EMPRES
Transboundary Animal Diseases Bulletin
No. 28 – 2005
February–June 2005
E-mail: empres-livestock@fao.org ■ www.fao.org/empres
ISSN 1564-2615

EMERGENCY PREVENTION SYSTEM


Zambia, 2004

Foot-and-mouth disease status in southern Africa

Since 2000, southern African countries have experienced unprecedented outbreaks of transboundary animal diseases (TADs) the most prominent of which have been foot-and-mouth disease (FMD), contagious bovine pleuropneumonia and African swine fever. A summary of FMD outbreaks in the region over 2000–05, broken down country by country, is given. The synopsis of information is derived from reports presented at an FAO recent workshop on control of TADs in the region, OSRO/RAF/404/SAF, held 3–4 May 2005 at Onderstepoort Veterinary Institute, South Africa.

A multidisciplinary approach to analysing wild birds and avian influenza viruses


WILDLIFE CONSERVATION SOCIETY

EMPRES supported the visit of a veterinary investigation team from the Wildlife Conservation Society to several sites in the central provinces of Mongolia from 29 July to12 August 2005. The team conducted wild bird surveys and sampling at nine sites.

In this particular study, the first of its kind to sample both live and dead wild birds while gathering denominator information on affected as well as sympatric species, no evidence of a reservoir for avian influenza H5N1 was found in the wild birds. The methodology, including the multidisciplinary approach, needs to be taken to other regions where wildlife may be implicated either in introducing the virus in poultry or in being infected by a domestic bird source.

AND...

EMPRES in action: report of an EMPRES emergency mission to Guinea-Bissau for assistance in the control of anthrax

In April 2005, clinical examination of patients seeking medical attention at the Mansoa Hospital, Oio Region, confirmed the presence of *Bacillus anthracis* in skin lesions. On 22 April 2005, the Ministers of Health and Agriculture declared the Oio Region as affected by an anthrax epidemic and, among other measures, appealed for urgent international support for an emergency vaccination campaign to control the epidemic in cattle. FAO deployed an EMPRES Officer to Guinea-Bissau to assess the situation for possible technical assistance.

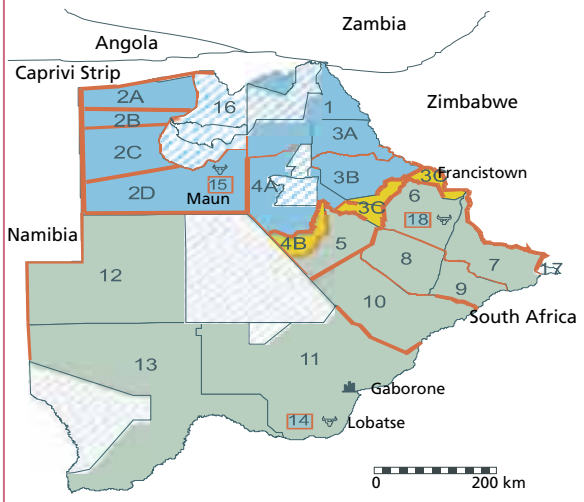
Foot-and-mouth disease status in southern Africa

Since 2000, southern African countries have experienced unprecedented outbreaks of transboundary animal diseases (TADs), the most prominent of which have been foot-and-mouth disease (FMD), contagious bovine pleuropneumonia (CBPP) and African swine fever. Below is a summary of FMD outbreaks in southern Africa, 2000–05. This information is derived from reports presented at an FAO workshop on control of TADs in the region, OSRO/RAF/404/SAF, held 3–4 May 2005 at the Onderstepoort Veterinary Institute, South Africa.

In **Angola**, with the last reported outbreak of FMD in 1974, to confirm the presence or absence of circulating FMD virus, there is a need to promote clinical investigations and to undertake serological testing of cattle and other susceptible species, especially in areas where buffaloes are present, including Bengo, Bié, Cunene, Cuando Cubango, Cuanza Sul, Huambo, Huíla, Malanje, Moxico and Uíge Provinces. Inability to monitor the FMD situation is attributed to the civil strife that devastated the infrastructure of the country for 27 years.

In **Botswana**, much attention is paid to the control of TADs because beef exports contribute significantly to the economy of the country and continued access to lucrative world markets is dependent on freedom from diseases such as FMD and CBPP. The country enforces a strict livestock disease control policy based on early detection and effective response. Capable enforcement is, in turn, enabled by effective disease control operating structures and programmes among government authorities in conjunction with private interests. The structures are made up of a disease control

Veterinary disease control zones in **Botswana**



Area: 582 000 km²
Semi-arid
Population 1.7 million (2001 census)
2.5 million cattle
1.0 million goats
0.5 million sheep

FMD-vaccinated zone
Non-vaccinated surveillance zone
FMD-free zone

Cordon fences
Double
Single
Stock-free zone
Abattoir

Source: M. Letshwenyo. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005

committee, an FMD alert team, an FMD contingency plan and public awareness campaigns, combined with bilateral collaboration with neighbouring countries.

The effective disease control and prevention programmes include disease reporting, surveillance and monitoring, vaccination activities, animal movement control, a permit system, veterinary infrastructure and extension delivery services. FMD control in Botswana is based on veterinary control zones (see map).

In 2002–03, however, the country experienced FMD outbreaks near the Zimbabwe border that were successfully controlled through quick action by central and local authorities. All previously affected areas have since been restocked with cattle. A 10 km-wide surveillance zone has been created along the border with countries where FMD has been reported in recent times, and patrols have been intensified. The height of cordon fences has been raised from 1.4 metres to 2.4 metres, and fences are now electrified. Cattle are mouthed during the annual vaccination campaigns, and the disease control committee reviews the situation regularly. Cloven-hoofed animals are quarantined for at least 21 days before leaving their districts.

Botswana enforces a strict livestock disease control policy based on early detection and effective response

In **Lesotho**, no FMD was detected in the period under review.

In **Malawi**, 18 FMD outbreaks had been recorded since 1957. Only two of these outbreaks have occurred in the past five years. Almost all of the outbreaks originated from neighbouring countries. The one exception is the FMD outbreak in southern Malawi in 2003, believed to be of Malawi origin, most likely from the African buffalo population within Lengwe National Park.

Malawi has been vigilant in avoiding the establishment of endemic status of FMD. An FMD outbreak in Malawi constitutes a national emergency because the disease could potentially close agricultural export markets.

FMD outbreaks disrupt local market systems, as well, because movement restrictions are implemented in the face of an outbreak. Such disruption has far-reaching socio-economic implications. The hardest-hit sector is that of traditional cattle keepers, who are unable to move or sell their cattle. Another major expense is the very high cost of controlling and recovering from FMD outbreaks.

There had been no outbreaks reported in **Mozambique** for 17 years, until November 2002, when FMD broke out in the Provinces of Gaza, Manica and Maputo. Twenty foci were recorded between November 2002 and July 2003 (see map, p. 4).

In addition to outbreaks indicated on the map, in 2003, outbreaks were also recorded in Bobobo M. Ribwe (April), Nalazi (May), Chicotane (August) and

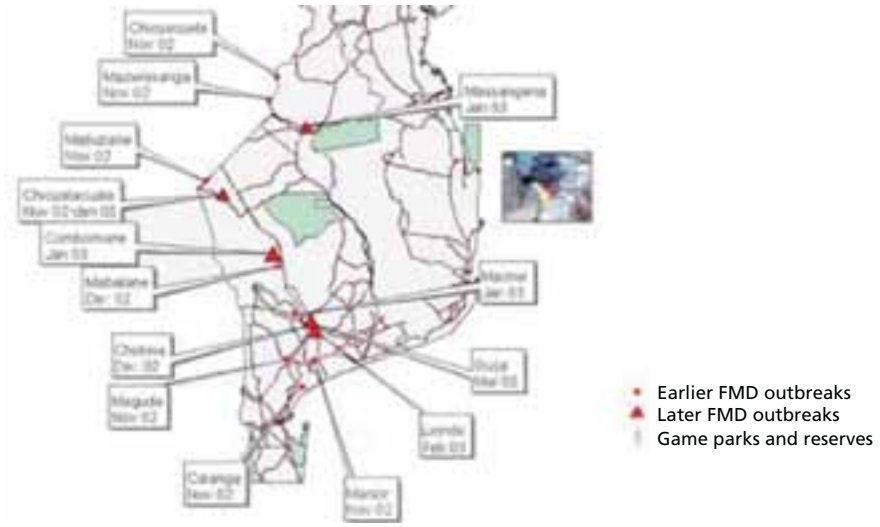
Foot-and-mouth disease outbreaks suspected or confirmed in **Malawi**, 2000–05, by year of occurrence

District	Year	Month of first case	Serotype
Mzimba	2000	April	SAT-1
Chikwawa	2003	April–May	SAT-2

Source: D. Chinombo. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005

In Mozambique, surveillance continues to target areas at risk

Foot-and-mouth disease outbreaks in **Mozambique**, 2002–03



Source: A. Mavale. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005

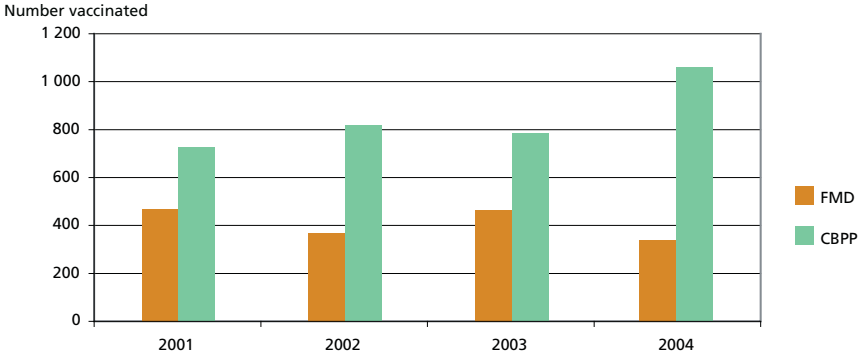
J. Nyerere, Gaza Province (September). Although this last FMD outbreak was the final one recorded, surveillance continues to target areas at risk.

Mozambique has reported that control measures combine vaccination and restriction of animal movement.

In **Namibia**, FMD is a priority animal disease. The last outbreak occurred in August 2000 and was eliminated by March 2001.

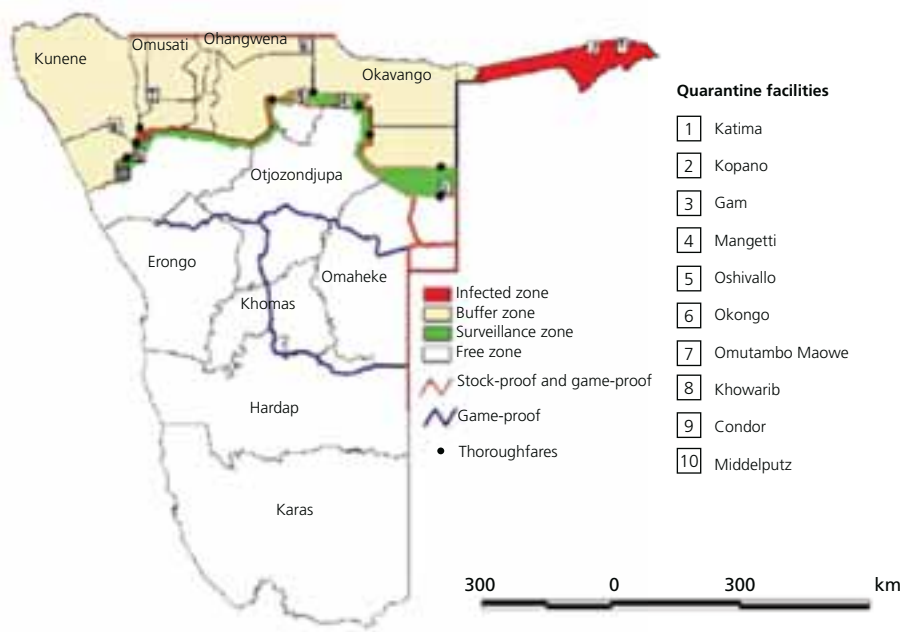
FMD control is based on vaccination and intensive surveillance of FMD zones (see map). The number of vaccinations for FMD (and CBPP) in the infected/buffer zone,

Foot-and-mouth disease and contagious bovine pleuropneumonia vaccinations in the infected/buffer zone of **Namibia**, 2001–04



Source: O. Hubschle. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005

Foot-and-mouth disease zones and fences in **Namibia**



Source: O. Hubschle. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005; Agro-ecological zone Programme, Ministry of Agriculture & Rural Development, Namibia

2001–04, is shown in the graph. By June 2005, some 9 000 sera had been collected for serosurveillance, and more are expected.

In 2000, there was an FMD type O outbreak in **South Africa** following introduction of the virus from outside the country. Swill from a ship that docked on the eastern coast of South Africa was suspected as the source. Since then, there have been FMD outbreaks only in the FMD control zone at Masisi (August–November 2003) and Mopani (June 2004–February 2005) (SAT-2).

As in many other countries, FMD control is based on zoning (see map). A new system of control zones has been adopted based on: i) infected, ii) buffer, iii) vaccination area, iv) non-vaccination area, v) inspection area of the FMD free zone and vi) free zone without vaccination.

