



One World, One Health edging onto a global agenda

International community to draw on lessons from bird flu fight



Health at the animal-human-ecosystem interface is today's priority (FAO)

A fresh input of US\$ 350 million to the international fight against highly pathogenic avian influenza (HPAI) made the news when it was announced in Sharm El-Sheikh towards the end of October. Less coverage was given to endorsement of an ambitious new strategy to look at HPAI and other existing and emerging infectious diseases at the points where the animal, human and ecosystem domains meet.

The Sharm El-Sheikh meeting, the sixth in a series of high-level inter-ministerial conferences on avian and pandemic influenza, took place from 24 to 26 October and was attended by 530 participants from over 120 countries and 26 regional and international organizations.

A mix of technical and policy sessions, the conference focused on what is now known about HPAI and what has been achieved and learned since the latest wave of the disease broke out in later 2003 and subsequently spread throughout Asia and into Africa and Europe.

Delegates called for political commitment to and continued investment in strategies, approaches and activities to prevent and control HPAI. They stressed the importance of taking a long-term view of the issue, adopting a socio-economic approach and forging public-private partnerships to help combat HPAI. Communication was identified as a key component to respond to outbreaks before and once they spread.

In the almost five years that have passed since HPAI hit the scene in eastern and southeastern Asia, realisation of the need for close cooperation between the animal and public health sectors in the fight against HPAI and other existing or emerging infectious diseases (EIDs) has been growing steadily.

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Editor: Phil Harris, Senior Communication Officer, ECTAD (Phil.Harris@fao.org)

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Under the banner of *One World, One Health*, FAO, OIE, WHO and UNICEF, together with the World Bank and the UN System Influenza Coordinator (UNSIC), have agreed that a better understanding of the global emergence, spread and impact of EIDs is both urgent and important, and that because of the complexities of novel disease flare-ups, broad multidisciplinary and multisectoral cooperation across the animal-human-ecosystems interface should be put in place.

Presenting a first strategy paper on behalf of all the agencies involved, FAO explained that the thrust of the *One World, One Health* concept is to diminish the risk and minimize the global impact of epidemics and pandemics due to EIDs by enhancing livestock and wildlife disease intelligence, surveillance and emergency response systems at national, regional and international levels, and by supporting them through strong and stable public and animal health services and effective national communication strategies. Priorities will be identified on the basis of known areas of risk ('hotspots') for disease emergence and on research findings that point to new risks.

Delegates to the Sharm El-Sheikh meeting welcomed the approach as a starting point for future action and called for further elaboration of the concept and clear indications of the roles of all "stakeholders" in the process. These stakeholders range from local communities to national governments, technical regional and international organisations, and to finance and development agencies and NGOs.

Expressing great interest in *One World, One Health*, the Canadian government offered to organise a technical meeting in Winnipeg at the beginning of 2009 to continue discussion of the issue. On this basis, the agencies involved in formulation of the *One World, One Health* strategy are expected to decide on the next steps. These include ways of implementing the strategy, costing options and how to ensure that stakeholder "buy-in" to the strategy is as widespread as possible.

Timely implementation will contribute significantly to the overall goal of improving public health, food safety and security, and the livelihoods of poor farming communities, as well as protecting the health of ecosystems.

FAO has started to work with its partners to further develop the *One World, One Health* strategy, to share it with stakeholders particularly at country and regional levels, and to develop clearly defined options for its implementation.

To view or download the strategy paper on *One World, One Health*, [click here](#)

Issues and options in biosecurity for HPAI

There is no technical barrier to biosecurity in theory, but its successful application requires understanding of the structure and problems of the poultry sector. In this context, FAO, OIE and the World Bank have prepared a paper on *Biosecurity for Highly Pathogenic Avian Influenza: Issues and options*, which aims to set biosecurity in the context of the field situation and to propose options for its improvement. The agencies argue that highly pathogenic avian influenza, like any disease spread primarily through human activities, is susceptible to biosecurity control measures along the production and marketing chain. It is this that makes biosecurity such an important tool for the control and eradication of H5N1 HPAI. And, because it is human-mediated, the focus must be on changing the behaviours of people in such a way that the risk of disease transmission is decreased.

To view the paper, [click here](#)



FAO reports on HPAI surveillance in the Sudan

In a report in the latest issue of the *EMPRES Transboundary Animal Disease Bulletin* (No 31, 2008) FAO describes the implementation of and results obtained from participatory disease surveillance (PDS) in backyard systems, commercial farms and wild bird populations in the Sudan up to August 2007. Among others, FAO recommends that more data be collected on the dynamics of the poultry business (importers and domestic brokers), with a focus on the market chain to determine the probable path of the HPAI virus into the country; the extension of PDS activities to all states in Southern Sudan (focusing on those towns that import and trade in poultry, especially those that trade with the Northern Sudan); the intensification of awareness campaigns in all states of Southern Sudan; and further Wild bird surveillance, especially in the northern states.

To view the report, [click here](#)

Emerging diseases a global threat

Experts call for better coordination between animal and public health sectors

The call has gone out for the animal and public health sectors to work more closely together to minimize the ever-present threats of avian influenza and other animal-based diseases passing to humans.

During a meeting in Verona, Italy, from 7 to 9 October, almost 80 leading technical experts in the fields of influenza virology, molecular biology, epidemiology and other scientific fields agreed that while much has been learned about controlling avian influenza in animals and people, and the world is better prepared to confront it, the threats of avian and pandemic influenza (and other zoonotic diseases) remain and better cooperation between the animal and public health sectors is necessary to help reduce them.

The meeting, a joint FAO-OIE-WHO scientific consultation on avian influenza at the human-animal interface (with technical support from IZSVe and OFFLU), agreed that experience with the H5N1-type avian influenza virus at this interface, where millions of birds have died or been culled and more than 250 people have died, can help the global community meet the challenges of future emerging diseases.

There is now recognition of the benefits of rapid response, multidisciplinary teams, global collaboration, strong science and research, integration of reporting and surveillance, sharing information and materials, linking the human and animal health sectors, and respecting cultural and social difference and behaviours, among others.

Participants drew up a short- to medium-term "wish list" of actions for improved prevention and control of disease spread from animals to humans, divided into four main blocks: cooperation and coordination, surveillance and data use, multidisciplinary research into zoonotic risk, and sharing of tools and information.

In general terms, the international scientific community would be well advised to broaden its approach to disease prevention and control by taking a "big picture" approach and looking at the common ground where the animal and human health domains meet, and by studying the "ecology" of emerging zoonoses. However, the specific influenza-related activities in the animal health and public health sectors must continue and be strengthened.

The meeting urged increased coordination and information sharing between animal and public health laboratories to ensure real-time detection of potential pandemic viral strains, greater standardization of diagnostic techniques, and improved comparability and accuracy of results. The improvements would increase the scientific community's ability to make rapid assessments of human and animal influenza risks, including early identification of an emerging pandemic influenza strain.

Recognizing that many infectious diseases in humans have emerged from previously unidentified pathogens in wildlife, participants also recommended finding and using novel approaches to pathogen discovery, adopting new informatics tools, and sharing information openly.

For details of the conclusions of the Verona meeting, [click here](#).

