

Regional Meeting on Zoonotic Diseases

A Report of the Meeting
Jakarta, Indonesia, 6-8 November 2007



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Acronyms used

ADB	Asian Development Bank
AHI	avian and human influenza
AI	avian influenza
AIDS	Acquired Immunodeficiency Syndrome
APSED	Asia-Pacific Strategy for Emerging Diseases
ASEAN	Association of South-East Asian Nations
AusAID	Australian Agency for International Development
BSE	Bovine Spongiform Encephalopathy
CAREID	Canada Asia Regional Emerging Infectious Disease Project
CDC	Centres for Disease Control
CIDA	Canadian International Development Agency
CSR	Communicable Diseases Surveillance and Response
DALYs	disability-adjusted life years
EID	emerging infectious diseases
EC	European Commission
FAO	Food and Agriculture Organization of the United Nations
FETP	Field Epidemiology Training Programme
GDD	Global Disease Detection
GF-TAD	Global Framework for Progressive Control of Transboundary Animal Diseases
GLEWS	Global Early Warning System
GOARN	Global Outbreak Alert and Response Network
HIV	human immunodeficiency virus
HPAI	highly pathogenic avian influenza
HQ	headquarters
IHR	International Health Regulations
INFOSAN	International Network of Food Safety Authorities
JE	Japanese encephalitis

JICA	Japan International Cooperation Agency
M&E	monitoring and evaluation
MBDS	Mekong Basin Disease Surveillance
NICD	National Institute of Communicable Diseases
NGO	nongovernmental organization
nvCJD	new variant Creutzfeldt-Jacob disease
OIE	Office Internationale des Epizooties
PHAC	Public Health Agency of Canada
PHEIC	public health emergency of international concern
RC	Regional Committee
RO	Regional Office
SAARC	South-Asian Association for Regional Cooperation
SARS	Severe Acute Respiratory Syndrome
SEARO	Regional Office for South-East Asia (WHO)
SPS	sanitary and phytosanitary measures
TADs	transboundary animal diseases
UN	United Nations
UNEP	United Nations Environment Programme
UNHABITAT	The United Nations Human Settlements Programme
UNICEF	United Nations Children's Fund
UK	United Kingdom
USAID	United States Agency for International Development
UNSIC	United Nations System Influenza Coordination
VPH	veterinary public health
WAHIS	World Animal Health Information System
WHO	World Health Organization
WPRO	WHO Regional Office for the Western Pacific
WTO	World Trade Organization

Executive summary

The Regional Meeting on Zoonotic Diseases was held by the World Health Organization's (WHO) Regional Office for South-East Asia (SEARO) in coordination with the Government of Indonesia in Jakarta from 6-8 November 2007. The programme schedule is presented in Annex 1 and the list of participants is detailed in Annex 2.

To start the opening session, participants and observers were welcomed by the Ministry of Health of Indonesia. The increasing importance of veterinary public health (VPH) was highlighted by the delegates of the Indonesia Country office of the Food and Agriculture Organization of the United Nations (FAO). The Regional Representative of Office Internationale des Epizooties (OIE) for Asia and the Pacific stressed the importance of zoonoses prevention and control in the context of globalization of international trade, changes in agricultural practices and global warming, and highlighted the importance of international partnerships in addressing these issues. The Director of Programme Management of WHO's South-East Asia Region delivered a message from the Regional Director, Dr Samlee Plianbangchang. The recent outbreaks of Severe Acute Respiratory Syndrome (SARS), avian influenza and the Nipah virus in countries of South-East Asia Region have clearly demonstrated the vulnerability of our countries to emerging and re-emerging infectious diseases. Whatever the structure of veterinary public health services within the country, it is important to ensure that effective functioning systems are established for early detection and response to zoonotic diseases. The overall objective of the meeting is to discuss and arrive at a consensus on a regional strategic framework for prevention and control of zoonoses and to identify mechanisms for its implementation at the regional and country levels. WHO will work closely with FAO, OIE, the ministries of health and other relevant ministries and stakeholders of Member countries to achieve the common goal of zoonoses prevention, control and containment. An inaugural address was delivered on behalf of Health Minister of the Government of Indonesia. Considering the importance of zoonotic diseases in Indonesia, it was hoped that this meeting will be productive and produce concrete and practical recommendations for the prevention and control of zoonotic diseases in the South-East Asia (SEA) Region.

The business session commenced with an outline of the objectives of the meeting, introduction of the participants, observers and WHO

Secretariat for the meeting and the nomination of a Chairperson, Vice-Chairperson and rapporteurs.

In the first session, a presentation was made on ecology and zoonoses. Global warming, climate change and extreme weather conditions all have an adverse effect on biodiversity, distribution of animals and microflora, which can lead to the emergence of zoonotic agents and create favourable conditions for disease outbreaks. A centre for the strategic control and prevention of zoonotic diseases with multisectoral involvement and collaboration is needed.

The next presentation outlined the global scenario, burden and importance of zoonoses and depicted the pattern of emerging zoonoses over the period 1996-2007. It has been demonstrated that a disproportionate share of the burden of zoonosis is borne by the poor. There is a need to accelerate regional and national capacity building for integrated zoonoses detection and control through effective intersectoral collaboration at the level of the human/animal health interface.

A presentation on International Health Regulations (2005) in the context of emerging zoonoses was delivered next. The International Health Regulations (IHR) is a global legal instrument which aims to prevent, protect against, control, and provide a public health response to the international spread of disease. The IHR requires rapid notification (within 24 hours of occurrence of any potential public health emergency of international concern (PHEIC), and WHO also has the right to use other sources to obtain information on an emergency of such a kind.

A report on the status of zoonoses in the South-East Asia (SEA) Region of WHO was presented. Zoonotic diseases prevalent in the SEA Region can be grouped into three categories: endemic, re-emerging, and emerging disease with epidemic potential. Avian influenza (AI) A/H5N1 outbreaks have been reported since 2003 and are still continuing in many countries of the Region. The major challenge in AI control is to reduce human exposure to H5N1 virus and bring down the case fatality rate. An overview of Nipah virus, rabies, Japanese encephalitis and leptospirosis was presented. A major focus has been given to avian influenza preparedness by donors and national authorities. Other zoonotic diseases, on the other hand, have been relatively neglected.

A presentation was made on zoonoses control in India. This highlighted the importance of zoonotic diseases in the context of emerging

infectious diseases and socioeconomic development in India. The plague outbreak in 1994 provided a good opportunity to assess preparedness levels to combat zoonotic diseases in the country. A possible outbreak of SARS in 2003 was believed to have been averted through appropriate and timely measures taken at ports of entry. Activities related to capacity building, and strengthening laboratory and surveillance networks for early detection of and response to emerging zoonotic diseases were elaborated.

A presentation from OIE on initiatives for zoonoses control highlighted the importance of emerging diseases and transboundary animal diseases (TADs) in the context of globalization of trade, travel, ecological changes and development activities. The need to strengthen veterinary services and infrastructure at the country level and international partnerships at the regional level for the early detection and response of TADs (including zoonoses) was stressed.

A brief overview of FAO's animal health programme focusing on veterinary public health (VPH) as one of the priority areas was provided. There are three clusters under the VPH strategic plan: feed and food safety, emerging zoonoses and neglected zoonoses. Promotion of the "one health" concept and building close collaboration between the public health and animal health sectors will be needed to deal with potential public health threats posed by animal diseases.