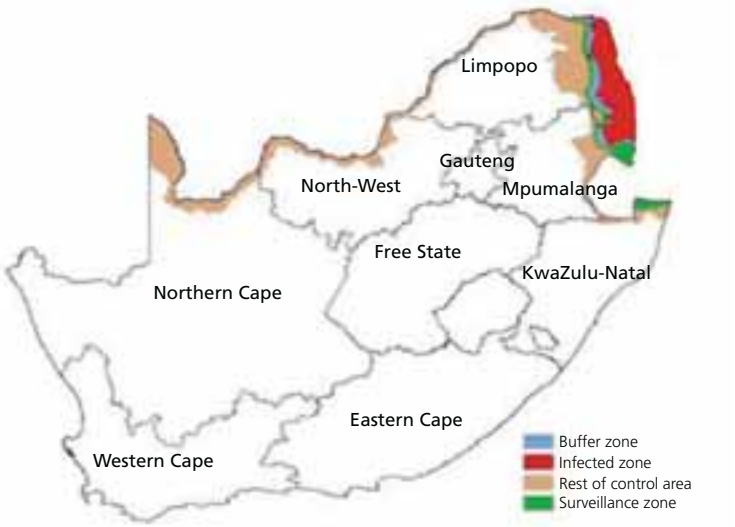
South Africa applies strict import controls, border control, movement control (especially in the control zones), vaccinations in the buffer zone, active surveillance (in the control zones) and passive surveillance (in the rest of the country) to detect and curtail the spread of FMD.

In **Swaziland**, there have been no outbreaks of FMD since 2000. This success was achieved through vaccination, slaughter and burial of clinically affected animals.

Swaziland was declared provisionally free from infection with FMD virus in June 2003

In 2003, a serosurvey undertaken in cattle populations in quarantine and surveillance zones, as well as those last vaccinated in March 1998, yielded negative results to tests for SAT-1, SAT-2 and SAT-3 viruses.

Foot-and-mouth disease control area in **South Africa**



Source: C. Garstenberg. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005

General control measures include a permit system for livestock movement based on the diptanks network and import control through a permit system for imports, which has been intensified by introducing veterinary personnel at the ports of entry designated to receive imported livestock. Importation is allowed only from areas that are recognized as disease-free.

Surveillance through cattle inspections is carried out on dipping. It is performed fortnightly in the summer and monthly in the winter in the Highveld (high altitude areas), and weekly in the summer and fortnightly in the winter in the Lowveld (low-lying areas). In the areas bordering Mozambique and Mpumalanga Province, South Africa (south of Kruger National Park), inspection is carried out weekly. A cordon fence bordering Mozambique and Mpumalanga Province is still maintained.

In the **United Republic of Tanzania**, FMD was reported in 68 of the 121 districts of the mainland in 2004 (see table and map, pp. 7–8). The 56 610 cases reported included FMD virus types O, SAT-1 and SAT-2. Districts were advised to use vaccines containing the three serotypes and to institute regulations and guidelines for the control of FMD in their areas of jurisdiction.

Budgetary constraints have prevented implementation of a national strategy that includes: continuing the rehabilitation of the FMD Animal Health Research Institute laboratory at Temeke to enable the country to type FMD viruses; focusing control of FMD in the dairy sector, draught power cattle and commercial beef stock; and performing ring vaccination in the vicinity of the outbreaks, coupled with restricting animal movement.

In Zambia, disease monitoring and surveillance are ongoing

In **Zambia**, FMD outbreaks were recorded in Northern Province in 2000 (SAT-2) and 2002 (SAT-2 and O). In Eastern Province, FMD broke out for the first time in 2000 in Lundazi District.

Foot-and-mouth disease outbreaks in the **United Republic of Tanzania**, 2000–04

Month	Number of regions	Number of districts	Number of outbreaks	Number of cases	Number of deaths	Number at risk
January 2004	6	10	16	433	4	6 171
February 2004	10	19	51	70	0	2 086
March 2004	13	24	71	2 542	25	118 376
April 2004	10	19	43	5 017	47	112 170
May 2004	12	18	35	1 916	68	70 773
June 2004	11	19	53	31 107	111	167 773
July 2004	8	10	17	2 248	8	28 820
August 2004	11	23	44	4 379	104	80 557
September 2004				3 770	47	74 924
October 2004	8	14	25	358	1	45 955
November 2004	2	2	4	54	0	538
December 2004	3	3	6	27	0	2 668
Total	**19**	**69**	**339**	**51 921**	**415**	**710 811**
2000*			113	7 189	597	
2001*			75	7 655	165	
2002*			58	2 536	60	
2003*			160	19 915	347	

Source: P. Njau. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005; and (*) World Organisation for Animal Health (OIE)

There was an outbreak in 2004 first reported in Namwala District and Itezhi-Tezhi District (July), in Mumbwa, Central Province, in Chibombo District (August), in Monze District (September) and in Nega-Nega (October) (see map, p. 8). The control measures exercised during this outbreak included quarantine, vaccination, zoosanitary measures, public awareness and sensitization training, disease reporting and surveillance activities.

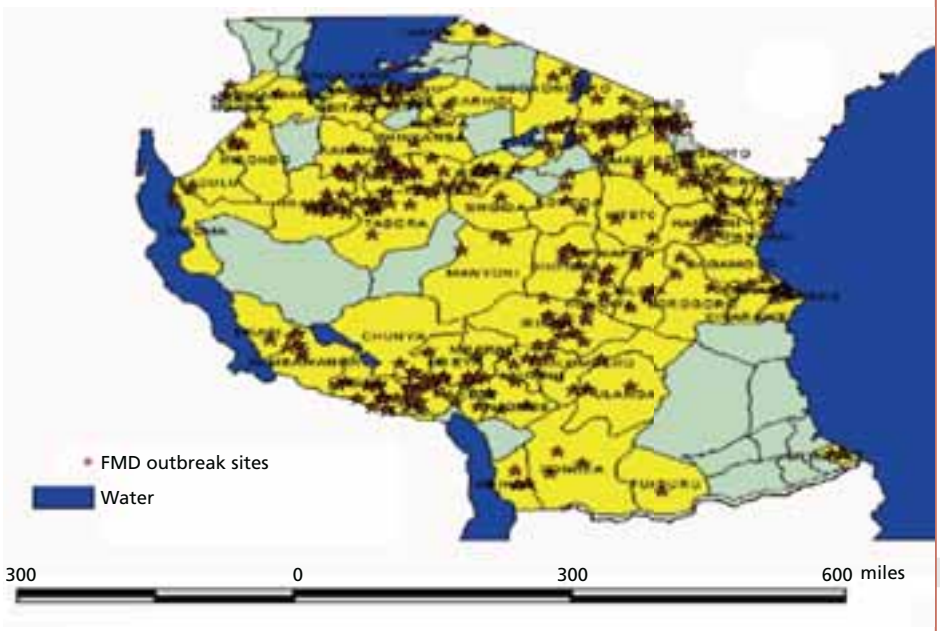
FMD is currently under control in Zambia. Disease monitoring and surveillance are ongoing. A ban on movement of livestock was lifted in March 2005. Movement of livestock to abattoirs is conducted with veterinary escorts, generally by truck, upon assurance that the abattoir is prepared to slaughter immediately.

Zambia's strategy for sustained FMD control focuses on defining and updating definitions of FMD clusters within the country (see map, p. 9), sustaining vaccination programmes and other control measures, holding regular meetings of the Livestock Coordination Group (a public–private stakeholder initiative) to review the FMD situation and creating a disease emergency fund.

In **Zimbabwe**, there were a series of FMD outbreaks in 2001–04. The primary outbreaks have all been associated with incursions of buffalo onto domestic property and the encroachment of humans introducing cattle on game reserves.

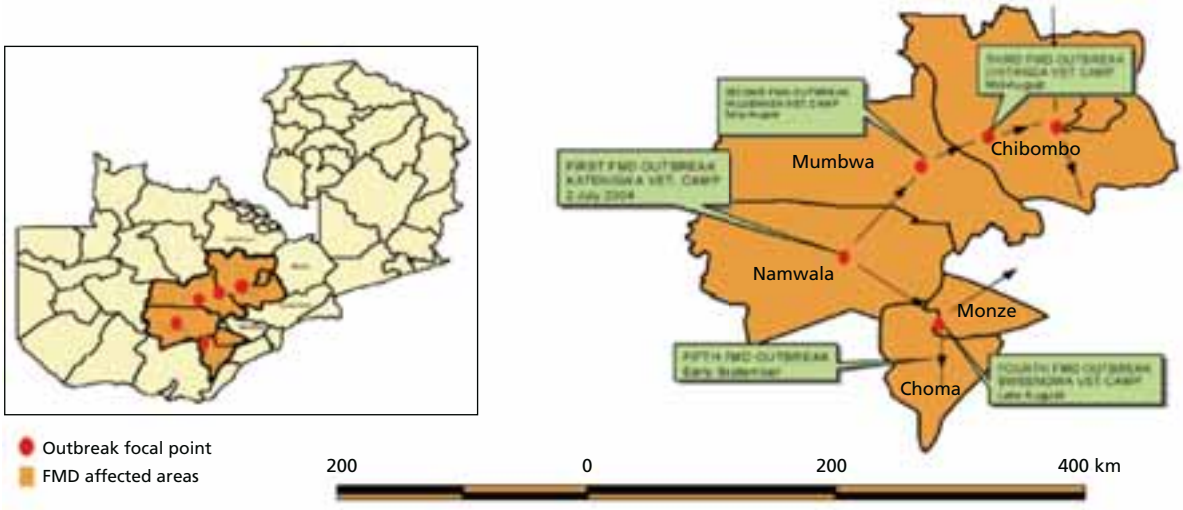
The first primary outbreak, in August 2001, resulted in several secondary outbreaks in southern Zimbabwe (see vector map, p.10). Another primary outbreak, which

Foot-and-mouth disease outbreaks reported in the **United Republic of Tanzania**, 2004, by district



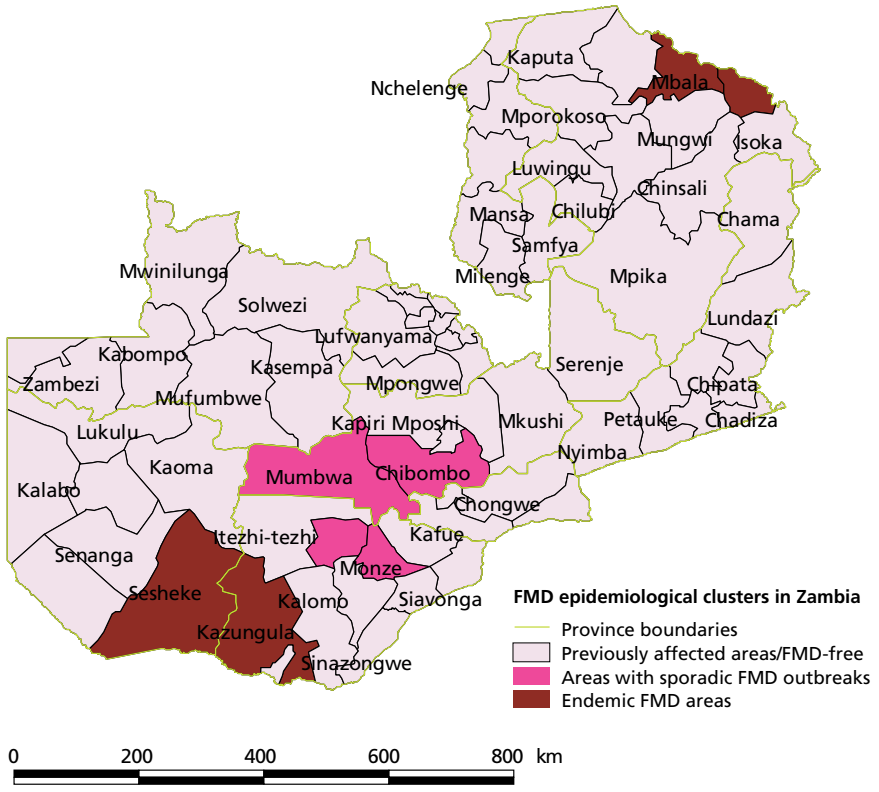
Source: P. Njau. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005

Foot-and-mouth disease outbreaks in **Zambia**, 2004



Source: F. Mulenga. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005

Foot-and-mouth disease epidemiological "clusters" in **Zambia**



Source: F. Mulenga. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005

occurred in August 2001 in Lupane in northwestern Zimbabwe, produced two secondary outbreaks. A third primary outbreak, which occurred in October 2001 northwest of Bulawayo, did not result in any secondary outbreak. A fourth outbreak, which occurred in August 2002 east of Masvingo around the Save conservancy area, produced a number of secondary outbreaks. The fifth and final outbreak, which occurred in October 2002 in the southernmost part of Zimbabwe, produced one secondary outbreak.

