

*HPAI outbreaks reported in this publication refer to officially confirmed cases only.
The information is compiled from the following sources: World Organisation for Animal Health (OIE), national governments and their ministries, and the European Commission (EC) – these sources are responsible for any errors or omissions.*

Thoughts of FAO on 'One Health'

The number of emerging infectious diseases and pandemic threats at the animal-human interface is increasing. In recent past the world has witnessed the emergence of novel diseases such as Nipah virus in Malaysia, intercontinental spread of Severe Acute Respiratory Syndrome (SARS), Highly Pathogenic Avian Influenza virus H5N1 and Influenza H1N1 (2009). These disease events have heightened worldwide public awareness of the multidimensional linkages between wild animals, livestock production and global public health. Human population pressures and the enhanced mobility of people, climate change, food and agricultural dynamics, and the progressive encroachment of forest and game reserves, are among the more frequently cited global factors amplifying emerging infectious diseases events.

A new approach has been devised to address the multiple factors influencing the emergence of infectious diseases: the 'One Health' approach. It can be best defined as a collaborative, international, cross-sectoral, multidisciplinary mechanism to address threats and reduce risks of detrimental infectious diseases at the animal-human-ecosystem interface. It strategically builds on the lessons learned from, and achievements of, the responses to H5N1 HPAI and H1N1 epizootics. This approach is acknowledged a feasible and viable model to address the multidimensional challenges that are rapidly evolving in a changing world. Disease emergence can no longer be seen in isolation but must now be viewed alongside a continuum of climatic changes, natural resource management, agricultural intensification, land utilisation patterns, trade globalization, and shifting farming, food distribution and marketing systems.



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The current approach to disease prevention and control emphasizes transmission disruption; with early warning, early detection and early response mechanisms targeting also the new pathogens emerging. Whilst critically important, this approach in itself does not address the root causes of disease emergence. The only option to effectively deal with the latter is to tackle the drivers of new disease emergence. Changing the emerging disease dynamics at the driver level with the aim to counter the progressive flare-ups of diseases at the human-animal-environment interface requires reassessment of the global health security strategy, along with renovation of multiple aspects at the technical, social and institutional levels.

First, at the technical level, we confront three sets of drivers corresponding broadly with three sets of disease (re-)emergence. One, globalization, land use and/or climate change are mostly implicated when diseases invade a novel territory or geographic area, often with identical host ecology and involving relatively minor changes in pathogen characteristics. Two, disease emergence is facilitated by the mass rearing of animals as seen during intensification of animal agriculture. The high numbers of animals per farms and per units, and the geographic clustering of industrial production plants provide fertile grounds for pathogens to turn more host-aggressive. In densely populated areas with both commercial pig and poultry production, and traditional smallholder systems, there is often a dynamic transmission of pathogens, enhancing both disease spread and persistence. Three, emergence associated with interspecies jumps of pathogens with pandemic potential. This often concerns wildlife, resulting from human and livestock encroachment of forests and game reserves, exploitation of wildlife for food and recreation, and degradation of rich ecosystems.

Second, at the social level, different stakeholders have different concerns regarding food safety, health, security and wellbeing. Poor people in developing countries are primarily concerned with existing disease burdens, which are considered far more important than pandemic risks. Disease impacts are complex and vary between stakeholders, including disruptions to financial, human, natural, physical and social assets. All of these affect achievement of the UN Millennium Development Goals.

Third, at the institutional level, broadening health management and the creation of safer, more disease-resilient landscapes goes beyond the remit of veterinary and medical services. The extension of efforts towards sustainable agriculture and rural development, environmental stewardship, gender inclusion and socio-economic progress entails involvement of many professionals, requiring a major shift in terms of fostering alliances, partnerships and communication schemes.