A presentation on the implementation of zoonoses control activities in the Western Pacific Region of WHO (WPRO) was delivered. The Asia-Pacific Strategy for Emerging Diseases (APSED) is a roadmap for countries to strengthen the core capacities required for the effective prevention and control of emerging infectious disease, including zoonoses. The WPRO implementation plan aims to achieve the minimum core capacity for surveillance and response of emerging diseases by 2010. Both the public health and animal health sectors need to collaborate with other partners (wildlife, environment, utility providers, etc.) to achieve effective control of zoonoses.

Presentations on zoonosis control and international collaboration were also made by key international donors and partners. The UN System Influenza Coordination (UNSIC) was instituted to ensure an integrated response by the UN system to national, regional and global challenges posed by avian and human Influenza. AusAID's development activities are implemented through global, regional and bilateral programmes. AusAID is committed to zoonoses control through the APSED framework. United

States Agency for International Development (USAID) has focused activities for avian influenza control in Asia aimed at containing the H5N1 virus within the animal population and preparing for pandemic influenza. Its responsibility and mandate covers both human and animal health sectors and it therefore works with WHO and FAO to ensure strong coordination and standardization of efforts to prepare for, identify, and respond to animal and human influenza outbreaks. Activities of the Canada-Asia Regional Emerging Infectious Diseases (CAREID) Project activities are designed to strengthen preparedness and response capacity for emerging infectious diseases (EIDs) in a number of countries in the Asia-Pacific Region. Surveillance and response, laboratory investigation, health promotion and risk communication are key areas supported by CAREID to enhance preparedness against EIDs.

A draft regional strategic framework for the prevention and control of zoonoses in the SEA Region was presented. The framework aims to control and/or eliminate key zoonotic diseases; thereby improving the health status and quality of human life by reducing socioeconomic burdens. The objectives of the strategy are 1] risk reduction, 2] establishment of coordinating mechanisms, 3] strengthening surveillance, response and preparedness through capacity building, and 4] promotion of an integrated multidisciplinary approach to research. Implementation of the Strategic Framework will be planned in a phased manner to align with existing APSED and IHR (2005) timelines, but will also take into account the time needed for implementation of planned activities and the relative priorities of different diseases.

A parallel meeting of WHO and international donors and partners was held to review the current status of international partnerships for zoonoses control in the SEA Region and outline funding requirements for the implementation of the Strategic Framework for zoonoses control of the Regional Office. A brief overview of zoonoses control activities coordinated by WHO in the SEA Region was presented, including an estimated budget (and funding gaps) for implementation of short-and medium-term plans. Discussions were focused on the possibility of identifying additional funds for zoonoses control in the SEA Region. Since most donor agencies have already committed to avian influenza control activities at country and regional levels, identifying separate funds for zoonoses will be a challenge. One approach would be to use funds already made available for the response to avian influenza to strengthen generic capacity for zoonoses control. Surveillance and response, laboratory capacity building and risk

communication are potential areas of donor interest. It was proposed that the endorsement of the “Regional Strategic Framework for Prevention and Control of the Zoonoses in the South-East Asia Region” by Member States at the sixtieth Regional Committee Meeting at New Delhi in 2008 would support and justify requests for funding.

The Regional Strategic Framework proposes that coordination mechanisms for zoonoses control should be established at country and international levels. Possible arrangements and modalities to this effect were discussed in an attempt to gain consensus. The required steps for implementation of the Strategic Framework were also considered. Discussions were held in three break-out groups and the conclusions presented at a plenary session. A drafting group was assigned to prepare the final recommendations of the meeting which were then discussed and approved as follows:

- Prioritize zoonotic diseases at country and regional levels.
- Support strategic planning and development at the country level based on the Regional Strategic Framework and with the participation of relevant stakeholders.
- Establish intersectoral committees based on existing coordinating mechanisms.
- Strengthen capacity building for outbreak response and containment.
- Promote cross-border collaboration for prevention and control for zoonoses control.
- Strengthen international collaboration for zoonoses control.
- Establish a linkage of national coordination mechanisms with international agencies.
- Recognize the role of nongovernmental organizations, academic and research institutions in zoonoses control.
- Establish a monitoring and evaluation (M&E) mechanism.

WHO was requested to take a lead role in the implementation of the Regional Strategic Framework in coordination with FAO, OIE and related agencies, and to endorse the Regional Strategic Framework at the WHO Regional Committee session.

Summary of proceedings

Agenda I: Inaugural session

The Ministry of Health of Indonesia welcomed all participants and observers to the regional meeting on the behalf of the Government of Indonesia. The meeting is important in the context of outbreaks of avian influenza, anthrax and leptospirosis in Indonesia and it is hoped that it will result in concrete recommendations for the prevention and control of zoonoses.

FAO highlighted the increasing importance of veterinary public health, which it regards as a vital global public good. Zoonotic diseases are an impediment to overall socioeconomic development. FAO has created three clusters as major areas of activity: food safety, emerging zoonoses and neglected zoonoses. The need to strengthen linkages between animal health and public health sectors for VPH activities was emphasized. The close collaboration between WHO and FAO for the control of highly pathogenic avian influenza in Indonesia was elaborated. It is hoped that this meeting will play an important role in strengthening intersectoral coordination and cooperation for the prevention and control of zoonoses.

The Regional Representative of OIE for Asia and the Pacific stressed the importance of zoonoses prevention and control in the context of globalization of international trade, changes in agricultural practices and global warming. Specific zoonotic diseases with global and regional implications particularly in international trade and animal movement, were highlighted. OIE has been closely working with WHO, FAO and other international agencies in strengthening surveillance and response capacities for the prevention and control of avian influenza. The need to assist national veterinary services in developing countries to strengthen food safety and the control of transboundary animal diseases (TADs) was emphasized. OIE is involved in setting standards for international livestock trade, animal movement and food safety and developing guidelines for

animal disease surveillance and control. International partnership is essential for the effective prevention and control of zoonoses, particularly in the Asia-Pacific Region.

The Director of Programme Management of the WHO SEA Region, Dr Myint Htwe, delivered a message from the Regional Director of WHO SEA Region, Dr Samlee Plianbangchang. In his message, the Regional Director observed that this meeting has been organized in a country (Indonesia) which has shown great courage in working to contain one of the emerging zoonoses with the greatest pandemic potential, i.e. avian influenza. Over the last three decades, over 30 new human pathogens have been detected, 75 per cent of which are of animal origin. The task of predicting which zoonotic disease may emerge in future is difficult for many reasons, including the constantly evolving nature of underlying ecological and other risk factors. However, the vast majority of zoonoses are not given priority by health systems at national and international levels and can, therefore, be labelled as “neglected”. The recent outbreaks of Severe Acute Respiratory Syndrome (SARS), avian influenza and the Nipah virus have clearly demonstrated the vulnerability of our countries to emerging and re-emerging infectious diseases. Given the extent and importance of close animal-human interaction and the deeply rooted sociocultural practices in the Region, the threat of zoonotic disease outbreaks in South-East Asia remains high.

VPH is an essential part of public health and includes various forms of interdisciplinary collaboration that link the “health triad” of people, animals and the environment. Irrespective of the nature of institutions and structures within any country, it is important to ensure that effective functioning systems are in place for early detection and response to zoonotic diseases.

