

Chapter VI

Bird flu and foot-and-mouth disease: impacts and regional cooperation



Introduction

International trade in animals and foods of animal origin, especially meat, is governed by strict quality requirements that, to a large extent, determine the volume of such trade and the price of commodities. The effect of quality criteria on trade has increased with the emergence of new risk factors associated with outbreaks of diseases that have the potential to impact strongly on the economy and on human health. One such disease is avian influenza, avian flu or bird flu, which is now a serious threat to health and to the global economy and has forced governments to take measures to prevent, detect and control contagious diseases that may represent public health and safety problems.

This chapter describes the main economic losses caused by avian flu and foot-and-mouth disease (FMD), two transboundary diseases that together represent one of the global meat trade's main challenges today. Bird flu cut world poultry trade by 8% in 2004 and altered projections for this year. FMD is now one of the main sanitary problems affecting South American livestock and has played a part in redistributing market shares in the region. The disease has jeopardized the position of Brazil, which is facing trade embargoes in dozens of importing markets and risks losing its status as the world's largest beef exporter.

This chapter will examine specialized studies on the financial, economic and social costs of recent outbreaks

of these diseases. It discusses the repercussions on international trade and the regional and international policy response to the fallout. The last section looks at trends and future challenges for global meat markets and warns of the urgent need for governments to take coordinated preventive measures as the most efficient way to control bird flu and FMD. Joint efforts to conduct surveillance, prevention and control, together with political, technical and financial commitment to undertake coordinated sanitary measures in response to the existing global zoonotic and public health risk, are not only essential to preserve trade competitiveness but also serve greater regional integration in a real and significant way.

A. Overview of the global meat market

Since the early 1980s, the world's production, consumption and trade of meat, particularly poultry, have expanded considerably. In 2002, the Food and Agriculture Organization of the United Nations (FAO) estimated that global meat consumption would increase

by 2% annually up to 2015 (FAO, 2002). Most of this increase was expected to occur in developing countries, where total meat consumption was to grow by 2.7% per year, compared with 0.6% in the developed world (see table VI.1).

Table VI.1
WORLD MEAT CONSUMPTION

	Consumption					
	1997-1999	1969-1999	1979-1999	1989-1999	1997/1999-2015	2015-2030
	Thousands of tons		Growth rates (annual percentages)			
World						
Bovine	57 888	1.4	1.2	0.7	1.4	1.2
Ovine	10 706	1.9	2.2	1.4	2.1	1.8
Pig	86 392	3.2	2.9	2.7	1.4	0.8
Poultry	60 809	5.2	5	5.2	2.9	2.4
Total meat consumption	215 795	2.9	2.8	2.7	1.9	1.5
Developing countries						
Bovine	28 074	3.4	3.5	4.1	2.3	2.0
Ovine	7 625	3.5	3.8	3.7	2.7	2.2
Pig	49 522	6.1	6	5.8	2.1	1.2
Not including China	11 393	3.6	3.2	3.7	2.7	2.4
Poultry	31 920	7.8	8	9.4	3.9	3.1
Total meat consumption	117 141	5.3	5.6	6.1	2.7	2.1

Source: Food and Agriculture Organization of the United Nations (FAO), "Animal diseases: implications for international meat trade", Committee on Commodity Problems, nineteenth session, Rome 27-29 August 2002; and *World Agriculture: Towards 2015/230*, Rome, 2002.

This projection of world meat consumption was based on two trends: the expansion of demand and the gradual reduction of trade barriers. But these two trends, specifically, have begun to change direction in the last few years, either because of recent outbreaks of animal disease or because of the resulting imposition of tougher sanitary barriers by non-infected countries. FAO has revised its 2006 projections for poultry, assuming a drop of 3 million tons in world consumption and 6% in world exports, with respect to the estimates made in 2005 before avian flu broke out on several continents (FAO, 2006f).

Any straightforward assessment of the potential global impact of avian influenza is, however, complicated

by the recent outbreaks of FMD in Brazil, which is a major world meat exporter. This will also influence world meat markets over the short term, especially since chicken and beef are normally used as substitutes for each other. FAO estimates that the adverse impact of poultry shortages in international markets (because of avian flu) will be heightened by reduced exportable beef supplies from Brazil (because of foot-and-mouth disease), putting considerable upward pressure on all meat prices, similar to the situation in 2004 when the absence of North American beef due to concerns over bovine spongiform encephalopathy (BSE) pushed up all meat prices.

B. Avian influenza

1. Socio-economic impacts of the disease

Avian influenza, avian flu or bird flu is an infectious disease of birds caused by the influenza virus. It can be transmitted to humans who enter into close contact with infected birds.¹ The danger of the virus lies in its resistance, ability to mutate and ease of propagation. The first known case of human infection with avian flu occurred in Hong Kong Special Administrative Region of China (Hong Kong SAR) in 1997. Previously, avian flu had been detected only in South-East Asia, but in the last few years outbreaks have occurred in Africa, Europe, the Middle East and the Americas (FAO, 2005a). Up until July 2006, the highly pathogenic H5N1 strain of the virus had not been found in Latin America and the Caribbean, although a number of countries have reported other, less pathogenic varieties.

The socio-economic impacts of bird flu take the form of deaths, medical costs (medicines, hospitalization and treatment), loss of working days and reduced employment performance and the effects on trade and on the services sector. As well as being an important source of work and income for rural communities, poultry provides high quality proteins for human consumption. The magnitude of these impacts depends on a range of factors, from the biological characteristics of the disease to the country's domestic structural features. The scientific aspect refers to the pathological traits of the disease, which determine the lethality of the pathogen and how it is spread, i.e., bird to bird, bird

to human or human to human (as yet there is no record of the last of these).

The first two forms of contagion have already occurred and are known to have caused economic losses mainly through poultry culls, and the destruction of poultry farms to avoid propagation, the decline in poultry trade, the disappearance of income sources, medical costs and expenditure on infrastructure investments and prevention programmes. The financial losses of the poultry farming sector in Asia were estimated at some US\$ 10 billion (FAO, 2005b).