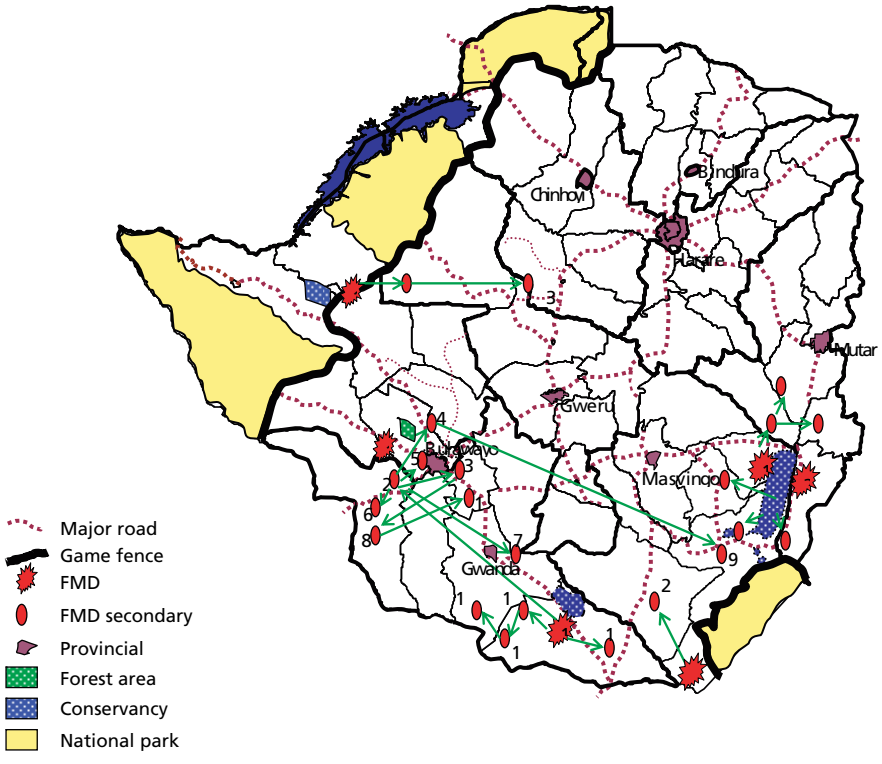
Acknowledgements

The information provided was assembled by Fred Musisi from reports made by participants of the FAO OSRO/RAF/404/SAF workshop, including various country representatives and the OSRO/RAF/404/SAF project staff of countries where activities were in operation. EMPRES is grateful for the contributions made by these participants. The workshop was organized through funding for project OSRO/RAF/404/SAF provided by the Government of the Republic of South Africa to an FAO appeal within the framework of the United Nations Consolidated Inter-Agency Appeal for southern Africa.

Foot-and-mouth disease outbreaks in **Zimbabwe**, 2001–04, by province

Province	Number of foci	Date of last case dd/mm/yyyy
Manicaland	107	09/08/2003
Mashonaland Central	1	16/07/2003
Mashonaland East	14	23/02/2004
Mashonaland West	25	13/05/2004
Masvingo	177	07/10/2004
Matabeleland North	20	03/12/2004
Matabeleland South	14	05/01/2005
Midlands	70	10/10/2004
	354	2003
	8	2002
	18	2001
Total	**800**	

Primary foot-and-mouth disease outbreaks in **Zimbabwe**, August 2001–October 2002



Source: W. Madzima. Presentation at OSRO/RAF/404/SAF workshop, Onderstepoort, South Africa, 3–4 May 2005

Special disease analysis report on FMD Asia-1: EMPRES and the EUFMD

Foot-and-mouth disease serotype Asia-1 in China, 2005

In 2005, there was confirmation of foot-and-mouth disease (FMD) virus serotype Asia-1 infection in cattle in the Hong Kong Special Administrative Region of China, and subsequently in widely dispersed locations on the Chinese mainland. These infections represent a major eastward shift in the known distribution of this virus type.

Extensive spread within China may increase risk to neighbouring countries. There is evidence that some spread may have already occurred: on 15 June 2005, FAO received a report of Asia-1 infection in the Amur Region of the Russian Federation, close to the Chinese border. This infection was subsequently reported to the World Organisation for Animal Health (OIE).

The reservoir of FMD virus (FMDV) serotype Asia-1 is generally considered to be in South Asia, particularly in India and Pakistan – countries with very high bovine and buffalo population densities. This virus type has often been associated with epidemic spread from these reservoir animal populations into western Asia as far as Turkey, and even into Greece (2000). However, the eastward spread to dispersed, possibly widespread outbreaks on the Chinese mainland appears to be a new and worrying development. Where entry into naive animal populations occurs, epidemics can be particularly severe.

Actions taken

As part of EMPRES and European Commission for the Control of Foot-and-Mouth Disease (EUFMD) activities, FAO has tracked the reports of severe FMD outbreaks in central Asia and western China that have occurred between 2003 and the present and has actively engaged with the countries concerned to improve reporting and follow-up actions.

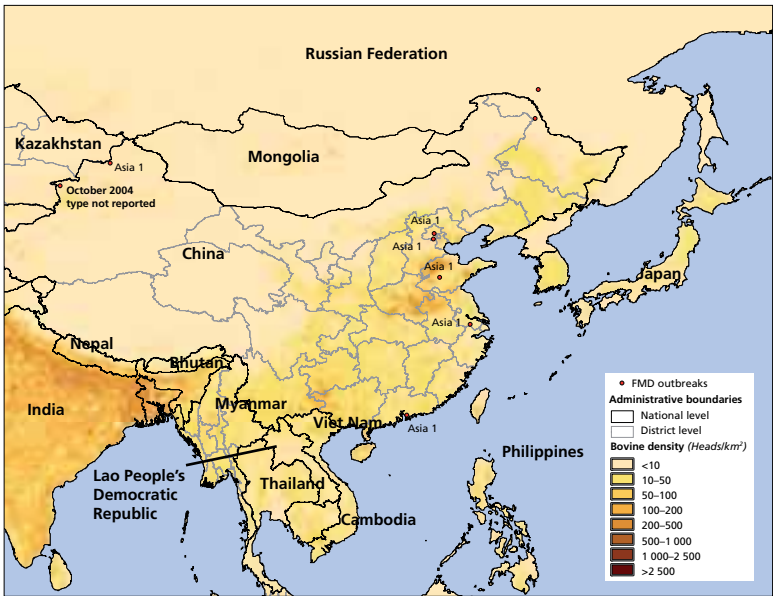
The development in China appears to be the consequence of a failure of the disease reporting system in a number of countries, mostly in central Asia, resulting in country-to-country spread and, it would appear, spread from western China to eastern China in 2005.

The consequence of a failure of the disease reporting system in a number of countries is a country-to-country spread

Tracking and analysing news reports

In 2003, FAO obtained media reports and unofficial reports from field-based projects and various organizations of a serious change in the FMD situation in several central Asian countries. FAO encouraged the authorities of the countries concerned to confirm or refute the reports and offered assistance for field or laboratory epidemiological investigations. The sequence of reports would suggest that infection in Tajikistan was followed by outbreaks in Uzbekistan and Kyrgyzstan and, at some point in 2003, in Kazakhstan. Three of these countries share borders with Xinjiang Uygur Autonomous Region in western China.

Locations of FMD outbreaks reported in 2005, and of an unconfirmed epidemic in 2004



In December 2003, Tajikistan reported FMD to OIE, and Kyrgyzstan reported the occurrence of FMD to the OIE Regional FMD Reference Laboratory in Vladimir, Russian Federation (FGI-ARRIAH). In January 2004, this laboratory confirmed the presence of Asia-1 type virus in samples from Tajikistan. A summary of information received concerning Asia-1 infection in China, or dramatic disease events that might indicate Asia-1 incursion, is presented in the map.

Reports made by China

On 23 March 2005, the authorities of the Hong Kong Special Administrative Region of China reported to OIE the detection of Asia-1 virus infection in cattle. The infection was confirmed in samples subsequently submitted to the FAO World Reference Laboratory (WRL) at Pirbright, United Kingdom.

On 13 May 2005, China reported to OIE that outbreaks caused by the Asia-1 serotype had occurred in April (first observed 24 April) in Wuxi, Jiangsu Province, and Taian, Shandong Province.

On 26 May 2005, China reported to OIE that further Asia-1 outbreaks had been detected:

- Daxing, Beijing Municipality, and Sanhe, Hebei Province, both in eastern China; and
- Hoboksar, Xinjiang Uygur Autonomous Region, located in western China near the Kazakhstan border.

Media reports

On 26 October 2004, FAO analysed media reports that suggested a serious situation was developing in western China close to the Kazakhstan border (Yili Prefecture, Xinjiang Uygur Autonomous Region). FMD outbreaks with a different character than what would be expected were reported to be occurring. A statement declared that "the virus had mutated". The same report indicated that this region exported meat to other provinces in China, and that the situation had triggered aggressive control measures including slaughter. The outbreaks and virus type involved were not reported to OIE or FAO.

On 24 May 2005, FAO received media reports of an FMD outbreak of unknown type in Sichuan Province. The reports stated that the initial outbreak had occurred on 15 April 2005.

On 15 June 2005, FAO received media reports of Asia-1 infection in cattle in the Russian Federation (Busse, Amur Region, 120 km northwest of Blagoveshchensk). This area is close to the Chinese border, but at least 1 000 km from the nearest outbreaks confirmed by Chinese authorities in the reports previously cited. The outbreak was subsequently confirmed in a submission by the Russian authorities to OIE. This location of the outbreak suggests that infection is present in neighbouring regions of northeast China close to the Russian Federation border.

Disease mapping and analysis

Virus type analysis

The genetic information received from FAO and OIE Reference Laboratories (WRL, IAH-Pirbright, United Kingdom; FGI-ARRIAH, Russian Federation; Foreign Animal Disease Diagnostic Laboratory, National Veterinary Services Laboratories (FADDL/NVSL), United States Department of Agriculture, Plum Island, United States of America) indicates that the Asia-1 viruses isolated from the outbreaks in the Hong Kong Special Administrative Region of China in January 2005 bear a closer relationship to those from earlier outbreaks in central Asia (Tajikistan) and western Asia (Afghanistan and Pakistan) than to recent virus isolates from South Asian countries (India and Nepal).

Pattern and implication of findings

The findings suggest that Asia-1 infection in central Asian countries in 2003 was followed by infection in ruminant livestock in Xinjiang Uygur Autonomous Region, China. This analysis would fit with media reports of a new disease pattern in the similar livestock systems of northwestern China (Xinjiang Uygur) in October 2004. At some point, the virus was transmitted to eastern China by an unknown source.

Risk for other areas

Central Asia

Until information is provided to clarify the extent of infection and efficacy of measures in western China, Kazakhstan, Mongolia and the Russian Federation can be considered at risk for FMD outbreaks along their borders with China (at the time of writing).

Other countries in Central Asia are at risk from continued infection from within the region and from countries to the south where the virus is endemic. Intensified surveillance and communication to OIE and FAO should assist in identifying risk and providing early warning to neighbouring provinces or countries to prevent further spread. FAO project support is available to assist countries concerned.

Intensified surveillance and communication to OIE and FAO should assist in identifying risk and providing early warning to neighbours to prevent further spread

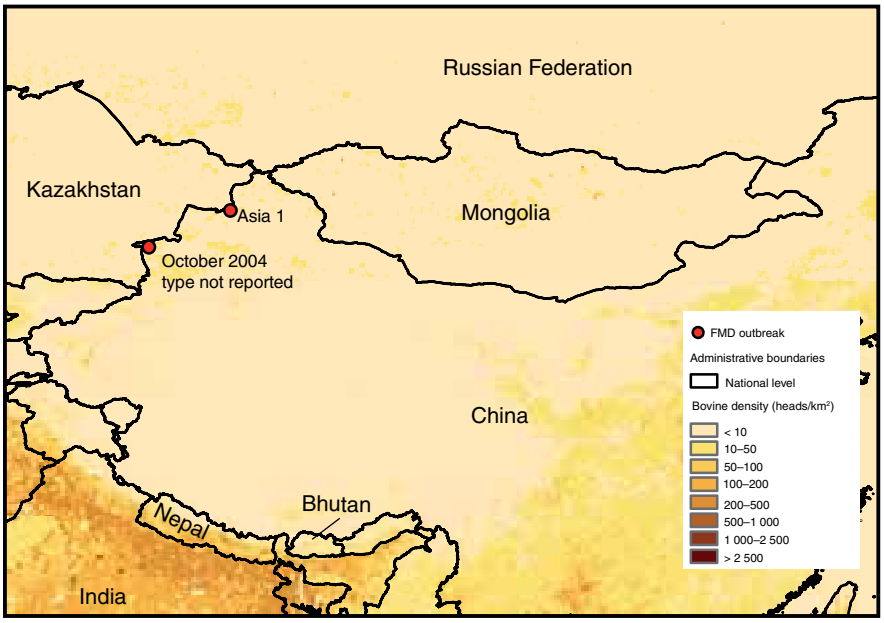
Southeast and East Asia

Until information is provided to clarify the extent of infection and efficacy of control measures, countries bordering China to the south and east can be considered at risk on a geographical basis. Trade and long-distance transport links between these countries may increase the risk of disease introduction and should be considered. The report of FMDV Asia-1 in the far east of the Russian Federation (Amur Region) would suggest increased risk to the Democratic People's Republic of Korea and the Republic of Korea.

