

SEA-CD-166
Distribution: General

Cross-border Collaboration on Emerging Infectious Diseases

*Report of the Bi-regional Meeting
Bangkok, 26-28 February 2007*

WHO Project: ICP CSR 001



**World Health
Organization**

**Regional Office for South-East Asia
New Delhi, September 2007**

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Contents

	<i>Page</i>
Acronyms used	v
1. Introduction	1
2. Bi-regional cross-border meeting.....	2
2.1 Inaugural session	3
2.2 Technical sessions.....	5
2.3 Country presentations.....	16
2.4 Conclusion and recommendations.....	44
2.5 Closing session.....	46

Annexes

1. Programme	48
2. List of participants.....	52

Acronyms used

ACMECS	Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy
ADB	Asian Development Bank
AEFI	adverse events following immunization
AFP	acute flaccid paralysis
AI	avian influenza
AQSIQ	administration of quality supervision, inspection and quarantine
APEC	Asia-Pacific Economic Community
APHO	Airport Health Organization
APSED	Asia-Pacific Strategy for Emerging Diseases
ASEAN	Association of South-East Asian Nations
AUSAID	Australian Agency for International Development
BAAM	Border Action Against Microbes
BBIN	Bangladesh Bhutan, India and Nepal Project
BSL	bio safety level
CDC	Centres for Disease Control
CSF	classical swine fever
CSR	Communicable Diseases Surveillance and Response
DAH	Department of Animal Health
DFID	Development Fund for International Development
DLS	Department of Livestock Services
DOC	day old chicks
DOTS	Directly Observed Treatment Service
DUNS	diseases under national surveillance
EID	emerging infectious diseases
FAO	Food and Agriculture Organization of the United Nations
FMD	foot-and-mouth-disease
GFATM	Global Fund for AIDS, Tuberculosis and Malaria
GF-TADs	Global Framework for Transboundary Animal Diseases
GOARN	Global Outbreak Alert and Response Network
HPAI	Highly Pathogenic Avian Influenza
HQ	Headquarters
HSADL	High Security Animal Disease Laboratory
ICRC	International Committee for Red Cross

IEC	Information Education and Communication
IEIP	International Emerging Infection Programme
IHR	International Health Regulations
IOM	International Organization of Migration
ITN	insecticide treated net
JE	Japanese encephalitis
JICA	Japan International Cooperation Agency
LBVD	Livestock Breeding and Veterinary Department
MBDS	Mekong Basin Disease Surveillance
MDR	multi-drug resistance
MFAg	Ministry of Food and Agriculture
MoPH	Ministry of Public Health
MoU	memorandum of understanding
MSF	Medicine Sans Frontiers
NDSP	National Disease Surveillance System
NFP	National IHR Focal Point
NGO	nongovernment organization
NICD	National Institute of Communicable Diseases
NISP	National Diseases Surveillance System
OFFLU	OIE/FAO Network on Avian Influenza
OIE	Organization Internationale des Epizooties
PHEIC	public health emergency of international concern
PI	pandemic influenza
PHO	Port Health Organization
PPR	peste des petits ruminants
PRC	People's Republic of China
RCU	Regional Coordinating Unit
RD	Regional Director
RGoB	Royal Government of Bhutan
RRT	Rapid Response Team
SAARC	South Asian Association for Regional Cooperation
SARS	Severe Acute Respiratory Syndrome
SEARO	WHO Regional Office for South-East Asia
SoP	Standard Operating Procedure
SPS	sanitary and phytosanitary measures
SRRT	Surveillance and Rapid Response Team

TB	tuberculosis
TADs	Transboundary Animal Diseases
UN	United Nations
USAID	United States Agency for International Development
US CDC	United States Centres for Disease Control and Prevention
UNSIC	United Nations System Influenza Coordination
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
VHV	Village Health Volunteer
WB	World Bank
WHO	World Health Organization
WPRO	WHO Regional Office for the Western Pacific
WRL	World Reference Laboratory
WTO	World Trade Organization

1. Introduction

Many countries of the Asia-Pacific Region have already witnessed outbreaks of avian influenza and SARS. These diseases may be local in origin but they can pose an imminent and ongoing global threat if not controlled at the source of origin. Informal and illegal movement of people and live animals, cross-border trade of livestock, livestock products and wild animals have been responsible for introduction of emerging and re-emerging diseases and infections.

There are a number of mega cities in the Asia-Pacific Region and the movement of people among countries of the Region is so intense due to the both heavy and well connected air, sea and road transport network. These conditions facilitate the rapid spread of infectious diseases if surveillance and response systems are weakened. Therefore, it is necessary to strengthen the public health infrastructure and system in such a way that communicable diseases do not spread beyond the borders of the country where it originated. The Asia-Pacific Strategy for Emerging Diseases (APSED) provides the impetus and guidance for countries and areas to strengthen their capacities for effective preparedness and for prompt detection and rapid response to diseases necessary to protect national, regional and international public health security.

There have been several multilateral and regional meetings on avian influenza but little has been done on bilateral issues such as border health planning and management. An initiative has been taken to plan border health cooperation for emergency preparedness and response which will result in developing consensus among participating countries for successful introduction of the health information exchange mechanism. A bi-regional cross-border meeting on Emerging Infectious Diseases was organized by the World Health Organization (WHO) in Bangkok from 26-28 February 2007 to review the status of cross-border disease control activities and develop a strategic framework for cross-border collaboration. The meeting provided a platform to discuss the development of core capacities for the implementation of International Health Regulations (IHR-2005).

The meeting was attended by 44 participants from 12 countries of the Asia-Pacific Region and representatives of Food and Agriculture Organization of the United Nations (FAO), Office Internationale des Epizooties (OIE), Asian Development Bank (ADB), United Nations System Influenza Coordination (UNSIC), International Organization of Migration (IOM), United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), Development Fund for International Development (DFID), Centres for Disease Control (CDC) and other nongovernmental organizations. The meeting reviewed current situation of cross-border movement of people and animals and the trade in livestock through country paper presentations. Past experience of cross-border collaboration was shared among participants and the strategic framework for such collaboration discussed in detail. Group discussions were held on border health collaboration, surveillance and response mechanism and multi-sectoral collaboration for border health management. The meeting came up with recommendations for strengthening border health management at local and inter-country levels.

Objectives

The general objective was to develop a framework for cross-border collaboration on emerging infectious diseases.

The specific objectives of the bi-regional meeting were to:

- (1) Review the current situation of cross-border movement of people and animals, and of livestock trade and share past experience of border collaboration for disease control;
- (2) Discuss a framework of cross-border collaboration and propose a strategy to further strengthen collaboration for emerging infectious disease control, and
- (3) Formulate basic principles of IHR implementation related to cross-border collaboration for surveillance, prevention and control of emerging infectious diseases.

2. Bi-regional cross-border meeting

The meeting consisted of the inaugural, technical and closing sessions. At the inaugural session the opening remarks were issued jointly by Dr Samlee

Plianbangchang, Regional Director for WHO's South-East Asia (SEA) Region and Dr Shigeru Omi, Regional Director for the Western Pacific (WP) Region. The Permanent Secretary with the Ministry of Public Health of the Royal Government of Thailand also spoke at the inaugural session.

2.1 Inaugural session

The acting World Health Organization (WHO) Representative in Thailand, Dr Maureen Birmingham, read the opening address on behalf of the Regional Directors (RD) of WHO's South East Asia and the Western Pacific (SEARO and WPRO) Regions. The RDs welcomed the participants and stressed the importance of the meeting given the demonstrated vulnerability of countries in the Asia-Pacific Region to emerging and re-emerging diseases such as SARS, avian influenza, Nipah virus, dengue fever and chikungunya fever. Both the Regional Directors emphasized the importance of preparedness to mitigate the risks and respond to outbreaks of emerging diseases. Such preparedness would include systems of early detection and response.

The new International Health Regulations (2005), called the IHR (2005), are now adopted by all Member States and will enter into force in June 2007. IHR (2005) provide a legal framework for preventing, protecting and responding to the international spread of disease while minimising avoidable interference with international traffic and trade. Every country must ensure the necessary core capacities of surveillance, laboratory support, alert and response mechanisms, reporting mechanisms and communication flow. One sector alone cannot fulfil all the IHR obligations, multi-sectoral collaboration is, therefore, necessary. Since infectious diseases know no international frontiers, border health management is crucial, particularly in view of the growth in volume of international travel and trade. The Regional Offices of South-East Asia and Western Pacific have jointly formulated the Asia-Pacific Strategy on Emerging Diseases (APSED) to reduce the threat from emerging diseases in the Asia-Pacific Region, which is home to more than half of the world's population.