The third form of contagion, from one human to another, could unleash a pandemic. This scenario remains hypothetical, although some experts have said that it is simply a matter of time until it occurs. The economic losses in such a situation are difficult to quantify because the entire global production system would be affected. The international community has begun to venture some projections, however, based on the two major human pandemics experienced in the past: severe acute respiratory syndrome (SARS) and Spanish flu (see table VI.2). Significantly, though SARS affected a limited geographical area and spread relatively little (with 8,000 people infected and 700-800 deaths), it strongly impacted on the world economy, with US\$ 30 billion to US\$ 50 billion in losses and a 2% contraction in East Asia's regional GDP in the second quarter of 2003 (Newcomb, 2005).

¹ The avian flu virus is transmitted from birds to humans through contact with virus-containing bird excreta that enter the human body through the mouth or nose. The disease is not passed on through consumption of poultry, eggs or derived products.

Table VI.2
ESTIMATED ECONOMIC COSTS OF A POSSIBLE PANDEMIC

Source	Observation	Cost
Lowy Institute for International Policy	Estimate of economic losses in four impact scenarios (mild, moderate, severe and ultra), based on the historical experience of major pandemics ^a	"Ultra" scenario: over 142 million deaths and world GDP loss of US\$ 4.4 trillion Mild scenario: 1.4 million deaths and world economic output loss of around 0.8% (about US\$ 330 billion)
International Monetary Fund	Estimate based on the socio-economic impact of Spanish flu (1918-1919) ^b	Loss of 2% in world GDP, only through the loss in human productivity (drop of some 20 million in the labour force in the first 6 weeks)
World Bank	Estimate based on impacts on the labour force through deaths, absenteeism and low productivity	Loss of 2% in world GDP (a annual loss of some US\$ 800 billion)
Centers for Disease Control and Prevention	Estimate of economic impacts on the United States	Loss of some US\$ 166.5 billion, taking into account only the social impacts (death, work days and productivity lost and medical expenses)
Asian Development Bank	Estimate of economic impacts in Asia, based on mild and severe scenarios	Mild scenario: losses of US\$ 99 billion through drop in consumption; US\$ 14 billion through deaths and productivity decline; and loss of the equivalent of 2.6% of Asian GDP Severe scenario: losses of US\$ 279 billion in the short term (6.8% of Asian GDP)

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of W. Mckibbin and A. Sidorenko, *Global Macroeconomic Consequences of Pandemic Influenza*, Lowy Institute for International Policy, February 2006; International Monetary Fund (IMF), *World Economic Outlook, Globalization and Inflation*, Washington, D.C., 2006; M. Brahmabhatt, *Avian Influenza: Economic and Social Impacts*, Washington, D.C., World Bank, September 2005; M. Meltzer, N. Cox and K. Fukuda, *The Economic Impact of Pandemic Influenza in the United States: Priorities for Intervention*, Atlanta, Centers for Disease Control and Prevention, September-October 1999; J. Newcomb, *Economic Risks Associated with an Influenza Pandemic*, Bio Economic Research Associates, November 2005.

^a Each of the scenarios was based on a different pandemic depending on gravity: the mild scenario took as a basis the 1968-1969 pandemic in Hong Kong; the moderate scenario the Asian flu of 1957; the severe scenario Spanish flu; and the ultra scenario would be one worse than that caused by Spanish flu.

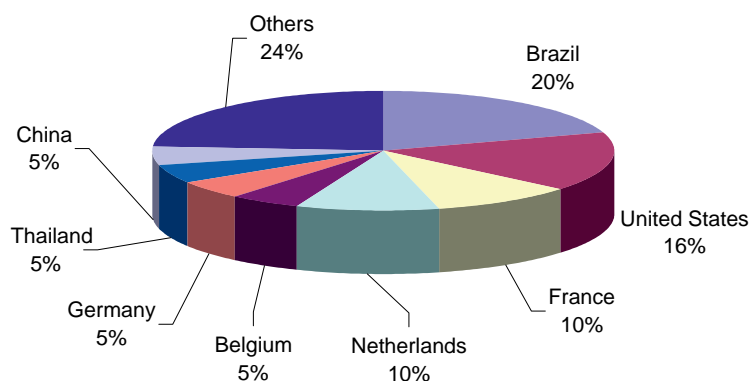
^b Spanish flu infected a quarter of the world's population and claimed the lives of 40-50 million people worldwide. Its mortality rate varied from one country to another, from 0.6% in the United States to 5% in India and 20% in some Pacific islands. India is thought to have experienced a contraction of 3.3% in agricultural production and an 8% drop in the labour force (IMF, 2006).

2. Repercussions for the global poultry trade

In the last decade, world trade in chicken has expanded at an average annual rate of 10% in volume terms and 6% in value. Prices for chicken have dropped in this period. The largest world exporters of poultry meat in 2004 were Brazil, United States, Netherlands and France (see figure VI.1). The continued expansion of the poultry