Risk of wider international spread

The information currently available is limited. Each country needs to conduct its own risk analysis. However, the distribution of reports suggests increased incidence of

Predicted bovine density, Kazakhstan and Xinjiang Uygur Autonomous Region, China



Note: This predicted bovine density map illustrates areas of significant bovine density extending across the borders of several central Asian countries.The risk of transboundary spread may be higher where bovine populations are located on both sides of the border, e.g. between southeastern Kazakhstan and Xinjiang Uygur Autonomous Region, China.
Source: Derived from work of the EUFMD Commission on FMD Distribution Mapping (W. Wint, Environmental Research Group Oxford, and K. Sumption, FAO, 2005)

FMD outbreaks reported in China, by date of reported start of event: OIE and unofficial reports.

Administrative level	Administrative level 2	Virus type	Date of reported start of event dd/mm/yyyy	Date of report dd/mm/yyyy	Number and type of animal destroyed	Source of information
Xinjiang Uygur Autonomous Region	Yili, Yining	Unknown	10/2004	26/10/2004	Slaughter used, numbers not given	Media reports
Hong Kong Special Administrative Region		Asia-1	09/03/2005	23/03/2005	560 cattle 7 147 pigs 120 goats	OIE
Sichuan Province	Wangyuan	Unknown	20/04/2005	20/04/2005		Media reports
Jiangsu Province	Wuxi	Asia-1	24/04/2005	13/05/2005	223 cattle	OIE
Shandong Province	Taian	Asia-1	24/04/2005	13/05/2005	40 cattle	OIE
Beijing Municipality	Yanqing	Asia-1	05/05/2005	26/05/2005	2 464 cattle	OIE
Xinjiang Uygur Autonomous Region	Hoboksar	Asia-1	18/05/2005	26/05/2005	308 cattle	OIE
Hebei Province	Sanhe	Asia-1	26/05/2005	26/05/2005	512 cattle	OIE

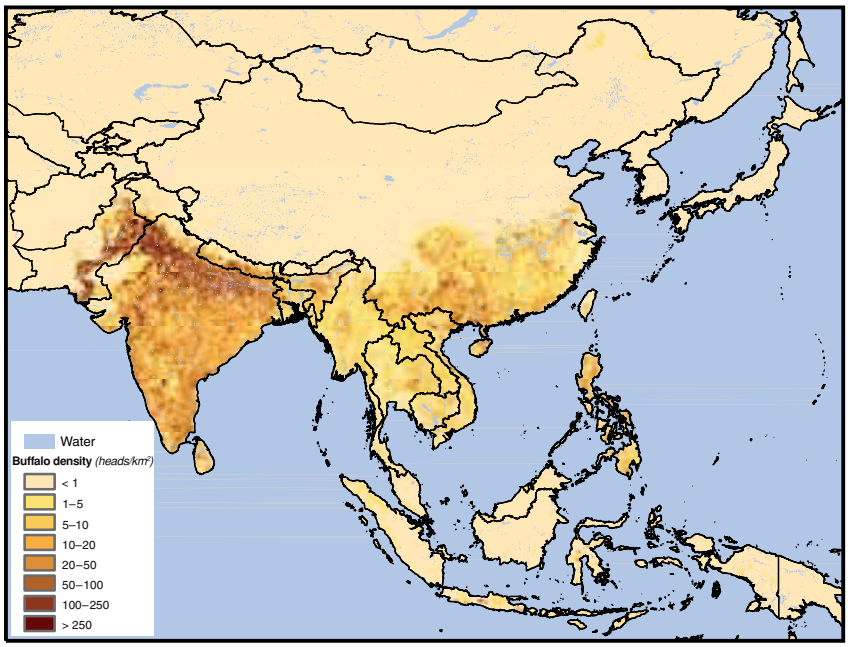
FMD outbreaks reported, Russian Federation

Administrative level	Administrative level 2	Virus type	Date of reported start of event dd/mm/yyyy	Date of report dd/mm/yyyy	Number and type destroyed	Source of information
Amur Region	Busse	Asia-1	09/06/2005	14/06/2005	15 cattle	OIE

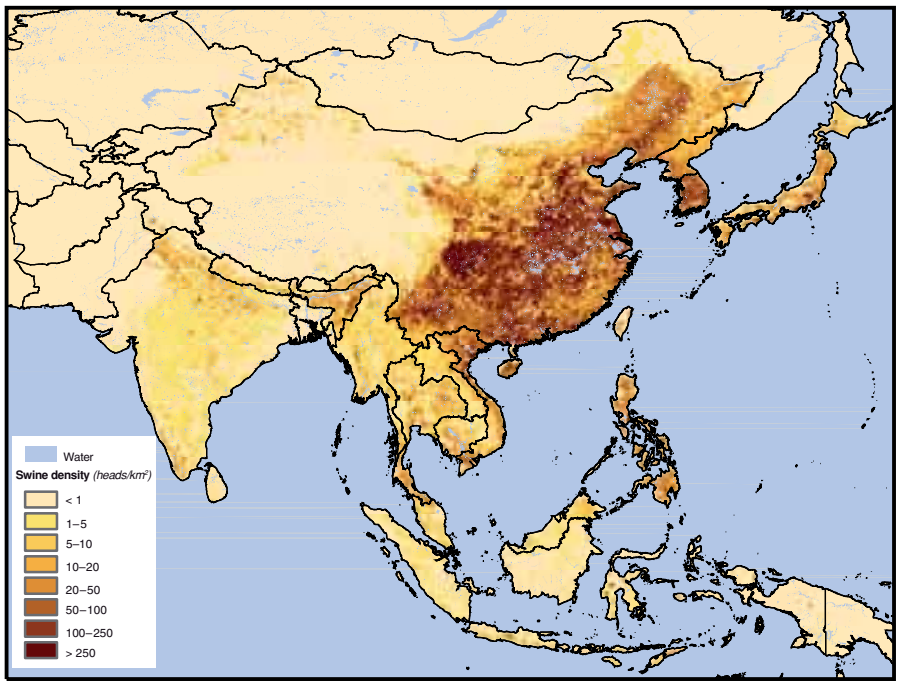
infection, which may contribute to increased risk through the pathways of animal products, live animals or other routes (such as contamination of fodder).

Throughout most of the recorded distribution areas of FMD Asia-1, pig populations are insignificant compared to ruminant host numbers and density (see map). The extension of Asia-1 to eastern China may allow significant exposure of pigs (see map). In general, FMD-infected pigs are of epidemiological significance because aerosol excretion of the virus provides a potent source of airborne viral particles to other susceptible species. In addition, it is more likely that the virus contaminates, and survives in, the meat from ruminants, providing a vehicle for infection to spread to distant locations, including internationally. Historically, there have been many cases in which disease introduction has been a consequence of feeding pigs with food containing uncooked ruminant or pig products. The transmission of FMDV Asia-1 to and between pigs has not been studied extensively, but it can be expected to follow the norms established for other FMDV types in pigs.

Predicted buffalo density in central and eastern Asia



Predicted swine density in central and eastern Asia



Update on the global highly pathogenic avian influenza H5N1, H7N7 situation (Feb–Jun 2005)

In **Cambodia**, an outbreak was discovered at a small family chicken farm in Kropeuh Ha Village, Ta Khmau District, Kândal Province, near Phnom Penh City. Highly pathogenic avian influenza (HPAI) H5N1 virus was confirmed in three chickens in early February 2005. Investigation teams were sent to communes within 1.5 km of the outbreak. They discovered that nearly 50 percent of households raising chickens had reported mortalities in their chickens since early January 2005. Poultry of five households were culled, and the areas were disinfected.

At the end of March, another outbreak was reported in Keatha Vong Leu Village, Banteay Meas District, Kâmpôt Province, near the Vietnamese border. H5N1 virus was confirmed in two chickens on 24 March. Investigation was conducted in this village of 194 families where approximately 640 poultry were being raised. Samples were collected in households that either had reported more than 50 percent mortality or owned ducks. A total of 139 chickens and ducks were culled. Fifty farms were disinfected.

No outbreaks were discovered during April or May, but some poultry deaths were reported in association with human cases. The National Animal Health and Production Investigation Centre has been continuing surveillance in sentinel villages and sentinel duck flocks near the Mekong Delta border, including Kâmpôt, Svay Riĕng and Takêv Provinces.

In **China**, 519 wild birds including bar-headed geese, great black-headed gulls, brown-headed gulls, ruddy shelducks and great cormorants were found dead at the Qinghai Lake Nature Reserve in Gangcha County, Qinghai Province, on 4 May 2005. By 8 June, after the death of more than 6 000 migratory birds had been recorded around the lake, the number of deaths had leveled off at about 20 per day. The island where the dead birds were found is home to more than 100 000 birds, including rare species.

In Cambodia nearly 50 percent of households raising chickens had reported mortalities in their chickens since early January 2005

In June, two outbreaks of HPAI H5N1 were discovered in Xinjiang Uygur Autonomous Region. First, an HPAI H5N1 outbreak was confirmed on a farm in Tacheng City, Tacheng Prefecture, on 8 June, where 460 of 2 177 geese had died. Then, on 20 June, an outbreak was confirmed in a poultry-raising household in Changji City, where 63 of 128 geese and ducks had died. Xinjiang Uygur authorities have adopted various control measures, including modified stamping-out and vaccination. More than 14 490 birds were culled.

In the **Democratic People's Republic of Korea**, outbreaks of avian influenza subtype H7N7 were reported on three chicken farms in Pyongyang Province during March–April 2005. The farms affected were the Hadang chicken farm, the Sopo farm and the Mangyongdae poultry farm, which are approximately 4 km apart and are operated by the same company.

An FAO veterinarian based in China assisted government authorities in the diagnosis, and subtype H7 was confirmed on 26 March. A total of 218 788 chickens

were culled and buried. The government vaccinated birds on these farms and in the surrounding areas with an inactivated vaccine. Antibody responses following vaccination were good, as evaluated by FAO, and determined to be adequate. Movement control around the plants was in place, and marketing of poultry and eggs was prohibited.

In **Indonesia**, HPAI killed a total of 578 128 birds in the provinces of Banten, Jawa Tengah (Central Java), Jawa Barat (West Java), Jawa Timur (East Java), Sulawesi Selatan (South Sulawesi), Kalimantan Timur (East Kalimantan), Sumatera Utara (North Sumatra) and Jambi Provinces during January–June 2005. In Jawa Barat Province, the deaths of 19 447 chickens were reported in January in the regencies/municipalities of Cirebon, Indramayu, Subang and Sukabumi. Cirebon Municipality reported the most cases: about 12 000 chickens were affected.

In Cirebon, destroyed quail were said to have been brought from Sleman (Yogyakarta Province). In Sulawesi Selatan Province, the deaths of the birds were observed in Maros, Pare-Pare, Pinrang, Sidrap, Sinjai, Soppeng, Tanah Toraja and Wajo regencies/municipalities. Inter-island chicken trade from Sulawesi Selatan has been banned since mid-March 2005.

Some 98 000 000 doses of vaccine against H5N1 infection were distributed to infected areas throughout Indonesia, and the government has set aside a fund of IDR3 billion[1] to carry out the vaccination programme. A poultry-check operation has been set up in Losari area, which is on the border and main route of poultry trucks from Jawa Tengah, Jawa Timur and Yogyakarta.

A total of 2 000 chickens were found dead in Kutai Kartanegara Regency, Kalimantan Timur, towards the end of April.

Also in April, a researcher in Jawa Timur detected H5N1 virus in throat swabs and blood samples from a pig in Tangerang, Banten Province, by RT-PCR[2]. Inactivated RNA isolates were sent to Japan for confirmation, where eight fragments (HA, NA, PA, PB1, PB2, M, NP, NS) were sequenced. The haemagglutinin (HA) gene of the isolated virus was a more than 98 percent match to samples taken from infected chickens and quail from Indonesia. The virus has been characterized as HPAI (based on the cleavage site structure).

The Ministry of Agriculture has conducted tests on pigs in several regions. So far, only one area in Banten, in the western part of Jawa Island, has tested positive. The Ministry of Health also tested poultry farmers for exposure to H5N1 virus. One worker from Sulawesi Selatan Province tested positive for antibodies against avian influenza but presented no illness. No information is available on how many workers were sampled.

In **Thailand**, 83 outbreaks were reported in 11 provinces between 1 February and 3 March 2005. More than 40 000 birds have died or been culled. A final outbreak

[1] 3 billion Indonesian rupiahs = c. US$300 000

[2] Reverse transcription-polymerase chain reaction

in this sequence occurred on 12 April in Lop Buri Province. Later, in July 2005, a new outbreak was reported in Chai Nat, Kamphaeng Phet and Suphan Buri Provinces.

The National Strategic Plan for Avian Influenza Control, Thailand, was approved by the Cabinet at the end of January and has been operational. The plan includes: developing a disease-free poultry management system; performing epidemiological analysis and conducting a study on the use of vaccines to prevent the disease in poultry; disease surveillance and response during outbreaks; knowledge generation and management; capacity-building of organizations and labour resources; improving understanding and participation of the civil society and private sectors; and developing sustainable integrated management mechanisms.

In **Viet Nam**, HPAI was confirmed in 35 provinces and cities between 1 January and 1 April 2005. Nearly 1.5 million birds have died or been culled. Although there have been no major outbreaks since April 2005, smaller outbreaks may have continued to occur; one H5 outbreak was reported in Ben Tre Province in June. A total of 9 000 chickens have died or been culled in the outbreak.