The importance of the “Delhi Declaration on Avian Influenza Prevention and Control” was highlighted and an update given on ongoing activities for implementation of its recommendations. The need to develop core capacities required for implementation of International Health Regulations (IHR) 2005 was stressed. In this context close collaboration, effective coordination and timely sharing of information among relevant government sectors and international organizations including WHO, FAO and OIE are essential. The objective of this meeting is to discuss and develop a consensus on a Regional Strategic Framework for Prevention and

Control of Zoonoses and to identify mechanisms for its implementation at the regional and country levels. WHO will work closely with FAO, OIE, ministries of health and other ministries and stakeholders concerned to achieve the common goal of zoonotic disease prevention and control.

An inaugural address was delivered on behalf of the Health Minister of the Government of Indonesia. Indonesia is facing a double burden of communicable and noncommunicable diseases, the address noted. Dengue fever, AIDS, malaria and tuberculosis are human diseases of international concern. Other communicable diseases with epidemic potential also have the ability to cause high morbidity and mortality as well as significant socioeconomic disruption. Indonesia is concerned about avian influenza outbreaks in humans with increasing case fatality rates in recent years. This has the potential to cause a pandemic if it cannot be controlled at the source of origin, i.e. in the poultry population. International partnerships for avian influenza control were praised. Indonesia has a National strategy for AI control and pandemic preparedness. Rabies is another zoonotic disease which is currently spreading from endemic to previously disease-free islands each year due to the mobility of the human population and dogs. Being an island country presents both opportunities and challenges for disease control.

Plague and anthrax are other re-emerging zoonotic diseases which are occurring due to lack of public awareness, the Minister said. Leptospirosis cases have been reported from time to time after instances of flooding. All these zoonotic diseases originate from animals, illustrating the need for collaboration between the public health and animal health sectors for effective control over them. Given the importance of zoonotic diseases in Indonesia, the Health Minister hoped that this meeting will come up with productive, concrete and practical recommendations for the prevention and control of zoonotic diseases in the Region. On this note the meeting was declared open.

The programme schedule is presented in Annex 1 and the list of meeting participants is at Annex 2.

Agenda II: Business session

The objectives of the meeting were highlighted. These are:

- (1) To review the situation of zoonotic diseases globally and the SEA Region in particular;
- (2) To discuss and agree upon a Strategic Framework for the Prevention and Control of Zoonoses; and,
- (3) To identify a viable mechanism for the implementation of this Strategic Framework at the Regional and country levels.

The meeting nominated Dr Nyoman Kandun as Chairperson and Dr R.K. Srivatsav as Vice-Chairperson. The nominated rapporteurs for the meeting were Dr Prabhakar Pathak, Dr Darika Kingnate and Dr P.A.L. Harischandra, who were supported by the WHO Secretariat team.

Agenda III: Zoonoses situation

Presentation on “Ecology and zoonoses” by Prof. Thiravat Hemachudha, Chulalongkorn University, Bangkok

Global warming, climate change and extreme weather events have an adverse effect on biodiversity, distribution of animals and microflora, all of which may increase the likelihood of emergence of zoonotic agents and infectious disease outbreaks. The emergence of the new cholera strain O:139 and outbreaks of West Nile virus, Rift Valley fever and Dengue fever in new geographical areas have been linked with the El Nino oscillation.

Conservation medicine is a new discipline which examines the continuous state of flux of ecological health. Ecological health can be defined as the holistic health of the ecosystem and its inhabitants, including animal and human health. The need for effective collaboration between human and animal health to successfully prevent and control zoonotic diseases was stressed. Up to 49% of emerging viruses can cause encephalitis and bats are naturally infected with 66 different viruses. Bovine Spongiform Encephalopathy (BSE) is transmitted from sheep to cattle and then from cattle to human beings in the form of the new variant Creutzfeldt-Jacob Disease nvCJD as a consequence of human action. Measures taken to reduce the risk of such transmissions were outlined. The spread of the West Nile virus in the United States in recent years may be linked to global warming and may have implications for other vector-borne diseases. A historical perspective on major vector-borne diseases such as arboviral

encephalitides, dengue fever and Rift Valley fever was presented. Although rare, a neurological syndrome has been reported in patients with dengue fever and avian influenza. The importance of bat transmitted viral diseases and their public health implications were outlined. The Neurovirology Division of the Chulalongkorn University, is involved in research on emerging infectious diseases which cause the neurological syndrome, including Nipah virus, rabies in bat populations and other diseases of public health importance in Thailand. Methods to capture, sample and describe bat behaviour and habitats were described. The emergence and spread of the Nipah virus in South-East Asia was outlined. Changes in coastal marine ecosystems due to global warming and human activity and their impact on increasing the incidence of marine disease and food poisoning were elaborated.

There is a need for collaboration among medical, veterinary, laboratory and public health professionals, especially in outbreak investigation and research activities. Strengthening surveillance and response capacity, the development of early warning systems, and formulating appropriate environmental, energy and economic policies are necessary to control emerging infectious diseases. The establishment of a centre for strategic control and prevention of zoonotic diseases involving multisectoral collaboration was advocated.

During the discussions it was inquired if attempts had been made to detect the presence of the West Nile virus in Thailand. It was observed that it has not been detected although appropriate vectors are present in the country and throughout the Region. A question was also asked about the effect that limiting the number of bats would have on the ecology. Bats are protected by the law in many countries. There is no evidence of any adverse effect of climate change on bat populations.

**“Global scenario of zoonoses” by Dr F.X. Meslin,
WHO headquarters ,Geneva**

The definition of “zoonoses” and “emerging zoonoses” that was agreed upon was stated. The evolution of emerging zoonoses globally during the period 1996 to 2007 was outlined. Ebola haemorrhagic fever, Rift Valley fever, avian influenza H5N1, plague and Nipah virus are examples of newly emerging zoonotic diseases. The direct and indirect socioeconomic impact

of BSE/nvCJD, SARS, avian influenza H5N1, and neglected zoonotic diseases such as rabies, brucellosis, cysticercosis and hydatidosis was illustrated. The Bovine Spongiform Encephalopathy (BSE) crisis illustrated the need to employ a complete “feed to food/farm to fork” concept in food safety, which in this case required an international ban on the use of meat and bone meal in animal feed for ruminants. The human form of the disease nvCJD can also be transmitted through blood transfusion from humans to humans and a study suggests that a significant number of potential blood donors in the United Kingdom (UK) may be incubating the disease.

The true burden of zoonoses is difficult to estimate due to underreporting, misdiagnosis, insufficient laboratory diagnostic facilities and lack of awareness among the public and health professionals. Some data exist to illustrate the socioeconomic impact of neglected zoonotic diseases (including the estimation of a DALY score), which reveals a disproportionate impact of the same on the poor. In Viet Nam, household losses due to the H5N1 outbreak in poultry in 2003/2004 have been estimated at US\$ 69 to US\$ 108 per outbreak as against a per capita income of \$2 per day or less.(World Bank, 2004).

The avian influenza epizootic which commenced in late 2003 severely affected poultry production and consumption and directly impacted the livelihood of millions of people. Given the cyclic pattern of pandemic influenza outbreaks and ongoing exposure of humans to AI/H5N1 virus across the globe, there is every possibility that a potential pandemic influenza strain may evolve. One prediction of the impact of an influenza pandemic has suggested 6.4 million to 28.1 million hospitalizations and 2 million to 7.4 million deaths during pandemic.