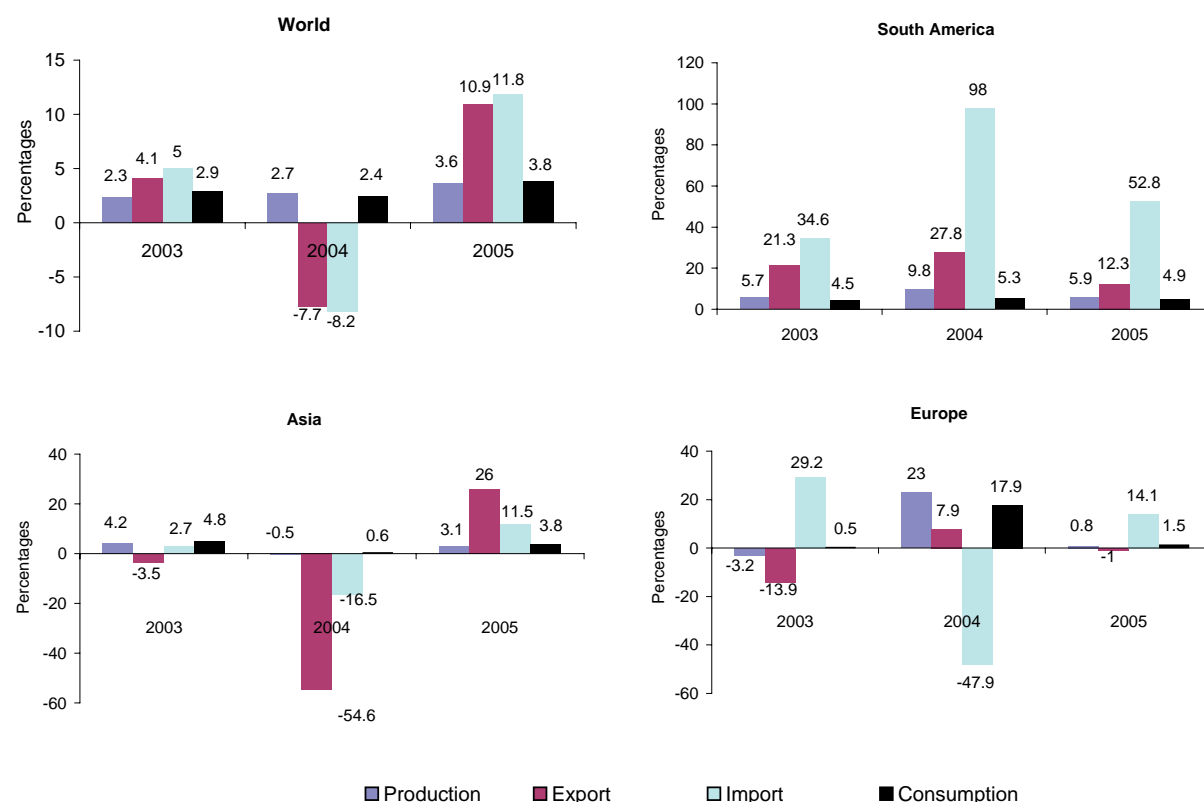
sector has been threatened, however, by the worsening of bird flu in the last few years, especially in Asia and Europe, whose exports have dropped considerably. In addition, world imports, which used to come from the regions now infected, are now coming mainly from the Americas (see figure VI.2).

Figure VI.1
WORLD TRADE IN POULTRY PRODUCTS, 2004
(Thousands of dollars)



Source: FAO Statistical Databases (FAOSTAT), 2006.

Figure VI.2
POULTRY MARKET DURING THE SPREAD OF AVIAN FLU, 2003-2005
(Growth rates in percentages)



Source: Food and Agriculture Organization of the United Nations (FAO), Meat Market Assessment, June 2006.

Notes: Up to 2003, Europe had 15 member countries; after 2004 it had 25 member countries.
Growth rate in percentages by variation in volume (100 metric tons).
2004: estimate; 2005: projection.

As the outbreaks of the disease move towards the West, restrictions on imports of poultry products from affected countries have increased. In the last year and a half, the main trade impacts on the world market have been: (i) a decline in world poultry trade; (ii) an increase in chicken meat stocks in infected producer countries; (iii) a drop in prices in infected countries; (iv) falling consumption of poultry in infected countries; (v) diversion of trade, with more imports coming from disease-free countries; (vi) toughening of sanitary requirements.

(a) Downswing in poultry trade

Asia and Europe are the regions whose trade has suffered the most from avian flu (see table VI.3). The impact of these trade losses has been very bad in

Asia, where the poultry business is crucial to several countries' economies. In the Philippines, the poultry trade represents 2% of GDP, which is one of the highest rates in the world. The World Bank reports that in Thailand, Viet Nam and China and the countries that sustained the heaviest financial losses during the avian flu outbreaks of 2003-2004, poultry trade accounts for 0.5%, 0.6% and 1.3% of GDP, respectively (Brahmbhatt, 2005). In the event of a pandemic, GDP in South-East Asia would shrink by an estimated 1.5%. Avian flu was responsible for almost halving Thailand's chicken exports between 2003 and 2004 and losing the country its place as the world's fifth largest exporter. From there it slipped to seventh place and avoided losing further ground by investing in the export of processed chicken meat (FAO, 2005b).

Table VI.3
MAIN POULTRY EXPORTERS
(Millions of dollars)

	2003	2004	Variation
Brazil	1 953	2 813	44%
United States	1 934	2 211	14%
France	1 357	1 346	-1%
Netherlands	1 357	1 336	-2%
Belgium	626	757	21%
Germany	639	713	12%
Thailand	1 138	675	-41%
China	796	625	-21%

Source: FAO Statistical Databases (FAOSTAT), 2006.

Europe's poultry trade, too, has been affected by avian flu. Many of the European countries are prominent in the world poultry trade: Belgium, France, Germany and the Netherlands together accounted for 30% of all poultry exports in 2004 (see figure VI.1). The largest exporters are France and the Netherlands, though their exports have declined since 2003. Conversely, there has been a rise in exports from European countries, including Belgium (where no H5N1 was reported in 2003) and Germany (where less was detected), which appear to have gained the market share of the others.

(b) Impacts on prices and consumption

In 2003-2004 outbreaks of bird flu initially pushed the international prices of poultry meat up by 20% or 30%, since the sanitary embargoes placed on exports from China and Thailand, which are among the world's main suppliers, reduced the volume available on the international market.² The detection of bovine spongiform encephalopathy (BSE), also known as "mad cow disease", in North America also helped to push up the price of chicken, which was used to substitute beef. Rising world prices contrasted with those dropping in the countries affected, as the exportable supply was channelled into domestic markets and local demand shrank owing to food safety and health concerns on the part of consumers.³ In late 2005, poultry consumption was down by an annual 1% on average in 15 European Union countries. This drop has been uneven, however, and has steepened in 2006, varying from 70% in Italy to 20% in France and 10% in northern European (FAO, 2006c).

