

## Update on the Avian Influenza situation (As of 31/07/2005) – Issue no. 32



Feeding in a village, Lao PDR  
Photo: R. Webb

The information summarized below is gathered from official and non official sources, which are quoted in the text. AIDE news is prepared by the FAO Technical Task Force on Avian Influenza.

### 1. Latest information on Avian Influenza

An outbreak of H5N1 Highly Pathogenic Avian Influenza (HPAI) killing 6,000 wild birds was reported in China, and H5N1 infection was confirmed in Russia during the preceding month. A suspected case was reported in Kazakhstan. Some outbreaks have been found in domestic poultry as they were during this season last year. A national vaccination campaign will be conducted in Viet Nam before the next lunar new-year season.

#### Country situation

**Russia:** Influenza type A H5 was discovered in open type non-commercial premises in Suzdalka village in Novosibirsk Region and confirmed as H5N1 on 29 July 2005. The disease was initially suspected on 15 July. As of 20 July more than 350 poultry (geese, ducks, turkeys and chickens) had died. Pathological material was sent to the reference centre for Veterinary and Phytosanitary Surveillance (FSVPS). Similar outbreaks were reported from eight other villages in Kupino, Dovolnoye and Chistoozernoye Districts, all in the Novosibirsk region. There is also evidence of the disease in wild birds. (29/07/05 source: Government, media website)



Recent H5N1 outbreak in Russia and China

**China:** Another outbreak of HPAI H5N1 was discovered at a poultry raising household in Changji city, Changji district, Xinjiang Province. A total of 128 geese and ducks were reported to have been infected of which 63 had died. H5N1 was confirmed by the National AI Reference Laboratory on 20 June. More than 1,490 geese and ducks were culled. Xinjiang authorities have adopted various control measures including modified stamping out and vaccination.

Number of deaths of migratory birds due to H5N1 infection at the Qinghai Lake Nature Reserve in Quanji Town, Gangcha County, Qinghai Province reached more than 6,000. Dead birds included bar-headed geese, great black-headed gulls, brown-headed gulls, ruddy shelducks and great cormorants. A compulsory vaccination campaign was implemented around the outbreak areas, along migration routes and in nearby regions using more than three million doses of vaccines. Surveillance activities around the lake were undertaken and no case was found in farms encompassing nearly 2 million domestic poultry in the area and no human case reported. According to an article from a recognised journal, the initial death of migratory birds was first detected on 30 April 2005. The deaths of migratory birds were about 30 per day during the period of 4-17 of May then increased to 200 during the period between 18 May and 8 June. After mid June, the number of death of migratory birds dropped gradually to more or less 20 per day. From

20 to 23 June, a FAO and WHO mission visited Qinghai Province. The mission investigated epidemiological situation in and around the reserve. The mission recommended to sample and analyse apparently healthy birds and have the Chinese authorities tag and monitor as many birds as possible. China agreed in principle but requested assistance from the UN. On 27 June, two dead birds were found, and on 28 June, no bird death was reported. (29/07/05, source: Government, FAO, media websites)

**Indonesia:** HPAI is reported in 21 out of 30 Indonesian provinces: Java (6), Sumatra (5), Bali (1), Kalimantan (3) and Nusa Tenggara (2); and new cases have been found in the provinces of Jambi, South Sulawesi, East Kalimantan and North Sumatra. Recent infection of broiler chickens, local chickens and fighting cocks in Soppeng, Sidrap, Pinrang and Maros, Pare-Pare, Sinjai, Taro and Wajo districts, in South Sulawesi, resulted in the culling of 382,872 fowl.

The avian influenza virus was detected in pigs in Tangerang, Banten Province, between February and April 2005. Officials destroyed animals at two pig farms in Tangerang. The Government was allocating 104 billion rupiah (10.7 million US\$) in emergency funds to tackle the disease.

The first human deaths attributed to H5N1 in Indonesia were reported on 16 July. Samples from a 38-year-old man from Jakarta's southwest suburb of Serpong District, Tangerang Province tested positive for avian influenza H5N1 virus by the WHO reference laboratories in Hong Kong, and the Centers for Disease Control and Prevention, USA. His two daughters, one 8-years-old became ill on 24 June and was hospitalised on 28 June died on 14 July, and the 1-year-old daughter became ill on 29 June and died on 9 July. There was a small pig and chicken farm whose poultry were affected by HPAI in February and April 2005, 15 kilometres away from the place where they lived. A month before, Indonesia had recorded its first human case of H5N1 who showed no symptoms but had antibodies. (28/07/05, source: Government, FAO, WHO, media websites)

**Viet Nam:** In June, ducks were found sero-positive for AI H5 virus in central Quang Tri Province, and nearly 10,000 ducks were culled. The Government decided to cull all infected waterfowl raised in large scale, and small scale flocks in isolated areas with sick poultry. One-fifth of total waterfowl flocks in Quang Tri Province were reported to have contracted the HPAI virus strain. The provincial Veterinarian Bureau of Quang Tri Province culled over 23,000 waterfowl, mainly ducks, in 38 infected flocks. Additional 144 flocks will be tested and may be culled if these are proved to be infected with H5N1.

Viet Nam will start vaccinating fowl against avian influenza viruses in northern Nam Dinh Province and southern Tien Giang Province on a trial basis starting from 1 August. The government would use 35.5 million doses of vaccines in this pilot vaccination. An initial 20 million doses of vaccines will be imported from the Netherlands and China. If it is successful, other 46 high-risk provinces would follow as soon as possible. A national plan for AI vaccination and a protocol for post-vaccination surveillance have been developed and issued along the same lines with the recommendations of FAO experts on AI control. The vaccination program will cost 35 million US\$, of which the government will subsidize 29 million US\$. The Government has instructed relevant agencies and localities to mobilize all sources to undertake the nationwide vaccination campaign. The state will cover expenses on vaccinating breeding poultry at state-owned facilities, and fowl at private farms in high-risk areas, while local and foreign large commercial poultry operations must cover their own expenses. If the enterprises do not vaccinate their poultry, the fowl will be culled. Household farmers will have their chickens vaccinated free of charge. The Prime Minister asked the Minister of Agriculture and Rural Development, Chairmen of the major cities and provincial People's Committees to work out programmes and plans to help raise awareness of the urgency and effect of poultry vaccination.

The Ministry of Agriculture and Rural Development has instructed localities to step up inspection and monitoring of the disease and strictly implement the temporary suspension of incubation and breeding of aquatic poultry until the end of February 2006. Poultry breeding inside urban areas and industrial zones is strictly banned. He also

instructed to reorganise the animal husbandry sector's operation. The Ministry will assist poultry farms breeding more than 500 reproductive hens or 1,000 commercial chickens located far away from residential areas, schools, highways and markets to gradually industrialise their operation.

A team of international virologists and epidemiologists from Australia, Canada, Hong Kong SAR, Japan, the UK and the USA visited Viet Nam in the latter part of June to study whether the H5N1 avian influenza virus may be changing its character to increased human-to-human transmission. The team completed its work on 29 June and submitted its preliminary findings to the government. The WHO website reported that the team found no laboratory evidence suggesting that human infections are occurring with greater frequency or that the virus is spreading readily among humans.

Viet Nam has increased compensation for farmers whose infected poultry are being culled in an effort to contain the spread of the virus. Farmers will be paid an average 15,000 dong (US\$0.95) for each bird killed. The compensation applies to the period between 1 December 2004 to 31 December 2005 (This doesn't include the next Tet which will be on 29 January 2006).

