



Avian Influenza: Stop the risk for humans and animals at source

The Avian Influenza (AI) virus has had a considerable economical and social impact on affected countries and could potentially lead to a new global human influenza pandemic. Therefore, it is in the interest of developed and developing countries to invest in the control and containment of the virus. Control of highly pathogenic avian influenza (HPAI) at *source* means managing transmission of the virus where the disease occurs – in poultry, specifically free range chickens and in wetland dwelling ducks – and curbing HPAI occurrence in Vietnam and other parts of Asia before other regions of the globe are affected.

Recent experience suggests that it will be impossible to completely eradicate the virus from all countries in Asia soon. Eradication requires that affected countries have highly effective veterinary services with efficient animal health delivery and animal disease information systems. Given the dispersed and variable nature of poultry production in these countries, and the lack of resources to address the problem, it is unlikely that effective strategies to contain the virus can be implemented without timely provision of significant additional technical and financial support by the international community.

The human health risk - unquantifiable, but real:

The strain of AI currently affecting several Asian countries has proven fatal to humans, infected mainly, if not exclusively, by direct contact with infected poultry. It is impossible to predict when the virus might become adapted to enable human-to-human transmission, but this could happen. Controlling HPAI in poultry, to decrease the risk to human health in Asia and worldwide, is a duty.

The losses caused by bird flu:

The impact of bird flu has been serious at several levels. For the household, it has meant the loss of modest livelihoods and food security. Smallholder poultry keeping is a major opportunity for alternative income in rural and peri-urban areas and many poor rural women keep small flocks of scavenging poultry for cash flow and food security. At the village level HPAI has devastated local economies. Loss of the flock destroys a major asset, leaving farmers deeper in debt and disrupting the livelihood of others in the market chain, such as small traders and butchers. A 2004 FAO survey found that in badly affected areas of Indonesia, more than 20% of the permanent workers on industrial and commercial farms lost their jobs, the demand for day-old chicks decreased by more than 40% and the demand for feed was reduced by up to 45%. In Vietnam and Cambodia, the prices of alternative proteins to chicken rose when poultry markets were disrupted by AI and remained high even after the poultry markets recovered, causing a problem for poor consumers.

For countries that exported poultry and poultry products, additional significant losses resulted from the short-medium term loss of export markets and, longer term, the loss of market share (other exporting countries may permanently take market share from countries that are temporarily affected by disease).

According to Oxford Economic Forecasting, in 2004, the total GDP losses accruing from poultry farm losses in (1) Thailand (2) Vietnam and (3) Asia are US\$1.2B, US\$0.3B and US\$10-15B respectively. The scaling-up of health risk impacts from avian influenza in birds to a more general problem for livestock and a drop in tourism could create annual economic losses of up to US\$50-60B, even if human cases of disease were to remain limited.

More than 125 million birds have died or been destroyed in the Asian epidemic to date. Wild birds and other wildlife have also died.

Avian influenza represents a risk to the developed as well as developing countries. In 2004-5, 10 Asian countries or areas had outbreaks of highly pathogenic strains. Outbreaks also occurred in Hong Kong (1997-1998 and 2003), South Korea and Japan (2003) and other countries around the world in recent years. No poultry keeping country can be sure of staying free.

Avian influenza – an endemic menace:

Bird flu will be difficult and, in some cases, impossible to eradicate because the viruses have become established in certain environments and host species (including in wild and farmed ducks). Assuming that HPAI will be present for many years in some of the countries that experienced outbreaks in 2004-2005, the objective, in the short to medium term, is to push infection back into known reservoirs and minimise the risk of infection spilling over into farmed poultry and humans at the village and commercial farm level. Minimising poultry infection and keeping humans free of avian influenza will help to prevent a global influenza pandemic. In the long term, the objective is to eliminate infection from as many production systems as possible, recognising that it will not be possible to eliminate AI viruses from wild birds.

There is a complex relationship between human behaviour and poultry production and marketing systems. Public awareness of risky practices must be raised and such practices changed in order to prevent continuing cases of human infection.

The production of poultry (and small livestock) is continually increasing in Asia, to meet the needs of growing urban populations. The effects of HPAI and the threat of future outbreaks of transboundary animal diseases, including zoonoses (animal diseases that affect humans) will increase with increasing intensification of livestock production, unless there is significant and sustained veterinary intervention to cut the cycles of disease transmission and establishment.

Animal and veterinary public health services are challenged to the extreme:

Many of the countries currently affected by HPAI have limited capacity to control this highly contagious disease. They lack effective diagnostic capability and surveillance systems that are essential for early warning and timely response. Shortfalls in human and financial resources and difficulties in interagency and public/private sector coordination compound the problem.

The extent to which national animal health services can control risk factors associated with production and marketing practices is limited. Many activities associated with the supply chain are effectively the responsibility of decentralised government jurisdictions or the private sector and it can be difficult to deliver the coordinated, centralised management that is required to manage a disease emergency.

These severe limitations are also important for future animal and public health emergencies, because livelihoods will always be at stake and food security at risk where there is little to no capacity to prevent and control disease.

While direct costs relate mainly to the livestock production sector and animal disease management, it is clear that the implications for economic performance and human health may be more serious. The priority is therefore to support national animal health and veterinary campaigns against bird flu, in particular through assistance to introduce better tools for diagnosis and disease control, including vaccines. Countries need help to address HPAI at its source – and the need is greatest for countries that have large numbers of poor farmers who depend on poultry for a living, and where resources to address the problem are limited.