In Viet Nam, random sampling surveys conducted in April indicated that 39.6 percent of these birds were seropositive, and antibodies were found in about 26 percent of duck samples

Random sampling surveys conducted in April on more than 10 000 ducks and geese across ten Mekong Delta provinces indicated that 39.6 percent of these birds were seropositive, with antibodies found in about 26 percent of duck samples. The government has readjusted a series of measures involving poultry production systems and trading, slaughtering, processing and transportation of poultry and poultry products. It plans to complete the regulatory system to bring the disease under control by 2006 or 2007, and to eliminate the disease by 2010.

In April, a ban on poultry farming in Viet Nam's urban areas was extended to 15 cities/urban areas. Pilot vaccination of poultry in two provinces was planned for August; a targeted countrywide vaccination was planned for October.

There were 54 human cases reported in Asia during February–June 2005 (including four cases in Cambodia), of which 13 were fatal.[3]

Low-pathogenic strains of avian influenza

A low-pathogenic avian influenza (LPAI) H7N2 strain was detected at a duck farm in Sullivan County, New York, **United States of America**, in June 2005. LPAI H5N2 strains were detected in chickens at a farm in Durango and Coahuila States, **Mexico**, in March–April 2005; in turkey flocks in Brescia Province, Lombardia Region, **Italy**, in April 2005; and in chickens at a farm in Ibaraki Prefecture, **Japan**, in June 2005. In Abbotsford, British Columbia, **Canada**, a swine influenza virus, serotype H3, was detected during routine testing on a turkey layer farm. This farm is located near a pig farm that had recently experienced H3 influenza infection.

[3] Source: World Health Organization Web site

EMPRES in action: report of an EMPRES emergency mission to Guinea-Bissau for assistance in the control of anthrax

Country background

Guinea-Bissau is a small country on the West African coast between Guinea and Senegal. It has an estimated human population of 1.45 million. The total land area is 28 000 km^2. Bordering the North Atlantic Ocean, the country has a tropical – generally hot and humid – climate with a monsoon-type rainy season (June–November) and a dry season (December–May) characterized by dry Harmattan winds.

The economy of Guinea-Bissau is based on farming and fishing. Cashew nut crop production has increased remarkably in recent years. Guinea-Bissau exports fish and seafood along with small amounts of groundnuts, palm kernels and timber. Rice is the major crop and a staple food. Internal conflicts have destroyed much of the country's infrastructure and caused widespread damage to the economy.

Anthrax outbreaks

In April 2005, clinical examination of patients seeking medical attention at the Mansoa Hospital, Oio Region, confirmed the presence of ***Bacillus anthracis*** in skin lesions. On 22 April 2005, the Ministers of Health and Agriculture declared the Oio Region as affected by an anthrax epidemic and, among other measures, appealed for urgent international support for an emergency vaccination campaign to control the epidemic in cattle.

By 28 April 2005, 80 cases of human infection with anthrax had been reported, including 13 hospitalizations and 4 deaths. The affected area was restricted to the Mansaba Sector, within the northern region of Oio. One hundred twenty-six cattle deaths had been reported in 12 villages affected. Oio Region's economy depends significantly on animal production by subsistence farmers.

Anthrax deaths in cattle had first been reported in February 2005

FAO assistance

The local population's limited knowledge of the public health significance of anthrax increased the risk of spread of the disease. A formal request was made by the Government of Guinea-Bissau for FAO assistance in controlling the anthrax outbreak. The FAO Animal Health Service deployed an EMPRES/Infectious Diseases Group Officer to make a rapid assessment of the situation for possible technical assistance. A mission was undertaken from 26 May to 4 June 2005, with the collaboration of and financial support from the FAO Technical Cooperation Emergency Operation Service.

The principal objective of the mission was to make a rapid technical assessment of the anthrax epidemic in various classes of livestock, determine specific aspects of the epidemic that required urgent emergency intervention to halt outbreaks of the disease and liaise with physicians of the Ministry of Health and WHO.

Structure of the mission

The EMPRES Officer met the FAO Representative to Guinea-Bissau, S. Norbet Dazogbu, and Rui Jorge Alves Da Fonseca, Programme Officer, for a detailed briefing session on the anthrax situation in the country. The World Health Organization (WHO) Representative to Guinea-Bissau, Antonio Da Costa Delgado, was consulted for a brief on the human epidemic of anthrax in the country. Discussions were also held with the Director General of the Ministry of Rural Development and Agriculture (Marcelino Martins), representatives of Oxfam America based in Dakar, Senegal, and the Director of the Department of Veterinary Services in Bissau (Bernard Cassama).

Field trips were made to Mansoa in Oio Region – the epicentre of the outbreaks – Bissora and to a vaccination camp. In addition, visits were made to the National Institute of Public Health, Bissau, where the diagnosis of anthrax in humans was initially made, and discussions were held with Serifo Monteiro, Specialist Microbiologist at this institute.

Oxfam America provided vaccines: 116 000 doses of anthrax and 136 000 doses of blackleg (*Clostridium chauvoei*). Veterinary authorities estimated the total requirement for vaccines at 600 000 doses of anthrax and 200 000 doses of blackleg. Oxfam also funded the operational cost for vaccination for ten days, starting 27 May 2005.

Anthrax outbreaks

Official records made available to the EMPRES Officer indicated that anthrax deaths in cattle had first been reported in February 2005; during that month, five cattle had died in N'Gassonhe Village. This index case was diagnosed based on clinical signs and post-mortem bloody discharges from natural openings such as the mouth, nose and anus. No laboratory confirmation was made, and no information was provided to indicate the source of the index case of the outbreak. Data presented to the officer also indicated that, as of 5 May 2005, 137 animals had died.

It was determined to be prudent and technically justified to carry out vaccination against blackleg

Two new outbreak foci in Cacheu Region were reported. The exact location of the outbreaks, the number of deaths and animals at risk of infection with anthrax could not be ascertained because of logistical difficulties in determining the various epidemiological parameters of the new outbreak foci. The outbreaks in Cacheu signified the possible movement of sick animals or infected animal products between the Oio and Cacheu Regions.

Vaccination strategies

It was observed that parallel vaccination with anthrax and blackleg vaccines was being carried out. Blackleg had occurred sporadically throughout the country in the past. It was therefore determined to be prudent and technically justified to carry out vaccination against this disease as well. No other livestock species had been known to be affected by anthrax.

Four teams of four people each were sent to the field to perform the vaccinations within Bafatá, Cacheu, Gabú and Oio Regions. The EMPRES Officer visited some of the villages near Mansoa to monitor and observe the vaccination process. There was

an inadequate number of automatic syringes, which slowed down the vaccination process, and vaccinated animals were not identified.

It must be pointed out that, despite tremendous difficulties such as limited access to cattle kraals and limited logistical support, the dedication of staff to get the vaccinations done was evident. Figures for the total number of animals vaccinated provided by the Department of Veterinary Services indicated that 6 558 cattle had been vaccinated by the three teams from 25 May to 2 June 2005.

Veterinary diagnostic laboratories

The veterinary laboratories in Bissau and Bissora were visited to assess their capabilities for anthrax diagnosis. The laboratory in Bissau was reasonably well equipped. There was a Biohazard Class II safety cabinet in the bacteriology laboratory. Limited laboratory supplies were available, but specific reagents and general bacteriologic media for anthrax diagnostics were lacking.

In addition to some equipment problems at the laboratory, there was a chronic shortage of water, and there were severe problems with the electric power supply. A small 15 kVA portable generator was provided through an FAO Technical Cooperation Programme (TCP) project, but there were no government funds to purchase fuel to run the generator.

There has been no hospitalization or human death caused by anthrax since 3 May 2005

The veterinary laboratory at Bissora was equipped with antiquated instruments.

The laboratory at the National Institute of Health, Ministry of Health, is a well-equipped laboratory that has its own electrical and water (borehole) supply. It obtained its support from a number of bodies such as WHO and the Government of Sweden. The bacteriology laboratory of this institute isolated the anthrax bacilli from human skin lesions in Mansoa on 16 April 2005. This accomplishment provided the first definitive confirmation of anthrax, which, in turn, prompted the Department of Veterinary Services to launch its international appeal to control the disease in animals, although sporadic outbreaks of anthrax in cattle had been observed since February 2005.

According to the WHO Representative in Guinea-Bissau, there has been no hospitalization or human death caused by anthrax since 3 May 2005.

Collaboration with other international organizations

E-mail exchanges and telephone discussions were held between FAO, WHO and the World Organisation for Animal Health (OIE) on the way forward in the management of the anthrax outbreak in Guinea-Bissau. While in Guinea-Bissau, the EMPRES Officer had a detailed briefing from the WHO Representative to Guinea-Bissau on the human dimension of the anthrax outbreak.

Main weakness observed

Inadequate animal disease surveillance was found to be a critical weakness in Guinea-Bissau, attributed in large part to poorly resourced Veterinary Services. Therefore, disease recognition and improvements in laboratory diagnostic capabilities are

essential components of any proposed project. Anthrax cases in animals were often overlooked, thus diminishing the true impact of the disease and the direction of control efforts, and were a deficient source of information to alert human medical services of potential problems. The public health significance of anthrax and the lack of public awareness regarding the dangers of exposure to anthrax through inhalation of spores or consumption of anthrax-infected carcasses justifies the provision of technical and financial assistance. The epicentre of the anthrax outbreak was one of the major rice production regions of Guinea-Bissau (see map). Rice and other crop production activities that rely on animal draught power were affected by both the sick animals and the government animal movement restrictions put in place to control the disease. The net result of the outbreaks was that people's livelihoods and food security were affected.

Disease recognition and improvements in laboratory diagnostic capabilities are essential components of any proposed project

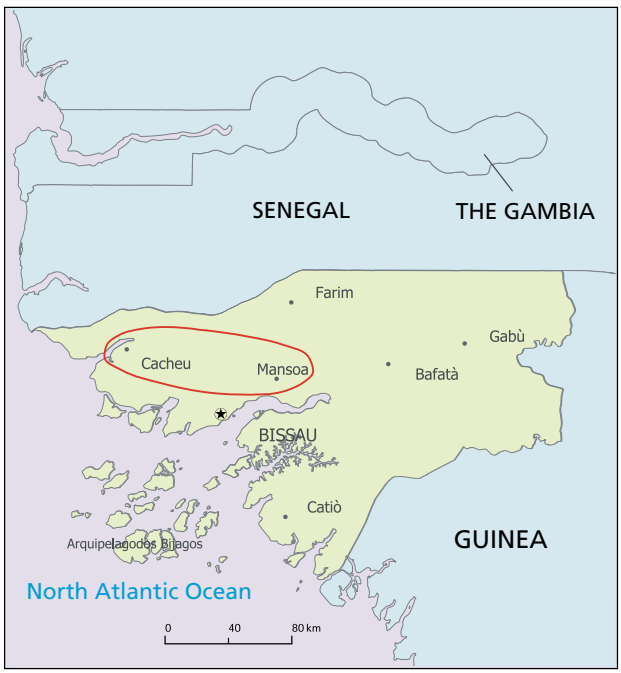
Recommendations

It was recommended that a short-term (ten-month) emergency TCP project be put in place to resolve the problem of anthrax spread in animals and to protect human health.

Outcome of the mission

An FAO TCP project, "Assistance d'urgence pour le contrôle des charbons bactéridien et symptomatique", TCP/GBS/3002(E), US$99 000, to support the control of anthrax

Area of the Guinea-Bissau outbreak of anthrax



in Guinea-Bissau, was approved within a few weeks. The principal objectives of the project were:

- to procure 400 000 doses of anthrax spore vaccine and 100 000 doses of blackleg vaccine for the control of anthrax and blackleg – a disease that also occurs periodically in Guinea-Bissau;
- to provide logistical support for operations in administering anthrax and blackleg vaccines at the field level;
- to provide basic laboratory supplies for rapid and accurate detection of anthrax in animals through improvements in laboratory diagnostic capabilities at Bissau Veterinary Laboratory. This measure will have the salutary effect of improving the surveillance and reporting of future outbreaks of the disease;
- to enact epidemiologic surveillance and strategies for the control of anthrax in Guinea-Bissau;
- to develop awareness and sensitization campaigns on the public health significance of anthrax infection in animals and humans and the need to avoid infection. This programme will be executed in collaboration with the Ministry of Health of Guinea-Bissau.

A multidisciplinary approach to analysing wild birds and avian influenza viruses

WILDLIFE CONSERVATION SOCIETY

Team from the Wildlife Conservation Society netting and collecting samples along a lake in Mongolia

EMPRES supported the mission of a veterinary investigation team from the Wildlife Conservation Society (United States of America) to several sites in the central provinces of Mongolia from 29 July to 12 August 2005 (see map). The team conducted wild bird surveys and sampling at nine sites ranging from Bayanhongor Province in the south to Hövsgöl Province in the north. The effort was organized by the Wildlife Conservation Society's Field Veterinary Program and included staff from the Government of Mongolia's Ministry of Agriculture State Central Veterinary Laboratory and Institute of Veterinary Research, the Ministry of Health's Center for Infectious Diseases with Natural Foci and the National Academy of Sciences. Additional assistance was provided by the Ministry of Health's Infectious Diseases Section and the World Health Organization's Mongolia office.