ORGANIZED BY

FAO - OIE - WHO Joint Technical Consultation on
Avian Influenza
at the human-animal interface

Palazzo Verità Poeta, Verona, Italy | 7 - 9 October 2008

The Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE) and the World Health Organization (WHO), with support from the Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) and the EC-funded project FLUTRAIN, have called this technical consultation to:

- identify critical virological characteristics for the emergence of zoonotic and pandemic viruses
- evaluate external factors affecting the evolution and emergence of a pandemic strain, and identify monitoring mechanisms for pandemic strain emergence
- identify likely modes of transmission and exposure sources for zoonotic infection with avian influenza viruses
- maximise outcome of ongoing research and preparedness efforts and identify gaps in knowledge
- identify next steps for further integrated data collection, analysis and research

PRACTICAL INFORMATION
The technical consultation will start at 9:00 am on Tuesday 7 October and end at 16:00 on Thursday 9 October.
The working language will be english only (no translation/interpretation facilities available).
The consultation will take place in the Palazzo Verità Poeta, a magnificent building in the heart of Verona, Italy.

CONTACTS
Istituto Zooprofilattico Sperimentale delle Venezie
Tel. _____ Fax: _____

IN COLLABORATION WITH

UNDER THE PATRONAGE OF

FINANCIAL CONTRIBUTIONS FROM

MOST RECENT HPAI OUTBREAKS 2006-08

Note: This list has been compiled on the basis of information up to 13 November 2008.

2008

November	Thailand
October	China (Hong Kong SAR), Egypt, Germany, Indonesia, Lao PDR , Viet Nam
September	Bangladesh, Togo
July	Nigeria
June	China, Pakistan
May	India, Japan, Korea (Republic of), United Kingdom [H7N7]
April	Russian Federation
March	Turkey
February	Switzerland , Ukraine
January	Israel, Saudi Arabia

2007

December	Benin, Iran, Myanmar, Poland
November	Romania
October	Afghanistan
August	France
July	Czech Republic
June	Ghana, Malaysia
April	Cambodia, Kuwait
January	Hungary

2006

November	Côte d'Ivoire
August	Sudan
July	Spain
June	Mongolia , 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 , Bulgaria , Georgia , Iraq, Italy , Slovakia

Green: wild birds only

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

This overview is produced by the FAO-GLEWS team, which collects and analyses epidemiological data and information on animal disease outbreaks as a contribution to improving global early warning under the framework of the Global Early Warning and Response System for Major Animal Diseases including Zoonoses.
glews@fao.org

WORLDWIDE

In August 2008, 106 outbreaks/ cases of H5N1 HPAI were reported in four countries (Egypt, Indonesia, Lao PDR and Viet Nam). The number of reported outbreaks/cases per country and the geographical locations are illustrated in Figures 1 and 2 respectively. No cases were reported in wild birds during August 2008.

The evolution of the number of reported cases over the last six months by continent and by species group (wild or domestic) is represented in Figures 3 and 4 respectively. For the same period, the number of human cases reported to the World Health Organization (WHO) is illustrated in Figure 5.

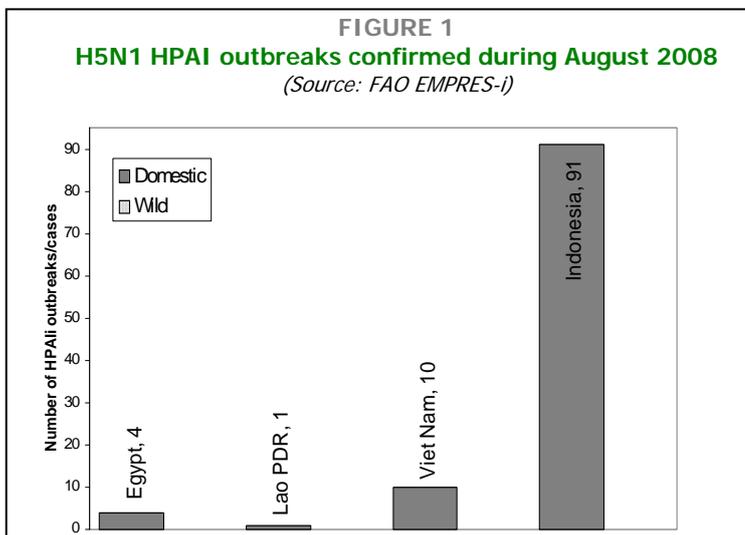
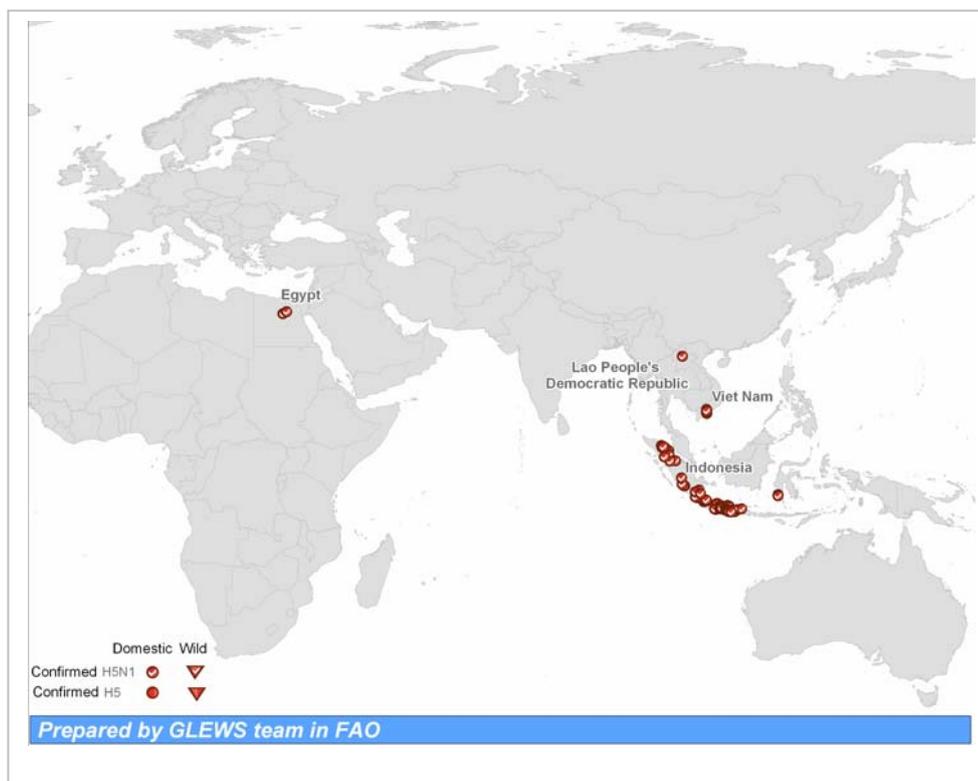
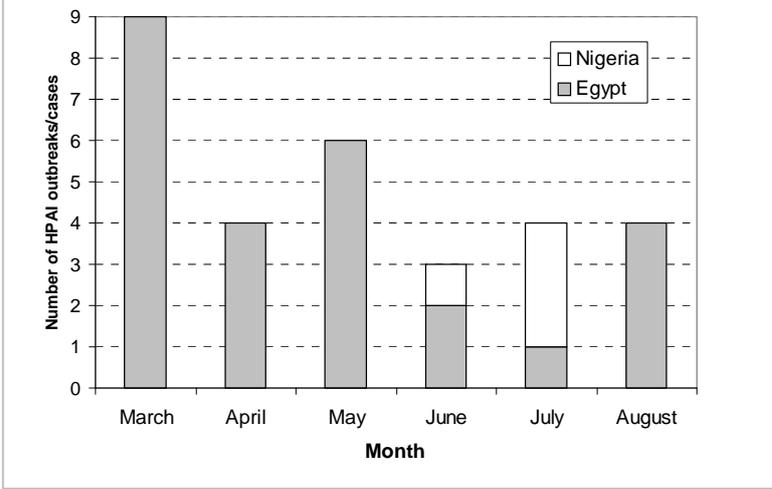


FIGURE 2
H5N1 HPAI outbreaks in poultry and cases of H5N1 infection in wild birds reported in August 2008
 (Source: FAO EMPRES-I)



NOTE: H5 cases are represented for countries where N-subtype characterization is not being performed for secondary cases or if laboratory results are still pending. Countries with H5 and H5N1 occurrences only in wild birds are not considered infected countries according to OIE status. The original data have been collected and aggregated at the most detailed administrative level and for the units available for each country.