A 73-year-old man from Hanoi infected by the H5N1 virus died on 28 June. He had culled his sick chickens before he became ill. A 24-year-old man from Tra Vinh Province who died on 25 July and a 26-year-old woman from Ho Chi Minh City died on 27 July were both tested positive for H5N1 on 28 July. According to WHO, a total of 60 people have been confirmed to be infected with avian influenza virus strain H5N1 since late December 2004 through 28 June 2005, of whom 18 have died. (29/07/05, Source: Government, FAO, WHO, media websites)

**Thailand:** The second nationwide active surveillance campaign was conducted from 1 to 31 July 2005. A total of 13 cases of HPAI in Supanburi Province in village poultry including native chickens, fighting cocks, and a broiler and a quail farm typical of traditional husbandry methods were so far identified. A total of 16,736 poultry have died and 121,819 have been culled. Control measures identified were: stamping out, quarantine, movement control and disinfection. On July 21, chickens tested positive for the H5N1 virus at a village in Kamphaeng Phet Province.

The Thai government has designated certain provinces as apt for free-ranging ducks production in the central part of Thailand. Duck flocks which have tested negative may move in to the "designated provinces" for further fattening in the harvested rice paddies under the control of the relevant provincial governors, provincial livestock and animal quarantine offices. Interior Ministry ordered the closure of all cock-fighting stadiums in the 25 provinces. A passport for fighting cocks will be issued to owners to record their recent health history of their birds. Spot checks will be carried out on the fighting birds every two months. (29/07/05, Source: Government, FAO, WHO, media websites)

**Cambodia:** There have been no reports of outbreaks of HPAI. The NAHPIC took sample of sentinel villages and duck flocks in Takeo province on 22-23 June 2005 with negative results. A veterinary animal health workers (VAHWs) training course was organized in Kampot Province in June for some 400 VAHWs, training focused on the management and handling of cases of acute mortality in village poultry. The training course provided practical and basic knowledge to the VAHWs. Since the conclusion of the training course, reports of poultry mortality have increased in Kampot Province. Samples from routine surveillance conducted in July in duck flocks in Kampong Cham and Svay Rieng Provinces and markets in Prey Veng and Kampong Cham Provinces and Chbar Ampeov, O' Russey, Central markets in Phnom Penh were negative for HPAI virus though some samples from Prey Veng and Kampong Cham Provinces were positive for antibody. (26/07/05, Source: Government, FAO)

#### --- Other strains -----

**Philippines:** On 8 July, an avian influenza H5 virus infection was suspected in ducks in Calumpit Town, Bulacan Province near the swamp area in Bulacan. The 230 native ducks

were kept at a backyard farm with 20 native chickens and 30 two-day-old chicks. All poultry in the farm were apparently healthy with no mortalities. The infection of a H5 virus in ducks was detected during routine serological testing using haemagglutination inhibition (HI) test and the virus was confirmed on 7 Jul 2005 using real time polymerase chain reaction (RT-PCR) test. All the chickens in the same farm tested negative to the HI test. The poultry at the farm were culled, and the movement and sale of live poultry within a 3 km radius from the affected farm was prohibited for one week. Further surveillance and testing of all poultry farms in neighbouring areas was undertaken. The private sector immediately prompted a voluntary export ban of poultry meat to Japan. The tissue samples were sent to the OIE/FAO avian influenza reference laboratories at the Australian Animal Health Laboratory (AAHL) for analysis. On 18 July, based on the combination of test results from the AAHL (RT-PCR, the virus isolation in SPF embryonated chicken eggs and haemagglutination (HA) test) the government officially reported that the ducks had been exposed to a low pathogenic avian virus and that there was no active infection.

The Department of Agriculture and Department of Health and the Philippine Charity Sweepstakes Office have identified high-risk areas in order to protect the local poultry industry. The areas identified are: Candaba Swamp, Zamboanga del Norte, Zamboanga del Sur, Zamboanga City, Zamboanga Sibugay, Palawan, Pagudpud in Ilocos Norte, Aparri, Cagayan, Cebu, Negros Occidental, Isabel, Lake Mainit in Agusan del Norte, Agusan del Sur, Surigao del Norte, Surigao del Sur, Roxas City, Sorsogon, General Santos City, Mindoro Oriental and Cotabato. It was reported that the Bureau of Animal Industry, Ministry of Agriculture is carefully monitoring the 20 major critical areas and has set around PHP 20 million (US\$ 335 600) to fund the bird-flu prevention and surveillance program with the possibility of adding PHP 50 million (US\$ 889 000) for the program. (22/07/05, source: Government, FAO, media websites)

**Japan:** A low pathogenic avian influenza H5N2 infection was confirmed at a layer chicken farm in Mitsukaido City, Ibaraki Prefecture on June 26. A retrospective investigation revealed that 430 of its 25,300 chickens died between April and June with an average mortality of 10 chickens dying every day since April (slightly more than expected) and a drop in egg production. The prefecture government set a 5 km radius movement control area for chickens, poultry meat and eggs. In addition, culling, composting and disinfection at the farm were undertaken, and investigated 17 other farms within the movement control area. Antibodies were detected on five other farms within a 600m radius from the index farm on 30 June. The prefecture government has ordered the culling of 94,000 chickens and destruction of eggs. On 1 July, a H5N2 virus was isolated from one of the five sero-positive farms which is located about 500m from the index farm. On 9 July, presence of antibodies (AGID) and a trace of virus (PCR) were confirmed at another farm at Bando City, Ibaraki Prefecture, 1,250m west of the index farm. On 26 July, presence of antibodies was confirmed (AGID and HI) at a farm 6km from the index farm in Mitsukaido City, Ibaraki Prefecture. The prefecture ordered the culling of 8,550 chickens, movement control and disinfection of the farm. The Government has started a nationwide emergency surveillance on LPAI infection targeting about 15,000 chicken farms that have >1,000 birds to determine the extent of the spread of the virus. According to the National Institute of Animal Health, the gene analysis of the first isolate showed a 97 percent base sequence homology to a virus found in chickens in Guatemala. The workers and family members at the infected farms all tested negative. (28/07/05, source: Government, Prefecture, media websites)

#### --- Other information -----

**Bar-headed goose migration:** The Bar-headed goose (*Anser indicus*) can be found in Afghanistan, Bangladesh, Bhutan, China, India, Kazakhstan, Kyrgyzstan, western Mongolia, Myanmar, Nepal, Pakistan, southern Russia, and Tajikistan. The Bar-headed goose has a discontinuous breeding range from eastern Kazakhstan and Kyrgyzstan across southern Russia to western Mongolia, south through the Tibetan Plateau to Tajikistan and northwest India. They spend the non-breeding period (winter) in Pakistan,

India (widespread across the country to southern tip), Nepal, Bangladesh, Myanmar and southern China (mainly inland rivers, lakes, reservoirs and croplands) and coastal estuarine wetlands. The bar-headed geese fly across the Himalayas, Pamirs and Hindu Kush on their annual migrations. A half to two third of the population winter in across the Indian subcontinent, India, Myanmar and a significant proportion of the population winter in China (Tibetan Plateau and in Yunnan and Guizhou Provinces). Three birds banded at Qinghai Lake in China in summer, were recovered on their wintering grounds in Karnataka state, south-western India; in Assam, north-eastern India; and around Chittagong, southern Bangladesh. (References: Wetlands International <http://www.jawgp.org/anet/aaa1999/aaaendx.htm>, <http://www.wetlands.org/IWC/WPEnote.htm> and Chinese Bird Banding Almanac 1982-1985. See also p13-14)

## 2. What next?

### ➤ **Avian influenza situation in Asia remains critical**

Virus behaviour still not fully understood - more research and investment in understanding virus ecology is required. The avian influenza situation in many Asian countries remains critical and requires more attention by affected countries and the international community. Eradication of the virus from the eight affected Asian countries will not be easily achieved. Highly Pathogenic Avian Influenza must be considered as an endemic disease and must be controlled at source in animals. A recent joint WHO/FAO/OIE mission to Viet Nam concluded that there is currently no evidence of virus change and that the virus is not as likely to spread widely among humans as was initially thought. But there is also no reason for complacency. The virus continues to circulate in poultry and wild birds and requires highest attention. Many questions remain unanswered and more research and major investments for national and regional control operations are required...