(c) Diversion of trade flows

Avian flu has also altered the flows of international poultry trade. In the last few years the exports of the main Asian suppliers have gradually declined, while those of

South America (mainly Brazil) and the United States, where the H5N1 virus has not yet been found, have climbed. Those countries have become the largest world suppliers of poultry meat, substituting the Asian supply (see table VI.3). Japan, which imports 70% of the poultry it consumes (three quarters of which used to come from China and Thailand), is now importing much more chicken from Brazil. In 2004 Japan was the largest consumer of Brazilian poultry, accounting for 18.9% of Brazil's chicken exports that year.⁴

(d) Prospects

Food safety issues will continue to divert trade flows in the global meat markets and South American shares in the world poultry trade are expected to keep growing in the short and medium terms. The long-term outlook for countries that are traditionally exporters (Brazil, among others), as well as the maintenance of their market share, hinges basically on two factors: (i) the countries remaining free from avian flu; and (ii) the ability to adapt to stricter sanitary requirements in importing markets.

In the long term, it is expected that traditional importers will continue to dominate the poultry trade and that Brazil and the United States will continue to supply the bulk of exports. Interestingly enough, Chile is gaining a growing foothold in the global poultry trade and should continue to supply major regional markets, such as Mexico. Projections show that poultry consumption will increase in the OECD countries, which will account for 37% of all meat consumed in 2014. The developing countries will become net importers of poultry meat once world prices come down and as local industries strive to compete with sales of low-price imports of chicken cuts. World trade rules are likely to hasten a shift towards consumption of more processed poultry products, because of sanitary barriers on unprocessed poultry (OECD/FAO, 2005).

Be this as it may, the question of how long the impacts of avian flu on trade will last is complicated by the growing complexity of the global markets, the uncertainties of consumer demand and the prolonged imposition of sanitary barriers. Moreover, the emergence of a virus that could be spread among humans could cause unprecedented losses, not only in the global poultry trade, but across the board.

In the light of recent bird flu developments around the world, FAO projections for poultry consumption for 2006 are currently 3 million tons lower, with a downward revision of 6% in world exports, than previous estimates based on outbreaks that intensified in 2005.

² The price of frozen chicken rose by 45% in Japan and by 20% in Singapore (FAO, 2006d).

³ Apprehension among consumers causes avian flu to impact on products derived from poultry meat, processed products (whole chickens, refrigerated or frozen) and eggs, even though the disease is not transmitted through consumption of these products.

⁴ According to data from the Commodity Trade Database (COMTRADE).

3. Trade impacts in Latin America and the Caribbean

Latin America has experienced outbreaks of different types of avian flu in the last 10 years, though none have been highly pathological: Mexico (1995), Chile (2002), Central America (2003) and Colombia (October, 2005). The disease caused Chilean exports to drop heavily in 2002, with a loss of US\$ 21 million in comparison with the previous year (see table VI.4). A trade quarantine was imposed on Colombia by the other Andean countries (Bolivarian Republic of Venezuela, Bolivia, Ecuador and Peru), leading Colombia to lodge a complaint against Ecuador with the Andean Community's dispute settlement body.⁵ Given that no incidences of the H5N1 virus have been encountered on the American Continent as yet, the flow of world imports from Latin American countries has increased and they have gained market niches previously occupied by Asian countries.

Table VI.4
LATIN AMERICA AND THE CARIBBEAN: MAIN POULTRY EXPORTERS
(Millions of dollars)

	2000	2001	2002	2003	2004	Variation 2003-2004	Variation 2000-2004
Brazil	904	1 439	1 498	1 953	2 813	44%	33%
Chile	37	57	36	54	116	113%	33%
Argentina	14	18	22	40	65	63%	47%
Latin America and the Caribbean	986	1 541	1 576	2 057	3 017	47%	32%

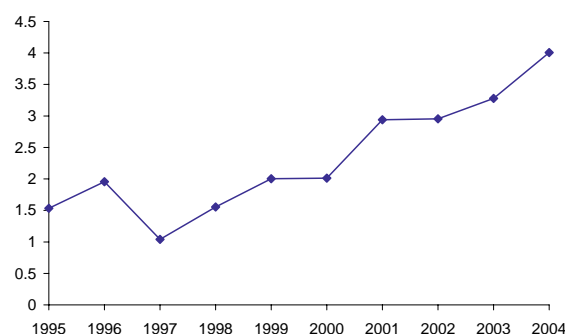
Source: FAO Statistical Databases (FAOSTAT), 2006.

One consequence of these developments is that between 2003 and 2004, the period that coincided with the outbreaks of avian flu in Asia, poultry came to account for a higher share of the region's total agricultural exports (see figure VI.3). In 2004 Latin American and Caribbean poultry exports expanded by 47% with respect to 2003 and accounted for 4% of agricultural exports that year (see table VI.4 and figure VI.3). Brazil is the region's largest poultry exporter, accounting for 20% of this market. Its exports increased by 44% in volume between 2003 and 2004. Argentina and Chile are the other two large exporters in the region.

A breakdown of poultry exports reveals uneven growth patterns across the different components. Exports of chicken meat have expanded steadily, especially in 2003-2004 (48%), as a result of avian flu in Asia. Turkey

exports have also moved upwards fairly constantly, except in 2002, when avian flu broke out in Chile, which is the region's second largest exporter of turkey (its exports dropped from US\$ 12 million in 2001 to US\$ 4 million in 2002). Exports of eggs also rose, except in 2002, as a result of the same outbreak (see table VI.5).

Figure VI.3
LATIN AMERICA AND THE CARIBBEAN: POULTRY EXPORTS AS A PROPORTION OF TOTAL AGRICULTURAL EXPORTS
(Percentages)



Source: FAO Statistical Databases (FAOSTAT), 2006.