The kind of investment support that is needed:

The costs to countries in the region to control and recover from AI are of the order of hundreds of millions of dollars. To date, support by FAO and donor agencies (\$18 M) has helped to provide critically needed supplies of equipment, materials and technical assistance. Obviously, significant additional investment support is needed to address HPAI in the longer term. The objective is to control and eventually eliminate HPAI from key production sectors and compartments, by reducing the virus load in poultry and resulting environmental contamination, preventing the infection of humans and reducing the risk of a global pandemic. Achievement of these objectives will limit the economic impact individual livelihoods, on countries and on the region and will help to keep other regions/countries free from infection.

After a year of FAO collaboration with OIE, other international (WHO) and regional organisations and governments on HPAI, we have established a set of principles on which to base future investment actions at the national, regional and global level, as follows:

- Timely early warning and disease intelligence, based on consistent and transparent information sharing, are central to detecting outbreaks before they become widespread, and tracking potentially dangerous changes in the virus. This requires networking at many levels, i.e field (farm) and central/national level, animal and public health laboratories, epidemiology teams and economic and policy institutions, and participation in national, regional and international reporting networks.
- Rapid response using the tools such as stamping out and biosecurity, including compensation for farmers when outbreaks occur and strategic, targeted vaccination in accordance with FAO/OIE recommendations.
- Control measures to prevent duck-to-chicken transmission cycles and stamp out any foci where chicken-to-chicken transmission is occurring.
- The complex risks and scientific uncertainties associated with HPAI (and other emerging diseases) demand a significant investment in scientific study and research and development activities. We must improve understanding of the interactions between production and marketing systems and the effects of human interventions,

and institutional responses. Further research into virus ecology is an important global public good.

- It is important to understand and where needed modify the behaviour of the many different stakeholders in the poultry sector, especially the smallholder private sector.
- Strong veterinary public health authorities play a central role in disease management but need to be operating strategically with other stakeholders and agencies. Control and prevention options for the strategies require careful cost-benefit assessment and must be planned in collaboration with all stakeholders, especially farmers.
- Development of better tools for diagnosis and control, particularly more cheap and practical vaccines, is a priority and must be linked with globally coordinated conduct of scientific research.
- To be efficient and effective each country must address HPAI and other transboundary animal diseases and access global support on both a national and regional basis.

FAO, in collaboration with OIE, regional organizations and countries, recommends immediate implementation of the following sets of actions at a national, regional and global level.

At the national level:

FAO proposes, and will support, a multi-faceted approach to disease prevention and management. Control strategies must flow seamlessly from rural areas to regional and national levels and vice-versa, involving all stakeholders: subsistence farmers and commercial operators; food distributors and market chains, national governments and international organisations. Activities will be implemented to build strong stakeholder partnerships and promote sharing of responsibilities between public and private sector. The development of control and prevention strategies will be done in a modular manner and based on sound cost-benefit in terms of public veterinary health risks, food security, and technical feasibility.

Donor assistance is required to assist governments:

- Strengthen the central and coordinated animal health and Veterinary Public Health Services to manage national surveillance systems, to improve early detection and response, define strategies, and monitor their implementation.
- Implement disease prevention and control programmes, including stamping out, biosecurity measures and vaccination when and where relevant. Surveillance of live animal markets and redesign of market systems are also important.
- Strengthen the management and analysis of disease information from the farm to the national level. Ensure that all stakeholders involved in disease control are fully informed about disease recognition and understand the steps to take when an outbreak is suspected.
- Reassess the strategies and policies (e.g. compartmentalisation and industry restructuring) that are used. The evolution of the epidemic must be monitored and periodically reviewed using cost benefit analysis and risk assessment methods to ensure the continuing suitability of control measures. Quality assurance principles should be used in the implementation and review of control programs.
- Develop better tools (e.g., diagnostic methods, vaccines, antiviral agents) and analyse their effectiveness in mitigating risk and their cost to different stakeholders.

- Review strategies and implement more effective programs for compensation, compliance, and support to rehabilitation programs, and strengthen the institutional aspects of animal health by forging links between government veterinary public health services and the private sector, including private veterinarians and farmers. Ways to generate and manage emergency contingency funds must be identified.

At a regional and global level:

FAO and OIE propose activities that will help countries, particularly in Asia, to rationalise, coordinate and harmonise their approaches where there are clear common interests and economies of scale, and in activities which are of global public good, particularly research.

Donor assistance is required to help governments:

- Support incipient regional diagnostic and surveillance networks with the goal of improving the quality of epidemiological information and, thereby, facilitate transparency, sharing of information, early warning and detection of HPAI.
- Develop regional co-operation with the objective of harmonizing surveillance and control strategies, improving economies of scale and scope, and helping regional bodies to establish sustainable funding and financial instruments for cross-border activities.
- Understand the regional dimension of the epidemic (disease intelligence), and its economic and trade impacts and define and implement appropriate prevention and control strategies.
- Establish a core group for international coordination, harmonization, strategy development, and provision of assistance to countries in the design and implementation of projects.
- Conduct basic research to answer key questions on HPAI and other transboundary animal diseases, including the development of better tools for disease diagnosis and control, such as vaccines.

FAO accepts the challenge:

FAO, with the support of OIE, accepts the challenge of assisting governments and farmers in the fight against HPAI through its Emergency Centre for Transboundary Animal Diseases, (ECTAD) and its proven capacity to provide interdisciplinary and integrated support from animal health, policy, environmental, production, marketing and project design professionals. FAO is in an ideal position of being able to coordinate and provide a forum for collaboration between many key regional and international partners. The joint OIE-FAO Network of Reference Laboratories and Epidemiology Collaborating Centres will play an important role, together with WHO networks and the national and regional animal and human health structures.

FAO has already established a highly effective working relationship with key countries in Asia in the struggle against HPAI and is prepared to take this further.