FIGURE 6
Number of outbreaks/cases of H5N1 HPAI confirmed between March and August 2008 in Africa
 (Source: FAO EMPRES-i)



HPAI outbreaks were confirmed during August 2008 by the National Laboratory, all from Al Minya governorate.

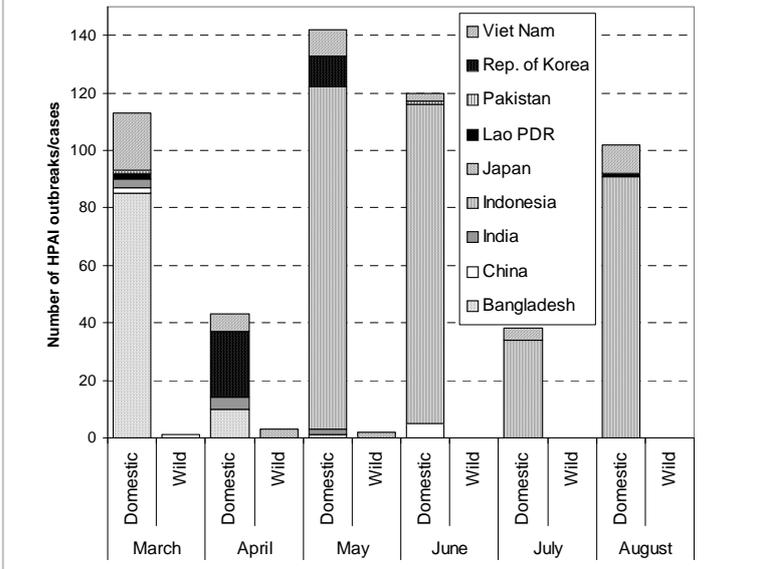
In **Nigeria**, after the re-emergence of H5N1 HPAI in June and July, no additional disease events were reported during the month of August. It still remains unknown how the strain of the EMA3 sublineage was introduced to the continent, whether through movements of wild birds or commercialization of domestic poultry.

Africa

Confirmed outbreaks of HPAI in Africa are presented in Figure 6. The suspected outbreaks in **Benin** were found to be negative after analysis at the OIE/FAO reference laboratory for Avian Influenza (Padova) and at the WHO Collaborative Centre for Avian Influenza (Memphis). Benin's Veterinary Services informed the OIE that the initial H5N1 HPAI outbreak in Lokossa (29 July 2008) was a misdiagnosis.

In **Egypt**, the current HPAI epidemic was first confirmed on February 17 2006. Since then, the disease has been reported in 22 out of 29 governorates. Occurrence of outbreaks continues despite the vaccination campaigns undertaken mainly in commercial farms. Four

FIGURE 7
Number of outbreaks/cases of H5N1 HPAI confirmed between March and August 2008 in Asia
 (Source: FAO EMPRES-i; Indonesia PDS data are included only from May onwards, which is when the epidemiological unit definition was modified from household level to village level)



Asia

Confirmed outbreaks of H5N1 HPAI in Asia are presented in Figure 7. In **Viet Nam**, vaccination is being implemented throughout the country to assist with control and a new HPAI vaccination strategy for 2009-10 is currently being finalized. In August, 10 outbreaks were reported in poultry, compared to 4 in the previous month. The vast majority of outbreaks is reported in unvaccinated flocks.

Indonesia has experienced a high number of cases of H5N1 HPAI outbreaks in poultry in the last three years. HPAI remains endemic in Java, Sumatra, Bali and South Sulawesi with sporadic outbreaks reported from other areas. HPAI infection is considered to be established throughout most of Indonesia, though with widely varying prevalence, and only two of its 33 provinces are considered to be free of infection.

The high figure of reported cases for Indonesia can be explained by the implementation of the 'participatory disease search and response' (PDSR) programme that targets backyard village type poultry production systems and has been very effective in detecting evidence of virus circulation. The programme uses participatory techniques combined with an influenza type A rapid test to identify cases of HPAI. The programme is supported by FAO and donors, USAID in particular, and is operating in 331/448 districts through 31 local disease control centres (LDCCs) in 27 provinces in Java, Sumatra, Bali, Sulawesi and Kalimantan. Outbreaks have been reported infrequently from the eastern provinces, where it is likely that H5N1 HPAI is more sporadic in the smaller, more dispersed poultry populations.

The new database for the PDSR system in Indonesia has been modified since 1 April 2008 and it is now being updated using the village as the epidemiological unit. Individual household reports are therefore now consolidated and reported as lesser numbers of village-level outbreaks.

On 10 September, the Ministry of Health retrospectively announced two fatal cases of H5N1 infection in humans in Banten province. Both victims developed symptoms and died during July 2008 (Figure 5). Of the 137 cases confirmed to date in Indonesia, 112 have been fatal.

In **Lao PDR**, after no HPAI activity since March 2008, an outbreak was detected on 27 August in Nambak, Luang Prabang, in ducklings in a small commercial unit within a village with backyard poultry. The ducks had been purchased from the neighbouring province, Oudomxay, bordering China. A surveillance zone with a 5-km radius was drawn around the suspected farm of origin in Oudomxay. Although no positive animals were found on that farm, on 1 September, a second outbreak with very low daily mortality (2%) was reported in one flock which also originated from the same farm in Oudomxay. In February 2008, there were already some rumours of HPAI activity in southern China (Yunnan province) connected to an outbreak in Laung Namtha Province in Northern Lao.

No H5N1 HPAI outbreaks were reported in August 2008 in **Bangladesh, China, India, Pakistan** or in the **Republic of Korea**.

Other Asian countries such as **Bhutan, Cambodia** and **Iraq** did not experience outbreaks of HPAI, but regularly reported the negative results obtained from their surveillance activities and suspected cases. **Bhutan** produces a clinical surveillance report on a weekly basis for each administrative level, which is published on-line at <http://www.moa.gov.bt/birdflu/main/reports.php?show=all>. **Cambodia** is using an animal health hotline activity to receive reports on suspicions or cases from the field. **Iraq** reported the laboratory results of their surveillance activities for August for all governorates except Kurdistan province, in the north of the country. All samples taken were negative for H5N1 [poultry farms (742), backyard poultry (1,335), game and wild birds (178), and markets and slaughterhouses (149)]. All samples were negative for HPAI.

Europe

The last cases in Europe were reported on 8 April 2008 in the Russian Federation in poultry and on 29 February 2008 in the United Kingdom in wild birds. In addition, Turkey reported one outbreak in poultry and one case in a wild bird in March 2008.

CONCLUSIONS

Although the number of outbreaks does not differ much from previous years for the month of August, the distribution has been markedly reduced. Other than the new occurrence in Lao PDR, only three of the countries considered H5N1 HPAI endemic (Indonesia, Viet Nam and Egypt) continue to report outbreaks regularly. This regular report is explained because in those countries there is active surveillance for H5N1 in places or production systems at risk. In August 2006 and 2007, 6 and 8 countries reported HPAI outbreaks, which could suggest a reduction in the geographic distribution of the H5N1 strain for the period studied.