Table VI.5
LATIN AMERICA AND THE CARIBBEAN: POULTRY EXPORTS
(Millions of dollars)

	2000	2001	2002	2003	2004	Variation 2003-2004	LAC share in 2004 world exports
Chicken meat	848	1 344	1 381	1 776	2 637	48%	31%
Turkey meat	90	124	116	159	231	45%	5%
Tinned chicken meat	48	73	78	122	148	21%	2.4%
Eggs	33	43	29	19	33	74%	14%

Source: FAO Statistical Databases (FAOSTAT), 2006.

The Latin American and Caribbean countries export no goose meat and very little duck meat, though duck exports expanded sharply from US\$ 95,000 in 2003 to US\$ 940,000 in 2004. This increase may be attributable to the global supply shock caused by the sudden drop in exports of duck meat from Thailand, Hong Kong SAR and China between 2003 and 2004.⁶

⁵ The General Secretariat of the Andean Community ruled that there was no proper justification or technical grounds for Ecuador's ban on all poultry products from Colombia. Accordingly, Ecuador was required to amend its resolution No. 024 by including an article allowing the sale of poultry products treated to inactivate the avian influenza virus (see resolution 982 of the General Secretariat of the Andean Community).

⁶ According FAO statistics, Thai duck meat exports plunged from US\$ 39 million to US\$ 3 million. Those of Hong Kong SAR dropped from US\$ 21 million to US\$ 5 million and those of China fell from US\$ 26.5 million to US\$ 20 million.

Poultry farming for export is highly mechanized in the region, as may be seen in Argentina, Brazil and Chile. This means that there is less contact between humans and birds in poultry farms and producers are in a position to respond quickly to disease prevention and control plans. In several countries, however, a good deal of chicken meat is also produced in small and medium-sized rural farms for the domestic market. These farms are at higher risk of catching and spreading avian flu.

Lastly, an important point is that financial losses are not confined to the poultry trade, but spill over to the production of maize and soybean, on which poultry feed is based. Argentina and Brazil would be the region's worst affected countries in this regard, since they are the largest exporters of cereal and vegetable oil (maize and soy, respectively) for use in feed for the world poultry industry. Much of this feed goes to the domestic market, however. In Brazil, the domestic poultry sector alone absorbs 49.5% of maize production and 27% of powdered soybean production.⁷

4. International agency response and mobilization in the region

Responding to the urgency of the situation, international agencies mobilized and joined forces to provide technical assistance to the countries. They have conducted a series of activities individually and jointly, led by the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO)⁸ and the World Organisation for Animal Health (OIE).⁹ Among other efforts, they have organized seminars, workshops and technical assistance, including support for national authorities in investigating outbreaks, stepping up surveillance in affected regions and coordinating regional programmes to tie in with international directives.

In the framework of global mobilization around this issue, FAO, OIE, WHO and the World Bank convened the Meeting on Avian Influenza and Human Pandemic Influenza in Geneva in November 2005. At the meeting, the organizations looked at the FAO proposal for a global programme of avian influenza control and eradication and examined the countries' main short-, medium- and long-term financial needs. It was agreed that FAO would coordinate the global programme with regional initiatives, which would cost an estimated US\$ 476 million (see table VI.6). Significantly, this estimate does not include the costs of financing the regional initiatives.¹⁰

Despite the socio-economic importance of the poultry sector in the region, the countries' response to bird flu has been very uneven (see table VI.8). As well as regional

meetings of governments and animal health agencies, once the existence of the H5N1 virus was known, the regional agencies spurred on the preparation of a regional avian flu pandemic preparedness plan, under the guidance of WHO, OIE and FAO. Domestic mobilization in the countries has been led by ministries of health and of agriculture and livestock, in coordination with public and private bodies. The Pan-American Health Organization (PAHO) is also working with the Latin American and Caribbean countries to develop national pandemic preparedness plans and has stipulated that all members must have their preparedness plans finalized by July, 2006.¹¹

Table VI.6
ESTIMATED COSTS TO FAO OF COORDINATING GLOBAL
CONTROL AND ERADICATION EFFORTS
(Millions of dollars)

FAO activity	First 6 months	First full year	Second year	Third year	Total
Coordination	9 838	18 500	15 892	15 337	49 711
Infected countries	22 220	56 129	24 637	23 652	104 418
Countries at risk	16 197	21 007	29 123	27 492	77 622
Newly infected countries	16 100	44 000	62 700	137 500	244 200
Total	64 355	139 636	132 352	203 981	475 969
Estimated prevention costs					
Americas	3 239	4 201	5 825	5 498	15 524

Source: Food and Agriculture Organization of the United Nations (FAO), *Avian Influenza Control and Eradication. FAO's Proposal for a Global Programme*, January 2006.

⁷ Data from the Ministry of Agriculture, Fisheries and Supply (MAPA) of Brazil.

⁸ Information from FAO is available at on its website: http://www.fao.org/ag/againfo/subjects/es/health/diseases-cards/special_avian.html.

⁹ Information from OIE is available at: http://www.oie.int/eng/avian_influenza/guidelines.htm#AIEurope.

¹⁰ Regional programmes include the Global Early Warning and Response System for Major Animal Diseases (GLEWS) for transboundary animal diseases (estimated cost of US\$ 3 million) and those run by the Emergency Centre for Transboundary Animal Diseases (ECTAD) in Bangkok (the cost of activities in the Asian region is estimated to be US\$ 5.6 million) (FAO, 2006e).

¹¹ For further details see: "Influenza pandémica". <http://www.col.ops-oms.org/repositorio/vertema.asp?id=20&idrepositorio=1>.