The full text is available at: <http://www.fao.org/newsroom/en/news/2005/104425/index.html>

- **The FAO/OIE/WHO Consultation on Avian Influenza and Human Health: Risk Reduction Measures in Producing, Marketing, and Living with Animals in Asia** was held in Kuala Lumpur, Malaysia, on 4-6 July 2005. The consultation was conducted in collaboration with the Veterinary Services Department and Ministry of Health of Malaysia. The meeting was attended by 63 delegates from 8 Asian countries and observers from donor countries (USA and The Netherlands), FAO, OIE and WHO representatives. The objectives of the consultation were to identify current practices employed in the production and marketing of live animals in Asia which can have potential human health implications; to assess the scope and effectiveness of current regulatory control measures applied to the production, distribution and marketing of live animals for food in Asia to minimize human health risk; identify effective interventions that would reduce the risk at the animal-human interface. The meeting agreed that the avian influenza situation in Asia was extremely serious but determined that there was still a window of opportunity to prevent a pandemic. The recommendations of the consultation covered seven areas: Vaccination, Biosecurity, HPAI Epidemiology, Diagnosis and Vaccination measures, Legislation, Education and Wet Markets. Delegates concluded that priority should be given to the situation in small-scale and backyard production systems. If there is evidence of existing active infection, and biosecurity of the Village or backyard production cannot be improved, veterinary authorities should consider ring vaccination strategies as part of a multi-element response to minimize propagation by this sector, to protect susceptible birds from infection and to manage human health risks. As for the regulatory process, it was noted that, while policies and regulatory instruments are sufficient in many countries, enforcement of regulations remains a challenge. The meeting identified short term, medium term and long term approaches. "A Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza" made by FAO and OIE in collaboration with WHO was handed out for participants. The final conclusions and

recommendations of the Kuala Lumpur meeting will be placed on the websites of FAO, OIE and WHO in due course.

➤ **A Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza**

The continuing outbreaks of highly pathogenic avian influenza (HPAI) in several Southeast Asian countries that began in late 2003 and early 2004 have been disastrous to the poultry industry in the region and have raised serious global public health concerns. Nearly 140 million domestic poultry have either died or been destroyed and over a hundred people have contracted the infection, of which 54 have died as at May 2005. Economic losses to the Asian poultry sector are estimated at around \$10 billion, but despite control measures the disease continues to spread, causing further economic losses and threatening the livelihood of hundreds of millions of poor livestock farmers, jeopardizing smallholder entrepreneurship and commercial poultry production and seriously impeding regional and international trade and market opportunities. The potential of the HPAI virus to become transmissible among humans is of serious concern to the global community. The second FAO/OIE regional meeting on avian influenza control in Asia held in Ho Chi Minh City in February 2005 and the international scientific AI conference in Paris in April 2005 have recommended FAO, OIE and WHO to develop guidelines for risk reduction along the whole length of the production and marketing chain for consideration at a joint technical consultation towards mid 2005. Thus a global strategy for short, medium and long term was developed and was distributed in the FAO/OIE/WHO Consultation on Avian Influenza and Human Health: Risk Reduction Measures in Producing, Marketing, and Living with Animals in Asia. The document provides a long term vision, goal, approach and implementation plans to control HPAI in Asia with a phased disease control programme. This approach is seen as an integral part of the FAO/OIE Global Framework for the Control of Transboundary Animal Diseases (GF-TADs). It is intended that similar plans for Central Asia, Africa, Americas and Europe will be developed. The following is an extract of the executive summary of the Global Strategy:

The HPAI H5N1 will have been progressively controlled in domestic poultry of all infected countries of Asia, and prevented from affecting those Asian countries not currently infected, but at high risk. The immediate to short term objective is to reduce the risk to humans by preventing further spread of HPAI in those countries that are currently infected by H5N1. Immediate evaluation of the feasibility of vaccinating ducks and the study of the epidemiology of the disease is essential, to develop approaches to duck vaccination in countries with large duck populations.

The long-term vision of the strategy is to minimize the global threat and risk of HPAI in humans and domestic poultry, through progressive control and eradication of HPAI, particularly that caused by H5N1 virus, from terrestrial domestic poultry in Asia. Achieving this goal will diminish the global threat of a human pandemic, stabilize poultry production, enhance a robust regional and international trade in poultry and poultry products, increase human and food safety, and improve the livelihoods of the rural poor.

Over the medium to long-term (7-10 years), a more focused approach to HPAI control will be mounted to progressively eradicate the disease from the remaining compartments of infected domestic terrestrial poultry in the region. The medium to long-term strategy will consider all control measures, including vaccination, zoning and compartmentalization as defined in the OIE Terrestrial Animal Health Code. To prevent the threat of HPAI from spreading to avian influenza-free countries, the long-term strategy supports the development of active surveillance programmes and emergency preparedness plans for non-infected, at-risk countries in Southeast Asia and South Asia.

The strategy suggests building a strong and sustainable human and physical resource capacity in the region, to respond in a more effective and timely manner in stamping

out not only HPAI outbreaks but also other newly-emerging infectious zoonotic and transboundary animal diseases (TADs). Capacity building will be wide ranging and include all aspects of disease control as well as policy development and socio-economic impact analysis. The strategy will facilitate strategic research to investigate the epidemiology of avian influenza, evaluate the efficacy of vaccines in domestic ducks to reduce virus shedding in domestic duck reservoirs, and work in close collaboration with regional and international advanced research institutions (ARIs) to promote the development of improved vaccines and rapid diagnostic tests. Risk analysis of various poultry production systems and along marketing chains will be carried out to better target effective disease control.

At the national level, well-defined country specific projects will be formulated, which will be underpinned by the formation of three sub-regional HPAI support units, located in Southeast Asia, East Asia and South Asia, respectively. Through these units sub-regional disease diagnosis and surveillance and socio-economic and policy analysis networks will be established. These subregional networks will provide the lead in the development of harmonised technical standards and regional policies related to the management of live animal movement, compensation plans, capacity building, disease reporting requirements and long term planning to restructure poultry sectors. At the international level, coordination of the national programmes and subregional networks will be under the umbrella of GF-TADs, a joint FAO/OIE initiative. The international coordination will provide technical backstopping to the subregional networks and national programmes, promote international cooperation, and mobilize and coordinate resources for HPAI control.