No European country reported any H5N1 disease event during August, and three months have now passed with no known H5N1 activity. Nevertheless, previous months of August in 2006 and 2007 did show low HPAI activity: only one case in a wild bird in 2006 and 2 cases in wild birds plus one outbreak in poultry in 2007.

The reoccurrence of H5N1 HPAI in some countries after a long period without reporting outbreaks or an apparent 'epidemiological silence' implies either the reintroduction of the virus or that the virus is circulating without detection because surveillance is not sensitive enough. In some areas in Asia, where no occurrence of H5N1 HPAI has been reported in chickens, the results of disease surveillance indicates that the H5 HPAI virus remains well entrenched in the duck population. Results of phylogenetic analysis of viral isolates and thorough epidemiological investigations are essential to know the sources of virus under these conditions.

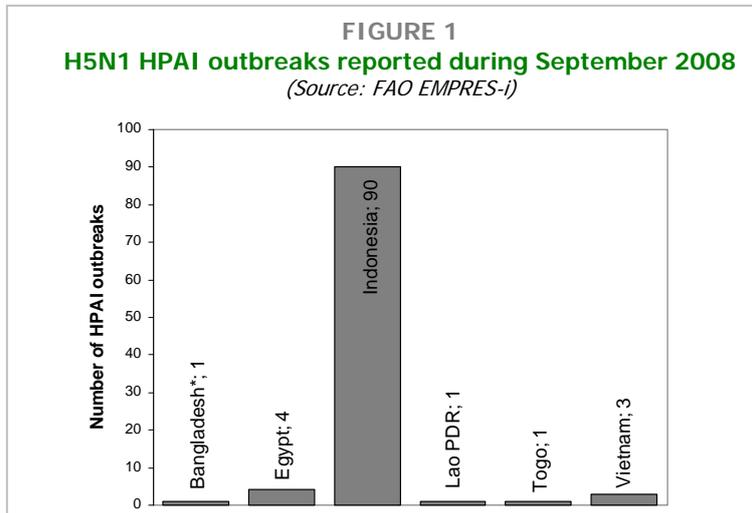
Although there has been an improvement in disease awareness, outbreaks/cases of HPAI are likely still underestimated and underreported globally because of limitations in the capacity of veterinary services to implement adequate disease surveillance, which may affect the number and the shape of the distribution of outbreaks by country and region. The variability and sensitivity in space and time of HPAI surveillance systems makes it difficult to draw correct conclusions on the results and performance of reporting by countries affected by H5N1 HPAI. It is recommended that countries not only include their positive findings but also detail the negative findings in poultry and/or wildlife and number/location of samples analysed.

EMPRES welcomes information on disease events or surveillance reports on H5N1 HPAI (and other transboundary animal disease - TADs), both rumours and official information. If you want to share such information with us, please send a message to empres-i@fao.org.

An animated map showing the evolution of outbreaks over the last six months including August 2008 is available at: www.fao.org/ag/againfo/programmes/en/empres/maps.html.

This overview is produced by the FAO-GLEWS team, which collects and analyses epidemiological data and information on animal disease outbreaks as a contribution to improving global early warning under the framework of the Global Early Warning for Transboundary Animal Diseases (TADs) including Major Zoonoses. glews@fao.org

WORLDWIDE



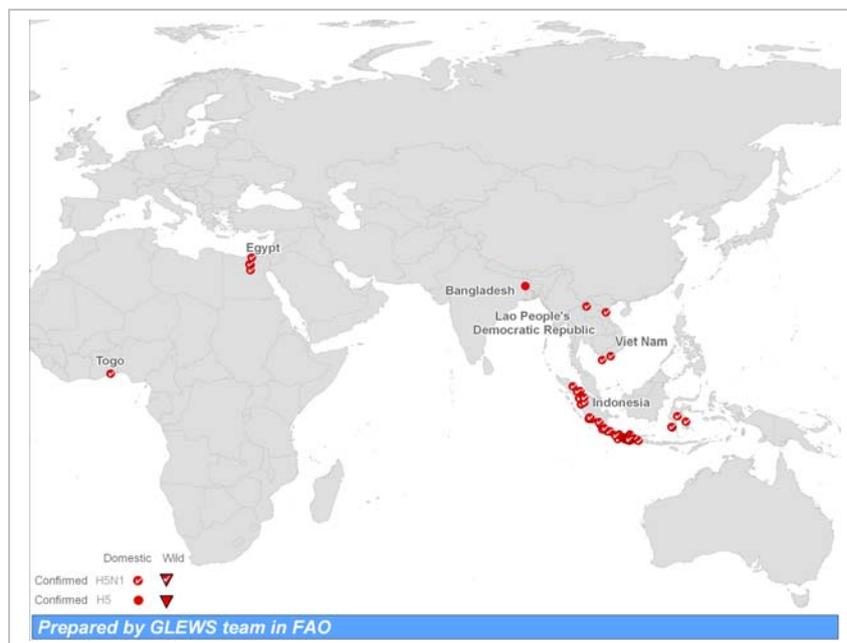
One hundred outbreaks of H5N1 HPAI were reported worldwide in September 2008 from six countries (Bangladesh*, Egypt, Indonesia, Lao People's Democratic Republic, Togo and Viet Nam). The number of reported outbreaks per country and the geographical locations are illustrated in Figures 1 and 2, respectively. No cases were reported in wild birds during September 2008.

The evolution of the number of reported cases over the last six months by species group (wild or domestic) and by geographical area is represented in Figures 3 and 4, respectively. The evolution of the number of confirmed cases of H5N1 AI infections in human reported to

the World Health Organization (WHO) per country between November 2003 and 6 October 2008 is illustrated in Figure 5.

*N-subtype was not characterised but according to the HPAI epidemiological context in Bangladesh, N1 is the most likely subtype

FIGURE 2
H5N1 HPAI outbreaks in poultry and cases of H5N1 infection in wild birds reported in September 2008



(Source: FAO EMPRES-i)

NOTE: H5 cases are represented for countries where N-subtype characterization is not being performed for secondary cases or if laboratory results are still pending. Countries with H5 and H5N1 occurrences only in wild birds are not considered infected countries according to OIE status. The original data have been collected and aggregated at the most detailed administrative level and for the units available for each country.

FIGURE 3
Weekly numbers of H5N1 HPAI outbreaks in poultry compared with cases of H5N1 infection in wild birds reported between April and September 2008

(Source: FAO EMPRES-i; Indonesia PDSR data are included only from May onwards, which is when the epidemiological unit definition was modified from household level to village level)

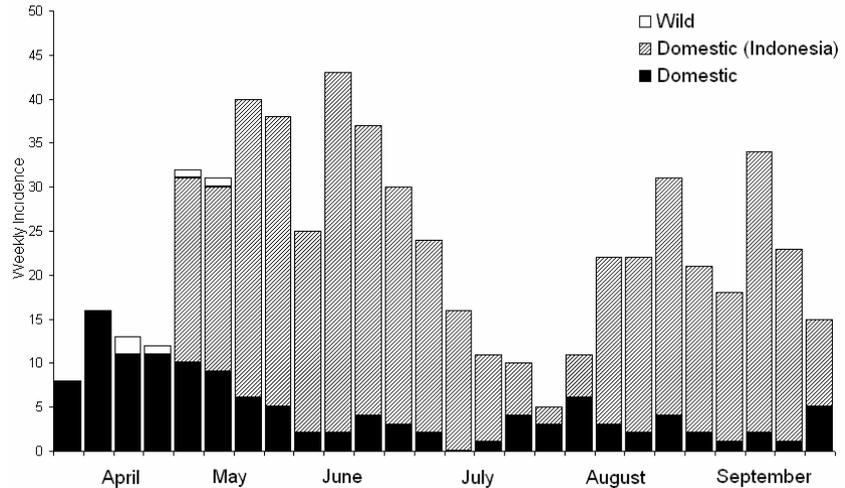


FIGURE 4
Weekly numbers of H5N1 HPAI outbreaks in poultry and cases of H5N1 infection in wild birds per continent reported between April and September 2008