The team collected fresh faecal samples for virus isolation and RT-PCR[4] from 878 live wild birds – whooper swan (*Cygnus cygnus*), bar-headed goose (*Anser indicus*), ruddy shelduck (*Tadorna ferruginea*), black-headed gull (*Larus ridibundus*) and herring gull (*Larus argentatus*) – as well as from a few dead birds. At all sites, numbers and species of wild birds were observed and recorded.

At one site (7, Erhkil Lake in Hövsgöl Province), a wild bird mortality event occurred. Samples were collected for virus isolation, RT-PCR and histopathology from six dead

The nine sites of the wild bird sampling survey conducted in Mongolia

[4] Reverse transcription-polymerase chain reaction


WILDLIFE CONSERVATION SOCIETY

Wildlife conservation team sampling birds in Mongolia

birds (one whooper swan, three bar-headed geese and two herring gulls). Laboratory analysis performed at the United States Department of Agriculture's Southeast Poultry Research Laboratory in Athens, Georgia, found the presence of avian influenza H5N1 in trachea, cloacal and lung samples of one swan using virus isolation and RT-PCR, as well as in brain and other tissues using immunohistochemical staining techniques. This finding is consistent with two other whooper swan samples and a bar-headed goose sample collected by staff of the State Central Veterinary Laboratory at the time of the outbreak and subsequently analysed at the OIE Reference Laboratory for Avian Influenza at Hokkaido University, Japan.

At site 7, the team found 41 wild bird carcasses (nine species) around the lake. Government authorities reported that they had already removed approximately 75 carcasses a few days earlier, 45 of which were of whooper swans. Over 6 500 live birds representing 63 species were observed on the lake at the time of the outbreak. All other samples from all sites (from both live and dead birds) were negative for avian influenza viruses at the time of this report (see table). Additional testing of the samples is in progress to confirm the negative test results.

In this particular study, the first of its kind to sample both live and dead wild birds while gathering denominator information on affected as well as sympatric species, no evidence of a reservoir for avian influenza H5N1 was found in the wild birds. Sampling of wild birds was directed to focus on species recently reported to have been involved in H5N1 outbreaks.

The methodology, including the multidisciplinary approach, needs to be taken to other regions where wildlife may be implicated either in introducing the disease/infection in poultry or in being infected by a domestic bird source.

Wild birds observed and sampled at different sites

Site number	Number of species of birds observed (live)	Number of birds observed (live)[1]	Number of birds sampled (live)	Number of birds observed (dead)
1	28	1 347	215	0
2	23	858	10	0
3	3	135	29	0
4	10	302	10	0
5	1	76	40	0
6	3	29	20	0
7	54	6 531	430	43[2]
8	>6[3]	104	46	1
9	16	1 286	78	0
Total		**10 564**	**878**	

Notes: [1] Conservative estimates (not fewer than)
[2] In addition to those observed by the team, 75 bird carcasses were reported to have been removed by Mongolian authorities
[3] Several additional species could not be identified

Workshop on the control of transboundary animal diseases in Central Asia

Introduction

M. HASSAN

The first Regional Workshop under the project "Controlling Transboundary Animal Diseases in Central Asian Countries" (GTFS/INT/907/ITA) was held in Dushanbe, Tajikistan, 4–8 April 2005. The immediate objectives of the Government of Italy-funded project were: 1) to progress along the "OIE pathway" for Freedom from rinderpest; 2) to understand better the impact of foot-and-mouth disease (FMD), *peste des petits ruminants* (PPR) and other major livestock diseases; 3) to establish communication among the countries for collaborative disease control; 4) to establish national disease investigation, control and contingency planning for transboundary animal diseases (TADs).

The specific objectives of the workshop were to address the needs of each of the beneficiary countries of the project – Afghanistan, Pakistan, Tajikistan, Turkmenistan and Uzbekistan – in order to fulfil project objectives. The workshop also aimed to address: the more general needs for capacity-building in disease investigation methods, surveillance strategies and international reporting; the requirements of national veterinary services; and guiding principles for preventing and controlling TADs with special reference to FMD and PPR.

Participants

Chiefs of Veterinary Services and senior staff members of the beneficiary countries attended the workshop, as well as delegations from Kazakhstan and Kyrgyzstan. The World Organisation for Animal Health (OIE) was represented by Konstantin Gruzdev, Director, OIE Collaborating Centre for Diagnosis and Control of Animal Diseases in Eastern Europe, Central Asia and Transcaucasia in Vladimir, Russian Federation. The workshop was officially opened by His Excellency Mr Voris Madaminov, Minister of Agriculture of Tajikistan.

Presentations

Presentations on clinical and epidemiological aspects of, and control strategies for, the key TADs of concern were made by Giancarlo Ferrari, Project Leader, GTFS/INT/907/ITA, Peter Roeder, Secretary, FAO Global Rinderpest Eradication Programme, and Manzoor Hussain, Regional Epidemiologist, GTFS/INT/907/ITA.

Andres Perez, University of California, Davis, United States of America, made a presentation, "FMD case study", clearly explaining the potential of spatial analysis as an important tool for better design of control strategies against TADs.

Muhammad Rasheed, an expert on participatory epidemiology, outlined the general principles and methods of participatory disease surveillance (PDS). To illustrate PDS in action, he showed that information collected by PDS teams for the

All countries committed themselves to initiating the OIE pathway for freedom from rinderpest

Livestock Department in Pakistan had great value in helping to establish priorities for intervention.

David Sherman, Country Program Director, Dutch Committee for Afghanistan, and Abdul Quader Raofi, General President of Veterinary Services, Afghanistan, made a joint presentation that outlined the necessary cooperation between the private and public sectors for efficient control of TADs.

Delegations from each participating country illustrated the main issues related to animal health in their respective countries, with special reference to TADs.

Summary of issues addressed in working groups

Rinderpest

Cooperation between the private and public sectors is necessary for the efficient control of TADs

Rinderpest no longer seems to represent a threat for the region. Information reported by each of the delegates and each beneficiary country demonstrates that all countries are in a position to initiate procedures necessary to being internationally recognized as free from rinderpest. These procedures were fully discussed during the workshop, during which Dr Roeder clarified the different steps to be followed. The first step would be a self-declaration by each country. To date, only Pakistan has taken this step. Through serosurveillance and disease-searching activities, Pakistan will soon be ready to complete the OIE dossier and be declared free from disease.

All countries committed themselves to initiating the OIE pathway for freedom from rinderpest.

Foot-and-mouth disease

FMD is a constant threat for the region, and there is a need to improve investigation and disease control measures. Communication between neighbouring countries has been seen as an essential tool in developing the most appropriate strategy. It emerged in the working group that, in some circumstances, because of the low rate of mortality in adult animals, disease might not be seen as a priority by farmers – unless outbreaks are detected when young animals are present. As a result, reporting only occurs when there could be great losses in younger age categories.

An awareness campaign among field veterinarians has been seen as essential to enhancing the reporting of suspected cases.

Peste des petits ruminants

According to the country reports, PPR is well known in Afghanistan and Pakistan and has only more recently been identified in Tajikistan. It is most likely that, rather than being an emerging disease, PPR has been present in some areas of the region, but has been confused with diseases that show similar clinical signs. Appropriate actions need to be taken in the field to make veterinarians aware of the possible occurrence of cases.

Prior to the Regional Workshop, a manual on PPR disease recognition available through FAO/EMPRES was translated into Russian, and copies were distributed to

the participants. Additional copies will be sent and used for training field veterinary staff in participating countries.

Follow-up

All of these issues were addressed in the workshop conclusion and recommendations. Specific work plans of the project activities were prepared accordingly. The first step will be for each of the countries to prepare and submit a self-declaration of freedom from rinderpest, after which related activities to verify the absence of clinical disease and infection will be implemented.

Addressing FMD and PPR, known to be present in the region, will require a deeper assessment of the situation and a longer-term strategy. Priority has thus been given to training activities for field veterinarians.

The next planned activity at the regional level is the Workshop on Participatory Epidemiology, in Islamabad, Pakistan, 18–26 July 2005.

Addressing FMD and PPR, known to be present in the region, will require a deeper assessment of the situation and a longer-term strategy

Recommendations of the EMPRES Expert Consultation on Early Warning and Rapid Response to Reduce Disease Impact

An EMPRES expert consultation group met at FAO headquarters from 6 to 9 June 2005 to discuss the current status and future prospects of early warning and rapid response to existing and emerging transboundary animal diseases (TADs).

Participants

Invited experts were: Gyanendra Nath Gongal, Epidemiologist, Nepal, Bryony Ann Jones, Rinderpest Project Manager – the Sudan, Vétérinaires sans frontières, Belgium, Moetapele Letshwenyo, Deputy Director for Disease Control, Botswana, Mary F. Parker, United States Army Medical Research Institute of Infectious Diseases, Dirk U. Pfeiffer, Royal Veterinary College, Patricia Ruíz De Los Ríos, Field Epidemiologist, Bolivia, Cristóbal Zepeda, Center for Epidemiology and Animal Health, United States Department of Agriculture, Madeleine Thomson, International Research Institute for Climate Prediction, United States of America; representatives from partner organizations: Laurence Vial, CIRAD-EMVT[5], Karim Ben Jebara and Daniel Chaisemartin, World Organisation for Animal Health (OIE), Rasmus Egendal, World Food Programme, Denise Werker, World Health Organization (WHO) and Gerrit J. Viljoen, Joint FAO/IAEA (International Atomic Energy Agency) Division of Nuclear Techniques in Food and Agriculture (AGE), Vienna, Austria.

Proceedings

All group members recognized that EMPRES plays an essential role in improving global animal health. It therefore also contributes to sustainable animal production, rural development and improved livelihoods of the poor, food security and safe trade, and directly protecting human health through the prevention of zoonotic diseases.

The group felt that EMPRES should be supported and strengthened. FAO needs to provide EMPRES with sufficient institutional resources – human and financial – and promote its role in safeguarding against TADs by engaging ministers and their representatives during Council and Conference activities of the Organization.

The group recognized the current increased level of interaction and coordination between FAO/EMPRES and other international organizations (IAEA, OIE, WHO) as a very positive and necessary development. The group also noted that, internally, FAO has made various institutional and Organizational changes, such as the creation of the position of the FAO Chief Veterinary Officer, the establishment of the Emergency Centre for Transboundary Animal Disease Operations (ECTAD) and the launching of the FAO/OIE initiative Global Framework for the Progressive Control of Transboundary

[5] Centre de coopération internationale en recherche agronomique pour le développement – Département d'élevage et médecine vétérinaire.

Animal Diseases (GF-TADs), which includes the development of the Global Early Warning (and response) System for Animal Diseases including Zoonoses (GLEWS), planned in collaboration with WHO. The group commended these developments and encouraged other initiatives that would further increase the visibility and efficiency of EMPRES.

General recommendations

The group recommends that the operational relationship between EMPRES and GF-TADs should be clarified as soon as possible.

The group recommended that FAO/EMPRES improve awareness among policy- and decision-makers within FAO and its Members about the socio-economic consequences of TADs in order to facilitate timely disease reporting, intersectoral collaboration and emergency response at the field level. This activity should be highlighted during the FAO Council and Conferences and multiorganizational Global Outbreak Alert and Response Network meetings.

EMPRES should adapt to the needs of FAO Members in the control and prevention of TADs through increased consultation with relevant stakeholders.

The group emphasized that the success of EMPRES is dependent on effective political and technical partnerships with FAO Members as well as other national and international organizations such as OIE and WHO for all aspects of early warning, prevention and response. These partnerships require both the political will for action and the use of diagnostic, Web-searching, environmental-monitoring and climate-forecasting tools.

Specialized recommendations

The meeting was structured into four topics. The key recommendations for each topic follow.

Surveillance

EMPRES should continue to encourage the incorporation of complementary data sources such as livestock keepers and community animal health workers to improve the effectiveness and sensitivity of national and regional animal disease surveillance systems in detecting disease.

Only in specific circumstances based on documented criteria defined in consultation with stakeholders should EMPRES consider issuing alerts before the validation of events has been completed, and only after weighing the risks and benefits of releasing such information.

Information systems

In consultation with appropriate stakeholders, EMPRES should further define the scope and purpose of information dissemination and alert levels, according to a defined hierarchy of sensitivity.

EMPRES needs to have access to state-of-the-art information-processing and analytical tools to be able to achieve its early warning objectives.

Methodologies and tools

The group recognized the importance of EMPRES rumour-tracking activities and recommends further investment into their development.

It also recognized that FAO has a major role to play because of its access to ancillary data that affect animal and human health and overall welfare (agriculture, land use, production systems, conservation, humanitarian aid, climatic change, economic trends and analysis). Investing resources in these data, in conjunction with sound epidemiological understanding of animal health and production, would improve EMPRES' prevention and mitigation mandates.

EMPRES should regularly (re)assess existing and new data sources to improve rumour-tracking and validation. Partnerships with other organizations conducting similar activities should be promoted.

EMPRES should provide guidance to member countries on diagnostic technologies in accordance with international standards and promote the adoption of appropriate diagnostic technologies to improve surveillance and control of TADs.

EMPRES should utilize information from all relevant data sources to improve its disease risk assessment and forecasting capabilities.

Response

EMPRES should assist member countries with planning and implementation of measures to prevent and mitigate the spread of TADs and other animal disease events of international concern.