C. Foot-and-mouth disease

Foot-and-mouth disease (FMD) does not infect humans, but it is one of the most contagious diseases of mammals and has great potential for causing severe economic loss because of the ease with which it spreads, the significant deterioration of the animals affected and its ability to spread through the sale of the meat. It is therefore an issue of great concern in the international beef trade. An intensive cooperation effort between health and

agriculture sectors has achieved significant progress in controlling and eradicating the disease in several countries, almost exclusively highly economically developed nations, while South America has yet to reach this point. According to the Secretariat of the World Trade Organization (WTO), FMD heads the list of animal health concerns, together with BSE (mad cow disease).¹²

1. Impacts on the international beef trade

FMD affects trade because it reduces livestock productivity (meat, milk and derivatives), forces sanitary restrictions on exports and pushes up production costs through compliance with international sanitary standards and the provisions of public control and eradication programmes. In addition to deaths caused by the disease and the necessary cull of livestock,¹³ it causes spontaneous abortion, loss of reproductive capacity, gestation problems, increased secondary conditions (such as mastitis) and heightened vulnerability to other infections. Another indirect economic effect is the impact on tourism. The losses to tourism and recreational activities caused by the restriction on access to rural areas during the FMD outbreak in the United Kingdom in 2001 amounted to US\$ 4.9 billion, which represented half the total cost of the disease (DEFRA, 2005).

These outbreaks of FMD impacted immediately on world trade in beef and cattle, which declined by 4%. Trade losses in Uruguay and Argentina, which were also hit in this period, are estimated at US\$ 178 million and

US\$ 440 million, respectively. Outbreaks of BSE in the European Union and of FMD in Argentina, the Republic of Korea, the United Kingdom and Uruguay slowed world trade in beef in 2000 and 2001 and triggered a shift in consumption trends that pushed up the prices of all meat other than beef. Trade flows were also diverted, much like what happened in the world poultry trade in response to the spread of avian flu. The FMD outbreak in the Republic of Korea in 2000 hurt the country's trade with Japan, which was worth US\$ 300 million, and enabled other major exporters to gain a larger share of the Japanese market (FAO, 2004).

In sum, the short-term trade impacts of FMD outbreaks in 2000-2001 in the main exporting countries were reduced availability of FMD-free meat in the international markets; a drop of almost 3% in global beef trade and a consequent 3.5% increase in world prices; and an increase in the prices of other meats, such as pork, poultry and lamb or mutton, which were used as substitutes (FAO, 2004).

¹² Bovine spongiform encephalopathy (BSE) is the scientific name given to the condition commonly known as "mad cow disease", which was first diagnosed in the United Kingdom in the 1980s.

¹³ Outbreaks of foot-and-mouth led to the culling of 4.03 million animals in Taiwan Province of China in 1997 and 6.24 million in the United Kingdom in 2001 (FAO, 2004b).

2. Foot-and-mouth disease in South America

Two changes in the international rules have contributed to the growth of regional beef exports in the last few years: the recognition of zones classified as FMD-free with vaccination and the regionalization concept. Previously, the international market recognized only FMD-infectious areas and FMD-free areas, which placed South America at a disadvantage, since this classification did not distinguish countries that were free of the disease through vaccination (as in the cases of Argentina, Brazil, Paraguay and Uruguay), but only whether FMD had been eradicated in the region or not. This had two implications for trade. First, meats from FMD-free areas were in greater demand, attracted higher prices and enjoyed access to the markets of countries in the FMD-infectious areas. Second, countries that had not eradicated FMD could sell only to other countries within the same FMD classification, or market processed (cooked or salted) meat at a lower market value (PAHO, 2005). In this regard, beef from Argentina and Brazil, though of high quality, did not attain the high market value of meat from Australia, the European Union or United States, which were FMD-free.

In the 1990s, OIE devised the sanitary category of “FMD free zone with vaccination” in its International Animal Health Code. This is the first disease for which OIE has established an official list of countries and areas that are disease free with and without vaccination. This category provides for the trading of beef under conditions that are advantageous to countries of South America, which has the world’s largest beef herd and where, with vast stretches of land devoted to livestock farming, it is difficult to completely eradicate the disease throughout the continent.

The great majority of the developed countries are classified as FMD-free without vaccination. All the Central American and Caribbean countries and Chile have attained this category too. A number of South American countries, including Paraguay and Uruguay, have been classified as FMD-free through an efficient system of herd vaccination. Argentina and some States in Brazil, having gained FMD-free with vaccination status, then had it suspended.¹⁴ In terms of trade, this suspension strips a country of one of the main entry requirements laid down by the world’s largest beef importers.

(a) The challenge of overcoming resistance to regionalization

Another important development that broadened the export prospects of countries where FMD had not been eradicated was the introduction of the regionalization principle enshrined in article 6 of the Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement),¹⁵ and its subsequent regulation by the international organizations, namely OIE and the International Plant Protection Convention (IPPC).¹⁶ This principle is crucial for large countries reporting outbreaks of disease that are restricted to a particular geographical area.¹⁷ Argentina and Brazil have benefited from the regionalization principle, since it enables them to export beef from FMD-free regions and avoid beef embargoes on the whole country as a result of isolated outbreaks. These two changes in the international rules had much to do with the considerable increase in the region’s beef exports in 1994-2004. In 2000-2004, Brazil led export growth (33%), followed by Paraguay (22%) and Uruguay (14%) (see table VI.7).

¹⁴ The outbreak in Mato Grosso do Sul triggered the suspension of that State’s FMD-free with vaccination status, together with that of Tocantins, Minas Gerais, Rio de Janeiro, Espírito Santo, Bahia and Sergipe (from 30 September 2005). The outbreak in Paraná led the suspension of FMD-free with vaccination status there and in the States of São Paulo, Goiás, Mato Grosso and the Federal District of Brazil (from 21 October 2005). Argentina’s FMD-free with vaccination status was suspended as of 8 February 2006 following a report of an outbreak of FMD in the province of Corrientes that month.

¹⁵ Article 6 of the Agreement on the Application of Sanitary and Phytosanitary Measures (the “SPS Agreement”) requires governments to recognize areas within other countries as safe sources for imports of food and animal and plant products, instead of taking measures based solely on national boundaries.

¹⁶ The International Plant Protection Convention (IPPC) has three rules dealing with regionalization: International Standard for Phytosanitary Measures (ISPM) No. 4 on requirements for the establishment of pest-free areas; ISPM No. 10 on requirements for the establishment of pest-free places of production and pest-free production sites; and ISPM No. 22 on requirements for the establishment of areas of low pest prevalence. The OIE Terrestrial Animal Health Code sets out requirements for certification of freedom from diseases.