There is an urgent need to accelerate regional and national capacity building for integrated zoonoses detection and control through effective intersectoral collaboration. WHO works closely with FAO and OIE on food safety and zoonoses control.

During the discussions a clarification was sought on the role of the pharmaceutical industry as a partner in zoonosis control, including response to emergencies. Pharmaceutical companies are committed to providing antihelminthics for the control and eradication of lymphatic filariasis and WHO has also received support from pharmaceutical companies for stockpiling of oseltamivir to be used in emergencies.

“International Health Regulations (2005) in the context of emerging zoonoses” by Dr Pierre Formenty, WHO Geneva, delivered by Dr Meslin

Preparedness for outbreaks of zoonotic disease is suboptimal and they often catch us by surprise. Although prediction is difficult, much can be done through strengthening intersectoral global frameworks for early detection and containment, and the selection of appropriate control strategies.

WHO, FAO and OIE work together through a number of established detection and response frameworks, including the Global Outbreak Alert and Response Network (GOARN), the Global Early Warning System (GLEW - WHO, FAO and OIE), the Information Network of Food Safety Authorities (INFOSAN emergency -WHO/FAO) and the Crisis Management Centre (FAO/OIE). There are also frameworks aimed at strengthening national surveillance and response capacity under the International Health Regulations 2005 (IHR), the Global Framework for progressive control of Transboundary Animal Diseases (GF-TADs - FAO/OIE) and the Global Disease Detection Programme (GDD - CDC).

The International Health Regulations (IHR) 2005 was endorsed by the World Health Assembly in May 2005 and came into force on 15 June 2007, although a special provision for avian influenza was also adopted by some countries on a voluntary basis in May 2006. The IHR (2005) aims to prevent, protect against, control and provide a public health response to the international spread of disease and requires notification by Member countries within 24 hours of any potential public health emergency of international concern (PHEIC). In the event that such notification or supply of information is not timely, the Regulations stipulate that WHO also has the right to use other sources to obtain information on such events. The response to a PHEIC depends critically on the capacity of Member countries to detect, assess and, if required, notify any event as well as the ability to contain it. An algorithm known as the “IHR Decision Instrument” has been developed to help Member countries decide if such notification is required. An overview of GOARN activities was provided. Complete transparency in the reporting of events would greatly facilitate international cooperation and support for rapid containment whenever a PHEIC is detected in WHO Member countries.

During the discussions a clarification was sought on how WHO is monitoring the implementation of IHR. A checklist to assess

implementation has been developed and progress is reviewed through regional and global consultations.

“Regional status of zoonoses in the South-East Asia Region – Opportunities and Challenges” by Dr Gyanendra Gongal, CSR unit, SEARO

Zoonotic diseases are important in the SEA Region because of the close everyday interactions between the human and animal world, deep-rooted sociocultural practices, high relative density of human and animal populations, intensification of the farming system, and changing food habits and lifestyles of the people. Zoonotic diseases prevalent in this Region can be divided into three categories: endemic, re-emerging and emerging disease with epidemic potential. The economic impact of select infectious diseases in the global context was illustrated, followed by an overview of zoonotic diseases of regional importance.

Avian influenza (H5N1) outbreaks were first reported in the Region in 2003. Sporadic outbreaks are continuing in many countries, including in Bangladesh (2007), India (2006-2007), Indonesia (2004-2007), Myanmar (2006-2007) and Thailand (2003-2006). All these countries with the exception of Indonesia adopted a stamping-out policy for the control and eradication of avian influenza outbreak in poultry. Human H5N1 cases were reported from only Thailand and Indonesia. The major challenge in AI control is to reduce human exposure to the H5N1 virus and if possible, to bring down the case fatality rate. Japanese encephalitis (JE) is a major vector-borne zoonotic disease endemic in most countries of the SEA Region. The epidemiology of JE remains fairly stable in endemic countries except in those where vaccination campaigns are introduced which have resulted in a dramatic reduction in the incidence of disease in normal conditions. Nipah virus is another emerging regional zoonotic disease of public health significance which has been reported from Bangladesh and India. Little is known about the epidemiology and clinical management of the Nipah virus, and there is an urgent need to strengthen capacity for surveillance and laboratory confirmation. Rabies remains a major public health problem in the Region. Dog-mediated rabies is responsible for most human cases although cases of “wildlife” rabies are also reported in the Indian subcontinent. The impact of dog vaccination in reducing the incidence of rabies in Sri Lanka and Thailand was illustrated. Rabies vaccine

of nerve-tissue origin is being phased out from India and Nepal. The introduction of a more cost-effective rabies vaccination schedule is required to ensure that modern tissue-culture rabies vaccine becomes accessible to the general public. The implementation of a regional rabies control strategy should be urgently considered. Leptospirosis is an emerging outbreak-prone disease which is associated with flooding. Major outbreaks have been reported from the states of Gujarat, Orissa, Maharashtra and Tamil Nadu in India and also in Northern Thailand during the last 10 years.

There are both opportunities and challenges for zoonoses control in the Region. A major focus has been given to the response to avian influenza by both donors and national authorities while other zoonotic diseases have been neglected. There is a need to develop multidisciplinary and integrated approaches to preparedness, surveillance and response to zoonotic diseases.

**“Zoonoses control activities in India” by Dr Veena Mittal,
Head of Zoonosis Division, National Institute of
Communicable Diseases (NICD), Delhi, India**

The importance of zoonoses in the context of emerging infectious diseases and socioeconomic development in India was highlighted. Avian influenza, Japanese encephalitis, Nipah virus, leptospirosis, plague and anthrax are important zoonotic diseases in India known to have occurred. The plague outbreak in Surat in 1994 provided a good opportunity to review the preparedness levels to combat outbreaks of zoonotic diseases in India. A possible outbreak of SARS in 2003 was averted through appropriate and timely measures taken at ports of entry and by ensuring adequate preparedness for surveillance, laboratory diagnosis and clinical case management. Avian influenza H5N1 outbreaks in poultry during 2006-2007 were contained at source through coordinated action taken at the state and local levels and no human cases were reported. Activities related to capacity building and strengthening laboratory and surveillance networks for early detection and response for emerging zoonotic diseases were elaborated. Pilot projects for rabies and leptospirosis have been incorporated in the Eleventh Five Year Plan (2007-2011) of the Government of India.

Agenda IV: Partnerships for zoonoses control

“OIE initiative for zoonoses control” by Dr Teruhide Fujita, OIE Regional Representative for Asia and the Pacific

The importance of emerging diseases and transboundary animal diseases (TADs) in the context of globalization of trade, travel, ecological changes and development activities were highlighted. The socioeconomic impact of TADs in terms of loss of animal productivity and trade opportunities and the threats posed to human health was elaborated. Veterinary services and infrastructure at the central and field levels need to be strengthened to ensure the effective prevention and control of TADs at the source of origin. In addition, it is essential to strengthen linkages and collaboration between animal health and public health authorities and to promote regional cooperation for zoonoses surveillance and response. OIE is an intergovernmental organization established in 1924 to promote intercountry cooperation for rinderpest control, but it is now organized into five regions and has 170 Member countries on its rolls. The objective of the OIE is to ensure transparency at the global level with all issues related to animal disease, provide technical support and foster international partnerships in the control of animal diseases, to safeguard world trade by publishing health standards for commerce in livestock, and to promote food safety and animal welfare.

