



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Avian Influenza in the Americas

IICA's vision



Avian Influenza in the Americas

IICA's vision

If they are to prevent and control this disease, the countries must rethink their agricultural health and food safety systems, with an eye to making them more effective.

Ana Marisa Cordero

Agricultural Health and Food Safety Specialist



public health problem. The major threat posed by this problem is the possible emergence of a new strain of the virus that is transmissible from human to human, which could lead to a pandemic.

Therefore, if they are to prevent and control this disease, the countries must rethink their agricultural health and food safety (AHFS) systems, with an eye to making them more effective.

What is Avian Influenza (AI)?

AI, first identified in 1901, is a contagious viral infection that can affect all bird species (chickens, turkeys, guinea fowl, ducks, wildfowl) and has the potential to be highly deadly. In intensive production systems, hens and turkeys are most affected. Wildfowl carry the virus, but have some natural resistance to it, and may contract the disease but not display apparent clinical symptoms. Other species can be affected, but the infection is usually not apparent (hogs, horses, felines, etc.). In humans, who can also be infected, symptoms usually include respiratory problems which, on occasion, can worsen and result in death.

Hogs, for example, which are vulnerable to both the avian and human viruses, may favor antigenic shift, by transferring genetic material or fusing or forming a new subtype; likewise, this could occur if a human with common flu becomes infected with avian flu. Since populations have no immunity to the new subtype, and no vaccination for same is currently available, we would be faced with a situation similar to those that, throughout history, have produced deadly pandemics.

In this era of globalization, more than at any other time in history, the external factors that affect agricultural health and food safety have changed drastically and have an impact on other sectors such as public health, trade, tourism and the environment. Today, agricultural products, just like people, can travel great distances in very little time. As a result, the presence or absence of animal diseases and zoonoses has a direct impact on the economic performance and the competitiveness of countries¹.

Outbreaks of Highly-Pathogenic Avian Influenza (H5N1) in Southeast Asia, Africa and Europe have affected the socioeconomic situation in these regions and have become an animal health and

¹ Information from various international organizations was used in preparing this article. We wish to thank Erick Calderon, of IICA, for her assistance in reviewing it.

Causal agent of AI

In general terms, there are three types of influenza viruses: C, which is rare and poses little risk; B, which affects humans; and A, which affects birds and is zoonotic (transmissible to humans). The viruses responsible for avian influenza belong to the family Orthomyxoviridae, genus Influenzavirus A, and are divided into 16 subtypes, in which hemagglutinin (H) proteins are present on the surface of the virus, and 10 subtypes in which neuraminidase (NA) proteins are present on the surface of the virus. The most pathogenic form confirmed to date is the one caused by Influenzavirus A of subtypes H5 and H7, also known as highly pathogenic avian influenza (HPAI).

Clinical symptoms and lesions

Clinical symptoms vary greatly depending on the pathogenicity of the virus and the medium or conditions in which the disease occurs. They are very similar to those of Newcastle Disease. In the case of a virulent strain (highly pathogenic), the disease appears suddenly and causes the death of birds, in most cases without prior symptoms or minimal signs of depression. The HPAI viruses, in addition to causing respiratory problems, also cause lesions. The usual symptoms are loss of appetite, sudden drop in egg production, soft-shelled eggs, respiratory difficulties, excessive lachrymation, facial edema, swollen and cyanotic comb and wattle, and heavy diarrhea. The common lesions are severe congestion of musculature, dehydration, nasal and oral cavity discharge, and severe congestion of conjunctivae, sometimes with petechiae. These lesions can vary in intensity in different bird species. Infected birds expel large amounts of virus in feces, and nasal and ocular discharge.

Epidemiology

It is now known that the H5 and H7 viruses are low pathogenic when they enter flocks of birds. However, when they circulate among bird popula-

tions, they can turn into highly pathogenic strains through spontaneous genetic mutation.

The virus is transmitted through direct contact with secretions from infected birds, especially feces, and contaminated feed, water, equipment and clothing, as well as via aquatic and marine birds. The virus remains potentially active for a long time in tissues, feces and water. Once domestic fowl have been infected, the virus becomes highly contagious and wildfowl cease to play a fundamental role in spreading the disease. Once it enters a henhouse, the virus spreads from henhouse to henhouse thanks to the movement of infected birds and the use of contaminated equipment. Also, broken or contaminated eggs can infect chicks in incubation plants. Food-borne transmission, though considered highly unlikely today, has not been ruled out altogether. Airborne contagion is possible if birds are very near one another and the wind is blowing in the right direction. The virus is inactivated if exposed to a temperature of 56°C (three hours) or 60°C (30 minutes), acid pH, or an oxidizing agent.