The 'One Health' approach aims to restore social and ecological resilience in global health security. It is well known that prevention is better than cure, both in the fight against existing and new emerging diseases. Redressing the current disease burden in humans and attaining global health security is pivotal to achieve sustained economic growth, food security and poverty alleviation. Animal and human diseases represent tremendous economic and social burdens to governments, households and individuals alike. Regrettably, the current global investments to confront these challenges are imbalanced and not proportional to the tectonic weight of the economic and social burdens confronted, with negligible amounts being allocated to better understand disease emergence of animal origin.

We believe that to reverse this trend it is necessary focus on a set of 5 principles:

- **Impact Assessment:** the multidimensional impacts of both old and new human and animal diseases require adequate measurement in terms of costs, globally, and ranked by how these diseases withhold global health security;
- **Drivers:** the core factors influencing disease emergence and pandemic risks await clarification in order to be able to restore responsible, sustainable and safer animal agriculture and associated feed and food supplies;
- **Wildlife:** The emergence of wildlife pathogens as hazards and threats to food safety and public health in general has to be confronted and redressed, at the ecosystem level, as a component of natural resource management;
- **Hazard Analysis Critical Control Points (HACCP):** These critical control points need to be established to enhance hygiene and biosecurity routines and practices in food value chains and agro-ecological landscape levels;
- **Partnerships:** Alliances and associated communication efforts are to be pursued, adequate to a broadening of the set of global health security measures, with strengthened collaborations between medical, veterinary and environmental agencies with the concept of 'One Health' as a shared international public good that directly involves and engages the public at large.

The Food and Agriculture Organization of the United Nations (FAO) based in Rome, Italy, is teaming up with the World Health Organization (WHO) and the World Organisation for Animal Health (OIE) to jointly pursue the 'One Health' approach. Whilst FAO plays a critical role in raising the levels of nutrition, improving agricultural productivity, bettering the lives of rural populations and contributing to the growth of the world economy, there is increasingly recognition that global health and food security form twin objectives.

MOST RECENT H5N1 AI OUTBREAKS 2006-2010

Note: This list has been compiled on the basis of information up to 30 November 2010.

2010

November	Egypt, Japan, Viet Nam
September	Indonesia
June	Bangladesh, Russian Federation
May	China, Israel, Mongolia
April	Cambodia, Lao PDR
March	Bhutan, Bulgaria , China (Hong Kong), Myanmar, Nepal, Romania
January	India

2009

March	Germany
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2008

November	Thailand
September	Togo
July	Nigeria
June	Pakistan
May	Japan, Korea (Republic of), United Kingdom
March	Turkey
February	Switzerland , Ukraine
January	Saudi Arabia

2007

December	Benin, Iran, Poland
October	Afghanistan
August	France
July	Czech Republic
June	Ghana, Malaysia
April	Kuwait
January	Côte d'Ivoire, Hungary

2006

August	Sudan
July	Spain
June	Niger
May	Burkina Faso, Denmark
April	Djibouti, Sweden, West Bank & Gaza Strip
March	Albania, Austria , Azerbaijan, Cameroon, Croatia , Greece , Jordan, Kazakhstan, Serbia, Slovenia
February	Bosnia-Herzegovina , Georgia , Iraq, Italy , Slovakia

Green: areas which never had reported outbreaks in poultry

Sources: World Organisation for Animal Health (OIE), European Commission (EC), FAO and national governments

AT A GLANCE

The latest HPAI outbreaks for the period 1 – 30 November 2010

Note AIDE news publishes reports of **confirmed HPAI cases** using the following sources: OIE, European Commission, FAO and national governments.

AFRICA

EGYPT

A total of 14 H5 HPAI positive cases were reported in 7 governorates during 1 - 30 November 2010 (number of outbreaks in brackets): Beni Suef (2), Dakahlia (2), Gharbia (2), Menoufia (3), Qualioubia (3) Qina (1), Sixth of October (1) Governorates. All of the outbreaks were in household poultry without vaccination records, other than four which were confirmed to be not vaccinated. A total of 481 birds were culled.