Achieving the objectives of this meeting will herald a significance step towards enhancing national capacities to manage emerging diseases. Strengthening of existing systems and developing good linkages will help ensure a consistent and coordinated approach to deal with any emergency

of public health concern, and to safeguard the health and well-being of the populations in the Asia-Pacific Region. At the same time, in the context of the new International Health Regulations (2005), such efforts will help safeguard international public health security better.

Dr Kumnuan Ungchusak, Director of Bureau of Epidemiology, delivered the opening remarks on behalf of the Permanent Secretary of the Ministry of Public Health (MoPH) of Thailand. He warmly welcomed all participants to the meeting and to Thailand. He also lauded the initiative of the World Health Organization in organizing the meeting on cross-border collaboration in line with IHR (2005) since it addresses the needs of countries of the Asia-Pacific Region that share common land borders.

The MoPH is strongly committed to reducing the threat of emerging diseases and collaborating with other countries to ensure effective border management of infectious diseases. Over the past three years, Thailand, like many neighbouring countries, faced outbreaks of avian influenza in birds and humans which had a substantial socio-economic impact. Realizing the importance of preparedness, Thailand developed strategic plans with components of surveillance and response, clinical management, laboratory support, health education and communication. Thailand has also conducted numerous table-top exercises at the provincial level to test their plans.

The MoPH has established surveillance and rapid response teams at the national, provincial and district levels. Moreover, Thailand mobilized over 800 000 village health volunteers (VHVs), who provide an effective link between the health sector and community for detection and notification of public health risks, risk communications and health education. Thailand has learned many important lessons: to avoid complacency, to maintain public confidence through regular, timely and transparent public information, to ensure multi-sectoral collaboration and community involvement, and to strengthen ongoing collaboration with neighbouring countries.

Dr Khanchit Limpakarnjanarat, Regional Adviser for Communicable Diseases – Surveillance and Response (CSR) in the Regional Office, outlined the objectives of the meeting. He provided a brief review of various working papers and presentations that were to be discussed and made available to participants (Programme listed in Annex 1). Dr Takesi Kasai,

Regional Adviser for CSR in the Western Pacific Region chaired the session for introducing the participants and nominating the chair, co-chair and rapporteurs. The list of participants is provided in Annex 2.

2.2 Technical sessions

The technical sessions at the meeting focussed on three themes: Surveillance of and response to priority communicable diseases, cross-border collaboration and implementation of IHR (2005).

Communicable diseases and cross-border collaboration

A summary of communicable diseases in the global context and the socio-economic impact of communicable diseases was presented at the technical session. IHR (2005) and the issues and challenges related to border health management and collaboration were also discussed. Globalization and the rapid modernization of trade and transport as well as the porousness of borders has contributed to the rapid spread of communicable diseases, some of which have major socio-economic and public health implications. An estimated one billion people move back and forth across national borders every year reflecting the global and transcontinental dimension of health. Major challenges to health security include cross-border migration in search of employment and refuge as well as the flight of qualified health professionals from developing to industrialized countries. The geographical distribution of priority communicable diseases of major public health and/or socio-economic importance in the Region was illustrated. These include avian influenza, dengue, kala-azar, malaria, Nipah virus, and Japanese encephalitis. The heavy socio-economic and public health burden of human immunodeficiency virus (HIV), tuberculosis (TB) and malaria was highlighted. A historic perspective on multilateral cooperation for communicable disease control and health regulations was presented. It covered the gamut from the earliest agreements in Europe during the medieval cholera epidemics, the first International Sanitary Conference in 1851 that was followed by 10 such conferences in the 19th Century, the 1905 Inter-American Sanitary Convention, and the establishment of the Office Internationale des Epizooties (OIE) in Paris to control rinderpest. The factors influencing the spread of communicable diseases were elaborated. It was agreed in conclusion that in view of the challenges globalization posed a policy for infectious diseases requires responses at the government level.

Cross-border collaboration for disease control and lessons learnt

The importance of cross-border collaboration was highlighted. WHO has prioritized three issues, namely Recognition of health problems, Commitment of all individuals and key players in cross-border areas, and Coherent policies for diagnosis and control. Lessons learnt from the Bangladesh, Bhutan, India and Nepal (BBIN) Project for cross-border collaboration were discussed in detail. The goal of the project was to institutionalize collaborative mechanisms among 11 border districts in Bangladesh, Bhutan, India and Nepal to maximize disease control activities on four priority communicable diseases (HIV/AIDS, TB, malaria and kala-azar). Community-based HIV/AIDS activities among migrants as well as the Mekong Basin Disease Surveillance (MBDS) Cross-border Project were cited as examples. Despite many cross-border meetings organized by WHO, the follow-up action was not in adequate measure. In other instances, joint strategies, action plans, and pilot projects were developed for cross-border collaboration on priority communicable diseases but the success achieved was short-lived. Cross-border collaboration has been identified as a major priority requiring urgent responses at the regional, national, and most importantly, local levels. Cross-border collaboration needs to be institutionalized and action initiated at the local level. The paradigm of cross-border control of communicable diseases needs an integrated, collaborative and coordinated approach. Regular cross-border meetings, development of joint strategies and programmes, monitoring and evaluation of activities, establishment of referral mechanisms for treatment, and effective communication systems are vital for border health management. Collaboration with regional associations such as Association of South-East Asian Nations (ASEAN) and South-Asian Association for Regional Cooperation (SAARC) is crucial to ensure the sustainability of cross-border activities. All relevant resources, including local nongovernmental organizations (NGOs) and the community, need to be fully mobilized and involved. NGOs have an important role to play in the border areas, particularly in conflict zones.

Cross-border movement/trade and outbreaks of zoonotic diseases

A summary of emerging zoonotic diseases (e.g. Severe Acute Respiratory Syndrome (SARS), Highly Pathogenic Avian Influenza (HPAI), Nipah virus infection, bovine spongiform encephalopathy, Rift Valley fever, Ebola virus infection, West Nile fever, monkey pox) and transboundary animal diseases such as foot and mouth disease was presented. Determining factors of

emerging/transboundary diseases such as globalization that result in an increase in both speed and volume of international travel and trade, and the expansion of susceptible human populations into new areas were elucidated. Other factors responsible for the spread of transboundary animal diseases include environmental changes, industrialization, and alterations in farming patterns, restructuring of consumerism, microbiological adaptation, and improvement in diagnostic capability. The socio-economic impacts of transboundary/emerging diseases are multiple and include loss in animal productivity, other economic losses, threats to human health or food safety, loss of trading opportunities, increased uncertainty about stable production management and socio-economic destabilization. Emerging diseases, especially zoonoses, are best controlled at the source but rapid detection and response to achieve this is limited by existing deficiencies in the veterinary infrastructure of many countries.

The objectives and function of OIE was elaborated. An inter-governmental organization, it was founded in 1924 and currently comprises 167 Member States. Headquartered in Paris, it has five Regional Representatives. The objectives and functions of OIE are six-fold: (1) Ensure transparency in the global animal disease situation; (2) Collect, analyse and disseminate scientific veterinary information; (3) Contribute expertise and encourage international solidarity in the control of animal diseases; (4) Under its mandate with the World Trade Organization's (WTO) Sanitary and Phytosanitary (SPS) agreement, safeguard world trade by publishing health standards for international trade in animals and animal products; (5) Improve the legal framework and resources of National Veterinary Services, and (6) Provide a better guarantee of the safety of food of animal origin and to promote animal welfare through a science-based approach. The SPS Agreement provides the legal framework for the application of OIE standards, guidelines and recommendations for the international trade in animals and animal products. The SPS Agreement also encourages WTO Members to harmonize their sanitary measures in tandem with international standards, guidelines and recommendations. If a country decides it needs a level of protection higher than that provided by the international standard, then a health measure must be based on a risk analysis with proper scientific justification. Settlement of disputes with regard to trade of animals or animal products is done in accordance with WTO procedures or with the mediation of OIE. While OIE is the organization setting standards for animal health and zoonoses, the Codex Alimentarius Commission sets the food safety standards and the International Plant Protection Convention sets

the benchmarks for plant health. The concept of the OIE Animal Health Code requirements for international trade were also discussed threadbare.