The H5N1 virus is characterized by its rapid onset, the severity of symptoms and the ability to spread quickly. According to the World Animal Health Organisation (OIE), the incubation period for the virus is from three to five days, but may last longer (the maximum incubation period, according to the Terrestrial Animal Health Code of the OIE is set at 21 days). Mortality is nearly 100%. Consequently, the presence of the H5 or H7 subtypes of the virus in poultry is always a cause for concern, even if early signs of infection are mild.

According to the World Health Organization (WHO), there is no risk of transmission if poultry meat or by-products are properly cooked because the virus is sensitive to heat (70°C). However, it is stable at low temperatures (when frozen or refrigerated) and can survive up to a month in the meat. Hence the need for proper hygiene when preparing poultry meat in places where there have been outbreaks of HPAI. In such places, cross contamination involving organs affected by the virus, those that have not been affected and the other foods, would be very likely.

Socioeconomic impact

In recent years, there have been outbreaks of HPAI in more than a dozen countries. According to the OIE, they began in December 2003 in South Korea, which spread rapidly, and by January 2004 was in Vietnam, Thailand, Cambodia, Hong Kong, Japan, the Peoples Republic of China, Indonesia, Malaysia (Peninsular), Taipei, South Korea (a low pathogenic subtype of H5N2) and the Lao People's Democratic Republic.

It continued to spread in 2004, reaching new countries such as Russia, Croatia, Philippines (H5 low pathogenic), Turkey, Kazakhstan, Romania, Mongolia and Japan (low pathogenic H5N2 subtype).

Since the end of 2005 and during the first half of 2006, the disease has spread to Europe (Austria,* Czech Republic,* Denmark, France, Germany, Greece,* Hungary, Italy,* Poland,* Slovakia,* Slovenia,* Sweden, the United Kingdom,* Bosnia,* Bulgaria* and Croatia,* among others)²; to Africa (Sudan, Nigeria, Niger, Egypt, Ivory Coast, Cameroon and Burkina Faso) and to other countries of Asia (China, Afghanistan and Pakistan, among others). More than 290 million chickens have been slaughtered as a result of this disease.

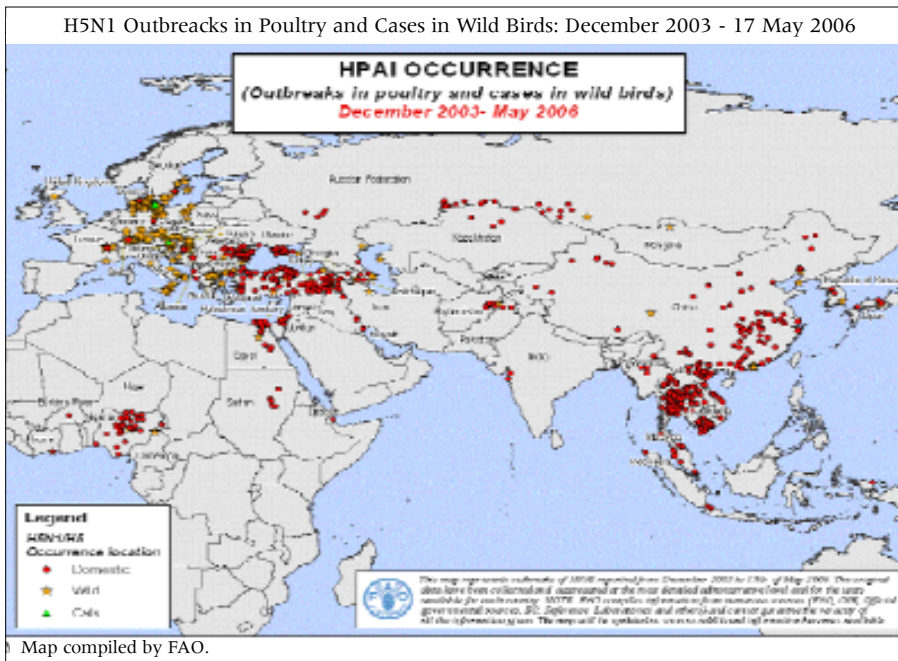
To date, based on WHO statistics, in Asia there have been 228 cases in human beings, including 130 fatalities.