OIE has been recognized by the World Trade Organization (WTO) as the organization for setting standards and benchmarks on animal health. Application of sanitary and phytosanitary (SPS) measures and risk assessment are tools to facilitate fair and transparent trade practices. OIE regularly publishes standards, guidelines and recommendations for animal health and food safety and maintains an electronic information network, called the World Animal Health Information System (WAHIS), to provide transparent and timely notification of disease occurrences. Guidelines for the surveillance of specific zoonotic diseases such as AI, bovine tuberculosis, BSE, rabies and salmonellosis have been included in the OIE Animal Health Code. OIE and FAO have been working together for regional activities under a Global Framework for Progressive Control of Transboundary Animal Diseases (GF-TADs) aimed at controlling priority animal diseases of regional importance. An OIE/Japan Special Trust Fund Project on Highly Pathogenic Avian Influenza (HPAI) Control in South-East Asia has been established to strengthen surveillance and response capacity

of Member countries. The need to foster international partnerships for early detection and response of TADs at their source of origin, including for zoonoses, was stressed.

Clarification was sought on the role of OIE in the development of infrastructure in Member countries, procedures for the evaluation of National Veterinary Services, and on the confidentiality of reports. OIE is supporting Member countries mainly in capacity building by organizing training, workshops and meetings, making the provision of technical expertise, and through advocacy to development partners in the mobilization of resources for animal health at an international level. OIE encourages transparency and timeliness in disease reporting and maintains confidentiality over sources of reporting if necessary.

**“FAO initiative for strengthening veterinary public health services”
by Dr Carolyn Benigno, FAO Regional Office for Asia and the Pacific**

An overview on FAO's animal health programme was provided focusing on Veterinary Public Health (VPH) as one of the priority areas. VPH activities have been a feature of FAO's animal health programme for many years, but were awarded a more prominent role in 1999. Discussions are currently being held across regions to develop a new strategy document for the next biennium. The VPH programme focuses on how animal health problems impact the human population and considers risks related to both production and consumption of food of animal origin. According to surveys previously conducted by FAO, the perceptions and priorities of VPH activity varies over time, but it is generally a low priority area for animal health programmes in most developing countries.

There are three clusters under FAO's VPH strategy. These are feed and food safety, emerging zoonoses and neglected zoonoses. Feed and food safety has become a significant issue because of the implications of BSE and AI outbreaks in relation to consumption of animal products. FAO provides technical expertise, tools and guidelines to improve national food safety systems in Member countries in accordance with international standards. A Regional Food Safety Workshop was organized in Chiang Mai in October 2007 to identify priority issues in food safety and determine a plan of action for FAO. The identified priority areas are meat inspection and abattoir management, capacity building, consumer awareness, coordination and legal frameworks.

Livestock rearing in Asia is not only an issue related to animal production but also to other end uses such as for draft power, rural transport and biofuel. It also has a sociocultural aspect of reinforcing the close interplay of human beings and animals in everyday life. Multiple factors lead to the emergence of zoonotic diseases and these diseases have serious socioeconomic consequences for animal production and consumption and trade of animal products. Rabies, brucellosis and parasitic zoonoses are neglected zoonoses which mostly affect the poorest segment of the human population. The control of these diseases requires community-based approaches, public awareness and behaviour change.

There is a need to foster the integrated control of major zoonotic disease (including foodborne diseases) through the development of networks for surveillance, risk assessment and response at the regional and country levels. The momentum generated by the AI crisis should be viewed as an opportunity. Promotion of the “one health” concept with close collaboration between the human and animal health sectors will be needed to mitigate the threat to public health posed by animal diseases.

Queries were raised in relation to food safety in the informal food chain system, on collaboration between public health and animal health sectors, and about capacity building opportunities for Member countries. Since most food trade is informal in this Region, food safety presents a significant challenge which will require robust collaboration between FAO and WHO at the international level and between human and animal health sectors at the national level. Established field epidemiology training programmes (FETP) which aim to bolster the capacity building of public health professionals could be utilized instead of creating a separate programme for veterinary professionals. The interaction between community-based animal and public health workers at the field level is a good example of an integrated approach which encapsulates the “one health” concept.

“Implementation of zoonoses control activities in the Western Pacific Region” by Dr Bee Lee Ong, CSR, WHO/WPRO

An overview of the composition of the WHO Western Pacific Region was presented. There are 37 countries in the Region, presenting considerable diversity in terms of economic development, geography and population. Outbreaks of SARS, Nipah virus and AI in recent years have highlighted the

need to enhance preparedness levels for emerging zoonoses in the region. A list of priority zoonotic diseases which are either endemic or considered a potential threat in the Region was outlined.

The Asia-Pacific Strategy for Emerging Diseases (APSED) is a roadmap for countries to strengthen the core capacities required for effective prevention and control of emerging infectious diseases, including zoonoses. The five principal objectives of APSED are risk reduction, early detection, rapid response, effective preparedness and technical collaboration for international health security. Current plans are aimed at achieving a “minimum core capacity” for surveillance and response to emerging diseases by 2010. APSED plans are linked to a number of other key initiatives covering avian influenza control, pandemic preparedness and the implementation of IHR (2005). APSED has identified zoonoses as one of the priority programme areas and has developed a workplan accordingly. The health sector alone cannot address the problems of zoonoses; the human and animal health sectors need to work together with other stakeholders (wildlife, environment, utility providers, etc) as required.

A two-phase approach has been adopted for implementation of the zoonoses workplan. A regional mechanism between FAO/OIE and the WHO Regional Offices has already been established and a generic guide to develop a coordination mechanism for strengthening animal and human health sectors at the country level has been developed. A step-by-step approach for intersectoral cooperation has been proposed, which includes identification of contacts, discussions on areas of work, determination of role and responsibilities, and evaluation of progress leading to an agreement or revision of the action plan.

Clarifications were sought on approaches to the establishment of a coordination mechanism for implementation of a zoonoses workplan at the country level. Several options were outlined, but the consensus of the meeting was that the highest national authority should normally decide whether representatives from the human or animal health sector should lead any intersectoral committee. However, the most important step to avoid any potential conflict of interest is probably to ensure at the outset a clear demarcation of roles and responsibilities at the outset. Risk reduction, surveillance and information exchange, coordinated response and collaborative research have been identified as the four pillars of the zoonoses framework and consideration should be given to which authority

can provide the most balanced approach to addressing all of them. It has been suggested that risk assessment should be included as the fifth pillar of the zoonoses framework.

International partnership for zoonoses control in the South-East Asia Region

Presentations were invited from partners and donors. United Nations System Influenza Coordination (UNSIC) was instituted to ensure a unified UN system response to national, regional and global challenges posed by avian and human influenza. Key activities include monitoring and impact assessment of steps and actions taken related to the current avian influenza outbreak, pandemic preparedness and resource mobilization. Outcomes and recommendations of the Technical Meeting on HPAI and human H5N1 infection organized by FAO, OIE and WHO in collaboration with UNICEF and UNSIC in Rome in June 2007 were presented. A major issue discussed at this meeting was the collaboration between animal and human health sectors. The meeting strongly advocated joint animal and human health activities for training, surveillance and response, risk communication and cross-border collaboration, including joint standard operating procedures. Attempt should be made to harmonize human and veterinary medical curricula and promote collaborative research to fill knowledge gaps at the human-animal interface. The meeting also stressed the need for intersectoral coordination and collaboration at all levels for AHI preparedness.