(Source: FAO EMPRES-i; Indonesia PDSR data are included only from May onwards, which is when the epidemiological unit definition was modified from household level to village level)

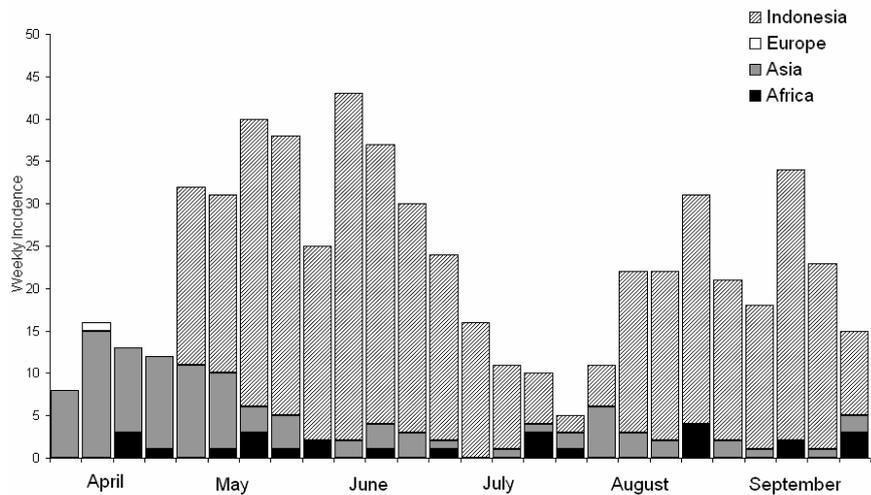
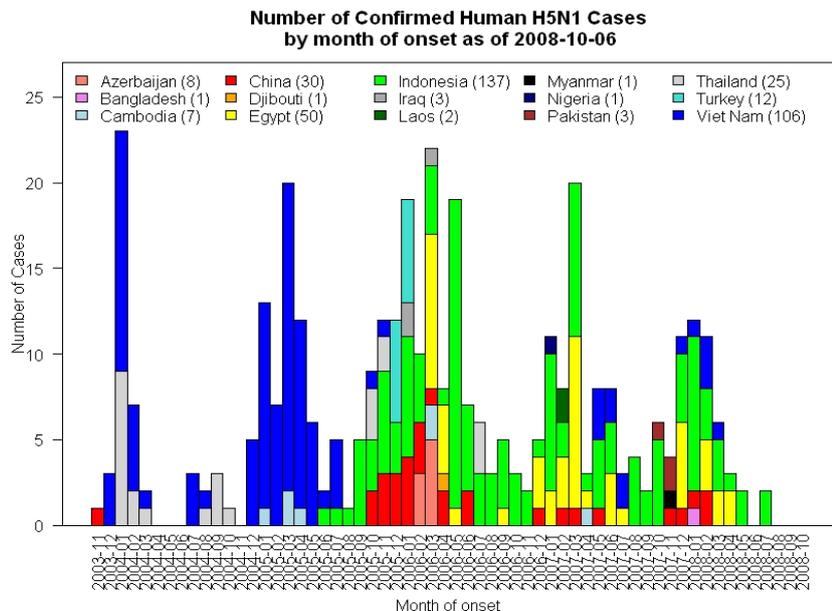


FIGURE 5
Confirmed cases of H5N1 AI infections in human per country reported between November 2003 and 6 October 2008

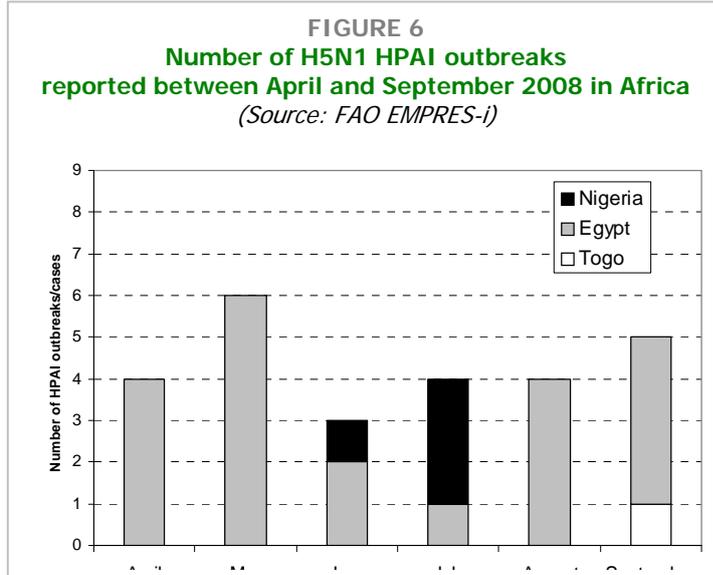
(Source: World Health Organization)



* PDSR case definition in Indonesia: When active outbreaks are encountered where more than one bird died, with or without clinical signs, the Participatory Disease Surveillance and Response (PDSR) teams carry out an influenza type A rapid test. A mortality event consistent with clinical HPAI and a positive rapid test in affected poultry is considered a confirmed detection of HPAI in areas where HPAI has previously been confirmed by laboratory testing.

The Indonesia data is only partially included in Figures 3, 4 and 7, because the epidemiological unit definition was modified from "household" to "village" level in May 2008, and are therefore not comparable to previous data.

Africa

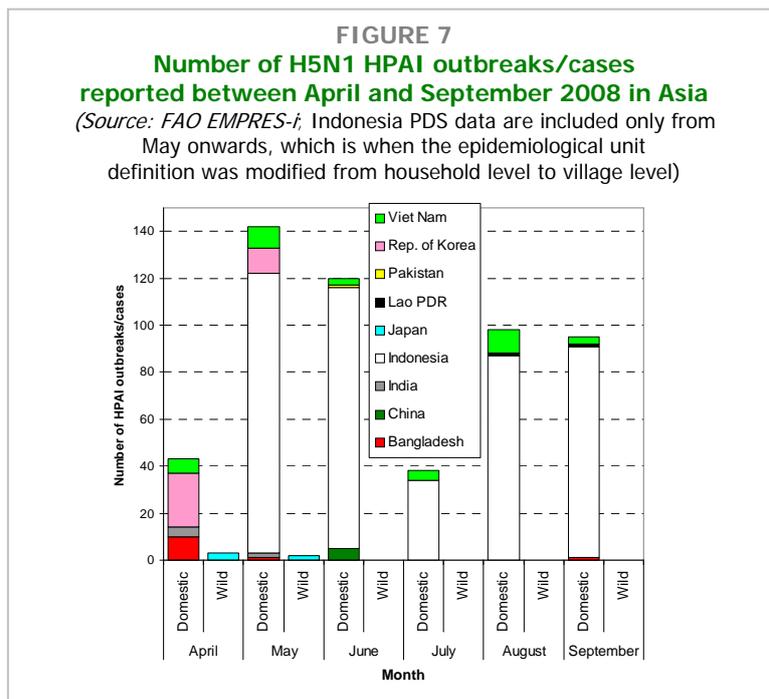


H5N1 HPAI outbreaks reported in Africa over the last six months are presented in Figure 6. In **Egypt**, the current HPAI epidemic was first confirmed on 17 February 2006. Since then, the disease has been reported in 22 out of 29 governorates. A policy of vaccination against H5N1 was introduced in the commercial sector in 2006 and in the household sector by mid-2007 as one of the measures aimed at controlling the escalating HPAI epidemic. The current government policy is to provide and deliver vaccine for sector 4 poultry (household village poultry) and to permit commercial companies to vaccinate with a registered vaccine of their choice. Occurrence of outbreaks continues, with four H5N1 HPAI outbreaks confirmed by the National Laboratory in backyard chickens and ducks during September 2008.