The following table, prepared by the OIE, shows the foci of AI in poultry from the end of 2003 to June 15 of this year.³

²* In wild birds.

³ http://www.oie.int/download/AVIAN%20INFLUENZA/graficos%20HPAI/gráfico%20IAAP%2015_06_2006.pdf

⁴ <http://www.iadb.org/news/articledetail.cfm?language=Spanish&artid=2698&artType=WS>



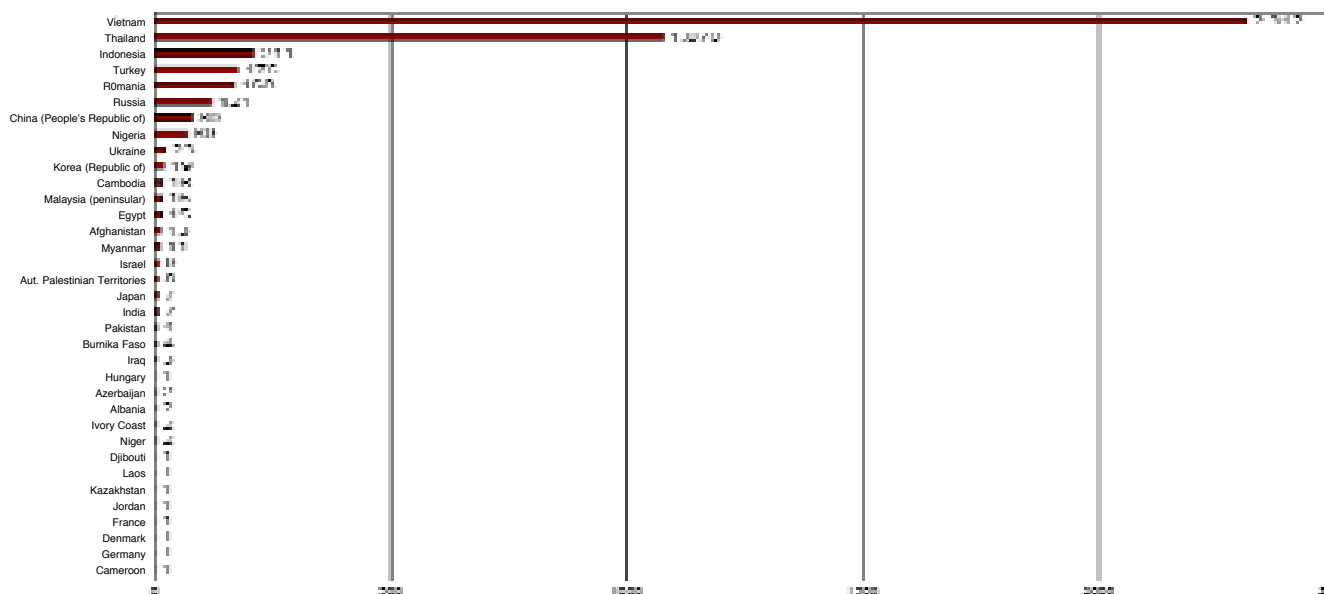
Current situation in the Americas

In the Americas, AI has affected five countries: Canada (H7N3) and the United States (H5N2), in 2004; Mexico (highly pathogenic H5N2), in 1995; Chile (H7N3), in 2002; and most recently in Colombia (low pathogenic (H9) subtype which does not affect humans), in October 2005.

The Americas produce more poultry than any other region in the world, accounting for 47% of production and 58% of exports worldwide (Brazil is the leading producer and exporter). As a result, an epidemic of avian influenza, highly pathogenic or not, would have grave economic consequences.

According to Inter-American Development Bank (IDB) statistics, poultry production totals US\$18.5 billion, and egg production US\$5 billion. Chicken meat and eggs account for 97.9% of the gross value of poultry production, 10% of protein consumption and 25% of animal protein consumption.⁴

Foci of avian influenza (H5N1 subtype) in poultry. From late 2003 to June 16, 2006



Cuadro elaborado por OIE.