The Global Strategy is available at:

[http://www.fao.org/ag/againfo/resources/documents/empres/AI\\_globalstrategy.pdf](http://www.fao.org/ag/againfo/resources/documents/empres/AI_globalstrategy.pdf)

### 3. Surveillance and Post-epidemic rehabilitation activities

#### ➤ **OIE mission to the Democratic People's Republic of Korea (DPRK)**

Following the original declaration of HPAI and FAO assessment and technical assistance missions, representatives of the OIE visited the country on 13-18 June 2005 to assess the current situation on avian influenza and to provide advice on technical matters. A summary of their conclusions are the following: the diagnosis of HPAI in DPRK has to be reviewed in the light of the laboratory results obtained; for this purpose, complete characterisation of the virus would be required. Virus strains and/or samples must be sent to an OIE/FAO Reference Laboratory; diagnostic laboratories and manufacturing plants of vaccine need to be strengthened. Such infrastructure will be helpful for the diagnosis of animal diseases in general and not specifically to AI.

#### ➤ **Lao PDR AI projects overview**

Lao PDR reported outbreaks of HPAI between January and March 2004. From 45 infected premises of which 42 were commercial enterprises and three in villages. Thirty eight of the localised outbreaks occurred in the Vientiane region, five in the province of Champasack and two in Savannakhet. To strengthen HPAI control activities in Lao PDR, FAO, France and Japan provided funds and technical assistance in a combination of projects. Most of these have come to an end, except for the FAO regional diagnosis and surveillance network project (TCP/RAS/3006) due for completion on 31 January 2006. The major assistance provided were: 1) OSRO/RAS/401/JPN (Lao component) to provide suitable facilities to establish local disease control centres at national level; basic equipments and materials for disease investigation, culling operations, cleaning and disinfection of infected premises and to assist coordination of disease control activities at the local level (US\$404,040), 2) OSRO/LAO/401/FRA to support avian influenza active surveillance in Lao PDR (US\$53,000), 3) TCP/LAO/3001 to support controlling avian influenza outbreaks to prevent transmission of the disease from poultry to humans; enhance laboratory

diagnostic capacity; train farmers and government workers on safe disposal and disinfection techniques and precautions (\$390,000), 4) TCP/RAS/3010 to assist the participating countries to prepare for a post-avian influenza rehabilitation programme by providing them with a rational basis for decision-making (total US\$400,000 with five countries), 5) TCP/RAS/3006 to create sub-regional epidemiologic surveillance and diagnosis networks to rapidly detect, diagnose and control avian influenza in affected countries and identify the risk factors with the aim to prevent future outbreaks (total US\$400,000 with ten countries). Other donor agencies such as ADB, Australia, China have also supported in kind the training of personnel or efforts at rehabilitation.

Despite the severe shortage of staff and material resources, Lao PDR achieved much to control AI during past one and half years. The following is a summary of the activities undertaken with the assistance of the above projects. Activities conducted included providing minimum necessary facilities, strengthening laboratory diagnosis, conducting a nation-wide random survey of infection in domestic poultry, promoting awareness, training workshops on disease surveillance and analysis and rehabilitation.

***Providing minimum necessary facilities:*** Lao PDR faced a severe lack of diagnostic equipment at the beginning of the HPAI outbreaks. Due to its zoonotic significance, an HPAI diagnostic laboratory had to be established separately from the conventional diagnostic laboratory to reduce the risk of human infection. A renovated section at the Animal Disease Diagnostic Laboratory was completed in middle of June, 2004 including the purchase and installation of a class II biosafety cabinet, -80°C freezer, enzyme-linked immuno-solvent assay (ELISA) system, fluorescence microscope, refrigerated centrifuge, CO<sub>2</sub> incubator, autoclave, refrigerators, egg incubators, and other instrumentation. For the analysis and the awareness campaign, LCD projector, computer, digital camera etc., were also provided.

***Strengthening laboratory diagnosis:*** A consultant for strengthening laboratory diagnosis was provided to Lao PDR for two months in two separate missions. The basic laboratory facilities for serology and virus isolation, especially HA/HI and ELISA tests were established. Various laboratory supplies for conducting diagnostic tests in virology and serology were purchased in sufficient quantity for a one year period. Four laboratory staff from the avian diagnostic laboratory, in Vientiane were trained to conduct isolation and identification of AI viruses and serologic assays. Three serological assays including HI test, agar-gel immuno-diffusion test (AGID) and ELISA have been established in the laboratory for AI serological surveillance. Standard operating procedures (SOPs) and good laboratory practices (GLP) were strengthened and the importance of biosecurity was emphasised.

***Conducting a nation-wide random survey:*** A consultant for field surveillance was sent to Lao PDR for a total of 4.5 month in three missions. An active surveillance programme was conducted during May through August 2004. Lao PDR has a total of 12,446 villages in 142 districts. A two-stage randomised sampling selection technique was used. First, one third (33%) of the districts in each of the 18 provinces were randomly selected, and then one fifth (20%) of the villages in each of the selected districts were randomly selected. The final number of selected villages was 783 in 47 districts. The relevant district officers visited each selected village and undertook interview of poultry owners in cooperation with each village's Village Veterinary Worker. A questionnaire in Laotian was completed by all poultry owners in each village visited for sampling. Blood and cloacal swab samples were collected from chickens for serological tests and virus isolation.

***Promoting Awareness:*** In the early stage of outbreak, posters were designed by the Information Center of the Ministry of public health for the awareness program of



SARS and AI with the support of the WHO and FAO. Later, based on the recommendations of the national rehabilitation workshop, the public awareness activities through various media were implemented through the recruitment of a national specialist. Glossy coloured posters on basic hygiene measures and bio-security for village livestock owners in practical designs were printed and distributed to the provinces, NGOs, other organisations, and to the markets, primary schools and other public areas within Vientiane. Radio broadcast through the Lao national radio station were presented, from 15 December 2004 to 15 June 2005, to raise community awareness (Total 156 programs for 6 months). Topics covered included:

- How to feed ducks and chickens in a safe method
- What needs to be done in preventing an AI disease outbreak?
- The level of danger of AI disease from dead chickens/ducks
- Chicken eggs – do we need to destroy the eggs?
- How to clean the dead chickens/ducks applying safe methods
- Cooking chickens to prevent the AI disease
- Why there is AI infection in some places in Lao PDR and the reasons for the infection
- How AI is transferred from animals to human and why

TV programmes were also broadcasted. A video programme on public awareness has been made for the government's future activities. The National HPAI Task Force (NHPAIF) also published a handbook "Technical guideline on disinfection vehicle at the check points". This will be distributed as reference guide for the government officials, village veterinary workers and the general public.

**Training workshops:** Before the implementation of the active surveillance measures in each province, training workshops on disease investigation and reporting, sample collection and submission, and use of Personal Protecting Equipment (PPE) were organised in Vientiane, Champasack and Luang Namtha Provinces during March-April 2004. The national workshop on active surveillance was held on 4–5 May in Vientiane with participants from all HPAI-affected Provinces. A Geographical Information Systems (GIS) training course was also organised on 4-6 May. Also in May 2004, a workshop was held in Vientiane with officials from each of the 18 provinces for survey administration. Follow-up to the training, NHPAIF members visited each province to provide technical support. From 31 May to 18 June, another workshop on GIS was delivered in Vientiane. The course provided hands-on training in the use of the computerised software programme "Health Mapper" which had been introduced to the Lao Ministry of Health by WHO. Under TCP/RAS/3010, a national workshop on rehabilitation was held on 15-16 September. This was followed by a regional workshop on rehabilitation held in Thailand. On 2–3 November 2004, a workshop for the evaluation of Disease Control Activities and active surveillance was held in Vientiane to review the findings from the national active surveillance programme. Results were discussed while practical working solutions were developed for various problems experienced. Lao PDR organized a bilateral meeting with Viet Nam for control animal diseases in early April 2005. A workshop on quarantine was held in the second week of April. During June, Lao PDR participated in two regional epidemiology training workshops that were held in Thailand.