In **Nigeria**, after the re-emergence of H5N1 HPAI in June and July, no additional disease events were reported during September. Field capture, sampling and identification of resident wild birds, which began on 28 July 2008, is still ongoing. To date, activities have been completed in six states (Plateau, Kaduna, Kano, Oyo, Borno and Yobe), partially completed in Sokoto and are continuing in Ogun. Live bird market sample and data collection was completed in the 11 non-HPAI infected states. Laboratory analysis is ongoing.

After no HPAI activity since December 2007, **Togo** reported a new outbreak in September 2008 in Agbata, the same location as the previous outbreak. It affected three closely clustered poultry farms. After genetic characterization, mutations related to mammalian host adaptation or to antiviral drugs resistance were not detected in the HA and NA genes. Analysis of the HA and NA genes showed virus clusters with H5N1 viruses isolated in Togo in June 2007 (similarity ranged from 99.2% to 99.3% for HA gene and from 98.7% to 98.8% for NA gene).

Asia



H5N1 HPAI outbreaks/cases reported in Asia over the last six months are presented in Figure 7. In **Bangladesh**, after several months with outbreaks reported all over the country, the epidemic had apparently been controlled, with the previously reported last outbreak occurring in May 2008.

However, on 29 September a layer farm in Naogaon District tested positive for H5 HPAI after 750 out of 1,100 70-day-old hens died. As of 30 September 2008, a total of 288 outbreaks had been recorded in 47 out of 64 districts. These included outbreaks in 246 commercial farms and 42 outbreaks in backyard poultry production systems. The first and only human case of H5N1 infection occurred in January 2008.

In **India**, the Ministry of Agriculture Department of Animal Husbandry, Dairying & Fisheries (DAHDF) reported that the High Security Animal Disease Laboratory (HSADL) had found that 26 samples were positive for antibodies to H5 avian influenza virus in duck samples collected in West Bengal during targeted field surveillance. This information was included in the report on surveillance/testing of samples by HSADL in Bhopal concerning notifiable avian influenza (H5 and H7) from 8 to 28 September 2008 (<http://dahd.nic.in/flu/bfweekending28.09.08.pdf>). In this period, 8,968 samples were tested (including 2,140 sera and 4,095 tissue samples from West Bengal State). According to DAHDF, there were no clusters of cases, but isolated detection spread out with no pattern. Serological and virological surveillance was carried out in a 5 km zone around outbreaks. Following detection of antibodies in randomly collected samples, intensive surveillance (including clinical, serological and virological surveillance) was carried out in all areas where antibodies had been detected. No virus or viral genome could be detected from swabs of ducks which were found to be sero-positive or otherwise. No clinical cases have been seen in poultry in the surveillance zone in six months following the detection of the last case, including the areas where antibodies had been detected in ducks.

Indonesia has experienced a high number of cases of H5N1 HPAI outbreaks in poultry over the last three years. HPAI remains endemic in Java, Sumatra, Bali and South Sulawesi with sporadic outbreaks reported from other areas. HPAI infection is considered to be established throughout most of Indonesia, though with widely varying prevalence, and only two of its 33 provinces are considered to be free of infection. Regarding human H5N1 infections, of the 137 cases confirmed to date in Indonesia, 112 have been fatal.

The high figure of reported cases for Indonesia can be explained by the implementation of the 'participatory disease search and response' (PDSR) programme that targets backyard village type poultry production systems and has been very effective in detecting evidence of virus circulation. The programme uses participatory techniques combined with an influenza type A rapid test to identify cases of HPAI. The programme is supported by FAO and is operating in 331/448 districts through 31 local disease control centres (LDCCs) in 27 provinces in Java, Sumatra, Bali, Sulawesi and Kalimantan. Outbreaks have been reported infrequently from the eastern provinces, where it is likely that H5N1 HPAI is more sporadic in the smaller, more dispersed poultry populations. The new database for the PDSR system in Indonesia has been modified since 1 April 2008 and is now being updated using the village as the epidemiological unit. Individual household reports are therefore now consolidated and reported as lesser numbers of village-level outbreaks. During September, 1,263 villages in 27 provinces received surveillance visits, and 5.5% of these villages were found infected (HPAI compatible event supported by a positive antigen test result). Since May 2008, PDSR activity has been carried out in 9,326 (14.4%) villages; of these, 5.3% had been infected when visited. Cumulative infection rates varied widely between provinces, but most were <5%. Focal culling was implemented in 27.1% of infected villages, and vaccination was undertaken in 11.3% of infected villages. Most (69.7%) of the PDSR visits were planned initial visits rather than in response to disease notifications, or re-visits. Only 9.8% of visits were in response to disease reports, and 20.4% were re-visits to once-infected villages for surveillance, control or preventive activities. A village status snapshot of all records since May 2008 showed that at the end of September most (84.7%) were apparently free, 2.0% were infected, 9.4% were suspect and 3.7% were controlled. The August snapshot was similar but slightly more favourable. Another 14 H5N1 HPAI outbreaks were reported by the Disease Investigation Centre through passive surveillance. PDSR is probably a better method for detection of H5N1 HPAI than that used in most other endemically-infected Asian countries

In **Lao PDR**, after no HPAI activity since March 2008, an outbreak was detected on 27 August in Nambak, Luang Prabang in ducklings in a small commercial unit within a village with backyard poultry. The ducks had been purchased from neighbouring Oudomxay province which also borders China. A surveillance zone of 5 km radius was drawn around the suspected farm of origin in Oudomxay. Although no positive animals were found, a second outbreak with a daily mortality of 2% was reported on 1 September 2008 in one flock which also originated from the same farm in Oudomxay. This virus seems to have been reintroduced into the country, as preliminary results of phylogenetic analysis of viral isolates of the September outbreak are of a different clade than those of the February-March or other previous outbreaks.

In **Viet Nam**, vaccination is being implemented throughout the country to assist with control. The second mass vaccination campaign of 2008 will start in October. The official government decision for the 2009-10 vaccine strategy is expected by mid-November. In September, three outbreaks were reported in poultry, compared with 10 in the previous month. The vast majority of outbreaks is reported in unvaccinated flocks..

No H5N1 HPAI outbreaks have been reported since May 2008 in the **Republic of Korea** and since June 2008 in **China** and **Pakistan**. No cases of H5N1 infection in wild birds have been reported since May 2008 in **Japan**. Some other Asian countries regularly report the negative results obtained from their surveillance activities and suspected cases. **Bhutan** which has not experienced H5N1 HPAI outbreaks, produces a clinical surveillance report on a weekly basis for each administrative level (available on-line at <http://www.moa.gov.bt/birdflu/main/reports.php?show=all>).