In Asia, economic losses in the sector exceed US\$10 billion. According to estimates by FAO, as the following table shows, outbreaks of AI in recent months have caused a sharp drop in consumption of poultry products, from 84.6 to 81.8 million tons, which is approximately 3 million tons less than projected; a situation expected to continue for the rest of this year. In Europe, consumption has fallen by 70% in Italy, by 20%

in France and by 10% in the countries of northern Europe. In India, consumption has fallen by 25% and prices between 12% and 13%. This decline in consumption is leading to a reduction in worldwide demand for poultry products, resulting in lower prices; a situation which could threaten the profitability of the poultry industry and limit job opportunities in rural areas.

Revision of the FAO Poultry Meat Outlook in light of Developments of Avian Influenza
Projected change from previous 2006 estimate

Consumption	2003	2004	2005	2006 p	2006r	Change from 2006p	% Change
	(1000 metric tonne)						
World	76,734	78,643	82,024	84,632	81,819	-2813	-3%
Africa	3,939	4,034	4,147	4,269	4,067	-202	-5%
North America	15,960	16,563	17,034	17,447	17,291	-156	-1%
Central America/Carr	3,998	4,101	4,342	4,548	4,548	0	0%
South America	9,576	10,084	10,837	11,507	11,227	-280	-2%
Asia	27,904	27,909	28,953	29,513	28,896	-617	-2%
Europe	11,292	11,629	11,851	12,067	10,727	-1340	-11%
Oceania	895	911	950	991	991	0	0%
CIS	3,166	3,410	3,906	4,291	4,068	-223	-5%

The Pan American Health Organization (PAHO) estimates that, in the region, each person consumes 25 kilos of chicken and 2.5 kilos of eggs per year, which means that an outbreak of AI could also have a strong impact on nutritional levels. The poultry industry is employer to more than 2 million people in the region.⁵

At the present time, the outbreaks that have occurred in Europe, Asia and Africa have had an indirect effect on the poultry sector in the hemisphere: for example, in the United States, the price of cuts of chicken for export have fallen by 13% and the price of chicken legs has dropped 50%; in Brazil, the price of new-born chicks has fallen drastically.⁶

Wildfowl, especially aquatic birds, are spreading the deadly H5N1 variety to regions that until now been free of the disease, as demonstrated by the outbreaks recently detected in Europe. Migration from eastern Siberia to Alaska or Iceland, via Greenland, and into northern Canada could lead to the introduction of the virus into the Western Hemisphere and from there along the north/south migratory routes.

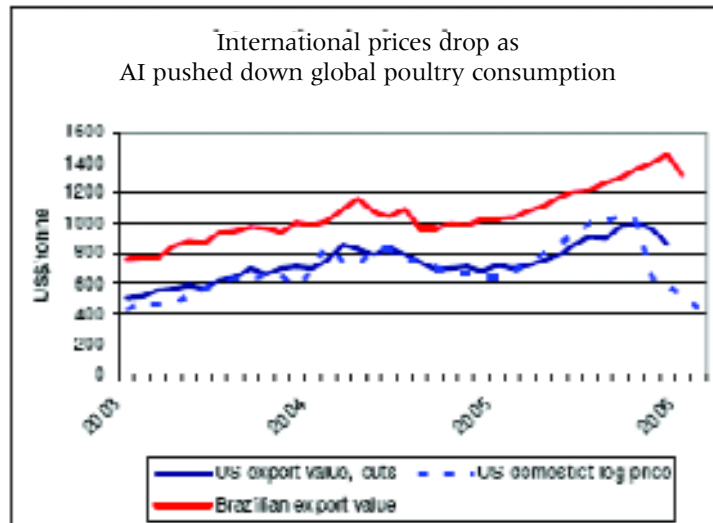
What is being done to prevent the introduction of AI?

The public and private sectors share responsibility in the execution of the following actions:

What is being done to prevent the introduction of AI?

The public and private sectors share responsibility in the execution of the following actions:

- 1) To promote the modernization and strengthening of public veterinary services and national



food safety services, with a view to improving their technical capabilities to apply sanitary measures, so they can respond to this and any other emergency.

- 2) To use scientifically-based prevention methods and procedures, in keeping with the provisions of the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization.
- 3) To ensure strict inspection birds, vehicles and poultry equipment, and implement disinfection programs, at ports of entry.
- 4) To improve the capability to find, process and store information on the behavior and characteristics of the disease.
- 5) To prepare and coordinate national and regional strategies to anticipate the presence and possible spread of the disease.
- 6) To improve emergency response programs.
- 7) To alert the private sector and stay in constant touch with same to coordinate and ensure its participation in the implementation of joint actions.