Since HPAI is affecting many countries of the Asia-Pacific Region, the OIE/Japan Special Trust Fund has a special programme for the control of avian influenza. It has four components: (1) To encourage improvement of regional and national HPAI control strategies; (2) To encourage HPAI information sharing to further strengthen regional early warning systems; (3) To strengthen laboratory diagnostic capacity, and (4) To provide training for field veterinarians and para-professionals on HPAI strategic surveillance.

There is a regional mechanism for control of Transboundary Animal Diseases (TADs) under the FAO/OIE initiative. The Global Framework for Progressive Control of TADs (GF-TADs) is a forum for regional alliance and partnerships, capacity-building and support to the national project formulation. The targeted diseases in South-East Asia include foot and mouth disease (FMD), avian influenza (AI), classical swine fever (CSF) and in South-Asia they are FMD, AI, and peste des petits ruminants (PPR).

OIE's preparedness for emerging (zoonotic) diseases involves 12 components. Transparent and timely notification of animal disease occurrences and animal health information by a country and strengthening linkages and collaboration between animal health and public health authorities are keys to reduce public health risks of zoonoses.

Current status of avian influenza and importance of cross-border collaboration

The HPAI situation was reviewed with particular emphasis on the Asia-Pacific Region. There is an improvement in the HPAI situation in comparison with 2004 in terms of fewer outbreaks, better preparedness, greater awareness and strengthened capacity for rapid response and containment. Nevertheless, the HPAI virus still circulates in some countries with recurrence and reintroductions reported in others. Trade of live birds (chickens, ducks, quails, fighting cocks, migratory birds) and poultry products (eggs, meat) are the main sources of transmission.

Control of HPAI in some countries is complicated by shifts in poultry production systems, production bans, movement of vehicles and equipment (crates, egg trays), and illegal trade in medicines/biologicals including the illegal importation of HPAI vaccines. There have been

attempts/agreements to manage cross-border trade at bilateral and international levels, but other factors facilitate trade and increase the challenges in managing risks. These factors include modern technology (with better packaging allowing trade access longer distances), new travel and trade routes as well as conflict and civil unrest which tend to result in increased smuggling and difficulties in the enforcement of quarantine at borders, or inaccessible frontiers. The insufficient capacity of animal health services in many countries to ensure quarantine or border control also plays a role, along with privatization, deregulation and/or decentralization of animal health services. The complex situation of poultry trading practices along the 4000 km long Mekong River that forms parts of the international frontiers of many countries was illustrated. It was stressed that cross-border 'management' and not of 'control' was the key issue.

To minimize the risk of the spread of HPAI, there is a continuing need to manage cross-border trade including the establishment of international standards, bilateral and regional agreements, regional frameworks, harmonization, capacity building in quarantine and animal movement management, short-term training, logistical support, and transparent exchange of information. However, short-term training without logistical support does not work. In the long term, capacity must be built at the field level and veterinary education must include aspects of transboundary disease control. The number of trained animal health personnel inadequate in many countries needs to be bolstered. Transparency in information exchange can only be achieved in an environment of sincerity and trust.

Overview of the International Health Regulations (2005)

New obligations and opportunities emerge with the newly revised International Health Regulations (2005) that were adopted by the World Health Assembly in May 2005. The IHR (2005) are the legally binding international instrument for preventing the spread of disease internationally without unnecessarily interfering with global traffic and trade. The adoption of these modern Regulations reflects the international commitment for shared responsibilities and collective actions to protect global public health.

The scope of the IHR (2005) is very broad, addressing all significant public health risks and threats and in particular any event that may contribute to a public health emergency of international concern (PHEIC). The Regulations set out many obligations concerning the outbreak of disease and/or event such as their early notification, verification, assessment

and public health response. Most importantly, the country core capacity requirements for surveillance and response as well as for designated airports, ports and ground crossings have been included within the purview of the new regulations. While it is challenging for most developing countries to meet these requirements within the timeframe defined under the IHR (2005), they provide unique new opportunities for Member States to further secure political commitments and domestic and external resources to strengthen basic public health surveillance and response systems and to enhance international collaboration.

Each Member State is also required to establish a functional National IHR Focal Point (NFP). Clear NFP standard operating procedures (SOPs) for communication with WHO and other government sectors should be put in place to support the legally required functions and other expected tasks under the IHR (2005).

Cross-border collaboration in the context of implementation of IHR (2005)

The background on the revision of IHR (2005), major changes and cross-cutting principles to implement the Regulations were highlighted. There is a need to define the scope of cross-border collaboration in this context. There is a strong synergy between cross-border collaboration and IHR (2005), such as surveillance information sharing. The new Regulations provide fresh opportunities and a new framework for Member States to collaborate with each other, including on cross-border issues. While IHR (2005) focus more on a global perspective with a global vision, they need to be flexible enough to allow local collaboration. They set out rules for certain activities between any two countries. Cross-border collaboration can include an agreement on specific actions for local issues, but these must be consistent with IHR (2005).

The nature of collaboration will depend on issues to be addressed, existing agreements, targeted infrastructures (e.g. border crossings), surveillance information exchange, application of specific measures at borders, sharing expertise and so on. The relevance and impact of IHR depends largely on the nature of the collaboration. IHR (2005) recognises and encourages cross-border collaboration but are not a blueprint for the same. Possible relevant areas for collaboration may include surveillance and response capacity-building, capacity at jointly designated ground crossings,

certificate of vaccination, vector control, inspection and examination of people, goods and animals, changes in health measures and additional measures, etc. The costs need to be factored in decision-making against the benefits accrued from cross-border collaboration (e.g. common local threats and risks, local traffic). In accordance with some provisions of the IHR (2005), cross-border agreements are encouraged in areas of direct and rapid exchange of public health information such as the health measures to be applied to international traffic, health measures to be applied at common frontiers, arrangements for the transportation of affected persons or human remains as well as provisions for deratting, disinsection, disinfection and decontamination. While there is no mandate for cross-border collaboration under the IHR (2005), regarding collaboration in surveillance and control activities, the Regulations effectively provide an opportunity for enhancing the same.

IHR (2005) has relevance to cross-border collaboration in as much that it both encourages such activity and provides certain obligations with regard to relevant activities. Collaboration between States is mandated by the Regulations. IHR (2005) do not limit the content of such collaboration but provide some directions of relevance.

Asia-Pacific strategy for emerging diseases and its workplan

Since infections and diseases do not respect geographical and political boundaries and countries of the Asia-Pacific Region share common borders and disease burdens, a bi-regional strategy called the Asia-Pacific Strategy for Emerging Diseases (APSED) has been developed and endorsed by the Regional Committee of WHO's South-East Asia and Western Pacific Regions in September 2005 to help Member States to fulfil many IHR core capacity development obligations.

APSED is a strategic framework for the countries and areas of the Asia-Pacific Region to strengthen country core capacities for effective preparedness planning, prevention, prompt detection, characterization, containment, and control of *emerging infectious diseases*. The five interrelated objectives are to:

- (1) Reduce the risk of emerging diseases.
- (2) Strengthen early detection of outbreaks of emerging diseases.
- (3) Strengthen early response to emerging diseases.

- (4) Strengthen preparedness for emerging disease.
- (5) Develop sustainable technical collaboration within the Asia-Pacific Region.

Despite the diversity in capacity, the APSED has been developed with a view to accommodate the needs of all the countries in the Region both developed and developing. It should also be used to provide a framework for cross-border collaboration in national and local capacity building. The foundation of cross-border collaboration does not lie in joint activities alone.

WHO has now developed its five-year APSED workplan as a tool to implement the strategy. It identifies a minimum set of activities from the APSED to support Member States in developing and strengthening their core capacities required under the IHR (2005). It also ensures urgent and effective implementation of activities required for pandemic influenza preparedness. The recent outbreaks of emerging infectious diseases in the Region clearly demonstrate the need to shift from the reactive approach to a more proactive approach. Any cross-border collaboration should be in line with these efforts towards long-term capacity building.

The APSED workplan adopted a step-wise approach to achieve the minimum core capacity requirements by 2010. Five programme areas of work identified under the workplan include surveillance and response, laboratory, zoonoses, infection control and risk communication. WHO is in the process of developing APSED baseline data collection checklists as the core capacity assessment tool to identify gaps in capacity development at the country level. Once gaps are identified, countries will need to develop their APSED/IHR workplan to fill these gaps and ensure that the minimum capacities are in place and functional by 2010. The animal-human interface of zoonosis was cited as an example of the basic steps for strengthening possible cross-border collaboration.