ASIA

INDONESIA

The Participatory Disease Surveillance & Response (PDSR) programme implemented through 33 Local Disease Control Centres covers 71,319 villages in 84 percent of Indonesia's 448 districts and municipalities, and in 29 of its 33 provinces. During October 2010, PDSR conducted surveillance in 1,738 villages (2.4 percent). The overall HPAI incidence was 0.9 infected villages per 1,000 villages under surveillance. The overall HPAI incidence during September was 0.7 infected villages per 1,000 villages under surveillance.

Japan

An outbreak of H5N1 HPAI confirmed in a layer farm in Yasugi City, Shimane Prefecture. A total of 30 birds had died out of 20,000 layers and 3,300 chicks by the end of 29 December 2010. Three out of five birds sampled were rapid tested as positive, and a PCR test conducted by the Prefecture Livestock Health Office indicated the presence of H5 subtype. The samples were sent to the National Institute for Animal Health, and a genetic analysis conducted confirmed that the virus isolated from the samples was a virulent type. Further genetic analysis showed that this virus is closely related to the H5N1 HPAI virus isolated from the faeces of wild ducks in Hokkaido Prefecture in October 2010. Yasugi City faces Nakaumi Lake (surface area 86.2 km²) which connects Lake Shinji and the Sea. The Nakaumi Lake area is a known wintering location of wild ducks, geese and Tundra swan (*Cygnus columbianus*).

Viet Nam

Outbreaks of H5N1 HPAI occurred in Nam Dinh and Nghe An Provinces in November according to the Government website. The outbreak in Nghe An Province was in 2 households in a same commune with unvaccinated duck and Muscovy; the outbreaks in Nam Dinh Province were all in ducks in 2 different communes in a same district. The previous outbreak was reported about four months ago, in July 2010 in chickens and Muscovy ducks in the central Gia Lai Province.



SUMMARY OF CONFIRMED HPAI OUTBREAKS (As of 30 November 2010)

Sources: OIE, European Commission (EC), FAO and national governments – WHO for human cases/deaths

Note: H5N1 unless otherwise indicated. Highlighted countries indicate those in which there has been only one officially confirmed H5N1 outbreak or occurrence. Dates of the last outbreak within this year are in bold.

AFRICA	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Benin	7 November 2007	15 December 2007	Domestic poultry	-
Burkina Faso	1 March 2006	20 May 2006	Domestic poultry - wild birds	-
Cameroon	21 February 2006	28 March 2006	Domestic poultry – wild birds	-
Côte d'Ivoire	31 March 2006	31 January 2007	Domestic poultry – wild birds	-
Djibouti	6 April 2006	6 April 2006	Domestic poultry	1 / 0
Egypt	17 February 2006	27 November 2010 Gharbia	Domestic poultry – wild birds – donkeys*	112 / 36
Ghana	14 April 2007	13 June 2007	Domestic poultry	-
Niger	6 February 2006	1 June 2006	Domestic poultry	-
Nigeria	16 January 2006	22 July 2008	Domestic poultry – wild birds	1 / 1
Sudan	25 March 2006	4 August 2006	Domestic poultry	-
Togo	6 June 2007	8 September 2008	Domestic poultry	-