⁵ Martine Sirven, Luis Gómez Oliver y Claudia Ferrando; Grandes órdenes de magnitud del impacto socioeconómico que podría tener la influenza aviar en América Latina y el Caribe; CEPAL/FAO RLC; Noviembre 2005.

⁶ Morgan Nancy; Poultry trade prospects for 2006 jeopardized by escalating AI outbreaks; FAO, 2006.

- 8) At the farm level: to build henhouses away from areas frequented by wild waterfowl; to control the access of people and equipment to henhouses; to disinfect equipment before taking it to henhouse; and to eliminate feeding or watering troughs for wild fowl, and ponds for wild ducks.
- 9) To strengthen existing transparency and notification mechanisms, as per the SPS Agreement and the provisions of the OIE.

How has the world reacted?

- *Global framework for the progressive control of transboundary animal diseases (GF-TADs)*

This global initiative is aimed at eradicating and controlling the most important transboundary animal diseases, including those that can be transmitted to humans. It includes a global component, as well as regional and subregional components. Under the initiative, a list of priority diseases has been drawn up, including highly pathogenic avian influenza, and global and regional actions to combat it and other diseases have been defined.

- *Joint Conference on Avian Influenza and Human Pandemic Influenza (November 7-9, 2005, Geneva)*

This meeting, organized by the OIE, FAO, WHO and the World Bank, was held to develop a strategy for controlling the disease in animals and, at the same time, and to discuss preparation of a plan to limit a possible influenza pandemic in humans. At the meeting, the OIE and FAO, with collaboration from the WHO, presented the Global Strategy for the Progressive Control of Highly-pathogenic Avian Influenza. The strategy underscores the importance of strengthening veterinary services and implementing strategies at the national and regional levels.

(<http://www.fao.org/ag/againfo/subjects/documents/ai/HPAIGlobalStrategy31Oct05.pdf>)

- *International Pledging Conference on Avian and Human Influenza (January 17-18, 2006, Beijing)*

The objective of this conference, organized by the Government of China, the European Commission and the World Bank, was to identify financial donors who can help in the struggle against HPAI. The OIE presented two technical documents as a contribution to efforts to combat the diseases: first, the Performance, Vision and Strategy (PVS) instrument, for evaluating whether or not veterinary services comply with OIE quality standards; and second, a joint proposal with FAO: Ensuring good governance to address emerging and re-emerging animal disease threats. Also, short-term actions were defined at the national and regional levels, and the international financial community pledged US\$1.9 billion in aid. Participants also recommended coordination and joint efforts among cooperation agencies to make better use of available resources.

- *Meeting on Highly Pathogenic Avian Influenza in Europe (February 27-28, 2006, Paris)*

At this meeting, sponsored by the OIE, it was concluded that HPAI can have a negative impact on trade and the rural economies of some European countries. In this regard, the international community was urged to support the countries in the actions they take to control the virus. Also, it was concluded that national veterinary services are on the front line in combating and preventing animal diseases. Participants recommended that requests for funding take into consideration weaknesses detected, thanks to the application of the PVS instrument, and that the GF-TADs strategy for Europe be implemented as soon as possible.

- *Meeting on Avian Influenza and Human Pandemic Preparedness (June 7, 2006, Vienna)*

The objective of the meeting, organized by the European Commission, the United States, the People's Republic of China and the Austrian EU



Presidency, was to confirm the availability of the financial resources pledged at the Beijing conference earlier this year. The OIE, together with its partners FAO and WHO presented an update on the financial and technical gaps that are still to be filled in order to be able to control the disease worldwide

How has the hemisphere reacted?

- **GF-TADs Strategic Plan for the Americas**

As part of the global strategy to control transboundary animal diseases, a program was established in the Americas, with the following strategic lines of action:

- *To establish a regional strategy* aimed at preventing, controlling and/or eradicating transboundary diseases, through coordinated action between regional and international organizations.
- *To increase awareness of the role of national veterinary services*, to ensure leaders are aware of the need to improve them.
- *To increase interaction with the private sector and other interested groups*, by improving strategic areas such as communication, information, official representation, accreditation and capacity to respond to new opportunities and challenges.
- *To ensure proper application and use of international standards*, for safe trade based on scientific knowledge, through the application of concepts such as regionalization/zoning, compartmentalization, transparency and notification.