There was a need to develop a framework for the control of emerging and infectious disease. The APSED in this context can serve as a strategic framework for cross-border collaboration. The APSED implementation plan provides a standard approach and mechanism to discuss and share information and identify role and responsibility. In other words, the APSED workplan serves as an implementation plan for IHR/APSED.

Strategic Framework of Cross-Border Collaboration

The presentation covered three main areas: (i) Cross-border movement of people, trade and health situation; (ii) Past experiences of cross-border collaboration, and (iii) strategic framework of cross-border collaboration and strategies.

There are three groups of people involved in cross-border migration. They are migrant workers, refugees and traders. In Asia there is an overall increase in the number of migrants in 2005 as compared to 2000. These migrant workers are sometimes carriers or repositories of many diseases such as diarrhoea, AIDS, measles, TB, dengue fever, leptospirosis, viral encephalitis, cholera, leprosy, conjunctivitis etc. The incidence of diseases was high but the same was not covered by the national surveillance system. Refugees, the second group, reside in camps and acquire many diseases such as respiratory and skin infections, malnutrition, malaria etc which are usually not reflected in national data. Not much is known about the health status of traders, whose numbers are increasing as the volume of trade between Thailand and its neighbours Myanmar, Cambodia and Lao PDR. Most of this trade is illegal and there is inadequate local capacity to regulate it.

Past experiences with cross-border collaboration on disease control, health management, and mechanism of disease surveillance at the local, provincial, regional and national levels were shared. Two such instances of collaboration, the Mekong Basin Disease Surveillance (MBDS) and ASEAN Disease Surveillance Net, were cited.

Some strategies for improving cross-border collaboration based on past experiences were presented. The role of WHO and other international organizations in promoting cross-border activities were highlighted.

Presentations on cross-border activities

There are a variety of examples of direct and indirect activities that involve cross-border collaboration. Levels of involvement could range from international, bilateral or multilateral and could also involve donor agencies with different objectives.

Mekong Basin Disease Surveillance (MBDS) Project

A detailed presentation on the background, project activity, information exchange mechanism, and the challenges and achievements of MBDS project were made. The project was initiated by the Ministries of Health of Cambodia, the People's Republic of China, Lao PDR, Myanmar, Thailand and Viet Nam. The Memorandum of Understanding was signed by the Health Ministers of the six countries in 2001 in Kunming, China. The goals are namely, to strengthen sub-regional disease surveillance and information exchange; to strengthen human resource development in field epidemiology; to establish sustainable national capacity in disease surveillance, outbreak investigation and response; to provide information for health and social policy to reduce the burden arising from priority diseases; and to establish partnerships with other existing cooperating organizations. The schedule of exchange and contact for the project year 2007 is still being finalised.

International Emerging Infections Programme (IEIP)

The background and guiding principles of International Emerging Infection Programme (IEIP) collaboration between Thailand's Ministry of Public Health and the US Centres for Disease Control and Prevention (US CDC) was highlighted. Planned IEIP programmes, among others, include international collaboration with US CDC in Egypt, China and Guatemala in 2007. The pillars of the IEIP are: Surveillance and research, outbreak response, laboratory and training. Surveillance activities in Thailand, rapid response to avian and pandemic influenza, and training of trainers workshops were among other examples of activities conducted under the programme. Experience showed that there are many opportunities for collaboration and IEIP support to cross-border activities and programmes.

Asian Development Bank

An overview of functions of the Asian Development Bank (ADB), principles underlying ADB support, partnership, strategy and diversity were presented with particular emphasis on the project for the prevention and control of Avian Influenza in Asia-Pacific Region. ADB support to Member countries is through technical agencies such as WHO, OIE. There are three components of ADB influenza projects namely: (i) Regional capacity building, through implementing partners and regional organizations; (ii) regional coordination and cross-border issues involving strengthening

networks and exchange of information, and (iii) Avian Influenza Emergency Fund. Some current support for WHO include feasibility study on strengthening pandemic vaccine manufacturing and delivery in Asia; support for health systems strengthening strategies through IHR (2005) and APSED and regional capacity -building workshops and meetings.

Mekong Malaria Programme

The challenges faced by the Mekong Malaria Programme in the context of cross-border health management in six countries in the Mekong Basin were highlighted. National achievements through regional goals cannot be achieved if other members of the Region are not doing well. The Mekong River 'end-users' need access and use of harmonized quality diagnosis, prevention and IEC material in different languages. All six countries sharing the Mekong Basin have six different policies for malaria. Only Cambodia, Lao PDR and Myanmar comply with the WHO guidelines for the treatment of malaria. To address the issue of multi-drug resistance (MDR) there is the need for concerted efforts with harmonized methodology, comparison of data and inter-laboratory checks to document MDR, and to develop harmonized strategies and policies based on documented best practices.

Borderless Action Against Microbes

Borderless Action Against Microbes (BAAM) is a part of the Greater Mekong Sub-Regional Infectious Diseases Programme of the Kenan Institute Asia under USAID funding. The highlights of the programme were discussed at the meeting. It is a strategic approach to support joint action programmes on communicable disease control along cross-border areas. The infectious disease surveillance and response activities carried out in Thailand, Lao PDR and Cambodia were elaborated. The programme sites consist of 15 provinces in Thailand, four in Lao PDR and three in Cambodia. The programme includes harmonized surveillance, investigation and response, bolstering border checkpoint and laboratories and capacity building of health professionals in the border districts.

International Field Epidemiology Training Programme (FETP)

An overview of the international FETP Training Programme in Thailand was presented. The joint investigation in February 2007 of a suspected human case of avian influenza on the Thailand-Lao PDR border was illustrated as an excellent example of joint surveillance and response activity across borders. A two-year training programme is designed to provide practical

knowledge and experience to medical and veterinary doctors. Although International FETP was started in 1998 and is a non-academic programme, it has gained considerable popularity in South-East Asia.

2.3 Country presentations

The People's Republic of Bangladesh

Bangladesh is a densely populated country with a population of about 140 million people. The contribution of the livestock sub-sector to its agricultural GDP is 16.42% and it has been growing continuously from 2.4% in 1993 to 4.38 in 2003-2004. Cattle, buffalo, goat, sheep, chicken and ducks are raised and traded.

Bangladesh shares more than 4000 km of land border with India and Myanmar. It has three airports, eight ground cross-over points (seven with India and one with Myanmar) and seaports. About 1.2 million people cross the borders annually.

Major TADs like FMD, PPR, Newcastle Disease and zoonotic diseases such as rabies, salmonellosis, brucellosis and bovine TB have an impact on cross-border movement and trade.

Existing public health and animal health Acts are outdated and there is a need to develop a new and comprehensive Public Health Act in line with IHR (2005) and an Animal Health Act to accommodate sanitary and phytosanitary (SPS) requirements.

Cross-border meetings have been held with neighbouring countries under the framework of sub-regional cooperation for prevention and control of epidemic-prone and transboundary animal diseases. Cross-border collaboration exists between Bangladesh, India and Nepal for kala-azar control. A Bangladesh-Myanmar cross-border meeting for TAD control was held recently.

The National IHR Focal Point has been designated. The government plans to strengthen border health screening system and use GIS software for disease-mapping and to strengthen the National Disease Surveillance System (NDSP) for disease surveillance. Strengthening of border health screening systems has been planned at all ports of entry.

In recent years, the development of a link between veterinary services and public health is discernible. National Avian and Pandemic Influenza Preparedness Plan was approved in 2006. A basic epidemiology unit has been established at the Department of Livestock Services (DLS) and targeted surveillance in selected areas has been contracted to NGOs under the supervision of the DLS. The government is negotiating with the World Bank for an AI Control Project in Bangladesh which will cover capacity building for laboratories, surveillance, risk communication, outbreak management and compensation for culling.

There is a need for enhancing intersectoral collaboration between animal health and public health for zoonoses and food safety activities. Future plans include development of national strategies and guidelines for implementation of IHR (2005), and assessment of core capacities and capacity building for implementation of NIPPP. There is a need to develop national strategies and guidelines for combating emerging and re-emerging diseases including AI, SARS, Nipah virus, etc. At the same time, priority is being given to strengthen contacts with neighbouring countries in the Region to combat epidemic-prone diseases of public health significance and transboundary animal diseases.

The Kingdom of Bhutan

The Kingdom of Bhutan is a landlocked country with China in the north and India in its south, east and west. It has a total area of 47 000 sq. km. and a population of 672 425. The country is divided into 20 administrative districts. There is an international airport in Paro. There are four major entry points on the border with India. About 5000 to 8000 people cross the border with India at Phuntsholing daily. A total of 27 289 foreigners visited Bhutan during 2006.

