level but also allow IGOs to implement surveillance and response models at regional and country level Support public good rather than donor specific projects Support coordination of various IGOs in global response Can promote and test generic response such as containment response Can test global response to outbreak Can reinforce global and regional humanitarian response</p>	<p>Difficult to attribute impact of support Impact should be measurable at country level</p>	<p>Can build on previous success</p>	<p>Need more specific evaluation of results Coordination of UN agencies remains a substantial challenge.</p>
<p>7 Promote UK support of countries where DFID is already active</p>	<p>Build on other programmes developed by DFID and search for synergy</p>	<p>Countries might not be the most relevant for AHI</p>	<p>Strengthening influenza preparedness through generic preparedness planning will strengthen health system capacity</p>	<p>Many countries at minimal risk of being at epicentre of pandemic influenza. Containment unlikely to be an issue. Mitigation likely to be a major challenge and capacity to effectively mitigate in event of human pandemic probably unfeasible.</p>
<p>8 Research and development</p>	<p>Build coordinated research agenda through mapping of ongoing research in order to respond to policy imperatives and avoid duplication</p>	<p>Much research is piecemeal and strategies of funding bodies difficult to map and changeable</p>	<p>UK is research active and has strength in strategic-thinking on research. Duplication avoided in UK funding.</p>	

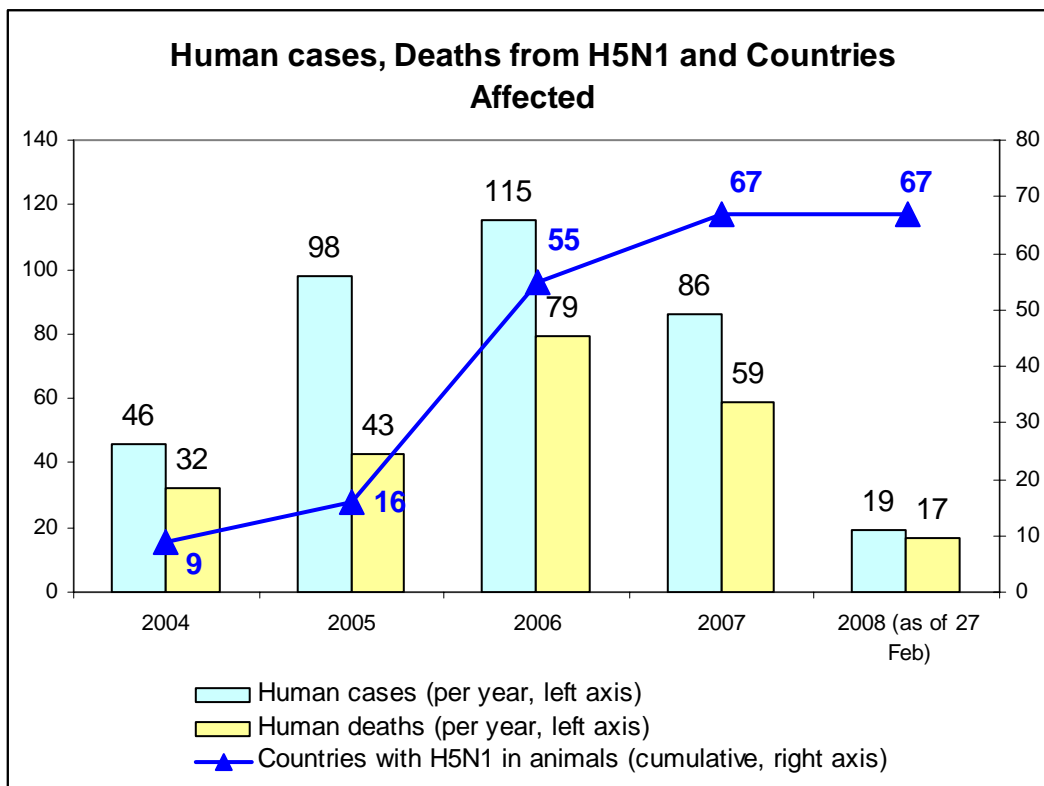
Process:

The strategy should be accompanied by an operational guide for implementation that would include a simple logframe, specifying expected outcomes, activities, implementer(s), UK contributions and SMART indicators of success.

Responsibility of various departments and agencies in the UK should be defined clearly and a common monitoring process should be set up. A specific body in charge of monitoring and evaluation should be identified and report to all UK agencies.

Annex A.