**Rehabilitation:** Lao PDR had been importing commercial chicks from neighbouring countries until AI outbreak devastated these countries. Thus Lao PDR faced a severe shortage in replacement chicks for their poultry production because of import ban from AI infected countries. After instituting random surveillance of AI infection and strengthening of border control to stop reintroduction of the disease, day old chicks of layer and broiler parent stocks were provided from an AI free country around April 2005. The chicks were quarantined and distributed to designated farms for commercial chick production.

**Education:** No outbreak of HPAI has been reported in Lao PDR in 2005. How to continue surveillance and keep up general public awareness is the key for Lao PDR to detect infection early should it occur. Considering that there is no veterinary faculty in Lao PDR, a severe shortage of veterinary human resources is

inevitable in near future. The current work force was all trained at universities in other countries including Russia, Eastern Europe and Cuba under various training and scholarship schemes. Since the demise of the USSR and contraction of available funds from former socialist donors, there have been few opportunities for undergraduate or graduate training. This will affect not only HPAI control but other transboundary animal diseases control (e.g. foot-and-mouth disease). To keep the current veterinary capacity for preventing, detecting and controlling animal diseases, international assistance for undergraduate training on veterinary medicine is essential.

#### 4. Actions taken – follow-up

- **Regional Training on Basic Epidemiology and Data Analysis** under FAO subregional projects was held in Bangkok on 13-17 June 2005. The workshop was organised by FAO with the collaboration of CIRAD. Participants were from Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Papua New Guinea, Philippines, Thailand, Timor Leste and Viet Nam.
- **Regional Training on Advanced Epidemiology and Data Analysis** under FAO subregional projects was held in Bangkok from 27 June to 1 July 2005. The workshop was organised by FAO with the collaboration of Royal Veterinary College (RVC), UK. Participants were from Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Papua New Guinea, Philippines, Thailand, Timor Leste and Viet Nam.
- **Regional Training on Epidemiological data management** under FAO subregional projects was held in Bangkok from 26-29 July 2005. The workshop was organised by FAO with the collaboration of Massey University, New Zealand. Participants were from China, India, Sri Lanka, Viet Nam, Indonesia, Nepal and Thailand
- **The Launching Meeting for TCP/RAS/3008 "Diagnostic Laboratory and Surveillance Network Coordination for Control and Prevention of Avian Influenza in South Asia"** will be held in India in August 2005. The meeting will be attended by the Chief Veterinary Officers from the region, Heads of the National Veterinary Laboratories and Surveillance teams from countries of the Region, experts from OIE and FAO reference laboratories and collaboration centres, experts from WHO, SAARC representations, FAO experts from Rome and Bangkok. The objective of the meeting is to set up a sub-regional (South Asia) network of national veterinary diagnostic laboratories and surveillance teams, in order to improve the quality of the laboratory diagnosis and the understanding of the epidemiological situation.
- **Stakeholder consultation on the regional/national interest in setting up a broad assessment of the socio-economic impact of HPAI control in the region** was held in Bangkok on 27 June 2005 to provide detailed information on current and proposed research on socio-economic impact assessment of policy decision and epidemiological analysis in the Mekong region and to ascertain the proposed approach adds value to the on-going research.
- **Regional Avian Influenza Economic Assessment Workshop** will be held in September 2005 in Bali, Indonesia.
- **APEC Health Task Force Symposium on Avian Influenza and Preparedness for a Human Health Emergency** will be held in San Francisco 28-29 July 2005.
- **Preparing against risk – Argentine:** The National Agrifood Health and Quality Service (SENASA), Argentine will conduct an "exotic poultry disease simulation exercise" from 7 to 11 August 2005 in conception of Uruguay, Province of Entre Ríos to provide training to the technical professionals involved in order to cope with possible infection of poultry with highly pathogenic avian influenza virus.

**Panama:** The Ministry of Agricultural Development, Panama will conduct a simulation exercise on avian influenza from 26 to 29 July 2005 in Penonomé City, Coclé Province.

➤ **Recent Missions (June - August):**

*We would be grateful if other organizations/countries could send us information on their assistance missions to the countries concerned. (e-mail to: Avian-Influenza-Registration@fao.org)*

**[Cambodia]**

- Dr. Y. Froehlich (France) FAO consultant (Project Technical Adviser), ongoing
- Dr. S. Desvaux (France) FAO consultant (Veterinary Epidemiologist), 09/05–08/06/05
- Dr. W. Kalpravidh, FAO RAP (Bangkok), Project Co-ordinator, June 2005

**[Indonesia]**

- Dr. S. Morzaria, FAO AGAH (Rome) ECTAD Coordinator, 23/05-06/06/05
- Dr. B. Brandenburg (USA), 16/05-11/06/05
- Dr. F. Pluimers (Netherlands) Avian influenza disease management expert, 01-11/06/05

**[DPRK]**

- Dr K. Benjebara OIE (Paris), Head, Animal Information Department, 13-18/06/05
- Dr D. Sibartie, OIE (Paris) Deputy-Head Scientific and Technical Department, 13-18/06/05

**[Malaysia]**

- Dr. J. Domenech, FAO AGAH (Rome) Chief AGAH, FAO/OIE/WHO Consultation on avian influenza and human health, 04-06/07/05 Kuala Lumpur
  - Dr. V. Martin, FAO AGAH (Rome) Animal Health Officer (Infectious Diseases Emergencies), Kuala Lumpur meeting
- Dr. A. McLeod, FAO AGAL (Rome) Senior Officer (Livestock Policy), Kuala Lumpur meeting
- Dr. C. Benigno, FAO RAP (Bangkok) Animal Health Officer, Kuala Lumpur meeting
- Dr. W. Kalpravidh, FAO RAP (Bangkok), Project Co-ordinator, Kuala Lumpur meeting
- Mr. W. Schoustra (Netherlands) FAO consultant, Kuala Lumpur meeting
- Mr. E. Northoff, FAO GIIM (Rome) Information Officer, Kuala Lumpur meeting
- Dr. F. Guo (China), Project Co-ordinator, Kuala Lumpur meeting

**[Philippines]**

- Dr. C. Benigno, FAO RAP (Bangkok) Animal Health Officer, 18-22/07/05

**[Thailand]**

- Dr. F. Guo (China), Project Co-ordinator, Regional Training on Basic Epidemiology and Data Analysis. 13-17/06/05
- Dr. C. Benigno, FAO RAP (Bangkok) Animal Health Officer, ASEAN Working Group on Livestock on 1-3/06/05
- Dr. W. Kalpravidh and Dr. C. Benigno, FAO RAP, ASEAN HPAI Task Force Meeting. 30-31/05/05
- Dr. W. Kalpravidh, FAO RAP (Bangkok), Project Co-ordinator, ASEAN Working Group on Livestock on 1-3/06/05