¹⁷ The purpose of the regionalization principle is to allow part of a country to be declared FMD-free, even if outbreaks have occurred in other parts of the country. This avoids the need for a country-wide embargo on meat exports.

Table VI.7
LATIN AMERICA AND THE CARIBBEAN: MAIN BEEF EXPORTERS
(Millions of dollars)

	2000	2001	2002	2003	2004	Variation 2000-2004
Brazil	783	1 009	1 090	1 508	2 429	33%
Argentina	662	249	475	595	1 020	11%
Uruguay	376	229	272	383	629	14%
Paraguay	70	76	20	60	158	22%

Source: FAO Statistical Databases (FAOSTAT), 2006.

Paraguay and Uruguay attained unprecedented growth in their beef exports thanks to their FMD-free status. Both growth rates outstripped that of Argentina, which has a much larger herd and volume of beef than either Paraguay

or Uruguay. Although both these countries are working at full capacity, the combined volume they export (349,000 metric tons in 2004) is not enough to cover all the market supplied by the exports of Brazil and Argentina, which ship almost five times as much.¹⁸

Although it has certainly had a positive impact on regional beef trade, the regionalization principle would yield much greater benefits if all the WTO member countries were to respect it. Of all the Latin American and Caribbean countries, Argentina lodged the largest number of WTO notifications under the regionalization principle, followed by Brazil (WTO, 2005b), between 1995 and 2004 (WTO, 2005b).

D. Trends and future challenges for the global meat market

South America is an unusual region in that is prominent in global trade of both chicken and beef and both are crucial to its agricultural sector. The region has the largest commercial beef herd in the world and it is the world's second largest exporter of beef and largest exporter of chicken. The production and sale of these products are not only important sources of employment and income for rural communities: they also contribute heavily to human well-being by supplying high-quality proteins that are essential for good health.

As new sanitary barriers are imposed, governments and producers must continually take preventive measures if they are to maintain their exports of livestock products, since it takes some time to regain access to destination markets and recoup consumer confidence after a sanitary problem has occurred.

(a) The three main weaknesses

These "sanitary shocks" have revealed issues that, though not new, point up three main difficulties for the countries of the region: (i) lack of effective public inspection procedures; (ii) weakness of public-private partnership; and (iii) lack of legal provisions designed, at least, to standardize sanitary protection, even if they are not identical in content.

Recent outbreaks of FMD call into question the capacity of the region's countries to deploy a rapid and effective response to transboundary diseases, which heightens concerns over the potential spread of avian flu to the American continent. What is more, it shows up the institutional weakness of many countries, i.e., the lack of inspection agencies properly prepared to undertake sanitary surveillance, prevention and control. The spread of these diseases also demonstrates on the ground that public-private collaboration is essential for any satisfactory sanitary programme. On the one hand, it is the responsibility of the public sector to formulate and produce instruments for achieving clear objectives in disease control and eradication, since only the public sector has the authority to define epidemiological profiles and interact with productive units in the best possible way. On the other hand, the private sector is responsible for implementing the sanitary measures set out in government programmes, not only when a disease worsens, but at all times.

Another difficulty is that, typically, farming methods vary widely in Latin America and the Caribbean, for both beef and poultry. Large industries with advanced, high-tech production methods exist alongside medium-sized and small producers using traditional techniques of animal husbandry. The broad variety of types of meat production in the region places limits on the efficiency of public plans of sanitary inspection and

¹⁸ According to FAOSTAT data, Brazil and Argentina combined reported a volume of 1.664 million tons in 2004.

coordination with the plans of neighbouring countries. This, together with Latin America's ecological diversity, makes it difficult to put the discourse on harmonization of sanitary rules into practice in the region.

Despite these difficulties, if the spread of avian flu in the Americas is to be avoided, a common regional strategy must be formulated as a matter of urgency and coordinated with the respective international strategies. In the case of FMD, given that several regional plans have started up in the last few years, the main obstacle now is the region's institutional heterogeneity, which prevents more effective surveillance by the responsible bodies in each country. Effective FMD eradication plans need closer coordination between public authorities and rural producers. Better investment in municipal or provincial surveillance systems would represent a step in this direction.

Short-term initiatives in response to transboundary disease focus on prevention and control within production units, but in the long term what is needed is an effective institutional structure conducting surveillance at all times, not only when the international alarm is raised over an outbreak that is already spreading. It is therefore necessary to strengthen services of surveillance, prevention and control within the countries and to establish a joint, standard strategic system based on sanitary rules that offer a common level of protection, thereby creating "sanitary armour-plating" that can safeguard the stability of the region's livestock trade.

The countries of the region have made some headway in putting their respective national avian flu prevention plans in place. However, the only effective way to deal with a disease that spreads rapidly across geographical boundaries is to devise a coordinated response by all the countries, lest trade barriers compromise access to export markets. Efforts should therefore be focused on coordinated activities, of which examples are the creation of the Ad hoc Group on Avian Influenza¹⁹ by the Southern Cone countries and the preparation of the Regional Strategy on Avian Influenza Prevention aimed at standardizing sanitary measures in the region.

The containment of FMD, too, is vital for the international positioning of the livestock sector and must therefore be dealt with by the governments. For example, Brazil's national FMD eradication programme drastically reduced the

incidence of the disease and eradicated it altogether in several states.²⁰ Bolivia has implemented a similar programme and has managed to have the area of Chiquitania recognized as FMD-free with vaccination.²¹ Although several eradication programmes have achieved positive results, however, the latest outbreaks in Argentina and Brazil show that the countries still have a long way to go to eradicate the disease in Latin America. In this regard, proposals for joint action by institutions such as the Southern Agricultural Council (CAS) and the Agricultural Policy Coordination Network (REDPA)²² are crucially important for the countries that form one of the world's largest beef producing areas.