Figure 1. Human cases, Deaths from H5N1 and Countries Affected (adapted from UNSIC)



Source: WHO/OIE

Table 1. Resources provided at global and UK levels

Dec 2006, Bamako (cumulative, \$ millions)	Pledged	Committed at end 2007	Disbursed at end 2007
Total funds	2309	1678	1017
% pledged		73%	44%
% committed			61%
Total funds without Banks	1326	1287	955
% pledged		97%	72%
% committed			74%
UK	55	51	29
% pledged		94%	53%
% committed			56%

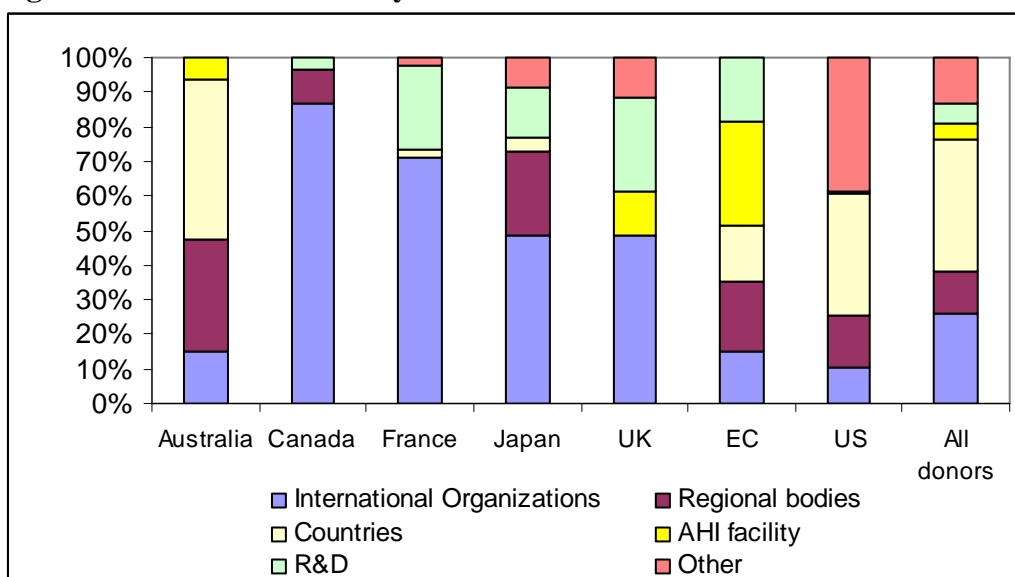
Source WB/UNSIC

Table 2. Funds committed and disbursed by human H5N1 affected countries

	Total committed	Total disbursed	% of total disbursed for countries	% of total funds disbursed	Total cases	Total deaths
Azerbaijan	6.69	1.2	0%	0%	8	5
Cambodia	28	13.32	5%	1%	7	7
China	10.82	7.63	3%	1%	30	20
Djibouti	3.14	0.73	0%	0%	1	0
Egypt	14.63	7	3%	1%	43	19
Indonesia	96.6	54.51	20%	5%	129	105
Iraq	1.65	1.32	0%	0%	3	2
Lao People's Democratic Republic	24.68	11.5	4%	1%	2	2
Myanmar	3.42	0.8	0%	0%	1	0
Nigeria	54.27	24.8	9%	2%	1	1
Pakistan	0.83	0.83	0%	0%	1	1
Thailand	8.84	8.33	3%	1%	25	17
Turkey	46.68	12.16	5%	1%	12	4
Viet Nam	108.07	38.73	14%	4%	105	51
Total	408.32	182.86	68%	18%	368	234