- **Agricultural and Health Ministerial Meeting on National Plans for Surveillance and Prevention of Avian Influenza (November 30 – December 2, 2005, Brasilia)**

At this meeting, co-sponsored by the Ministry of Agriculture of Brazil, the Pan American Health Organization, IICA, OIE, and FAO, the Declaration of Brasilia was signed. In it, the ministers of agriculture and health and their representatives, producer associations and international organizations committed themselves to undertaking national and hemispheric actions against AI. Also, the decision was made to set up a working group under the GF-TADs initiative, with the participation of the Inter-American Committee on Avian Health, the public and private sectors and international organizations. Lastly, national cooperation agencies were encouraged to coordinate efforts at the technical and financial levels.

- **Extraordinary Meeting of the Executive Committee of GF-TADs on Avian Influenza (February 9-10, 2006, Buenos Aires)**

This event provided a backdrop for the first meeting of the Working Group on AI, and for defining and approving the basic guidelines for the Americas. The principal objectives defined were: to prevent the entry of the AI virus; to develop methods for early and rapid detection; and to determine control and eradication actions in the case of an outbreak. The basic elements of the strategy are:

- Establishment of a system to prevent the entry of AI, by strengthening veterinary services with specific actions to be carried out at the national and hemispheric levels.
- Improvement of epidemiological surveillance systems for commercial-scale poultry and other subpopulations at risk, also with specific national and regional actions.
- Control and eradication actions to respond rapidly and effectively to the appearance of

the virus. Also, national and hemispheric actions are defined.

- Strengthening of capabilities in the countries to diagnose AI, establishing commitments at the national and hemispheric levels to fulfill specific commitments in the areas of prevention, surveillance and eradication
- To ensure the existence of financial resources at the national and hemispheric level to meet existing commitments.

- **Meeting on Prevention and Surveillance of AI in the Caribbean (March 3-7, Port of Spain)**

This meeting, co-sponsored by the CARICOM, PAHO, IICA, OIE and FAO, was organized to define basic actions for combating AI in the Caribbean. Recommendations were made for work in the region in the following areas: regional and national drills, development of indicators to evaluate and strengthen active and passive surveillance systems, need for assistance in collecting samples and strengthening legislation and infrastructure, evaluation of veterinary services, support in the development of protocols for quality assurance, establishment of national plans for compensation in animal disease emergencies, and access to soft loans from financial organizations.

- **Meeting of Ambassadors (March 31, 2006, Washington)**

This event, sponsored by IICA and PAHO, was organized to increase the awareness of representatives of the embassies in Washington and the OAS regarding the importance of this topic and the need to implement coordinated actions rapidly to combat this disease. It was attended by representatives of IICA, PAHO, World Bank, IDB and the private poultry sector.

- **Resolución 2242 de la OEA Influenza Aviar: Cooperación Interamericana para enfrentar una amenaza mundial (6 junio, 2006, Santo Domingo):**

At its 36th regular session, the Organization of American States approved Resolution 2242, in

which it reaffirmed the member states' commitment to work together in combating AI, and agreed to support the member states in strengthening the infrastructure of their veterinary and public health services and to promote technical and financial cooperation among the member states.

IICA's vision

Transboundary diseases such as avian influenza (AI) have brought to light the importance of taking coordinated action at the national, regional, hemispheric and global levels.

The lessons learned from recent outbreaks of AI underscore the responsibility countries have in balancing the need to protect their sanitary status and to promote trade and, as a result, in basing their decisions and actions on the international norms and standards established by the relevant organizations (WTO, OIE, etc.). They also underscore the responsibility of technical and financial cooperation agencies to work together.

The greatest challenges for the countries in implementing such actions is to adopt a broad-based approach, one that takes into consideration all the different roles played by those involved in the field of agricultural health, the goal being to enable them not only to prevent or control this disease, but also to build up official veterinary services to the point where they can respond to any sanitary emergency.

Our primary objective is to provide a specific, coordinated response to the threat of AI that will involve supporting the countries in their efforts to strengthen their institutional capabilities, and undertaking a number of actions aimed at providing agribusiness operators and opinion makers with information and training related to this disease.