(b) Investment in traceability, regionalization and mutual recognition agreements

The diseases discussed here spark consumer concerns over human health impacts and this has heightened the need to implement methods to verify the origin of foods consumed. Food traceability or trackability lets consumers know where food comes from, offers guarantees of food safety, improves quality management and risk assessment to increase consumer confidence and provides a basis for timely measures to be taken in response to risk-inherent problems.²³ In order to enter markets such as the European Union, the United States and Japan, meat exporters must provide accurate information on the history of the imported food from its point of origin to the consumer's table. This is why it is important to have traceability systems in place permanently.

With regard to the regionalization principle, since the approval or rejection of requests calls for technical and legal evidence, efforts must be made to minimize the political factors that are sometimes involved in consultations undertaken in the framework of WTO. The countries should be represented at the main WTO and OIE meetings addressing the issue, in order to engage the international community in the problems the countries face in securing recognition of the regionalization principle.

Mutual recognition agreements arise out of assessment processes in which two or more countries agree that the systems they employ can permit the goods traded in one country to be traded freely in any other country party to

¹⁹ This working group is an initiative of the Permanent Veterinary Committee of the Southern Cone.

²⁰ Brazil recorded 2,000 outbreaks of FMD in 1994, compared to just 2 in 2004 (Lima and others, 2005).

²¹ Further details available from PANAFTOSA and the National Agricultural Health and Food Safety Service of Bolivia (SENASAG).

²² CAS was established in 2003 by the member and associate countries of MERCOSUR and comprises the ministers for agriculture of Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay. Its main tasks are to harmonize agricultural policies in the region, exchange information on the agricultural matters in the member countries, coordinate sanitary defence, adopt common positions on international trade negotiations and promote regional integration. REDPA is a mechanism of regional coordination on agricultural policy implementation. Further details are available at: <http://www.iica.org.uy/casonline/inicial.asp> and <http://www.redpa.org>.

²³ The traceability system applies to foods, feed and animals from which food products derive. Monitoring encompasses all operations along the production chain, industry, transport, distribution and retail.

the agreement. The purpose of such agreements is to allow goods to flow more freely among countries and avoid impediments to trade caused by differences in the trading partners' national rules, on the condition that each country maintains a proper level of sanitary protection—which does not require the rules to be identical. In practice, a mutual recognition agreement facilitates trade and reduces or eliminates the need for inspection of goods at the point of entry, on the basis that the importer trusts the effectiveness of control systems in the exporting country.

Mutual recognition agreements are based on the notion that different rules can result in an acceptable

degree of assurance of food safety, even if the contents of the legislation are different. Among countries with such varied sanitary situations as those of the region, this is essential. Such agreements merit a place on the Latin American countries' trade policy agendas, because they would represent substantial progress towards improving regional trade flows, in view of shared sanitary problems such as FMD. Unquestionably, the countries need to inject urgency into the joint initiatives that have been developed over the last few years to even out sanitary policies in their agricultural sectors, since this would represent a first step towards forging mutual recognition agreements.

Table VI.8
REGIONAL ACTIVITIES AIMED AT AVIAN FLU CONTROL AND PREVENTION

Institutions		
<ul style="list-style-type: none"> • Pan American Health Organization (PAHO) • FAO Regional Office for Latin America and the Caribbean (RLAC) • OIE Regional Representations • Permanent Veterinary Committee of the Southern Cone • Inter-American Institute for Cooperation on Agriculture (IICA) • International Regional Organization for Plant and Animal Health • Inter-American Committee on Avian Health • OIE regional commission on avian health 		
Activities		
<ul style="list-style-type: none"> • Technical assistance for training and institution-building of veterinary services and national laboratories • Organization of information seminars and workshops • Guidance on scientific research and risk assessments • Capacity building • Guidance on national prevention plans • Meetings to improve regional coordination • Financing of national and regional activities 		
Forums and instruments		
<ul style="list-style-type: none"> • Global Framework for Transboundary Animal Diseases on the American Continent ^a • Regional strategy of avian flu prevention • Hemispheric Conference on the Surveillance and Prevention of Avian Influenza (Brasilia, 2005) • Technical cooperation projects for detection of avian flu in Central America, the Caribbean, the Andean region and the Southern Cone (FAO) • Guide to prevention and control of avian flu in small-scale poultry farming in Latin America and the Caribbean • Ad hoc Group on Avian Influenza created by the Permanent Veterinary Committee of the Southern Cone 		
By country		
Brazil	Costa Rica	Bolivia
<ul style="list-style-type: none"> • Avian flu prevention plan • National poultry health programme • Inter-agency working group on avian influenza • Inter-ministerial executive group on potential avian influenza pandemic • Contingency plans and operational manuals 	<ul style="list-style-type: none"> • National commission on influenza pandemic preparedness • Influenza pandemic preparedness and response plan • National influenza virus surveillance system • Guide to integral patient treatment 	<ul style="list-style-type: none"> • National plan for avian influenza • National avian health programme • National programme of control and eradication of Newcastle disease and avian influenza surveillance
Chile	Peru	Argentina
<ul style="list-style-type: none"> • Influenza pandemic preparedness plan • National programme of epidemiological surveillance in avian diseases • Livestock emergency plan and contingency plan for avian influenza (SAG) • Avian influenza prevention system (SAG) • National outbreak response and sanitary emergency commission 	<ul style="list-style-type: none"> • National avian health programme • Sanitary regulations for the rearing and slaughter of poultry for consumption • National preparedness and response for a potential outbreak of avian influenza • Registration and operation of farms and incubation plants 	<ul style="list-style-type: none"> • SENASA Resolution No. 1078/ 99 on avian influenza • Epidemiological surveillance programme • National poultry health plan • National poultry health commission

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the institutions cited.

^a The Global Framework for Transboundary Animal Diseases (GF-TADs) is a joint FAO/OIE initiative, which combines the strengths of both organizations to facilitate alliances among countries to combat transboundary animal diseases and assist with the establishment and development of programmes to control such diseases, including FMD and avian flu. Asia was the first region to implement GF-TADs and in 2005 it was introduced on the American continent with the support of a number of regional organizations.

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