EMPRES should acquire core human-resource capacity (at FAO headquarters and in the decentralized FAO structure) and ensure rapid access to contingency emergency funds in order to be able to respond to TADs and other animal disease events of international concern quickly and effectively, under the direction of the FAO Chief Veterinary Officer.

Avian influenza: recent conferences

IZS VENEZIE[6]

Sick chicken, depressed with some oedema of the comb

The Second FAO/OIE Regional Meeting on Avian Influenza Control in Asia

As a follow up to the joint FAO/OIE Emergency Meeting on Avian Influenza Control in Animals in Asia, held in Bangkok, Thailand, 26–28 February 2004, in collaboration with the World Health Organization (WHO), the Second FAO/OIE Regional Meeting on Avian Influenza Control in Asia was convened in collaboration with WHO in Ho Chi Minh City, Viet Nam, 23–25 February 2005. The meeting was attended by over 155 delegates from 30 countries and regional organizations of Asia, multilateral and bilateral donor organizations and countries, scientific experts, representatives of international and national technical and scientific institutions, including FAO, the World Organisation for Animal Health (OIE) and WHO, and representatives of the private sector, including vaccine companies.

The objectives of this meeting were: 1) to assess the avian influenza (AI) situation; 2) to evaluate the achievements of control measures implemented in the previous 12 months; 3) to review recent scientific advances in the understanding of AI; and 4) to advise on new control measures, if warranted, and to identify future research needs. The key concepts of the meeting follow.

The epidemic has evolved, and scientific understanding of AI has increased. The meeting made clear that highly pathogenic avian influenza (HPAI) H5N1 viruses are established in several countries in Asia, persisting in farm and wild waterfowl, particularly ducks, and in the multiple avian species found in live bird markets. The role of ducks as a reservoir of infection, causing persistence and spread of AI, was well recognized.

The epidemic has evolved, and scientific understanding of AI has increased

FAO, OIE and WHO have recommended against the destruction of wild birds and their habitats, as such action is both inappropriate on conservation grounds and unlikely to assist significantly in disease control. In fact, the dissemination of the virus via the movement of live poultry and poultry products, particularly through live bird markets, appears to be more influential. Therefore, this sector is the most important target for control measures.

Studies have shown that H5N1 viruses are continually evolving and may potentially cause more serious disease in mammals, including humans – heightening concerns about a potential global human pandemic of influenza.

The long-term goal is the elimination of HPAI, which requires countries to implement stricter controls on, or even restructure, poultry production and marketing. Because any restructuring could have a significant economic and

[6] Istituto Zooprofilattico Sperimentale delle Venezie

T. SONGSERM

Subcutaneous haemorrhage along the leg of an affected chicken

social impact, options should be investigated, and impact assessment of HPAI control strategies should form part of the animal health planning process.

Regardless of other measures adopted, protection of human health and elimination of HPAI will depend upon improved biosecurity. In the short to medium term, infected countries must implement measures to reduce excretion of the virus and transmission between flocks and to prevent the exposure of humans to infection.

AI vaccines can play a useful role, if properly used. However, vaccination must only be started as part of an overall strategy, and the recommendations and standards established by FAO and OIE must be strictly followed. In the case of HPAI incursions into countries that have historically enjoyed freedom, the focus should be on stamping out and not on implementing a policy of routine vaccination for prevention and control.

The meeting also recognized the need for enhanced international and regional cooperation and for the establishment of sustainable regional networks on AI. A Global Master Plan at the international, regional, subregional and national levels has to be prepared, with a proper road map and timetable, to be endorsed by international and regional organizations, as well as by national governments. The investment to support key priorities in Southeast Asia, identified during this meeting, will be more than US$100 million over the next five years.

Recommendations were adopted on seven topics, including a general declaration for more investment in the control of HPAI: 1) the Ho Chi Minh City Declaration on Investment; 2) international standards and surveillance for international trade; 3) national/regional/international coordination and cooperation; 4) strategies for surveillance and control of AI; 5) the implications of HPAI virus for human health; 6) research priorities for AI; and 7) economics and policy issues related to AI.

Full report of the Second FAO/OIE Regional Meeting on Avian Influenza Control in Asia:

http://www.fao.org/ag/againfo/subjects/documents/ai/AI_2nd_RegMtg_HoChiMinhCity_Rep.pdf

OIE/FAO International Scientific Conference on Avian Influenza

The OIE/FAO International Scientific Conference on Avian Influenza was held in Paris, France, 7–8 April 2005. There were over 200 participants from 47 countries, including multilateral and bilateral donor organizations and countries, scientific experts, representatives of international and national technical and scientific institutions, including FAO, OIE and WHO, and representatives of the private sector, including vaccine companies.

The objectives of this conference were to provide a multidisciplinary forum for the exchange of the latest scientific information on AI, to discuss AI control and prevention, including vaccination, and to guide OIE in setting new standards

and guidelines for surveillance and international trade, for adoption by member countries. The main topics included on the agenda were ecology and epidemiology, pathogenesis, human health implications, diagnostics and control. The main recommendations on these themes follow.

Recommendations include developing risk-based surveillance programmes for early AI detection and encouraging national laboratories to join international networks to share isolates, data and expertise

Ecology and epidemiology

Studies should be conducted and supported to establish the ecology and epidemiology of the AI virus in reservoirs and spill-over, specific to each affected country. Such studies would serve to examine the role of wild birds in the maintenance and dissemination of AI viruses and to assess the role of alternatively farmed birds as intermediate hosts for the transfer of AI and as vehicles of mutation of H5 and H7 low pathogenic avian influenza (LPAI) into HPAI viruses. Further recommendations include both developing risk-based surveillance programmes for early AI detection and encouraging national laboratories to join multinational and international networks to share isolates, data and expertise.

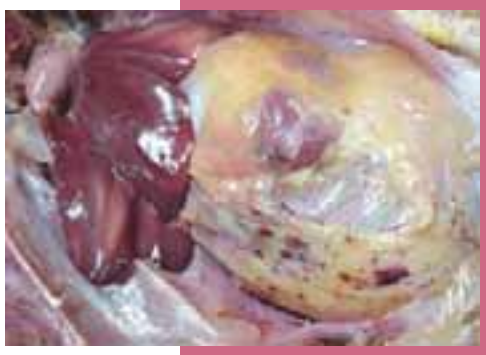
Pathogenesis

Ducks are widely recognized as a reservoir of AI infection, causing persistence and spread. Additional research should be conducted specifically on AI surveillance and vaccination in farmed ducks.

Human health implications

Studies and surveillance of the human–animal interface are recommended with cooperation among the newly established OIE/FAO Network of Expertise on Avian Influenza (OFFLU) and the WHO network (concentrating on infection in humans) and veterinary and public health services to improve national, regional and global health security.

Haemorrhage in serosa in the abdomen



T. SONGSERM

Diagnostics

The conference recommended that FAO and OIE assist and encourage countries in enhancing their veterinary infrastructures and in developing a laboratory network. Such a network should be coordinated through OFFLU. OIE and FAO should encourage developing both training programmes for laboratory personnel and appropriate diagnostic tests. The meeting recommended developing a prototype Material Transfer Agreement (MTA) for laboratories to facilitate virus transfer.

Control of AI (with a focus on vaccination)

It was recommended that donors should give priority to reinforcing veterinary services and animal health infrastructures in countries infected by or at risk of infection with AI. HPAI infections should be controlled at their source, through the implementation of risk-reduction interventions, including improved biosecurity,

stamping out, vaccination and education and improved awareness programmes. Vaccination should only be used in conjunction with monitoring vaccinated flocks. Appropriate surveillance systems that are capable of differentiating infected from vaccinated birds should be introduced. Vaccines should comply with OIE standards.

Improvement of management tools

The conference further recommended preparing a global master plan for the control and eradication of HPAI in Asia and in other threatened regions, with both regional and international coordination. National and regional strategies should incorporate a social and economic assessment.

Full report of the OIE/FAO International Scientific Conference on Avian Influenza:

http://www.fao.org/ag/againfo/subjects/documents/ai/OIE_FAO_Recom_05.pdf

FAO Consultation on the Development of a Global Strategy for Progressive Control of Highly Pathogenic Avian Influenza

A consultation held in Bangkok, Thailand, 17–18 May 2005, was attended by key personnel from the Association of Southeast Asian Nations plus China, Japan and the Republic of Korea (ASEAN+3), the ASEAN HPAI Task Force, Australia, the Democratic People's Republic of Korea, India, Pakistan, the South Asian Association for Regional Cooperation (SAARC) and FAO. The objective of this consultation was to discuss the first working draft of a Global Plan document that FAO and OIE had prepared recently with the support and contribution of WHO.

The preparation of this Global Plan was recommended by the Second FAO/OIE Regional Meeting on Avian Influenza Control in Asia and the OIE/FAO International Scientific Conference on Avian Influenza in order to develop a global long-term vision of the control of HPAI and to be assured that any country or regional project proposal would be in line with this global strategy.

Because the crisis in Asia represents an immediate emergency, it was decided that the Global Plan would first address the Asian region and that discussions with other regions would be initiated once the Asian component had been finalized. It was anticipated that the Asian component of the Global Plan would be presented to donors around July 2005.

The participants contributed to the elaboration of the document and gave full support to FAO and OIE to continue the consultation process.

News

In brief…

Since the publication of the last EMPRES Bulletin (No. 27), outbreaks of EMPRES priority diseases in different regions around the world have been reported to the World Organisation for Animal Health (OIE) or FAO.

Outbreaks reported, February–June 2005, by disease and country

Disease	Country	Reporting date	Location	Agent characterization
African swine fever	Burkina Faso	March 2005	Centre Region; Centre-Sud Region, Plateau Central Region	
	United Republic of Tanzania	February 2005	Kagera Region, Ngara District; Mwanza Region, Nyamagana District	
Avian influenza	Cambodia	February 2005	Kândal Province, Ta Khmau District	HPAI H5N1
		March 2005	Kâmpôt Province, Banteay Meas District	
	China	May 2005	Qinqhai Province, Gangcha County, Quanji Town, Niannaisuoma Village	HPAI H5N1
		June 2005	Xinjiang Uygur Autonomous Region, Changji District, Changji City and Tacheng District, Tacheng City	
	Democratic People's Republic of Korea	March 2005	Pyongyang Province	HPAI H7N7
	Indonesia	December 2004	Jawa Barat Province, Cirebon Regency; Jawa Tengah Province, Tegal	HPAI H5N1
		January 2005	Jawa Barat Province, Cirebon Regency, Sakabumi and Subang Regency	
		February 2005	Banten Province, Tengerang District; Jawa Barat Province; Jawa Tengah Province, Tegal; Sulawesi Selatan Province, Maros, Wajo and Soppeng Regencies	
		March 2005	Jambi Province, Batang Hari Regency and Jambi Municipality; Jawa Timur Province, Bojonegoro and Tuban Regencies; Jawa Tengah Province, Boyolali and Tegal Regencies; Sulawesi Selatan Province, Sidenreng Rappang, Soppeng and Wajo Regencies	
		April 2005	Banten Province, Tengerang District; Jawa Barat Province Indramayu Regency; Kalimantan Timur Province, Tenggarong	
		May 2005	Banten Province, Tangerang; Jawa Barat Province; Sumatera Utara Province, Simalungun Regency	
	Japan	June 2005	Ibaraki Prefecture, Mitsukaido City	H5N2
	South Africa	December 2004–May 2005	Northern Cape and Western Cape Provinces	H5 seropositive in adult birds on ostrich farms, no clinical signs

Outbreaks reported, February–June 2005, by disease and country *(cont.)*

Disease	Country	Reporting date	Location	Agent characterization
	Thailand	February 2005	Kamphaeng Phet Province, Lan Krabue District; Nakhon Ratchasima Province, Khon Buri District; Nakhon Sawan Province, Phayuha Khiri District; Nong Khai Province, Muang District; Nonthaburi Province, Muang District; Phichit Province, Sak Lek Subdistrict; Phitsanulok Province, Bang Krathum, Bang Rakam, Phrom Phiram, Wang Thong and Wat Bot Districts; Suphan Buri Province, Song Phi Nong and U Thong Districts; Uttaradit Province, Muang, Phichai, Thong Saen Khan and Tron Districts	HPAI H5N1
		March 2005	Sukhothai Province, Ban Dan Lan Hoi District; Phitsanulok Province, Bang Pla Ma and U Thong Districts	
		April 2005	Suphan Buri Province, Doem Bang Nang Buat and U Thong Districts; Lop Buri Province, Muang District	
	Viet Nam	February 2005	Bac Ninh, Ben Tre, Binh Duong, Ca Mau, Dong Nai, Hai Duong, Ha Nam, Hanoi, Ho Chi Minh, Kien Giang, Lam Dong, Ninh Binh, Ninh Thuan, Phu Tho, Quang Binh, Quang Nam, Soc Trang, Tay Ninh, Thai Binh, Thai Nguyen, Vinh Long Provinces	HPAI H5
		June	Ben Tre Province	HPAI H5N1
Classical swine fever	Nicaragua	June 2005	Granada Department, Nandaime District	
	South Africa	June–July 2005	Western Cape Province, Worcester	
Contagious bovine pleuro-pneumonia	Kenya	November–December 2004		
Foot-and-mouth disease	China	March 2005	Hong Kong Special Administrative Region, Sheung Shui, New Territories	Asia-1
		May 2005	Jiangsu Province, Wuxi City, Huishan District; Shandong Province, Taian City, Daiyue District; Beijing Municipality, Yanqing County; Hebei Province, Sanhe City; Xinjiang Uygur Autonomous Region, Hoboksar County	
		June 2005	Xinjiang Uygur Autonomous Region, Bayinggele District, Weili City; Hebei Province, Zhangjiakou City	
	Colombia	February–April 2005	Cundinamarca Province, Bogota	A24 Cruzeiro
	Democratic Republic of the Congo	May 2005	Ruzini, Uvira	SAT-1, SAT-2, SAT-3 and A (serological survey)
	Kenya	2004		SAT-1, SAT-2, A and O
	Russian Federation	June 2005	Amur Region, Svobodnenskiy District, Busse and Svobodnyy District, Busse	Asia-1
Lumpy skin disease	Senegal	February 2005	Vélingara Department	