As regards supporting the countries, IICA has developed a medium- and long-term strategy based on the following points:

Strengthening of veterinary services:

■ **Strengthening of veterinary services:**

National veterinary services play a key role in ensuring the health and well-being of a country's population. Therefore, to strengthen them, which in many cases requires leadership more than financial investment, is the most effective means of preventing and handling emerging or emergency situations. The benefits of improving the services far outweigh those of isolated pest or disease eradication programs.

The OIE and IICA have joined forces to develop the Performance, Vision and Strategy (PVS) instrument. The PVS can help the countries to determine their level of performance, share a common vision with the private sector, set priorities and facilitate strategic planning, with a view to meeting their obligations and taking advantage of new opportunities. The PVS identifies the basic critical competencies that official services must have to provide a coordinated response to an outbreak, enabling them to strengthen their capabilities in three basic areas:

- To respond to emergencies in the short term
- To control diseases in the medium term
- To ensure the health of animal population in the long term.

IICA, through its Offices in the countries, will collaborate with the public and private sectors in applying the PVS instrument.

■ **To promote the participation of the poultry sector in the implementation of actions at the national and regional levels**

The poultry production sector becomes a key player in the implementation of joint actions designed to combat this disease.

Shared responsibility between the public and private sectors, as well as a coordinated approach, are essential in deciding on strategic actions intended to combat this disease. To this end, IICA will implement the following actions:

Short-term actions:

- Support for conducting emergency drills at the regional level, and efforts to secure financial and technical resources for this initiative.
- Support in preparing requests for funding at the regional level to combat AI, and in identifying specific sources of funding.
- Provision of information on contingency and compensation plans and measures implemented by certain countries, which can be used by the countries of the hemisphere as the basis for developing their national plans.
- Promotion of horizontal cooperation, enabling countries affected by an outbreak to share the lessons they learned with others through activities at the regional level.

Medium-term actions:

- The IICA Offices in the countries, together with our regional specialists, when necessary, will train and educate small- and medium-scale farmers in areas such as:
 - biosafety
 - traceability
 - risk assessment
 - effective compliance with the Agreement on Sanitary and Phytosanitary Measures

■ **Risk Communication**

It is essential to make political leaders aware of the importance of supporting all initiatives aimed at combating this disease, from the perspective of animal health. Actions will be carried out in two basic areas:

- Creation of awareness among political leaders:

IICA is currently conducting a number of studies on the potential economic impact of this disease throughout the hemisphere. These studies will not only provide inputs for decision making at the



national level, but also will show the impact of the disease on the economy of the countries and, in this way, incorporate the Ministers of Finance, Trade and Environment into the processes.

- Dissemination of strategic information

It is of the utmost importance to provide the public and the poultry production sector with transparent and timely information, in order to inspire confidence and ensure the stability of the sector.

IICA, together with other cooperation agencies, is preparing guidelines for the communication of information related AI, which can be used as a frame of reference for tapping the competitive advantages of each.

IICA will also:

- Produce ten radio programs on AI for small- and medium-scale poultry farmers in the hemisphere.
- Produce audiovisual materials on AI to educate and train target audiences in the countries
- Provide training in AI for journalists and for information officers in the ministries of agriculture, with a view to ensuring that they disseminate accurate and timely information on the impact of the disease. We hope to coordinate this activity with other cooperation agencies, in order to secure necessary technical and financial resources.

- Establish teams of experts at the national level. Through its Offices, IICA will support the establishment of teams of experts comprising leaders from different production sectors, scholars, consumers, etc., who, in an eventual emergency, can disseminate accurate and timely information.
- Use its communicational products: ComunIICA online, Infoletter, IICA Connection, Access Bulletin, and Agroenlace radio program to transmit effective and timely information to agribusiness operators.

These actions are intended to foster inter-agency collaboration, to focus efforts on specific results, to avoid duplication of efforts and to make maximum use of resources. Therefore, these actions will be carried out in coordination with the technical cooperation agencies that are working on this topic within the framework of the FAO/OIE initiative for the control of transboundary diseases.

Conclusions

One of the lessons learned from recent outbreaks of AI is that countries must balance the need to protect their sanitary status and their desire to promote trade. As a result, they must base their decisions and actions on the international norms and standards established by the relevant organizations (WTO, OIE, etc.). Transboundary diseases such as avian influenza (AI) have brought to light the importance of taking coordinated action at the national, regional, hemispheric and global levels.