Details of the AusAID pandemic and emerging infectious disease strategy were presented together with priority areas of work and current commitments for international partnership. AusAID development activities are implemented through global, regional and bilateral programmes. AusAID has a strong commitment for zoonoses control through the APSED framework. Australia has invested over 150 million Australian dollars to combat EID in Asia and the Pacific since 2003 and AusAID strongly supports the efforts of the Regional Office to enhance collaboration through this meeting.

USAID regional activities for avian influenza control in Asia focus on successful containment of the H5N1 virus in the animal population and on preparedness for pandemic influenza. USAID is mandated to bridge the

human and animal health sectors and works closely with WHO and FAO. Strengthening national and regional preparedness, building capacity for early detection/warning of outbreaks and for rapid response, and promoting public awareness are all core areas for USAID activities. Similarly, cross-border surveillance and integrated FETP are major regional priorities.

The Public Health Agency of Canada (PHAC) is not a donor agency but works closely working with the Canadian International Development Agency (CIDA) for health projects in the Asia-Pacific Region. Some funds have been provided to WPRO/ SEARO for implementation of APSED. Current CAREID Project activities in this region were outlined. These are designed to strengthen preparedness and response capacity for EIDs in a number of priority countries. Surveillance and response, laboratory investigation, health promotion and risk communication are all considered key areas to enhance preparedness. Modular training courses will be developed to improve skills in surveillance and outbreak investigation at the country and regional levels and operational research capacity will also be strengthened in these areas.

During the discussion, existing modalities of FETP were discussed. Many donors are willing to support FETP at the regional and country levels and see joint training as a mechanism to foster intersectoral collaboration.

Agenda V: Policy document

“Strategic framework for prevention and control of zoonoses in the South-East Asia Region” by Dr Khanchit Limpakarnjanarat, Regional Adviser, CSR, SEARO

The need to develop and implement a strategic framework for zoonosis control was highlighted. A needs assessment was carried out in 2006 through a survey by questionnaire and a situation analysis undertaken to identify the strengths, opportunities and challenges for zoonoses prevention and control in the Region. A draft strategic framework had been prepared and informally discussed with experts prior to this meeting. Initiatives and factors taken into consideration included expectations of Member countries, APSED, IHR (2005), World Health Assembly Resolutions on EID and zoonoses, and the known epidemiological situation of major zoonotic diseases in the region. The Strategic Framework aims to control and/or

eliminate priority zoonotic diseases and thereby improve the health status and quality of human life by reducing their socioeconomic burden. The objectives are risk reduction, establishment of coordinating mechanisms, strengthening surveillance, response, preparedness through infrastructure development and capacity building, and promotion of an integrated multidisciplinary approach to research. The strategies are as follows;

- Advocacy, legislation, public awareness and health education.
- Appraisal of public health and socioeconomic impacts of zoonoses.
- Strengthening of surveillance and disease investigation capacities in human and animal populations.
- Networking of epidemiological and laboratory units under public health and animal health sectors.
- Developing prevention and control strategies in animal hosts and vectors.
- Development and harmonization of appropriate cross-border disease surveillance and response activities.
- Review of medical and veterinary curricula to address epidemiology and public health aspects of zoonoses.
- Involvement of medical and veterinary institutions, NGOs, international professional associations and animal welfare organizations in zoonoses control activities.
- Identify research needs on zoonoses and promote joint studies with the involvement of technical partners.
- Design a protocol to verify absence/elimination of infection from a country.
- Development of pilot projects for specific disease control and elimination.

Zoonoses will be grouped into three strategic areas for the implementation of the regional framework:

The broad strategic areas target elimination, control and risk reduction and are categorized as follows:

- (1) the zoonoses that can be eliminated in practice by mass vaccination or mass and/or targeted chemoprophylaxis, i.e. diseases for which there is a vaccine or other tools to prevent transmission;
- (2) the zoonoses controllable by mass preventive or targeted chemotherapy and intensified early case detection and management, i.e. diseases for which there is no vaccine but for which effective tools exist to reduce their incidence; and,
- (3) the zoonoses preventable and/or avoidable through risk reduction measures, i.e. diseases for which one targets the risk factors.

Implementation of the strategic framework is planned in a phased manner considering APSED and IHR timelines, the time needed for implementation of planned activities and prioritization. There are three phases of implementation plan:

- The short-term plan (2008-2010) includes risk assessment and an appraisal of public health and the socioeconomic impact of zoonoses; development of operational guidelines and training modules for zoonoses control and VPH services; formulation of regional strategies for priority zoonotic diseases, development of core capacities for surveillance, response, case management, infection control and risk communication for major zoonoses and strengthening of the coordination mechanism for intersectoral cooperation at regional and country levels.
- The medium-term plan (2011-2015) includes development of a legal framework for zoonoses, review of medical and veterinary curricula and development of guidelines, development of Regional Resource Centres for zoonoses surveillance and capacity building, and research and development to fill knowledge gaps and develop better tools.
- The long-term plan(2016-2020) includes the integrated VPH and food safety programme at the regional and country levels, protocols to verify absence/elimination of infection from a country, and elimination of human rabies as a public health problem in SEA Region.

The assessment, planning, implementation and monitoring cycle was presented.

The strategic document was discussed in detail. These featured coordination mechanisms, prioritization of zoonoses, intersectoral collaboration, capacity building and organizational structure, and programme planning and resource mobilization. Decentralization and “brain drain” (emigration of specialists in the subject during their peak production years) were cited as major challenges in the way of zoonoses control. These were arrived at on the basis of country experiences and the questionnaire survey for VPH assessment. Examples were presented of how coordination at the field level had been adversely impacted due to decentralization of health and development activities. Clarification was also provided on the coordination mechanism for implementation of a strategic framework. This implementation will be executed at two levels: FAO and OIE will work at the regional level, and the public health, animal health and other sectors at the country level). Prioritization of specific zoonotic diseases is required due to budgetary and technical constraints and the priorities may differ from country to country. The need for technical support for the development of legal frameworks for emerging zoonoses was highlighted by participants. Activities to eliminate human rabies by 2020 have been planned for impending launch.

The possibility of collaborating with other agencies such as UNHABITAT, UNICEF, UNEP, SAARC and ASEAN in implementing the Strategic Framework was raised. Clarification was provided over the alignment of short-and medium- term plans with the timelines of APSED and IHR (2005) and with programme budgeting, stipulating specific targets for resource mobilization. It was suggested that specific strategies should be developed for short-and medium-term plans.

Agenda VI: Group works

The Regional Strategic Framework envisages a coordination mechanism for zoonosis control at the national and international levels which required a wide range of discussions on different modalities to arrive at a consensus. Similarly, it was necessary to identify the next steps to be performed for the implementation of the Strategic Framework. Three groups were formed to discuss specific topics of interest and facilitators were provided to each

group with key questions for focused group discussions. The groups were formed in such a way that national animal health and public health sector counterparts from each participating country worked together in a group.

Agenda VII: International partners' meeting (parallel meeting)

A separate meeting of WHO and international donors and partners was held to review the current status of international partnerships for zoonoses control in the Region and discuss funding requirements for implementation of the Regional Strategic Framework. A brief overview of zoonoses control activities was provided by the WHO Regional Office for South-East Asia. An estimated budget and funding gaps for implementation of short-and medium-plans of the Regional Strategic Framework was outlined. Priority programme areas for zoonoses such as surveillance and response, laboratory capacity building, biosecurity and infection control, public awareness and education were highlighted. Since rabies is a major zoonotic disease in the Region and a Regional Strategy for Rabies Elimination has been developed in the past, the rabies elimination programme over the next 15 years was elucidated.