Live animals are imported for slaughter and breeding purposes. Cattle, pigs, goats and poultry are imported from India. Animals and poultry are slaughtered for their meat in the border towns. Among livestock products, egg is a major import item followed by meat and fish.

Cross-border movement of live animals is a potential source for the introduction of transboundary animal diseases such as FMD, AI and swine fever. The spread of diseases can be minimized by restricting the slaughter of animals in the border districts.

Livestock Act, Plant Quarantine Act, Seed Act, Forestry and Nature Conservation Act, Food Act and Custom Act are important Acts for regulating cross-border trade and animal movement. Human quarantine occurs as per the executive orders.

Bhutan has been actively participating in cross-border meetings organized for control of AIDS, TB and vector-borne diseases under sub-regional cooperation. Such meetings have been organized in Darjeeling (1995), Kathmandu (2000), Delhi (2001), Phutsholing (2001) and Paro (2002).

IHR (2005) has been endorsed by the Royal Government of Bhutan. National IHR Focal Point has been established and notified to WHO Contact Points. Bhutan is committed to voluntary compliance of IHR (2005) due to potential AI/PI risk. A National Influenza Pandemic Preparedness Plan is in place and emergency stockpiling of antivirals has been maintained. Public health and veterinary personnel have been trained in outbreak investigation, laboratory diagnosis, rapid response and containment.

An assessment of core capacity requirements for implementation of IHR (2005) was conducted in December 2006 with the technical support of the SEA Regional Office and gaps have been identified. A sensitization workshop on IHR (2005) was organized with the participation of relevant stakeholders at the national level. A consultative meeting with stakeholders was also conducted to assist the development of an IHR (2005) action plan and it has been included in the Tenth Five Year Plan.

Recent outbreaks of SARS and HPAI should be treated as lessons for epidemic preparedness in the future. Strong coordination and collaboration among concerned agencies, information sharing, responsible ownership and multi-sectoral approaches are key to successful preparedness and response.

Fulfilment of minimum core capacities required under IHR (2005) within the given time period will be a challenging task. International support will be needed, particularly for capacity building, i.e. infrastructure and human resources. It will be necessary to develop a strong cross-border information sharing system as well as official linkage with the concerned authorities of neighbouring countries.

The Kingdom of Cambodia

The Kingdom of Cambodia shares land borders with Thailand, Lao PDR and Viet Nam. It has two international airports (Phnom Penh and Siem Reap), one international seaport, six border checkpoints and 15 border checkposts. The number of persons screened at the border points was approximately 134 955, of which the majority made the crossing by land. The number of health information pamphlets distributed at these points of entry has almost doubled from 340 829 in 2003 to 650 022 in 2006.

Viet Nam and Thailand are Cambodia's major trading partners. Cattle and buffaloes are the main livestock exports. Around 28 517 heads of cattle were exported in 2005-2006, mainly to Viet Nam. Disease outbreaks have had a significant impact on cross-border trade.

There were a number of government decrees issued for the regulation of cross-border movement and trade. There is a legal provision for regulation of custom clearance procedures. Customs and Excise Department (CED) has been designated as a single leading agency for the clearance of goods based on risk management and only goods identified as high-risk are physically examined. The Interagency Coordination Group has been established to facilitate intersectoral cooperation.

Sub-decree 16 dated 13 March 2003 has been issued for animal and animal product inspection. These activities are designed to prevent the spread of animal-infected diseases both within the territory and to other countries and to protect animal life or health of animals within the country from risks arising from the spread of disease and disease-carrying organisms.

Sub-decree 67 of 22 October 1997 deals with health screening/control for persons entering and leaving the country by aircraft, boat, train, car and other modes of conveyance, and during epidemics in particular. The sub-decree specifies arrangements for carrying infected human remains and stipulates the rules regarding the issuance of deratting, disinsection, disinfection and decontamination certificates. It also provides directives on international cooperation for control of epidemics as specified in IHR (2005).

Sub-decree 15, dealing with phytosanitary inspection, dated 13 March 2003 deals with the introduction of quarantine and preventing the entry of dangerous pests into the territory and the spread of pests from one part of

the territory to another within the country or to other countries by any means of transportation in order to protect agricultural production and biodiversity. It also aims to conduct phytosanitary inspection and treatment on means of transport and plant quarantine materials in storage points, factories and agricultural production areas.

Cross-border collaboration with neighbours Thailand, Viet Nam and Lao PDR exists and bilateral agreements have been signed with them. Similarly, trilateral agreements exist between Cambodia, Lao PDR and Viet Nam. Cambodia is also part of the MBDS programme.

A number of activities have been initiated as a part of advocacy programmes and the development of core capacities for the implementation of IHR (2005). Advocacy workshops have been organized at central and regional levels and IHR (2005) document has been distributed to all government institutions. Changes have been made to the "Alert Report" to incorporate new diseases, including acute lower respiratory tract infection (LRTI) and clusters of unknown diseases. Cambodia is participating in a number of regional and multilateral projects designed to expand cross-border collaboration and strengthen epidemiological surveillance and emergency preparedness programmes for AI and EIDs.

The participation of relevant stakeholders in cross-border meetings is vital for effective border health collaboration. ADB has initiated single stop/window along the ASEAN road Highway which may have a bigger impact in reducing disease risks. Screening of passengers who lived in or have passed through affected areas or had contact with a SARS patient at international checkpoints is crucial for prevention and control during a SARS outbreak.

International support for national surveillance and response systems development is vital for emergency preparedness. Long-term investment in surveillance systems development and short-term interest in response will be crucial for national capacity development. Lack of cooperation and understanding between agencies and absence of a monitoring mechanism at illegal border crossing points are major obstacles for cross-border collaboration at the local level.

The People's Republic of China

There are 110 seaports in 11 provinces, 46 airports in 29 provinces and 58 ground crossing border points in nine provinces. The health quarantine for ports has been supervised by the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) of the People's Republic of China since 2001. Currently there are over 600 inspection and supervision institutions and over 20 000 professional quarantine inspectors. The AQSIQ is committed to the establishment of an international sanitary airport, with the aim of ensuring the maximum security against the spread of disease while avoiding unwarranted interference with international traffic and trade. Seven international airports in Shenzhen, Beijing, Shanghai, Haikou, Nanjing, Guangzhou and Chengdu currently have the facilities which meet the stipulated sanitary standards for international airports.

Border inspection is a routine activity at major ground crossing points, airports and seaports. The frequency of inspection of people and modes of transport in 2006 was as follows: People – 1.44 billion times; vehicles – 90.57 million times, including planes (1.11 million), ships (1.81 million), train carriages (3.19 million) and automobiles (83.91 million), and standard containers – 125 million times. In addition, vaccination of people crossing international borders occurred about 5.747 million person-times. Inspection of people crossing borders has increased by 22% in 2006 against figures for 2005.

Infectious disease surveillance is an integral part of border health management. In the 8.21 million person-times of disease surveillance conducted in border areas in 2006, a total of 675 000 persons were identified as infected. The number of patients having HIV infection was found to be 2135. The corresponding figures for tuberculosis were 5093, for venereal disease 14 000, and for hepatitis 28 000. The number of infected people crossing the border has increased by 11% over the past year while the number of people taking preventive vaccination has also risen by 3% over the same period.

There is an improvement in the inspection and quarantine legislation system for cross-border infectious diseases. Similarly, cross-border infectious diseases quarantine technology has been introduced with remarkable results in border disease prevention and control.

There is legal provision for border health management and the following regulations and amendments have been introduced to strengthen border health control, inspection and quarantine:

- Notice of prevention and control of incoming infectious diseases through transportation vehicles issued by the Ministry of Health, AQSIQ, Ministry of Railways, Ministry of Communications and General Administration of Civil Aviation of China (2005.6.17).
- Notice of establishment of coordination mechanism for prevention and control infectious diseases issued by the Ministry of Health, AQSIQ, General Administration of Civil Aviation of China, Ministry of Communications and Ministry of Railways (2005.12.2).

The revision of existing health-related laws and regulations in accordance with IHR (2005) has been initiated. It is designed to incorporate the contents of IHR (2005) into the law while at the same time explore options that are suitable for China. At the same time, amendment of the Frontier Quarantine Law and its specific rules taking into consideration the connection with relative laws including the Infectious Diseases Prevention and Control Law has also been initiated. Following consultations within the sector and with experts, a revised discussion paper of the Frontier Quarantine Law has been drafted. Efforts are on to submit the paper to the Legislative Affairs Office of the State Council in the first half of 2007 and refer it to the Standing Committee of the National People's Congress by the end of the year. The law is likely to be promulgated by 15 June 2008.