ASIA	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Afghanistan	2 March 2006	2 October 2007	Domestic poultry – wild birds	-
Bangladesh	5 February 2007	19 June 2010	Domestic poultry	1 / 0
Bhutan	18 February 2010	14 March 2010	Domestic poultry	-
Cambodia	12 January 2004	22 April 2010	Domestic poultry – wild birds	10 / 8
China	20 January 2004	9 May 2010 wild birds	Domestic poultry – wild birds	40 / 26
China (Hong Kong SAR)	19 January 2004	26 March 2010	Domestic poultry – Wild birds	-
India	27 January 2006	30 January 2010	Domestic poultry	-
Indonesia	2 February 2004	October 2010	Domestic poultry – pigs (with no clinical signs)	170/ 141
Japan	28 December 2003	14 October 2010 (virus found in wild duck dropping)	Domestic poultry – wild birds – raccoons (with no clinical signs)	-
Kazakhstan	22 July 2005	10 March 2006	Domestic poultry – wild birds	-
Korea, Rep. of	10 December 2003	12 May 2008	Domestic poultry – wild birds	-
Lao PDR	15 January 2004	27 April 2010	Domestic poultry	2 / 2
Malaysia	7 August 2004	2 June 2007	Domestic poultry – wild birds	-
Mongolia	10 August 2005	3 May 2010	Wild birds	-
Myanmar	8 March 2006	1 March 2010	Domestic poultry	1 / 0
Nepal	8 January 2009	8 March 2010	Domestic poultry	-
Pakistan	23 February 2006	17 June 2008	Domestic poultry – wild birds	3 / 1
Thailand	23 January 2004	10 November 2008	Domestic poultry – wild birds – tiger	25 / 17
Viet Nam	9 January 2004	18 July 2010	Domestic poultry	119/ 59

NEAR EAST	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Iran	2 February 2006	10 December 2007	Domestic poultry - wild birds	-
Iraq	18 January 2006	1 February 2006	Domestic poultry – wild birds	3 / 2
Israel	16 March 2006	2 May 2010	Domestic poultry – Emu (zoo)	-
Jordan	23 March 2006	23 March 2006	Domestic poultry	-
Kuwait	23 February 2007	20 April 2007	Domestic poultry – wild birds – zoo birds	-
Saudi Arabia	12 March 2007	29 January 2008	Domestic poultry	-
West Bank & Gaza Strip	21 March 2006	2 April 2006	Domestic poultry	-

* Journal of Biomedical Science : <http://www.jbiomedsci.com/content/17/1/25>

EUROPE	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Albania	16 February 2006	9 March 2006	Domestic poultry	-
Austria	10 February 2006	22 March 2006	Wild birds – cats	-
Azerbaijan	2 February 2006	18 March 2006	Wild birds – domestic poultry – dogs	8 / 5
Bosnia-Herzegovina	16 February 2006	16 February 2006	Wild birds	-
Bulgaria	31 January 2006	29 March 2010	Wild birds	-
Croatia	21 October 2005	24 March 2006	Wild birds	-
Czech Republic	20 March 2006	11 July 2007	Wild birds – domestic poultry	-
Denmark	12 March 2006	22 May 2006	Wild birds – domestic poultry	-
France	17 February 2006	14 August 2007	Wild birds – domestic poultry	-
Georgia	23 February 2006	23 February 2006	Wild birds	-
Germany	8 February 2006	10 January 2009 mallard, wild	Wild birds – domestic poultry – cats – stone marten	-
Greece	30 January 2006	27 March 2006	Wild birds	-
Hungary	4 February 2006	23 January 2007	Wild birds – domestic poultry	-
Italy	1 February 2006	19 February 2006	Wild birds	-
Poland	2 March 2006	22 December 2007	Wild birds – domestic poultry	-
Romania	7 October 2005	27 March 2010	Wild birds – domestic poultry – cat	-
Russian Federation	15 July 2005	5 June 2010 wild birds	Domestic poultry – wild birds	-
Serbia	28 February 2006	16 March 2006	Wild birds – domestic poultry	-
Slovakia	17 February 2006	18 February 2006	Wild birds	-
Slovenia	9 February 2006	25 March 2006	Wild birds	-
Spain	7 July 2006	9 October 2009 (H7)	poultry	-
Sweden	28 February 2006	26 April 2006	Wild birds – domestic poultry - game birds - mink	-
Switzerland	26 February 2006	22 February 2008	Wild birds	-
Turkey	1 October 2005	9 March 2008	Domestic poultry – wild birds	12 / 4
Ukraine	2 December 2005	11 February 2008	Wild birds – domestic poultry – zoo birds	-
United Kingdom	30 March 2006	22 May 2008 (H7N7)	Wild birds – domestic poultry	-

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