Discussions also focused on the possibility of international funding for zoonoses control in the SEA Region. Since most donor agencies have already committed to avian influenza control activities at the country and regional levels and it is currently the foremost priority, it is difficult to secure separate funding for zoonoses. Future funding can be difficult to predict for disease-specific projects. It was, therefore, suggested that best use of available AI funds be encouraged for strengthening capacity for zoonoses control. The need of resource mapping was also highlighted for better resource mobilization. Surveillance and response, laboratory capacity building and risk communication are potential areas of donor interest. Most donors have a particular interest in strengthening multidisciplinary field epidemiology training programmes at the regional and country levels. Endorsement of the "Regional Strategic Framework for Prevention and Control of Zoonoses in the South-East Asia Region" by the Regional Committee session was recommended to justify requests for funding. Budget estimations for country-specific and area-specific activities will provide flexibility to international partners to consider the possibility of

funding. More detailed proposals based on the Strategic Framework and stating country-specific activities and areas of work would be welcomed by the donor community.

The FAO Regional Office for Asia and the Pacific receives a regular budget for VPH activities from the FAO headquarters and the OIE Regional Representation for Asia and the Pacific has been receiving support from the Government of Japan. AusAID has also provided funding to the OIE Regional Representation to strengthen veterinary services in ASEAN countries. Funding public health projects through regional organizations such as the ASEAN and SAARC is a priority area of the European Commission (EC). ASEAN has received funding for EID from AusAID and is working towards the formulation of a zoonoses project with EC. It was suggested that Regional Strategic Framework for Zoonoses Control developed by the WHO South-East Asia Regional Office, the common document is made that could be endorsed by WHO, FAO and OIE for international funding. It was, however, decided to treat the same as a WHO document to avoid unnecessary delays in approval. Proposed activities, however, could continue to be coordinated with FAO and OIE at the regional level.

Donor coordination is crucial to avoid overlapping and identify areas of common interest for collaboration. WHO will have to play a pro-active role in resource mobilization and delivery of technical expertise to Member countries. There is strong commitment to APSED as a framework for capacity building by many donors and international partners.

Agenda VIII: Presentation of group work

The draft recommendations for the development of coordination mechanisms at the country and regional levels and next steps for the implementation of Regional Strategic Framework for Prevention and Control of Zoonoses were presented and discussed in detail.

Group recommendations on the development of coordination mechanisms at the country level were presented. It was pointed out that coordination mechanism should be built on existing structures wherever possible. The existing AI task force or intersectoral committee could be used as coordination body for zoonoses control. There should be intersectoral

committees with clear mandate at the policy and technical levels. Technical working groups may be disease-specific or task-specific with the involvement of the academic and private sectors. Coordination mechanisms should be developed not only at the national level but also at provincial and district levels. Some participants expressed doubts about any high-level minister participating in meetings of the coordination committee. The decentralization policy should also be considered while formulating a coordinating mechanism. It is necessary to identify commensurate government officials who can coordinate and head cross-border committees.

Group recommendations on the development of a coordination mechanism at the international level for zoonoses control were also presented. The SEA Regional Office will have to play a leading role in the coordination efforts with FAO and OIE at the regional level. WHO, FAO and OIE should play a proactive role in resource mobilization and technical assistance to Member countries in the implementation of the zoonoses control programme and coordinate information sharing and the development of guidelines and standards. Risk assessment of informal livestock trade and movement across national frontiers is important, and requires international cooperation. Risk assessment is based on the price factor and available information, but appropriate tools and operational guidelines for this purpose should be developed. Cross-border meetings are important to build a medium of trust among trading partners and neighbouring countries. Joint field epidemiology training for public health and animal health professionals should be promoted.

Group recommendations on next steps for implementation of the Regional Strategic Framework were also shared. AI, rabies, leptospirosis and anthrax have been identified as zoonotic diseases of regional importance. Concern was expressed about possible bias in prioritization of zoonotic diseases in the regional context which may not represent the real nature of the threat of epidemic-prone diseases. The Nipah virus and SARS have not been included, though these may have epidemic potential. Prioritization at the country level should be done using a consensus methodology based on the Delfi method. Priority diseases may differ among Member countries and may also change from time to time.

Mapping of technical expertise and resources is essential for better planning and the rational use of available resources. Member countries

should prepare strategic and operational plans based on the Regional Strategic Framework for Zoonoses Prevention and Control which should be endorsed by their national authority. The Regional Strategic Framework should be endorsed by the Regional Committee Session. Funding is the principal bottleneck for implementation of any plans and programmes therefore. Funding support for implementation of proposed Strategic Framework should therefore, be explored by WHO/SEARO. It was suggested that each country should identify a nodal officer for disease information including zoonoses, and develop a website for information dissemination while using the electronic communication network. It was also pointed out that though many websites exist they are rarely updated. Updating of websites should be ensured. Participants recommended that the “One Health–One Medicine” concept be followed and a holistic approach for zoonoses prevention and control be taken.

Risk assessment of zoonoses is an activity of prime importance and the Regional Office should provide technical support to conduct risk assessment to Member countries. Monitoring and evaluation is an essential part of project management and it will be necessary to develop appropriate tools using existing reporting format and templates.

A drafting group was assigned to prepare a list of detailed technical recommendations. The salient ones were as follows:

- (1) Prioritize zoonotic diseases at the country and regional levels on the following basis:
 - (a) risk assessment.
 - (b) incidence/prevalence.
 - (c) morbidity/mortality in humans and animals.
 - (d) disease burden.
 - (e) socioeconomic impact (trade, travel, tourism, etc).
- (2) Promote strategic planning and development at the country level based on the Regional Strategic Framework with the relevant stakeholders through:
 - (a) development of a clear and lucid strategic plan for the prevention and control of all priority diseases.
 - (b) agreed designation of roles and responsibilities.

- (c) common understanding of processes and protocols for decision-making and communications, etc.
- (3) Establish intersectoral committees based on existing coordinating mechanisms with the following considerations:
 - (a) a “policy level” coordinating committee that is responsible for determining strategic priorities, forming policy and steering the response.
 - (b) a technical working committee which reports to the coordinating committee.
 - (c) coordination at the sub-national level should be reoriented.
- (4) Strengthen capacity building for outbreak response and containment through:
 - (a) development of an information-sharing mechanism.
 - (b) networking of epidemiological and laboratory units.
 - (c) inventory mapping of resources available (laboratory technical expertise).
 - (d) joint training programme for animal health and public health workers on any outbreak investigation and response.
- (5) Promote cross-border collaboration for prevention and control of zoonoses by:
 - (a) considering current “IHR-related” activities to provide the necessary momentum.
 - (b) involving both bilateral and multilateral arrangements.
 - (c) establishing primary mechanism through existing arrangements/ committees for “border activities” .
 - (d) developing rapid response/notification capacity for border areas.
 - (e) agreeing on strategies for management of animal movement across borders in both outbreak and non-outbreak settings.
- (6) Strengthen international collaboration through:
 - (a) regular meetings of WHO, FAO, OIE and other related agencies at the regional level.