Bilateral sanitary inspection agreements have been signed with certain countries including Italy, Viet Nam, DPR Korea, Lao PDR. Agreements have also been signed with Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam regarding transboundary animal diseases prevention and control. Chinese health officials participated in the APEC influenza pandemic exercise and communicated and exchanged experiences with officials from the United States of America, the United Kingdom and Australia.

The Government of the People's Republic of China has decided to adopt *IHR (2005)*. The Chinese Ministry of Health has listed Amendment 1 Treaty 1 in the Public Health Emergency Response System Development Programme under the 11th Five Year Plan of the Ministry of Health. AQSIQ

has listed Amendment 1 Treaty 2 in the Standard Regulation of Sanitary Inspection Ability of Ports.

On the basis of the implementation of the Frontier Quarantine Law and its Specific Rules, and the Entry and Exit Animal and Plant Quarantine Law and its Regulations, a series of regulations and standardized documents to strengthen the border health quarantine law system have been issued. Over 400 industry standards have been developed, including industry and operation regulations, which enable health quarantine measures to move towards a more scientific, standardized and operational system. The entire system comprises of 167 International Health-care Centres. All the 35 bureau-level health-care centres and some branch units have passed the ISO 9000 and ISO/IEC 17025 certification for improved quality. The system has also built one central AIDS confirmation laboratory, 15 AIDS confirmation laboratories and 170 primary screening laboratories.

Emergency management has been strengthened on the basis of the experience gained from SARS and avian influenza prevention and control. To date, all the bureaux have collectively organized simulation exercises for a total of 138 times involving 4729 persons.

The following activities will be carried out to develop core capacities for implementation of IHR (2005):

- Capacity building for quarantine at ports during the 11th Five Year Plan.
- Improvement of infrastructure at ports and legislation on the public health capacity building at ports.
- Setting detailed standards for public health infrastructure in ports to fulfil the tasks of disease surveillance, control and public health emergency response.
- Enhancement of coordination and cooperation with the civil aviation, communication and railway sectors and comprehensively bolstering the core capacities of 214 ports in China.
- Sharing the experience of the international sanitary airports establishment, and developing more international sanitary airports.

- Exploring possibilities for the development of international sanitary seaports.

A total of 91 outbreaks of HPAI in 21 provinces have been reported from January 2004 to January 2007. A total of 34.6 million birds were destroyed. An epizootic outbreak of HPAI in migratory birds occurred in Qinghai province in 2005 and in the Tibet Autonomous Region in 2006.

Twenty one human cases of AI were reported in Mainland China from October 2005 to February 2007 with a case fatality rate of 62%. Human cases were reported mostly during winter from 12 provinces, most of them occurring in southern China.

Prevention and control measures in frontier areas have been strengthened with strict quarantine and supervision implemented on animals, animal products and people at entry and exit points. Epidemic monitoring and reporting systems in national, provincial, regional and county levels have been reinforced. Three hundred and four national epidemic surveillance stations and 146 checkpoints for epidemic control in bordering areas have been set up and 645 000 village-level epidemic inspectors have been appointed. In 2006, 6 811 000 samples from poultry and birds were investigated for AI.

AI vaccination was carried out on a massive scale for AI prevention and control. In 2006, 10.6 billion doses of AI vaccines were used, with vaccination coverage over 95% and the antibody qualification rate above required standards. A series of contingency plans and measures for emergency response were developed. Cooperation and coordination among AQSIQ, Ministry of Health, Ministry of Agriculture, General Administration of Civil Aviation of China, Ministry of Communications, Ministry of Railways, and Customs have been strengthened for rapid response and containment of SARS and AI.

Major issues identified for effective implementation of IHR (2005) are as follows:

- Enhancement of core capacities at the port of entry for prevention and control of infectious diseases.
- Improvement of health declaration and inspection.
- Promotion of bilateral communication and cooperation.

China's Control Policy for SARS outbreak – An example of best practices

Following the outbreak of SARS in 2003, border inspection and quarantine bureaux all over the country had enforced a series of effective measures: These include:

Eight regulations to fight SARS:

- Health declaration
- Temperature check
- Medical tour of inspection
- Patient deportation
- Disinfection and ventilation
- Real-time epidemic information report
- Self-protection
- Awareness campaign

Five “always-being-ready” steps:

- Leaders ready to go to the frontier
- Quarantine inspectors ready to go to the frontier
- Working principles well-developed
- Technology and materials
- Operational measures

Five “No one missed” checklists:

- Health declaration card
- Temperature check
- Border crossing persons with high fever ($> 38^{\circ} \text{C}$) sent to hospital
- Daily report of SARS quarantine information
- Well-kept documentation of health declaration card

Five “in-time” measures:

- Finding
- Reporting
- Controlling
- Disinfection
- Alarming

The Republic of India

The Republic of India shares vast land borders with China, Pakistan, Nepal, Bhutan, Bangladesh, Myanmar and Afghanistan. There are 21 airports, 12 ports and 3 official land border points throughout India. There has been a significant increase in international passenger traffic to India in recent years. The Ministry of Health and Family Welfare is the responsible agency for health clearance at the points of entry which are used for passengers and cargo other than livestock/plants. Port Health Offices, Airport Public Health Offices and Border Quarantine Centres perform the following functions:

- Yellow fever vaccination certificate validation and quarantine.
- Health screening during outbreaks.
- Vector control.
- Maintenance of general sanitation and food hygiene.
- Vigilance on global outbreaks.

The Ministry of Agriculture is responsible for livestock and plants. The Department of Animal Husbandry, Dairying and Fisheries is the implementing agency for animal quarantine. The main objective of animal quarantine is to prevent ingress of any exotic/emerging livestock diseases into India through the import of livestock and livestock products. Animal quarantine stations have been operating at the international airports:- New Delhi, Chennai, Kolkata and Mumbai. There has been a significant increase in import and export of livestock products into the country from 2001-2002 to 2004-2005.

There is a risk of the introduction of SARS and AI through the movement of people by air, land and sea routes. Movement of livestock and people across international borders may introduce AI, TADs and other zoonotic diseases such as rabies. Cholera, viral hepatitis and diarrhoeal diseases may be introduced through the transport of cargo. Accidental transportation of infected vectors or patients may be responsible for introduction of yellow fever, dengue fever and other vector-borne diseases. Transboundary diseases of public health importance are HIV/AIDS, STI, TB, malaria, kala-azar, dengue fever, Japanese encephalitis (JE) and measles. There is a risk of disease outbreak through cross-border movement of people due to poor cross-border coordination, inadequate health facilities and disease surveillance, overcrowding and behavioural change.

Existing public health laws are inadequate to deal with international traffic and the growing movement of people across international borders. The process of revision has been initiated to amend the following Acts and Regulations for IHR (2005) compliance: Indian Aircraft (Public Health) Rules, 1954 (provisions under these rules are applicable for land traffic also), and the Indian Port Health Rules, 1955.

A meeting was held in Cochin in November 2006 to amend health rules enforced at ports and airports and two more meetings are scheduled in Bangalore and Chennai in 2007. A Public Health Emergencies Act has been drafted. It covers 29 epidemic-prone diseases and PHEIC when notified by WHO. The Livestock Importation Act (Act No. IX. of 1898) was amended in 2001.

A Memorandum of Understanding (MoU) has been signed by India, Bangladesh and Nepal for the control of kala-azar. Regular inter-country meetings are held for malaria and JE. An initiative has been taken to establish a SAARC Disease Surveillance Centre at the National Institute of Communicable Diseases (NICD), Delhi. The CSR sub-unit of WHO/SEARO has been established at NICD. An international conference of Ministers of Health and agriculture/livestock on AI Preparedness and Control organized in New Delhi on 28 July 2006 in collaboration with the World Health Organization was attended by 11 Asian countries. The conference produced the Delhi Declaration on AI Prevention and Control which stressed the need for inter-country collaboration.

The Director of the NICD has been designated as the National IHR Focal Point for India. A stakeholders' meeting was held in April 2006 to prepare a plan of action and a list of activities for establishing/strengthening core capacities for surveillance and response at the national, state and district levels. Similarly, a plan of action listing out the activities for establishing/strengthening core capacities at designated airports, ports and ground crossings has been developed. A mechanism is in place for strengthening collaboration between different stakeholders at the national/state/district levels and at designated airports, ports and ground crossings. All administrative and legal issues related to the implementation of IHR (2005) have been identified and taken into consideration.