Outbreaks reported, February–June 2005, by disease and country *(cont.)*

Disease	Country	Reporting date	Location	Agent characterization
Sheep pox and goat pox	Viet Nam	January 2005	Cao Bang Province, Trùng Khanh District; Bac Giang Province, Luc Nam and Luc Ngan Districts; Lang Son Province, Huu Lung District	
		March 2005	Hà Tây Province, My Duc District	

Contributions from FAO reference laboratories and collaborating centres

FAO World Reference Laboratory for Foot-and-Mouth Disease, Pirbright, United Kingdom

Report, February–June 2005, by country

Country	Number of samples	FMD[1] virus serotype							SVD[2] virus	NVD[3]
		O	A	C	SAT-1	SAT-2	SAT-3	Asia-1		
China (Hong Kong Special Administrative Region)	17	8						8		1
Iran, Islamic Republic of	5		4							1
Kenya	15		2	1	1	7				4
Lao People's Democratic Republic	1		1							
Myanmar	4	4								
Pakistan	13	9								4
Saudi Arabia	12	9								3
Sudan	3	3								
Thailand	9	1	2							6
Viet Nam	5	5								
Total	**84**	**39**	**9**	**1**	**1**	**7**		**8**		**19**

[1] Foot-and-mouth disease
[2] Swine vesicular disease
[3] No FMD, SVD or vesicular stomatitis virus detected

FAO World Reference Laboratory for Morbilliviruses, Pirbright, United Kingdom

Report, February–June 2005, by country

Country	Species	Sample type	Number of samples	Disease samples tested for	Test used	Result
Jordan		Vaccine	1	PPR[1]	Virus titration	Fail
United States of America	Bovine	Sera	81	Rinderpest	C-ELISA[2]	Negative

[1] *Peste des petits ruminants*
[2] Competitive enzyme-linked immunosorbent assay

FAO/OIE Reference Laboratory for Rinderpest and *Peste des Petits Ruminants*[1], Montpellier, France

Report from the FAO Regional Reference Laboratory for Africa and Asia for PPR, February–June 2005, by disease tested and country

Country	Species	Sample	No. of samples	Test	Result	
					Rinderpest positive	PPR positive
Rinderpest/PPR						
Central African Republic	Bovine	Swab	6	RT-PCR[2]	0	0
	Bovine	Serum	31	C-ELISA/VNT[3]	6[4]	0
	Bovine	Serum	618	C-ELISA	1[4]	0
	Caprine	Swab	4	RT-PCR	0	4
	Caprine	Serum	9	C-ELISA/VNT	0	4
	Ovine	Serum	1	C-ELISA/VNT	0	0
	Ovine	Serum	33	C-ELISA	0	0
Kenya	Buffalo	Serum	15	C-ELISA/VNT	1[4]	0
	Desert warthog	Serum	6	C-ELISA/VNT	0	0
	Giraffe	Serum	6	C-ELISA/VNT	0	0
	Oryx	Serum	1	C-ELISA/VNT	0	0
	Wildlife	Tissue/swab	18	RT-PCR	0	0
Uganda	Bovine	Serum	78	C-ELISA[5]	26	0
	Buffalo	Serum	77	C-ELISA/VNT	0	20

[1] Centre de coopération internationale en recherche agronomique pour le développement (CIRAD) – Département d'élevage et médecine vétérinaire

[2] Reverse transcription–polymerase chain reaction with morbillivirus, rinderpest, PPR or dolphin-specific primers

[3] Competitive enzyme-linked immunosorbent assay (C-ELISA) is based on detection of the nucleoprotein and the haemagglutinin of both viruses. These tests are confirmed by the virus neutralization test (VNT) using rinderpest and PPR virus vaccine

[4] Belong to a non-eligible age group

[5] Based on horseradish peroxidase (HRP) C-ELISA

Report from the FAO Regional Reference Laboratory for Africa and Asia for PPR, February–June 2005, by disease tested and country *(cont.)*

Country	Species	Sample	No. of samples	Test	Result	
					Rinderpest positive	PPR positive
Rinderpest/PPR/morbillivirus						
France	Dolphin	Tissue	2	RT-PCR	Negative[6]	
	Buffalo	Serum	77	C-ELISA/VNT	0	20
PPR						
Tajikistan		Tissue culture PPR vaccine	1 batch	Quality control	No	Yes

[6] Negative for rinderpest, PPR and morbillivirus

New publication

La surveillance épidémiologique en sante animale: un ouvrage pratique pour la mise en place des réseaux de surveillance épidémiologique

This manual is for epidemiosurveillance network workers. It is a practical guide to understanding epidemiology – what it is, what its objectives are and the methods for the design and implementation of an epidemiosurveillance network in the field. The large diversity of epidemiosurveillance networks available in the field is highlighted. Concrete examples, local and global, are given by their implementors.

This book can be purchased through: La librairie du CIRAD; TA 283/04; Avenue Agropolis; 34398 Montpellier Cedex 5; France. Tel.: +33 (0)4 67614417; Fax: +33 (0)4 67615547; E-mail: librairie@cirad.fr; Internet: http://www.cirad.fr/librairie

New staff

Felix Njeumi

Dr Njeumi joined the EMPRES group of the Animal Health Service as an Animal Health Officer (Disease Management) in April 2005. From Cameroon, Dr Njeumi graduated in Veterinary Science at the University of Parma, Italy, and completed his Ph.D. in Epidemiology of Mild Rinderpest for the Kenya–Somalia border at the University of Bologna, Italy. He has a strong interest in survey design, disease reporting and investigation and data analysis. During the three years prior to his appointment at FAO, Dr Njeumi worked for the Pan African programme for the Control of Epizootics (PACE) in Somalia for the final eradication of rinderpest and control of other transboundary animal diseases (TADs). Other work experience includes the University of Bologna and an emergency relief programme for the control of TADs in the Horn of Africa. His work at FAO encompasses disease management initiatives within the Animal Production and Health Division with emphasis on the final eradication of rinderpest in the Somali ecosystem, as well as coordination of the EMPRES Bulletin.

Ahmed El Idrissi

Dr El Idrissi assumed duties in the Animal Health Service as an Animal Health Officer in February 2002 under the Oil-for-Food Programme for Iraq and other emergency projects (e.g. in Afghanistan, the Horn of Africa, Kosovo, Tajikistan). Since February 2005 he has been the focal point of project OSRO/IRQ/406/UDG for the restoration of veterinary services in Iraq. The project is funded by the UN Development Group Trust Fund for Iraq. He also coordinates the implementation of country-specific projects on avian influenza in Asia. Dr El Idrissi is a veterinarian with a Ph.D. in Veterinary Microbiology from the University of Minnesota, United States of America. He is Professor at the Institut Agronomique et Vétérinaire Hassan II (Rabat, Morocco), where, before joining FAO, he served as head of the Department of Microbiology and Infectious Diseases and led several applied research activities in epidemiology and the diagnosis of animal infectious diseases, at both national and regional levels.

Stop the press

In this issue, information presented on transboundary animal disease outbreaks covers February–June 2005 and is based on data available at the time of the Bulletin's preparation. As of 31 December 2006 …

- An outbreak of classical swine fever (CSF) was reported in South Africa in July 2005, after 87 years of freedom from the disease. The disease was detected in the Eastern Cape and Western Cape Provinces. Outbreaks of CSF also occurred in Nicaragua (July 2005), Bulgaria (February–March 2006), Brazil (March–June 2006), Germany (March–May 2006), Guatemala (May 2006), Croatia (July–November 2006), Bulgaria (August 2006), Bolivia (September 2006), Ecuador (October 2006) and South Africa (December 2006).
- There were outbreaks of African swine fever in Nigeria (July 2005) and Zambia (January–February 2006).
- Highly pathogenic avian influenza (HPAI) H5N1 was further detected in the Russian Federation and Kazakhstan (July 2005) and Mongolia (August 2005, wild bird), Turkey and Croatia (October 2005) and in Iraq (February 2006), suggesting a westward spread of the virus along the pathways of migratory birds flying from Southeast Asia. After the initial confirmation, HPAI H5N1 continued to circulate in the Russian Federation (July–October 2005, February, August 2006), Croatia (October 2005 to January 2006), Romania (October 2005 to February 2006), Turkey (October 2005 to March 2006) and the Ukraine (December 2005 to June 2006), until spring 2006. The severe 2005/2006 winter may have triggered significant short-term migration, or may have initiated earlier migration. HPAI H5N1 outbreaks further spread into Western Europe: France (February 2006), Sweden (H5, March 2006), Serbia (March 2006), Germany (April 2006), Denmark (May 2006) and Hungary (June 2006), and infected wild birds were also found in many other places in Europe. From the beginning of the 2006, eight African countries started to report H5N1 outbreaks: Nigeria, Egypt, Niger (February 2006), Cameroon, the Sudan (March 2006), Côte d'Ivoire, Burkina Faso (April 2006) and Djibouti (May 2006). The infection was also reported in Israel (March 2006), Jordan (March 2006), Occupied Palestinian Territory (March–April 2006). In Asia, there have been fewer outbreaks than in 2004, but they continue to be reported: in East Asia, China (August 2005 to September 2006), the Republic of Korea (November–December 2006) and Japan (January 2007); in Southeast Asia, Cambodia (March, August 2006), Indonesia (August–December 2005, March, July, August 2006), Malaysia (February–March 2006), Myanmar (March–April 2006), Lao People's Democratic Republic (July 2006), Thailand (July–November 2005, July 2006) and Viet Nam (July, August, October 2005 to January, August, December 2006); and in South Asia, India (February–April 2006), Pakistan (February, April, July 2006) and Afghanistan (March 2006). In South Africa, HPAI H5N2 was reported in June 2006.
- An outbreak of bluetongue occurred in Spain (July–November 2005), Algeria (July–August 2006), the Netherlands (August 2006), Germany (August–September 2006), Belgium(August–November 2006), France (August–November 2006), Morocco (September–November 2006), Tunisia (October 2006), Poland (October 2006), Bulgaria (October–November 2006), Italy (October–December 2006), Israel (November 2006), Portugal (November 2006) and Luxembourg (November–December 2006).
- Foot-and-mouth disease (FMD) Asia-1 outbreaks occurred in China (July, December 2005 to September, November 2006), Mongolia (August, October 2005), Myanmar (July, December 2005), the Russian Federation (July 2005 to January 2006) and Viet Nam (October–December 2005, May 2006). FMD outbreaks of other serotypes were also reported in Turkey (Thrace region: January–June 2006, Type A) and Egypt (January–March 2006, Type A), Israel (December 2005, Type O), Occupied Palestinian Territory (February–March 2006, Type O), the Democratic Republic of the Congo (May 2005, Types SAT-1, SAT-2, SAT-3 and A; May 2006, not typed), Guinea (October–November 2006, not typed), Botswana (July–August 2005 and April–May 2006, Type SAT-2; June 2006, Type SAT-1), South Africa (July 2006, Type SAT-3), Brazil (October 2005 to April 2006, Type O), Argentina (February 2006, Type O), Ecuador (May–August 2006, Type O), Cambodia (July–August, October 2005, May–June 2006, not typed), Philippines (August, December 2005, Type O), Malaysia (July–September 2005, November–December 2005, January, March, May–June 2006, Type O; July 2005 Type A), Myanmar (July–September 2005, February–March, May 2005 to September 2006, Type O; July–November 2005, not typed), Thailand (July–September 2005, December 2005 to September 2006, Type A; July–December 2005, January, July, September 2006, Type O), Viet Nam (July–September 2005, November 2005 to April 2006, Type A; July–October 2005, January–October 2006, Type O).
- Newcastle disease was reported in Azerbaijan, Botswana, Brazil, Bulgaria, Cyprus, Denmark, the Former Yugoslav Republic Of Macedonia, France, Greece, Israel, Italy, Japan, Latvia, Mexico, Romania, Serbia, Slovakia, Sweden, Turkey, Ukraine and the United Kingdom, and lumpy skin disease occurred in Egypt (January–April 2006) and Israel (June–August 2006).
- Afghanistan (August 2005), Gabon (December 2005), Iraq (March 2006), the United Arab Emirates (October 2005) and Uzbekistan (October 2005) declared themselves "provisionally free from rinderpest".

These data have been obtained from OIE sources.

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