- (b) resource mobilization for implementation of the Regional Strategic Framework.
 - (c) rectifying plans and programmes for implementation of Strategic Framework.
 - (d) updates on implementation status at the country level through regular communication/web portal.
- (7) Establish linkage of the national coordination mechanisms with international agencies through communication with respective country offices.
- (8) Recognize the role of nongovernmental organizations in zoonoses control in policy formulation, advocacy, resource mobilization, implementation and public awareness, and education at the community level.
- (9) Recognize the role of academic and research institutions in zoonoses control in the following sectors:
- (a) research, development and training.
 - (b) curriculum development as per emerging needs.
 - (c) policy formulation and advocacy.
 - (d) reference library/laboratory.
- (10) Establish M&E mechanism through:
- (a) development of a standard tool for M&E at the regional level.
 - (b) submission of progress report on meetings of the WHO Regional Committee and Technical Advisory Group (TAG).
- (11) WHO is requested to:
- (a) take a lead role in implementation of the Regional Strategic Framework in coordination with FAO, OIE and related agencies.
 - (b) endorse the Strategic Framework at the WHO Regional Committee session.

Agenda IX: Conclusions and recommendations

It was the first regional meeting on zoonotic diseases organized by WHO/SEARO with the involvement of international partners and donors and representatives of public health and animal health sectors of Member countries. The meeting provided an opportunity for detailed discussions across a wide range of issues pertaining to prevention and control of endemic zoonoses and emerging zoonoses at the regional and country levels. The Regional Strategic Framework for Prevention and Control of Zoonoses was presented by WHO/SEARO, which was discussed in detail and recommended for presentation at the Regional Committee session for endorsement.

The final general recommendations were summarized on the basis of the detailed technical recommendations, which were as follows;

- (1) Prioritize zoonotic diseases at the country and regional levels.
- (2) Support strategic planning and development at the country level based on the Regional Strategic Framework with the relevant stakeholders.
- (3) Establish intersectoral committees based on existing coordinating mechanisms.
- (4) Strengthen capacity building for outbreak response and containment of zoonotic diseases.
- (5) Promote cross-border collaboration for prevention and control for zoonoses.
- (6) Strengthen international collaboration through coordination and cooperation with FAO, OIE and other related agencies at the regional levels.
- (7) Establish linkage of the national coordination mechanism with international agencies through communication with respective country offices.
- (8) Recognize the role of nongovernmental organizations, and academic and research institutions in zoonoses control.

- (9) Establish M&E mechanism for implementation of the Regional Strategic Framework.
- (10) WHO requested to take a lead role in implementation of the Regional Strategic Framework in coordination with FAO, OIE and related agencies.

The participants requested the Regional Office of WHO to take necessary action to implement the recommendations.

Agenda X: Closing session

The closing session was chaired by the representative of the Ministry of Health of Indonesia. Participants called the a meeting timely and relevant and requested WHO to take a proactive role in the implementation of the Regional Strategic Framework. FAO highlighted the importance of coordination with WHO, particularly on issues of zoonoses and food safety. OIE expressed satisfaction for having taken the initiative to organize a regional meeting on zoonotic diseases and stressed the need of collaboration in the future. The WHO Representative for Indonesia highlighted the importance of this meeting in the context of emerging zoonoses such as AI and SARS. The representative of the Ministry of Health of Indonesia thanked WHO/SEARO for providing the opportunity to host this meeting in Jakarta and congratulated all for their active participation in the deliberations.

Annex 1

Programme

Tuesday, 6 November 2007

08:30-09:00 Registration

Agenda I: Inaugural session

- 09:00-10:00
- Welcome address by *Dr Erna Tresnaningsih*, Director, Vector-borne Disease Control, Ministry of Health, Government of Indonesia
 - Address by *Dr James McGrane*, Acting FAO Representative in Indonesia
 - Address by *Dr Teruhide Fujita*, OIE Regional Representative for Asia and the Pacific.
 - Message of WHO Regional Director for SEA Region, *Dr Samlee Pliabangchang*, read by *Dr Myint Htwe*, Director, Programme Management, WHO/SEARO.
 - Inaugural address by the Hon. Health Minister of the Government of Indonesia, *Dr Siti Fadilah Supari* to be delivered by *Dr I.N. Kandun*, Director-General of Communicable Disease and Environmental Health, Ministry of Health, Indonesia.
 - Announcements by *Dr Mohamad Asri Amin*, WHO Indonesia
- Group photograph

10:30-11:00

Agenda II: Business session

- Introduction of participants and objective of the meeting:
Dr Khanchit Limpakarnjanarat, Regional Adviser/CSR/SEARO
- Nomination of Chairperson, Vice-Chairperson and Rapporteurs:
Dr Myint Htwe, Director, Programme Management,
WHO/SEARO

Agenda III: Zoonoses situation

- 11:00-11:30 Ecology and zoonoses – *Dr Thiravat Hemachudha*, Chulalongkorn University, Bangkok
- 11:30-12:00 Global scenario of zoonoses – *Dr F.X. Meslin*, WHO/HQ
- 12:00-12:30 International Health Regulations in the context of emerging zoonoses – *Dr Pierre Formenty*, WHO/HQ
- 12:30-13:00 Regional status of zoonoses in the South-East Asia Region – Opportunities and challenges – *Dr G.N. Gongal*, CSR/SEARO

Agenda IV: Partnership for zoonoses control

- 14:00-14:30 OIE initiative for zoonoses control – *Dr T. Fujita*, OIE Regional Representative for Asia and the Pacific
- 14:30-15:00 FAO initiative for strengthening veterinary public health services – *Dr Carolyn Benigno*, FAO/RAP
- 15:00-15:30 Implementation of zoonoses control activities in Western Pacific Region – *Dr Bee Lee Ong*, WPRO
- 16:00-17:00 International partnership for zoonoses control in South-East Asia Region –
World Bank/UNSCIC
AusAID/USAID/ PHAC

Wednesday, 7 November 2007

Agenda V: Policy document

- 09:00-10:30 Strategic framework for prevention and control of zoonoses in the South-East Asia Region – *Dr Khanchit Limpakarnjanarat*, Regional Adviser, CSR/SEARO

Agenda VI: Group work

- 11:00-12:30 Group I: Coordination mechanism for zoonoses control at country level
Group II: Mechanism of international cooperation for zoonoses control
Group III: Next steps for implementation of the Regional Strategic Framework
- 14:00-16:00 Group work continued
- 16:00-16:30 Poster presentation
- 16:30-17:30 Group work continued

Agenda VII: International partners' meeting (parallel meeting)

(Participants from donors and partners)

- 16:00-16:15 Meeting objectives
- 16:15-17:00 Scenario of international partnership for zoonoses control in South-East Asia Region
- WHO/SEARO
 - FAO/RAP
 - OIE Regional Representation
- 17:00-17:30 Donors' perspective on zoonoses control activities in South-East Asia
- 17.30-18.00 Identification of priority areas and potential donors and partners

Thursday, 8 November 2007

Agenda VIII: Presentation of group work

- 8:30-10:00 Group work presentation
 Partners' meeting presentation
- 10:00-10:45 Drafting group to develop recommendations

Agenda IX: Conclusions and recommendations

- 10:45-11:30 Conclusions and recommendations

Agenda X: Closing session

- 11:30-12:00 Remarks by participants' representatives: WHO, FAO, OIE
 Closing remarks by Chairperson

Annex 2

List of participants

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