Integrated Disease Surveillance Project has been launched in a phased manner to strengthen core capacities for surveillance and control at the

national, state and district levels in India. Major emphasis has been given on capacity building, setting up an information network and satellite linkage, upgradation of existing peripheral laboratories and strengthening the networking of 15 reference laboratories for surveillance. Involvement of the private health sector in IDSP is important.

Airport Public Health Offices are functional in Delhi, Chennai, Kolkata, Mumbai, Amritsar and Tiruchi. It is planned to establish in Ahmedabad, Bangalore, Hyderabad, Lucknow and Thiruvananthapuram. Quarantine centres are operating in Delhi, Mumbai, Chennai, Kolkata, Tiruchi and Amritsar. Port Health Offices are functional in Mumbai, Jawaharlal Nehru Port Sheva, Chennai, Kolkata, Cochin, Kandla, Visakhapatnam, Marmagoa and Mandapam Camp and one is planned for Tuticorin. Amritsar is a major ground crossing point where a border health office is operational.

Animal quarantine stations are functional in New Delhi, Kolkata, Chennai and Mumbai to inspect imported animals and provide export certification. Suspicious animals are kept under quarantine for at least 30 days and samples are tested for exotic diseases at the High-Security Animal Diseases Laboratory (HSADL) in Bhopal. Similarly, facilities are made available for testing livestock products for exports.

India shares a large porous border with Pakistan, China, Nepal, Bhutan, Bangladesh, and Myanmar. It has large coastline across the Indian Ocean. Millions of people travel to India from many countries by the air, sea and land route for business, tourism, employment and asylum. Therefore, there is a significant risk of spread of infectious diseases due to an increase in travel and trade in the Region. Cross-border collaboration is hampered by weak and inadequate health infrastructure at border areas and multi-sectoral agencies for coordination and cooperation. It is necessary to strengthen disease surveillance and border/health agencies, especially in border districts/states, and promote horizontal collaboration between countries.

Malaysia

Malaysia has borders with Thailand, Indonesia, Brunei Darussalam and Singapore. There are nine international airports and seven domestic, 12 major seaports and 19 other ports, and 16 official land crossings. Fifteen million people visit Malaysia annually. About 7.5 million people cross over

by land annually and about 100 000 citizens move to and from Singapore daily for work-related reasons. Yellow fever vaccination is mandatory for people coming from endemic countries and immunization and quarantine facilities have been developed at Kuala Lumpur International Airport (KLIA) and Kelang. Suspected SARS cases are sent directly to designated hospitals.

Live animals are traded through three quarantine stations at KLIA, Port Kelang and Padang Besar land crossing. Dogs, cats, cattle, buffalo, horses, reptiles, wildlife, sheep, goats and animal products like animal feed, hide, leather, beef, mutton and poultry are frequently traded. There is a significant increase in export of livestock and animal products to Asia, Australia, New Zealand, Europe and America.

Outbreaks of SARS, rabies, cholera and malaria have been reported in cross-border areas. Among animal diseases, avian influenza, rabies, Nipah virus, brucellosis, salmonellosis and foot-and-mouth disease (FMD) are potential infections that could be introduced in cross-border areas through animal movement and livestock trade.

Many acts and regulations have been enforced by government agencies particularly by the Ministry of Health, and Departments of Veterinary Services, Customs and Immigration. Public health related acts and regulations include Prevention and Control of Infectious Diseases Act 1988; Importation and Exportation of Human Remains, Human Tissues and Pathogenic Organisms and Substances Regulation 2006; Food Act 1983 and Food Regulations 1985. Acts and regulations related to animal health include Animals Act 1953 (revised 2006); Animal Rules 1962 and Animal Importation Order 1962. Customs Act 1967, Customs Prohibition of Import Order 1998, Customs Prohibition of Export Order 1998, Immigration Act, Regulations and Orders 1959/63 and Passport Act 1966 are important acts related to customs and immigration.

Cross-border management is done through close collaboration between the Ministry of Health and Departments of Veterinary Services, Customs and Immigration at all entry points. Cross-border meetings on the exchange of information on important diseases, outbreaks and control of cross-border movement have been fruitful.

A national IHR Focal Point has been established and preparations are underway to strengthen capacity in both infrastructure and manpower

sectors to ensure core capacity requirements for designated airports, ports and land entry points. The Prevention and Control of Infectious Diseases Act 1988 has been reviewed keeping the new IHR (2005) in mind. Efforts have been made to strengthen the national disease surveillance system as well as the national control capacity to respond promptly and effectively to public health risks and public health emergencies.

With strict implementation of health regulations at the points of entry, yellow fever and other exotic diseases have been prevented from intruding into the country. The ministerial committee on avian influenza has been actively working towards the prevention of the entry of diseases into the country through monitored routes. Infection through illegal routes, however, has not been stopped. The Directorate of Veterinary Services has also been able to prevent rabies infection in collaboration with Customs.

Major challenges to cross-border health that are faced by Malaysia include smuggling of animals through unauthorized cross-overs and illegal immigration. To implement IHR (2005), major issues to be discussed are the need for assessment by international bodies, identification of minimum standards and adopting the decision instrument for the assessment and notification of events that may constitute public health emergency of international concern. Effective screening methods are required at all entry/exit points.

Mongolia

Mongolia is a landlocked country with a population of 2.5 million and a vast land area of 1500 square km. Mongolia has land boundaries with the People's Republic of China (PR China) in the south and the Russian Federation in the north. Mongolia is an agricultural country with the farm sector producing 30% of its GDP. Livestock, of which sheep, goat, cattle, horses and camels are the major constituents, forms the mainstay of the economy.

There are 21 permanent land border points: nine with the Russian Federation, 12 with China and one international airport in the capital of Ulaanbaatar. According to the Mongolian Customs Administration, about 2.5 million people crossed the national border in 2006.

Mongolia is a minor exporter of live animals and participates in international livestock trade. Mongolia exports mostly horses and falcons to

other countries, particularly to People's Republic of China, the Russian Federation and Arab countries. Mongolia imports horses, cattle, pigs, fish and seafood and also exports meat and milk products, cashmere and quality skins and hides.

The export and import of animals and animal products in Mongolia is regulated by several laws. Local import companies are required to approach the Ministry of Food and Agriculture (MFAg) and submit a request for special permission to import animals and animal products into Mongolia. Based on this request, the Ministry of Food and Agriculture sends a note to the exporting country about its requirements. After receiving the stipulated note from the exporting country the MFAg grants special permission to the importing firm and informs the State Specializing Inspection Agency (SSIA), which provides an import certificate. Customs officials check the import certificate at the border point. The quarantine inspection lasts for 14 to 21 days till the veterinary laboratory confirms that the animals are free from any disease.

The State Specializing Inspection Agency monitors persons on entry or exit for infectious diseases and takes necessary prevention and control measures in addition to quality control of export and import commodities whereas the Central Veterinary Laboratory monitors animals for infectious diseases on entry or exit.

There were outbreaks of FMD in Mongolia during 2000-2004 along the eastern borders with both PR China and the Russian Federation. The most severe outbreak was reported in 2001 in areas close to the border. The last full-blown outbreak of sheep pox happened in 1978 but there were reports of it resurfacing in 2007. Four provinces were affected before the latest outbreak was contained.

The existing acts and regulations in force for border health and animal quarantine management in Mongolia are laws on quarantine and control of entry and exit of animals and plant products (2002), the Government Resolution No. 173 on quarantine and control of entry and exit of animal and plant products (2003), the Law on animal health protection (2001), Customs Law (1996), Customs Tariff Law (1996) and Health Law (revised in 2006).

Although there were several meetings on cross-border issues between Mongolia and its neighbouring countries, there is the need for still more regular contact to improve collaboration between these countries. Important meetings and agreements were as follows:

- Meeting between the State Inspectorate Agency of Mongolia and the Hygiene and Epidemiology Inspection Agency of the Russian Federation in 2003.
- Bilateral agreements on veterinary sanitation and quarantine.
- Agreement with PR China on the establishment of a veterinary sub-working group in 2006.
- Agreement for cross-border collaboration with the Russian Federation for prevention and control of infectious diseases among animals in 2006.