Cambodia where the last H5N1 HPAI outbreak was in April 2007, is using an animal health hotline activity to receive reports on suspicions or cases from the field. **Iraq** where the last H5N1 HPAI outbreak was in February 2006, reported recent laboratory results of surveillance activities for September 2008 for all governorates except Kurdistan Province in the north of the country. All samples taken were negative for H5N1 [poultry farms (266), backyard poultry (87), game and wild birds (81), and markets and slaughterhouses (62)].

Europe

The last H5N1 HPAI outbreak in Europe was reported on 8 April 2008 in the Russian Federation.

CONCLUSIONS

In addition to the H5N1 HPAI reports in three of the countries considered H5N1 HPAI endemic (Indonesia, Viet Nam and Egypt), the month of September experienced a reoccurrence of H5N1 HPAI in Bangladesh, Lao People's Democratic Republic and Togo after a long period without reporting outbreaks or an apparent 'epidemiological silence'. This implies either the reintroduction of the virus or that the virus is circulating without detection, because surveillance is not sensitive enough to detect circulation. Results of phylogenetic analysis of viral isolates and thorough epidemiological investigations are essential to know the sources of virus under these conditions, as demonstrated by the recent example in Togo, where the current isolate has proved to be very similar to the viruses isolated in Togo in June 2007, as described above.

In some areas in Asia, where no occurrence of H5N1 HPAI has been reported in chickens, the results of disease surveillance indicates that H5 HPAI virus remains well entrenched in the duck population. This highlights the need for implementation of sero-surveillance programmes in affected countries and the sharing of the results with the international community.

European countries did not report any H5N1 disease event during September (Figure 9). It is now four months with no known H5N1 activity. Nevertheless, previous months of September in 2006 and 2007 did show low HPAI activity: no outbreaks/cases in 2006 and three outbreaks in poultry in the Russian Federation (1) and Germany (2) in 2007.

The isolation of H5N1 virus in live bird markets (LBMs) in countries such as Indonesia confirms their importance in the spread and maintenance of HPAI since they act as the main meeting point for backyard village poultry systems, commercial systems and people. More focus should be given to stop live bird market-related virus amplification and redistribution.

Although there continues to be an improvement in disease awareness, it is likely that outbreaks/cases of HPAI are still under-estimated and underreported globally because of limitations in the capacity of veterinary services to implement adequate disease surveillance. This shortcoming probably affects the number and the shape of the distribution of outbreaks by country and region. This may explain the considerable differences in number of outbreaks between Indonesia and other endemic countries. The variability and sensitivity in space and time of HPAI surveillance systems makes it difficult to draw correct conclusions about the results and performance of reporting by countries affected by H5N1 HPAI. It is recommended that countries not only include their positive findings, but also detail the negative findings in poultry and/or wildlife and number/location of samples analysed.

An animated map showing the evolution of outbreaks over the last six months including September 2008 is available at: www.fao.org/ag/againfo/programmes/en/empres/maps.html.

AT A GLANCE

The latest HPAI outbreaks for the period 26 July – 13 November 2008

Note

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

AFRICA

Egypt

Samples taken from 18 unvaccinated backyard chickens in Abu Sir village, Samanoud district, in the governorate of El Gharbia, tested positive for H5N1 HPAI on 7 October.

H5N1 outbreaks were reported on 26 and 29 September in the governorate of El Fayioum. The first outbreak occurred in three 6-month old vaccinated chickens and eight 4-month old ducks in the village of Abshaway. The second outbreak was reported in 250 vaccinated ducks (vaccinated one year previously) in the village of Al Barmaki.

FAO reported 17 September that an outbreak of HPAI had occurred in chickens and ducks in Ezbet Mohamed Ali, Dakalm village, Salamout/Dalkm district, in the governorate of Al Minya.

Between 26 July and 2 September, four outbreaks of HPAI were confirmed in ducks and unknown species in the governorate of Al Minya.

An outbreak of HPAI occurred on 22 July in 16 backyard chickens in Albayadia district in the governorate of Luxor governorate.

Nigeria

FAO reported 28 July that laboratory evidence indicated that the viruses isolated from ducks in live bird market in the states of Gombe and Birin Kebbi represented a novel strain for the country, and were classified as sub-lineage EMA3 (within clade 2.2). The related sub-lineage in Europe (A/cygnus_cygnus/Iran/754/2006 [EMA clade 3, Salzberg 2007]) was isolated on a whooper swan. EMA clade 3 strains are genetically different from the strains that circulated in Nigeria in 2006 and 2007 and are more related to the A/H5N1 strains circulating in Europe and the Middle East in 2007.

Togo

An outbreak of H5N1 HPAI was reported to the OIE on 18 September on three modern farms in Agata-Dague, a suburb of Lome, where there had been a previous outbreak in December 2007. Out of 5,000 chickens, 3,500 died in two days and 1,500 were slaughtered.

ASIA

Bangladesh

On 29 September, a layer farm in Naogaonv Upazilla, Naogaon district, tested positive for H5 HPAI after 800 70-day-old hens died out of a flock of 1,100 birds.

China (Hong Kong SAR)

The Agriculture, Fisheries and Conservation Department (AFCD) reported 20 October that a dead house crow found and collected on 15 October at the refuse collection chamber in Sham Shui Po Park had been confirmed as H5N1 positive after a series of laboratory tests.

India

The High Security Animal Disease Laboratory (HSADL) of the Ministry of Agriculture Department of Animal Husbandry reported 21 October that 26 samples had been found positive for antibodies to H5 avian influenza virus in duck samples collected in West Bengal during post-operation surveillance.

Indonesia

FAO reported 12 November that 32 outbreaks of H5N1 HPAI were detected through Participatory Disease Surveillance and Response (PDSR) in October.

During September, FAO carried out surveillance visits to 1,263 villages in 27 provinces, finding that 5.5% of these villages were HPAI-infected (on the basis of an HPAI compatible event supported by a positive antigen test result). Since May 2008, 9,326 (14.4%) of the villages in provinces with PDSR activity have been visited and, of these, 5.3% were found to be HPAI-infected when visited. Cumulative infection rates vary widely between provinces, but the rate for most was found to lie below 5%. A village status snapshot of all records since May 2008 showed that at the end of September, most villages (84.7%) were apparently free, while 2.0% were infected, 9.4% were suspect and 3.7% were controlled. The August snapshot was similar but slightly more favourable.

FAO reported 1 September that there had been outbreaks of HPAI in five villages: Air Bening (Bermani Ulu Raya sub-district), Curup (Curup Utara sub-district), Karang Jaya (Selupu Rejang sub-district), Mojorejo (Sindang Kelingi sub-district) and Pokoh Kidul village in Wonogiri district, Central Java province.

On 28 August, FAO reported two HPAI outbreaks in kampung chickens in Sumber Dem village, Ambyakan sub-village, and in Sumber Tempur village, Kalisat sub-village, both in East Java.

FAO reported 20 August that an HPAI outbreak earlier in the month in Suradita village, Cisauk district, Tangerang regency, had been confirmed.

Lao People's Democratic Republic

An outbreak of HPAI among backyard chickens and ducks on 27 October in the village of Donengeun, Sayabouli district, was reported to the OIE on 10 November. A total of 11 birds (out of 114 chickens and 41 ducks) died.

On 4 November, poultry mortality was reported from the village of Nalao, also in Sayabouli district, and subsequent real-time PCR confirmed H5N1 HPAI.

Two outbreaks of HPAI were reported to the OIE on 14 September. The first outbreak started on 28 August in Fa village, Nambak, Luang Prabang (out of 5422 birds, 197 died). The second outbreak started on 1 September in Nalae village, Xay, Oudomyay (out of 1170 birds, 23 died).