**[Viet Nam]**

- Dr. H. Oshitani, WHO WPRO (Manila) Regional Advisor in Communicable Diseases Surveillance and Response. Collaborative WHO/FAO mission to review significance of recent viral strains in Viet Nam (WHO/FAO review mission), 21-29/06/05
- Dr. P. W. Horby, WHO WPRO (Viet Nam) WHO/FAO review mission
- Dr. Wilina Wei-ling Chung (China) WHO/FAO review mission, 21-29/06/05
- Dr. Peter Cheng Kwok Chu (China) WHO/FAO review mission, 21-29/06/05
- Dr. M. Tashiro (Japan) National Institute for Infectious Diseases Research, WHO/FAO review mission, 21-29/06/05
- Dr. A. Nicoll (UK) Contagious Diseases Monitoring Centre, WHO/FAO review mission, 21-29/06/05.
- Dr. N. J. Cox (USA) CDC, WHO/FAO review mission, 21-29/06/05
- Dr. K. Fukuda (USA) CDC, WHO/FAO review mission, 21-29/06/05

- Dr. D. Swayne (USA), FAO Consultant. WHO/FAO review mission, 26-30/06/05
- Dr. L. Sims (Australia), FAO Consultant. WHO/FAO review mission, 23/06/05
- Dr. A. McLeod, FAO AGAL (Rome) Senior Officer (Livestock Policy), Supervision mission for Avian Influenza Emergency Recovery Project (AIERP), 07-16/06/05
- Dr. V. Martin, FAO AGAH (Rome) Animal Health Officer (Infectious Diseases Emergencies), Supervision mission for Avian Influenza Emergency Recovery Project (AIERP), 13-20/06/05, 29/06-01/07/05
- Dr. L. Sims (Australia) Avian influenza disease Management Expert. Supervision mission for Avian Influenza Emergency Recovery Project (AIERP) on vaccination strategy. 31/05-11/06/05
- Dr. A. Tripodi (Germany/Italy), Project Coordinator, 05/04-04/06/05
- Dr. N. Taylor (UK) FAO consultant (Epidemiology), 25/04-15/06/05
- Ms. C. Vaccaro (Italy) Architect, 18-26/07/05
- Dr. J. Pearson (USA) FAO consultant (Laboratory Expert), 24-29/07/05
- Dr. Xia Ye Cai (China). Head, Virology Division, Chinese Veterinary Medicine Control Department, FAO mission (AI vaccination), 31/05-15/06/05
- Dr. Tian Guo Bin (China). National AI Reference Laboratory (Harbin), FAO mission (AI vaccination), 31/05-15/06/05

#### **[Cook Islands]**

- Dr. H. Wagner, FAO RAP (Bangkok) Senior Animal Production and Health Officer, Meeting of Ministers of Agriculture of the South Pacific States. 01-03/06/05

#### **[Other regions]**

- Dr. J. Lubroth, FAO AGAH (Rome) Senior Officer (EMPRES), Avian Influenza and Pandemic Infections Preparation Planning, Luxemburg/EU SANCO. 28/06/05
- Dr. C.H. Riemenschneider, FAO LOWA (USA) Director, Liaison Office for North America, APEC Health Task Force Symposium on Avian Influenza and Preparedness for a Human Health Emergency, San Francisco, 28-29 July 2005
- Dr. W. Kalpravidh, FAO RAP (Bangkok), Project Co-ordinator, APEC Health Task Force Symposium on Avian Influenza and Preparedness for a Human Health Emergency, San Francisco, 28-29 July 2005
- Dr. W. Kalpravidh, FAO RAP (Bangkok), Project Co-ordinator, Centers for Epidemiology & Animal Health, USDA/APHIS/VS, Colorado, 26 July 2005

## **5. Resources available**

### **Relevant articles, publications and websites:**

#### **FAO**

- Second FAO/OIE Regional Meeting on Avian Influenza Control in Asia (23-25 February 2005, Ho Chi Minh City). The full text of the final report is available on: [http://www.fao.org/ag/againfo/subjects/documents/ai/AI\\_2nd\\_RegMtg\\_HoChiMinhCity\\_Rep.pdf](http://www.fao.org/ag/againfo/subjects/documents/ai/AI_2nd_RegMtg_HoChiMinhCity_Rep.pdf)
- FAO Recommendations on the Prevention, Control and Eradication of Highly Pathogenic Avian Influenza (HPAI) in Asia <http://www.fao.org/docs/eims/upload/165186/FAOrecommendationsonHPAI.pdf> (233KB)
- Guiding Principles : Highly Pathogenic Avian Influenza Surveillance And Diagnostic Networks In Asia (FAO Expert Meeting 21-23 July 2004, Bangkok)  
English: <http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/Guiding%20principles.pdf>  
中文: <http://www.fao.org/ag/againfo/subjects/zh/health/diseases-cards/Guidingprinciples.pdf>
- FAO/OIE Emergency Regional Meeting on Avian Influenza Control in Animals in Asia (26-28 February 2004, Bangkok). The full text of the final report is available on: [http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/HPAI\\_Bangkok.pdf](http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/HPAI_Bangkok.pdf)
- FAO/OIE/WHO Technical Consultation on the Control of Avian Influenza (3-4 February 2004, Rome) The full text of the Conclusions and recommendations is available on: [http://www.fao.org/newsroom/common/ecg/36647\\_en\\_experts.pdf](http://www.fao.org/newsroom/common/ecg/36647_en_experts.pdf)
- Manual on the preparation of national animal disease emergency preparedness plans

<http://www.fao.org/docrep/004/x2096e/x2096e00.htm>

- The use of vaccination as an option for the control of Avian Influenza (I. Capua, S Marangon) – 71st OIE General Session (May 2003). Available at: [http://www.fao.org/docs/eims/upload/153564/A\\_71\\_SG\\_12\\_CS3E.pdf](http://www.fao.org/docs/eims/upload/153564/A_71_SG_12_CS3E.pdf)
- Information for shipping international diagnostic specimens to the International Reference Laboratories (see appendix 2 of AIDEnews issue 5, 6 and 30, 31, available at: [http://www.fao.org/eims/secretariat/empres/eims\\_search/simple\\_s\\_result.asp?infotype=37](http://www.fao.org/eims/secretariat/empres/eims_search/simple_s_result.asp?infotype=37))
- FAO-EMPRES (Emergency Prevention System against transboundary animal and plant pests and diseases) Avian Influenza website: <http://www.fao.org/AG/AGInfo/programmes/en/empres/home.asp>
- FAO AGAH Avian Influenza website: [http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/special\\_avian.html](http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/special_avian.html)
- FAO AIDEnews (Vol. 1 - 31)  
(Available at: [http://www.fao.org/eims/secretariat/empres/eims\\_search/simple\\_s\\_result.asp?infotype=37](http://www.fao.org/eims/secretariat/empres/eims_search/simple_s_result.asp?infotype=37))

### **OIE**

- OIE/FAO International Scientific Conference on Avian Influenza (OIE Paris, France, 7–8 April 2005) Recommendations [http://www.oie.int/eng/avian\\_influenza/OIE\\_FAO\\_Recom\\_05.pdf](http://www.oie.int/eng/avian_influenza/OIE_FAO_Recom_05.pdf)
- OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2004 - CHAPTER 2.1.14. Highly Pathogenic Avian Influenza [http://www.oie.int/eng/normes/mmanual/A\\_00037.htm](http://www.oie.int/eng/normes/mmanual/A_00037.htm)
- Proposed new chapter for The OIE Terrestrial Animal Health Code [Chapter 2.1.14.] Avian Influenza: [http://www.oie.int/eng/AVIAN\\_INFLUENZA/safety.htm](http://www.oie.int/eng/AVIAN_INFLUENZA/safety.htm) click the link to the proposed new chapter submitted in May 2004
- OIE Update on Avian Influenza in Animals in Asia web site: [http://www.oie.int/download/AVIAN%20INFLUENZA/A\\_AI-Asia.htm](http://www.oie.int/download/AVIAN%20INFLUENZA/A_AI-Asia.htm)
- OIE Technical Disease Cards: [http://www.oie.int/eng/maladies/fiches/a\\_A150.htm](http://www.oie.int/eng/maladies/fiches/a_A150.htm)