The greatest challenge lies in taking actions that will make it possible not only to control this epidemic, but also to improve public veterinary services so that they can respond to any sanitary emergency, by:

- **Developing technical capabilities based on risk analysis and scientific knowledge.**

This will enable them to address emerging issues and emergencies in their own territories and those of their trading partners, while interrupting trade as little as possible.

- **Strengthening actions aimed in enhancing the competitiveness of the private sector, thus facilitating market access.**

To do this, it is necessary to formulate policies which attach priority to active participation in international forums and call for the implementation of their tools, such as harmonized norms, recognition of pest-free areas by the international community, and the use of bilateral or multilateral forums to defend trade interests.

- **Including the public and private sectors in the planning and decision-making processes of the agricultural health and food safety services.**

Cases in which this has been successful include the eradication of foot and mouth disease in Colombia and the elimination of Classic Swine Fever and Aujeszky' Disease in pigs in Sonora, Mexico.

- **Selecting, training and retaining competent human resources.**

It is also necessary to provide human resources with the training they need to comply with new international requirements. This change of vision is the best way to prevent and manage emerging or emergency situations, requiring, in many cases, more leadership than financial investment. The benefits of improving the services far outweigh those of isolated pest or disease eradication programs. Therefore, situations that cause great uncertainty at the international level, such as AI, should make us rethink how we want to plan our AHFS services.



The poultry production sector becomes a key player in the implementation of joint actions designed to combat this disease.

Source consulted

A Global strategy for the progressive control of highly pathogenic avian influenza, OIE/FAO, November 2005.

FAO AIDE News; Update on the Avian Influenza situation, Issue # 40, FAO, Rome, June 2006.

Lineamientos estratégicos para la prevención de la IA en las Américas; OIE/FAO, Buenos Aires; Febrero 2006.

Martine Sirven, Luis Gómez Oliver y Claudia Ferrando; Grandes órdenes de magnitud del impacto socioeconómico que podría tener la influenza aviar en América Latina y el Caribe; CEPAL/FAO RLC; Noviembre 2005.

Morgan Nancy; Poultry trade prospects for 2006 jeopardized by escalating AI outbreaks; FAO, 2006.

http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/special_avian.html

http://www.fao.org/ag/againfo/subjects/es/health/diseases-cards/avian_qa.html

<http://www.iadb.org/news/articledetail.cfm?language=Spanish&artid=2698&artType=WS>

<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=670356>

<http://www.infoagro.net/salud>

<http://www.nature.com/news/2006/060508/full/441137a.html>

<http://www.paho.org/Spanish/AD/DPC/VP/virflu-wer-faqs-80-44.htm>

http://www.panaftosa.org.br/inst/Aviar/DECLARA%C7%C3O_%20BRASILIA_ESP.pdf

http://www.who.int/mediacentre/factsheets/avian_influenza/en/index.html

<http://www.who.int/csr/disease/influenza/pandemic10things/en/index.html>

http://www.who.int/mediacentre/factsheets/avian_influenza/es/index.html

http://www.who.int/foodsafety/fs_management/No_07_AI_Nov05_en.pdf

<http://www.who.int/foodsafety/consumer/5keys/en/>

<http://www.who.int/foodsafety/micro/avian/en/>

<http://www.globalbirdflu.com/25birdflugraphic.gif>

http://www.oie.int/esp/info/es_avinf.htm

<http://www.fao.org/ag/againfo/subjects/documents/ai/HPAIGlobalStrategy31Oct05.pdf>

http://www.fao.org/ag/againfo/subjects/es/health/diseases-cards/avian_safety.html

<http://www.who.int/mediacentre/news/releases/2005/pr56/en/print.html>

http://www.oie.int/eng/press/en_051109.htm

http://www.oie.int/eng/press/en_060113.htm

http://www.oie.int/downld/Prep_conf_Avian_inf/Addressing%20Avian%20Influenza_BV_january%202006.pdf

http://www.oie.int/downld/AVIAN%20INFLUENZA/graficos%20HPAI/gráfico%20IAAP%2015_06_2006.pdf

Recommendation Control of Avian Flu in Europe; OIE, París, Febrero 2006.

Responses to Avian and Human Influenza Threats Draft document, UN System Influenza Coordinator & World Bank; June 2005.