Myanmar

FAO reported 8 November that results of active surveillance carried out during October 2008 in Bago (East) division, located next to Yangon division, indicated the presence of a large number of seropositive healthy ducks: of 1,476 serum samples tested, 182 showed positive to HA/HI tests (12.3% positive). Sero-prevalence was particularly high in two townships, Tanatpin (118/510=23.1%), and Waw (46/270=17%). The presence of sero-positive healthy ducks in Tanatpin township has been known since early 2007 when the H5N1 virus hit Yangon and Bago divisions and the state of Mon. The last reported HPAI outbreak in the country was in December 2007 in the state of East Shan, which shares borders with China and Thailand.

Republic of Korea

The OIE reported 14 August that the Republic of Korea had declared that it met the requirements for recognition as a country free from Highly Pathogenic Avian Influenza (HPAI) as of 15 August, in accordance with the Terrestrial Animal Health Code (2006).

The National Veterinary Research and Quarantine Service (NVRQS) announced 28 July that a suspect HPAI virus submitted by South Chungcheong University on 18 July had been confirmed as HPAI. The virus showed a base sequence identical to that of the avian influenza virus isolated in a dead cat in Gimje in April. NVRQS said that even though close examination had confirmed the virus as highly pathogenic, special control measures in the area where the cat was found were not necessary, considering the lifespan of the virus in a cat (4 days at 22°C).

Thailand

An outbreak of H5N1 in Village No 5, Tong SaLeam, Tong SaLeam, Sukhothai province was reported to OIE on 10 November. The outbreak started on 27 October, killing five out of 17 native chickens. This is the first H5N1 HPAI outbreak in Thailand since January 2008.

Viet Nam

On 8 November, the Department of Animal Health (DAH) reported an outbreak of HPAI in a farm raising 600 ducks and 373 chickens in the village of Hong Thinh, Dien Hong commune, Dien Chau district, in the province of Nghe An. Since 31 October, 105 layer ducks, 119 meat ducks and 43 chickens have died. According to preliminary investigation, the chickens and ducks had been vaccinated for H5N1 on 18 September; however, an additional 450 unvaccinated 5-day-old ducks had been introduced into the farm shortly before the outbreak.

The Department of Animal Health (DAH) reported that on 30 October H5N1 HPAI was discovered in ducks in a farm in the commune of Dien Hong, Dien Chau district, in the province of Nghe An, where 1156 out of a flock of 1423 died. The introduction of unvaccinated young ducklings into an existing flock was the cause.

The Department of Animal Health (DAH) reported that on 24 September, H5N1 HPAI was discovered in unvaccinated ducks in a farm in the commune of Quynh Chau, Quynh Luu district, in the province of Nghe An, where 300 out of a flock of 960 died.

DAH reported an outbreak of H5N1 HPAI at a village raiser farm in the commune of Khanh Hai, Tran Van Thoi district, in Ca Mau province on 18 September, involving 57 ducks (45-days-old and unvaccinated) out of a total flock of 500.

On 6 September, DAH reported an HPAI outbreak in an unvaccinated duck flock on a raiser farm in the village of An Loi, An Binh Tay comune in the district of Ba Tri, Ben Tre province.

In the first two weeks of August, HPAI was reported in five locations (An Binh Tay, My Chanh., An Hiep, Phu Nga and Vinh Hoa) in Ba Tri district, Ben Tre province, killing a total of 3,445 ducks. The outbreaks in An Binh Tay and Phu Nga affected unvaccinated village chickens and/or ducks).

DAH reported 6 August an outbreak of HPAI in Thoi Quan commune, Go Quao district, Kien Giang province, in a 50-day-old chicken flock on a raiser farm, killing 300 out of 612 unvaccinated village chickens.

EUROPE

Germany

The European Commission reported 3 November that 24 out of a further 157 samples from ducks affected by an H5N1 HPAI outbreak on 9 October in Markersdorf, Niederschlesischer Oberlausitzkreis - Landkreis Görlitz, had tested positive for H5N1 AI, of which nine were identified as highly pathogenic. On 24 October the Commission had reported that the H5 haemagglutinin of the virus isolated in samples from the affected holding had indicated a mixture of two clones. On that occasion, the virus was isolated from ducks and not from turkeys or laying hens that were also kept on the holding. The preliminary epidemiological investigation suggested a recent virus introduction. The affected premises held 800 geese, 550 ducks, 60 chicken and 24 turkeys. There had been no movements of animals into or out of the holding concerned within the previous 21 days. The virus appeared almost identical to the strain detected in a tufted duck (*Aythya fuligula*) from the See Bautzen in 2006.

Russian Federation

On 15 October, the Russian Federation reported to the OIE on two HPAI outbreaks that had occurred in 2007. The first occurred in "Sadovod" market, Moscow, on 19 February 2007 and affected 325 backyard poultry out of a population of 1,455. The second started on 23 December 2007 and affected 59 out of 5,455 backyard poultry in Severniy, Tselinny, Rostovskaya Oblast. A third outbreak on 8 April 2008 and culling, disinfection and ring vaccination of backyard poultry in surrounding localities finished on 8 May. Since then, there have been no further outbreaks in the country. As a result, and in line with the OIE Terrestrial Animal Health Code (2008), the country had declared itself free from highly pathogenic avian influenza with effect from 8 August 2008.

NEAR EAST

Iran

The OIE reported 4 August that the country had implemented an HPAI stamping-out policy, including disinfection of all affected establishments, for the required period of 3 months, as well as surveillance, in accordance with the OIE Terrestrial Animal Health Code, and had declared itself free of HPAI.

SUMMARY OF CONFIRMED HPAI OUTBREAKS (as of 13 November 2008)

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

Note: Highlighted countries indicate those in which there has been only one officially confirmed outbreak or occurrence

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	9 November 2006	Domestic poultry – wild birds	-
Djibouti	6 April 2006	6 April 2006	Domestic poultry	1 / 0
Egypt	17 February 2006	7 October 2008	Domestic poultry – wild birds	50 / 22
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	29 September 2008	Domestic poultry	1 / 0
Cambodia	12 January 2004	6 April 2007	Domestic poultry – wild birds	7 / 7
China	20 January 2004	13 June 2008	Domestic poultry – wild birds	30 / 20
China (Hong Kong SAR)	19 January 2004	15 October 2008	Wild birds	-
India	27 January 2006	9 May 2008	Domestic poultry	-
Indonesia	2 February 2004	October 2008	Domestic poultry – pigs (with no clinical signs)	137 / 112
Japan	28 December 2003	8 May 2008	Domestic poultry – wild birds	-
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 October 2008	Domestic poultry	2 / 2
Malaysia	19 August 2004	2 June 2007	Domestic poultry – wild birds	-
Mongolia	10 August 2005	5 June 2006	Wild birds	-
Myanmar	8 March 2006	23 December 2007	Domestic poultry	1 / 0
Pakistan	23 February 2006	16 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	31 October 2008	Domestic poultry	106 / 52
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	1 January 2008	Domestic poultry	-
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	-

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	9 February 2006	Wild birds	-
Croatia	21 October 2005	24 March 2006	Wild birds	-
Czech Republic	27 March 2006	11 July 2007	Wild birds – domestic poultry	-
Denmark	12 March 2006	26 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	9 October 2008	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	16 December 2007	Wild birds – domestic poultry	-
Romania	7 October 2005	6 December 2007 (cat)	Wild birds – domestic poultry – cat	-
Russian Federation	15 July 2005	8 April 2007	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	7 July 2006	Wild birds	-
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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