### **WHO**

- WHO Inter-country Consultation - Influenza A/H5N1 in Humans in Asia. Manila, 6-7th May 2005 [http://www.who.int/entity/csr/disease/avian\\_influenza/H5N1IntercountryAssessment.pdf](http://www.who.int/entity/csr/disease/avian_influenza/H5N1IntercountryAssessment.pdf)
- WHO interim recommendations for the protection of persons involved in the mass slaughter of animals potentially infected with highly pathogenic influenza viruses [http://www.who.int/entity/csr/disease/avian\\_influenza/guidelines/en/Avian%20Influenza.pdf](http://www.who.int/entity/csr/disease/avian_influenza/guidelines/en/Avian%20Influenza.pdf)
- Advice for people living in areas affected by bird flu or avian influenza (WHO) <http://www.wpro.who.int/avian/docs/advice.asp>
- Laboratory study of H5N1 viruses in domestic ducks: main findings (WHO) [http://www.who.int/csr/disease/avian\\_influenza/labstudy\\_2004\\_10\\_29/en/](http://www.who.int/csr/disease/avian_influenza/labstudy_2004_10_29/en/)
- WHO Avian influenza web site: [http://www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/)

### **Others**

- Miyabayashi, Y., and T. Mundkur. 1999. Atlas of key sites for Anatidae in the East Asian Flyway. Wetlands International – Japan, Tokyo, and Wetlands International-Asia Pacific, Kuala Lumpur. <http://www.jawgp.org/anet/aaa1999/aaaendx.htm>
- Mundkur, T. 2005. Cross-Himalayan Migration of the Bar-headed Goose. Wetlands International [www.wetlands.org/IWC/awc/waterbirdstrategy/NewsItems/BarheadedGoose.htm](http://www.wetlands.org/IWC/awc/waterbirdstrategy/NewsItems/BarheadedGoose.htm)
- National Bird Banding Center, P.R. China (eds). 1987. Chinese Bird Banding Almanac 1982-1985. Gansu Technology Publisher, Lanzhou, 197pp, in Chinese.

- Uttangi, J.C. 1988. Chinese ring on a Barheaded Goose. Newsletter for Birdwatchers. 28 (3-4): 15. Wetlands International. 2002. Waterbird Population Estimates – Third Edition. Wetlands International Global Series No. 12, Wageningen.  
[www.wetlands.org/IWC/WPEnote.htm](http://www.wetlands.org/IWC/WPEnote.htm)
- Wetlands International. 2002. Waterbird Population Estimates – Third Edition. Wetlands International Global Series No. 12, Wageningen.  
<http://www.wetlands.org/IWC/WPEnote.htm> [www.wetlands.org/IWC/WPEnote.htm](http://www.wetlands.org/IWC/WPEnote.htm)
- Nature - Bird Flu Special (Nature 435, 26 May 2005)  
<http://www.nature.com/nature/focus/avianflu/index.html>
- Avian Influenza - Disease and Control Strategies and Contingency Planning (intervet)  
<http://www.avian-influenza.com/>
- Avian Influenza - Its Causes, Effects & Control (Antec International)  
<http://www.antecint.co.uk/main/avianflu.htm>
- Biosecurity for the Birds (USDA Animal and Plant Health inspection Service, Veterinary Service) <http://www.aphis.usda.gov/vs/birdbiosecurity/>
- Biosecurity for Poultry Flocks (Joan S. Jeffrey, University of California, Davis, School of Veterinary Medicine) [http://www.vetmed.ucdavis.edu/vetext/INF-PO\\_Biosecurity.html](http://www.vetmed.ucdavis.edu/vetext/INF-PO_Biosecurity.html)
- DEFRA(UK): Low Pathogenic Notifiable Avian Influenza (H5 and H7) in poultry meat (386 KB) - 5 January 2005  
<http://www.defra.gov.uk/animalh/diseases/monitoring/pdf/lpai-poultrymeat.pdf>
- DEFRA(UK): Low Pathogenic Notifiable Avian Influenza (H5 and H7) in poultry eggs for consumption (363 KB) - 5 January 2005  
<http://www.defra.gov.uk/animalh/diseases/monitoring/pdf/lpai-poultrymeat.pdf>
- Viet Nam Livestock Working Group web site (including HPAI disease map)  
<http://www.livestockworkinggroup.org>
- Experimental Study to Determine if Low-Pathogenicity and High-Pathogenicity Avian Influenza Viruses can be present in chicken breast and thigh meat following intranasal virus inoculation. David E. Swayne and Joan R. Beck (Avian Diseases 49:81–85, 2005)  
[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=15839417](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15839417) (summary)
- National Strategic Plan for Avian Influenza Control in Thailand  
<http://www.tatnews.org/ccc/2480.asp>
- Proposal on Strengthening Nationwide Veterinary System during 2005-2010 (2<sup>nd</sup> draft)  
<http://www.mard.gov.vn/dah/dichcumga/Nam%202005/DeAn%20tang%20cuong%20Othong%20TY%204.05.htm>
- Italian AI outbreak information <http://www.oevr.org/or4/or?uid=oevr.main.index&oid=7656>
- Mexican AI outbreak information  
<http://web2.senasica.sagarpa.gob.mx/xportal/dgsa/czoo/Doc694/>
- Canadian Animal Health Network Bulletin. Special Edition: Avian Influenza  
<http://www.cahnet.org/bulletinsE/CahnetBulletin9english.pdf>

### Contact persons at FAO:

Juan Lubroth (FAO Headquarters – Rome)  
[juan.lubroth@fao.org](mailto:juan.lubroth@fao.org)

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Hans Wagner (FAO Regional Office for Asia and the Pacific (RAP) - Bangkok)  
[hans.wagner@fao.org](mailto:hans.wagner@fao.org)

Fernanda Guerrieri (Chief, Emergency Operations Service (TCEO), Headquarters - Rome)  
[Fernanda.Guerrieri@fao.org](mailto:Fernanda.Guerrieri@fao.org)

Cristina Amaral (Senior Operations Officer, TCEO, FAO Headquarters - Rome) for  
emergency fund raising and operational responsibilities [Cristina.Amaral@fao.org](mailto:Cristina.Amaral@fao.org)

**Supervision and Coordination:**

J. Domenech, Chief, Animal Health Service (FAO Headquarters – Rome)  
[joseph.domenech@fao.org](mailto:joseph.domenech@fao.org)

**Annex 1****Information for shipping international diagnostic specimens**

To the **Australian Animal Health Laboratory (AAHL)**

The Australian Animal Health Laboratory (AAHL) at Geelong, Australia is an OIE Reference Laboratory for avian influenza and Newcastle disease. It offers a wide range of diagnostic tests and facilities for handling these viruses to support countries in their disease control and eradication programs.

