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

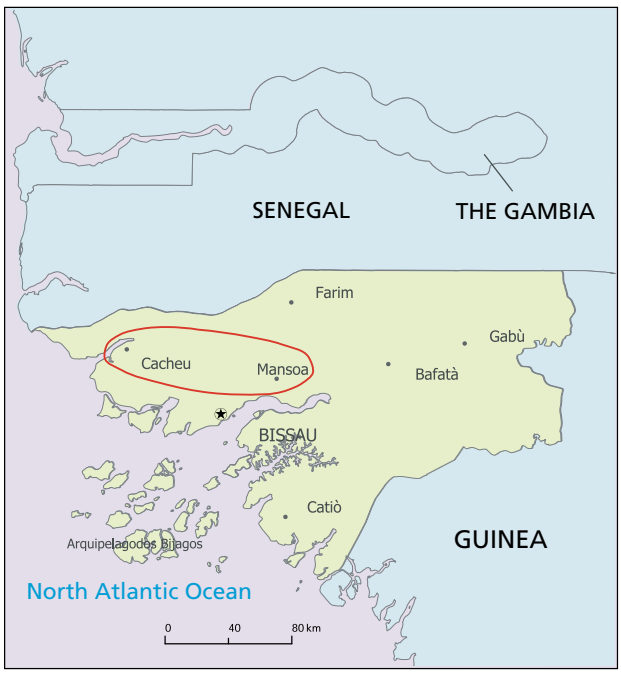
Recommendations

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

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

WILDLIFE CONSERVATION SOCIETY

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

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.