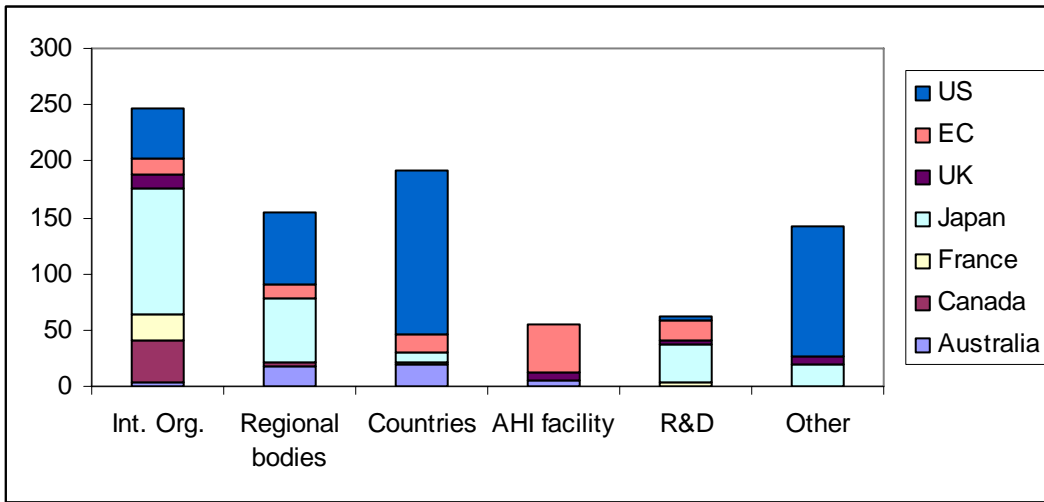
Source WB/UNSCIC

Figure 2. Funds committed by bilateral donors at end 2007



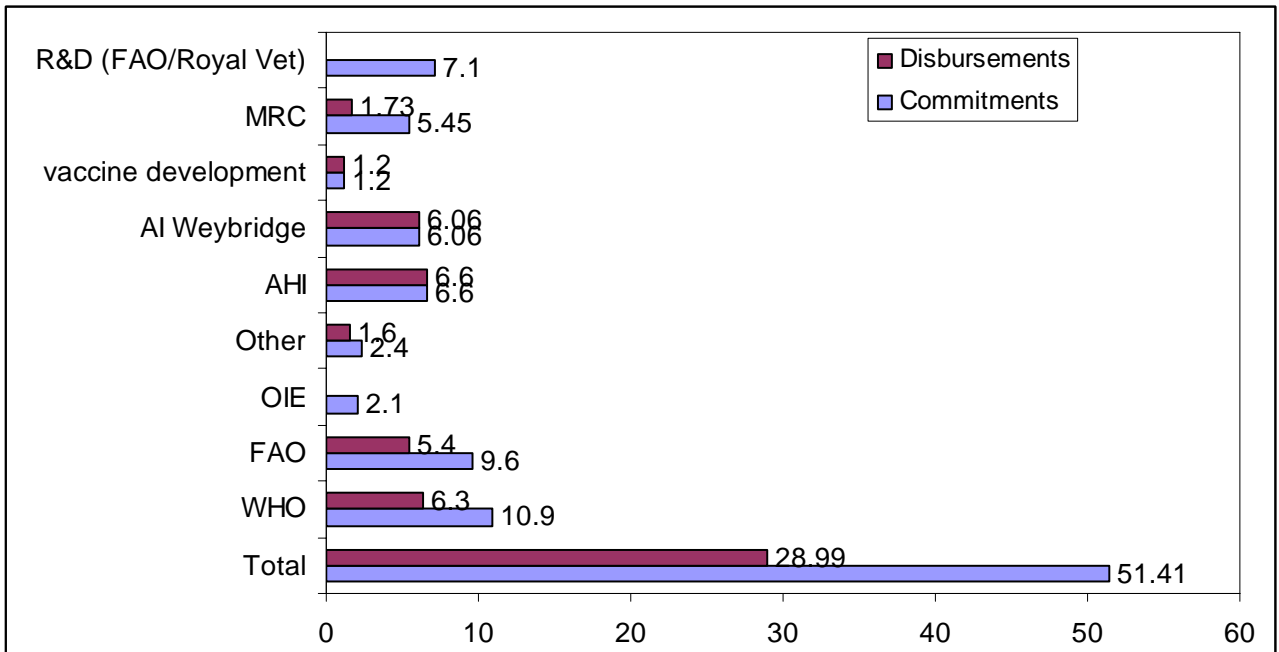
Source WB/UNSCIC

Figure 3. Contribution by donor and recipients. Funds disbursed by end 2007 (\$ million)



Source WB/UNSCIC

Figure 4. UK commitments and disbursements up to 2007, in \$ million



Source WB/UNSCIC

Annex B

A number of country assessments have been carried by international agencies and should enable donors such as the UK to better target their investment in specific countries. Such investment should be linked to an overarching strategic framework that acknowledges short and longer term risk.

- OIE PVS assessments (46 assessment carried out)⁵
- Rapid assessments (RA) in Africa (6 done to date)
- INAP assessments (Integrated National Action Program)⁵
- Assessment missions conducted by WHO in 30 countries (health infrastructures, resources availability, clinical management, containment measures, laboratories capacity)⁵
- Rapid assessment of factors leading to effective coordination by UNSIC (8 countries with H5N1 cases)⁵

Glossary

AHI	Avian Human Influenza (facility)
AI	Avian Influenza
FAO	Food and Agriculture Organization of the United Nations
DFID	UK Department for International Development
EC	European Commission
GLEWS	Global Early Warning System for Major Animal Diseases, including Zoonoses
GOARN	Global Outbreak Alert and Response Network
HI	Human influenza
HPAI	Highly pathogenic Avian Influenza
IDRC	International Development Research Centre
IDSR	Integrated Disease Surveillance and Response
IFPRI	The International Food Policy Research Institute
INAP	Integrated National Action Programme
IGOs	International Intergovernmental Organizations
IHR	International Health Regulations
KAP	Knowledge, Attitude and Practice
MBDS	Mekong Basin Delta Surveillance
MRC	Medical Research Council
NIH	National Institute of Health
OCHA	Office for the Coordination of Humanitarian Affairs
OIE	World organisation for animal health
PVS	Performance, Vision and Strategy
RA	Rapid Assessment
R&D	Research and Development
SE Asia	South East Asia
SMART	Specific, Measurable, Achievable, Relevant, Timebound
UNDP	The United Nations Development Programme
UNICEF	The United Nations Children's Fund
UNSIC	UN System Influenza Coordination
SWOT	Strengths, weaknesses, opportunities and threats
WHO	The World Health Organization
WB	The World Bank
WFP	World Food Programme

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