**Type of specimen:** Specimens submitted to AAHL for disease diagnosis may be either virus isolates made in the submitting country or clinical specimens, such as tissues or swabs, collected from diseased birds.

**Import permit and packing:** Copies of Australian import permits are available from AAHL by contacting [aahl-accessions@csiro.au](mailto:aahl-accessions@csiro.au). All specimens must be packed in leak-proof containers in accordance with the appropriate IATA regulation and appropriately labelled. Suitable transport containers, packing instructions are also available from AAHL by contacting [aahl-accessions@csiro.au](mailto:aahl-accessions@csiro.au). Copies of the import permit and other consignment details should be attached to the outside of the package to expedite clearance through Australian customs.

**Notification of shipment:** If submitting specimens please notify the accessions clerk on [accessions@csiro.au](mailto:accessions@csiro.au), the Duty Veterinarian on [dutyvet@csiro.au](mailto:dutyvet@csiro.au) or Dr. Peter Daniels on **+61 3 5227 5000** of the consignment details so that the specimens can be collected upon arrival in Australia. Alternatively send the information by facsimile to **+61 3 5227 5555**. Consignment details include the consignment note/air weigh bill number, courier/airline and expected arrival date.

**Shipping address:**

The Director  
Australian Animal Health Laboratory  
5 Portarlington Road  
Geelong, 3220  
Australia  
Telephone 61 3 5227 5000  
Facsimile 61 3 5227 5555  
<http://www.csiro.au/aahl>

**Contact for Avian Influenza:** You may also wish to discuss the testing required with Peter Daniels ([peter.daniels@csiro.au](mailto:peter.daniels@csiro.au)) or Paul Selleck ([paul.selleck@csiro.au](mailto:paul.selleck@csiro.au)) on **+61 3 5227 5000** prior to submitting the specimens.

**Annex 2: Situation by Countries (as of 31/07/2005)**

area	date of first official reporting to the OIE	type	species affected since the start of the outbreak	human case	Latest information <sup>1)</sup>		
					last known case suspected and/or confirmed	source of the latest information and OIE declaration	comments
Republic of Korea	12/12/03	H5N1	Layer, duck; virus isolated: magpie	no	24/03/04	Government, media websites, Declared to OIE	AHD/MAF informed OIE the negative result of the final serological testing of the sentinel birds on 19/07/04; Final report submitted to OIE on 21/09/04
		H5N2 (LP <sup>3)</sup> )	Duck	no	01/12/04	Government, media websites, Declared to OIE	
Viet Nam	8/01/04	H5N1	Chicken, quail, duck, muscovy duck	yes	June 05	FAO <sup>2)</sup> , Government	
Japan	12/01/04	H5N1	Chicken, crow	sero-positive	05/03/04 (crow)	Government and media website, Declared to OIE	All the movement restrictions lifted by 13/04/04
	01/07/05	H5N2 (LP)	chickens	no	10/07/05	Government, Prefecture and media website	
Taiwan Province of China	20/01/04	H5N2 (LP)	Chicken, duck, pheasant	no	09/03/04	Meeting report, media website. Declared to OIE	
Thailand	23/01/04	H5N1	Tiger, virus isolation: chicken, duck, goose, quail, turkey, stork. Surveillance: the Little Cormorant, Asian Openbill, Scaly-breasted Munia, Red Turtle-Dove, Black Drongo and pigeon.	yes	21/07/05	Government, FAO, media websites	
Cambodia	24/01/04	H5N1	Chicken, duck, goose, turkey, guinea fowl, wild bird	yes	April 05	Government, FAO	
Hong Kong SAR	26/01/04	H5N1	Peregrine falcon; Grey heron, Chinese pond heron	no	10/01/05	Declared to OIE	
Lao PDR	27/01/04	H5N1	Chicken, duck and quail	no	13/02/04	Government, FAO	
Pakistan	28/01/04	H7N3 H9N2 (LP)	layer; broiler	no	November 04	Government, FAO	
Indonesia	06/02/04	H5N1	Chicken, duck and quail; pig (without clinical sign)	Yes	4 May 05	ProMED, media website, Declared to OIE	
China	06/02/04	H5N1	Virus isolation: chicken, duck, goose, quail, pigeon, pheasant, black swan; bar-headed geese, great black-headed gulls, brown-headed gulls, ruddy shelducks and great cormorants	no	27/06/05	Government, FAO, media websites	
Malaysia	19/08/04	H5N1	Chicken, fighting cocks (?)	no	19/11/04	Government, media websites, Declared to OIE	Final report submitted to OIE on 03/01/05
Democratic People's Republic of Korea	07/04/05	H7	Chicken	no	27/03/05	Government, media websites, Declared to OIE	Complete characterisation is awaited.
Philippines	15/07/05	H5(LP), H9 (LP)	duck	no			Seropositive ducks were found through routine surveillance. No active infection.

(continued)

area	date of official reporting to the OIE	type	species affected since the start of the outbreak	human case	Latest information <sup>1)</sup>		
					last known case suspected and/or confirmed	source of information and its OIE declaration	comments
United States of America	11/02/04	H7N2 (LP)	Chicken	no	11/02/04 (Delaware)	Delaware Department of Agriculture Statement; FAO.	Final report submitted to OIE on 15/05/04
		H2N2 (LP)	Chicken	no	03/02/04 (Pennsylvania)	Pennsylvania Department of agriculture website; ProMED	
	23/02/04	H5N2	Chicken	no	Late February (Texas)	Texas Animal Health Commission and USDA website; FAO. Declared to OIE	USDA informed OIE the eradication of HPAI in Gonzales County, Texas on 01/04/04; 17/08/04
		H7N2 (LP)	Chicken	no	09/03/04 (Maryland)	Maryland Department of Agriculture News Release; FAO; Declared to OIE	Final report submitted to OIE on 15/05/04
		H7N3 (LP)	non-commercial	no	22/06/04 (Texas)	Texas Animal Health Commission website	
		H3N2	Turkey	no	17/09/04 (Missouri)	ProMED	
	10/06/05	H7N2 (LP)	Duck	no	10/06/05	ProMED	
Canada	19/02/04	H7N3 (LP)	Chicken	yes (conjunctivitis)	29/04/04 (British Columbia)	Government website. Declared to OIE	CFIA informed OIE that the identified zone is no longer considered as infected, as of 09/07/04; Final report submitted to OIE on 23/11/04.
	09/03/04	H7N3					
		H3 (LP?)	Turkey	no	01/06/05	ProMED	The virus was discovered during a routine testing matrix
Mexico	20/03/05	H5N2 (LP)	Chicken	no	July 2005	Web Media	
South Africa		H6 (LP)	commercial poultry	no	25/03/04	ProMED	
	06/08/04	H5N2	Ostrich	no	early December (Eastern Cape province)	Web Media	
Egypt		H10N7 (LP)	Wild duck	yes	18/04/04 (from survey sample)	ProMED	
Italy		H5N2 (LP)	Turkey	no	15 April 2005 (Lombardia)	Web Media, Local Government	
Russia	24/07/05	H5N1	chickens, turkeys, ducks, geese	no		web media	Confirmation of H5N1 was reported by web media news

1) Official (OIE) and unofficial information (ProMED, press agencies, FAO tracking systems...), 2) FAO: FAO representative in concurrence with Government sources, 3) LP: low pathogenic strain, 4) Gphin: Global Public Health Intelligence Network (Health Canada)