The development of core capacities for implementation of IHR (2005) is a continuous process. The National Centre for Communicable Diseases has been designated as the National IHR Focal Point. An assessment of early warning and response functions was conducted in June 2006 by the Ministry of Health (MoH) in collaboration with WHO. A plan of action for strengthening EWAR has been approved, 70 epidemiologists have been trained on EWAR and 17 provincial epidemiologists have been provided computers. The EWAR toolkit has been developed and hosted on the MoH website. The contents of IHR (2005) have also been translated into Mongolian and hosted on the website. Second and third-level laboratories have been strengthened and diagnostic facilities for assessment and care of ill travellers in designated airports and border posts have been improved. Influenza surveillance with CDC support began in 2005. Plans have also been made to enhance the capacity of healthcare workers in disease surveillance and response and improve coordination among stakeholders.

Coordination among the main agencies and organizations involved is vital. International financial and technical support as a response to epidemic crisis management is important. Although the Government is committed to implement IHR (2005) in Mongolia, there is lack of advocacy among decision-and policy-makers about IHR, especially in sectors other than health.

The Union of Myanmar

The Union of Myanmar shares land borders with Bangladesh, China, India, Malaysia and Thailand. There are two international airports and two seaports which are major points of entry. Myanmar has many ground crossing points with China and Thailand, whereas there is a single ground crossing point on the Myanmar-Bangladesh and Myanmar-India land borders.

Approximately 4000 heads of cattle and goats are exported to Malaysia annually. Forty-four million chicken eggs, 1580 dogs, 1425 pigs, 49 000 chicken, 71 MT of duck down feathers were exported to the Yunan province of China last year through the land route. Import and export of dogs, cats and wild animals is done through the Yangon International Airport.

There are standard health quarantine procedures for SARS, plague and yellow fever. Animal quarantine procedures include examination of animal and animal product plus laboratory sampling and checking of international veterinary certificates and other relevant documents. Animal and animal products are retained until laboratory result is obtained and animal owners should pay for health certificate and laboratory investigation charges. Animal and animal products would not be allowed to be exported if owners violate or do not adhere to the laws and regulations.

The importance of preventing the spread of PHEIC internationally was being considered seriously by the MoH with plans to immediately restrict movements at crossings when an outbreak such as SARS is reported.

There are acts and regulations related to public health, animal health and Customs. The Public Health Law, 1974, and Prevention and Control of Communicable Diseases Law, 1995 have been revised according to the context of IHR (2005) and submitted for approval to the higher authorities.

The formulation of an Industrial Zone Law began in 2006. Relevant provisions of IHR (2005) are proposed to be incorporated.

The Animal Health and Development Law, 1993 and the New Ministerial Orders 44/99 and 45/99 concerning infectious diseases of livestock need to be revised to accommodate SPS in import and export of live animals, livestock products and production materials. The Land

Customs Act (1924), Sea Customs Act (1960), Control of Imports and Exports (1947), Aquaculture Law (1989), Forest Law (1992), Plant Pests Quarantine Law (1993), Protection of Wildlife, Wild Plants and Conservation of Natural Areas Laws (1994) and National Food Law (1997) are systematically used to regulate import and export of wildlife, plants and plant products.

Meetings on cross-border issues were held with Bangladesh, China and Thailand for exchange of information, joint implementation and response, joint monitoring and supervision, health education and strengthening of referral systems.

Myanmar is actively participating in international networking of surveillance and laboratory systems such as the Mekong Basin Disease Surveillance Net, ASEAN+3 Epidemiological Networking, ASEAN Surveillance Net, Laboratory Network, strengthening of laboratory capacity and quality assurance for infectious diseases surveillance and ACMECS. Bilateral agreements for mutual cooperation exist with Thailand for SARS, avian flu, polio, HIV, TB and malaria, and with India for polio.

The Myanmar Government is committed for implementation of IHR (2005) and a National IHR Focal Point has been designated. Advocacy meetings have been organized at the central, state and divisional levels with stakeholders. Two advocacy meetings were held at the central level in 2006 and multiplier courses in States and Division to be conducted in 2007. The 17 diseases classified to be of public health importance are under national surveillance (DUNS). Table-top exercises on avian influenza and pandemic preparedness and response were conducted in 2006.

Outbreak of HPAI/H5N1 was confirmed among poultry in Sagaing and Mandalay Divisions of Myanmar on 8 March 2006. Intersectoral cooperation of stakeholders – the Ministry of Health, Ministry of Livestock and Fisheries, Ministry of Finance and Revenue, Ministry of Forests and Yangon and Mandalay City Development Council – was initiated. A total of 669 000 poultry and quail were culled for AI control. No HPAI outbreak was reported since April 2006 and Myanmar has since been declared an H5N1 free country by OIE.

Experience from past outbreaks of bird flu and SARS shows that there may be difference in knowledge and skills, drug and treatment protocols,

methods of laboratory testing and case definitions among neighbouring countries in cross-border areas, language barriers, communication gaps, wrong information in media and surveillance of infectious diseases of common interest in cross-border areas are other issues to be considered.

The following issues should be given due importance to strengthen cross-border cooperation and ensure effective implementation of IHR (2005):

- Agreement on coherent policies relating to cross-border interventions on health including prevention, diagnosis, case management, follow-up and vector control strategies and options.
- Regular interaction and exchange of information between local health authorities of both the bordering countries on health-related data, facilities and ongoing activities in border areas.
- Implementation of the joint action plan.
- Ensuring access to quality health services to all irrespective of status, nationality, or creed.
- Capacity-building of border district health units.
- Practice of standard technical/operational guidelines on managing integrated disease control measures.
- Resource mobilization to ensure adequate support for cross-border activities, including laboratory facilities.
- Regular monitoring, supervision, follow-up and evaluation of cross-border control of communicable diseases.
- Joint cross-border meetings for emerging PHEIC.

Nepal

Nepal is a landlocked country bordering with China in the north and India in the east, south and west. Its population is 23 million, 80% of which is engaged in subsistence agriculture-based integrated crop-livestock farming system.

Nepal is a small country but has three varied geographical regions i.e. mountainous, hilly and terai. Nepal has the highest livestock population per capita and per unit of cultivated land in Asia. Livestock and livestock products account for 11% and 6% of the total agriculture exports and imports.

There is numerous entry and exit points on the Nepal-India border but Kakarvitta, Biratnagar, Janakpur, Birganj, Bhirahawa, Nepalganj, Dhangadhi and Mahendranagar are the cross-over cities that are well connected by road, rail and air transport. There are eight animal quarantine offices and 24 animal quarantine checkpoints throughout the country. Tribhuvan International Airport in Kathmandu is a major entry point for foreigners. There is a regular mass movement of people across the India-Nepal border in search of employment, education and trade. The frequency of this movement of people varies according to the seasons, festivals and available/emerging opportunities for employment.

India and China are Nepal's biggest trading partners. Cattle, buffaloes and goats are imported for milk or meat production, draft power and breeding. Eggs, fish, hide and skins are major livestock products that are traded with India.

Nepal has a long and porous border with India and the movement of people and animals across it is difficult to regulate. Mass movement of live animals across the Indo-Nepalese border has been responsible for outbreaks of FMD, PPR and swine fever. The pattern of disease outbreak is related to the frequency of animal movement across the border and within the country. The internal livestock and poultry market is greatly influenced by availability, cost of production and the demand-supply situation in the markets in India. The Nepal government has restricted the import of poultry and poultry products from India from time to time due to the potential threat of AI.

There are a number of laws and regulation which concern health. The Infectious Diseases Act was enacted in 1963 but has turned out to be outdated. A review of existing health laws and regulations has been initiated and a new Public Health Act will be drafted in line with the requirements of IHR (2005). The following laws and regulations are related to cross-border movement and trade:

- Animal Health and Livestock Services Act, 1998, and Regulations, 1999.
- National Drug Act.
- Forest Act.
- Customs Act and Customs Regulations.

Drafts of the 'Animal Feed Act' and 'Veterinary Drug Act' have been developed. There is an MoU between India and Nepal on establishing four border facilities on both sides of the frontier. It is planned to develop facilities for the police, Customs and sanitary and phytosanitary measures in one building. An MoU has been signed between India and Nepal on cooperation in the field of agriculture, creating a Joint Agriculture Working Group. The First Sino-Nepalese Bilateral Meeting on Plant and Animal Quarantine, Food Quality and Health Quarantine was held in 2005. The meeting discussed inspection and quarantine procedures, establishment of cooperation and consultation mechanism, infectious disease control and supervision along the borders of the two countries. A Trans-frontier Herding and Grazing Treaty between Nepal and China was signed recently. The treaty covers the following issues: information exchange on newly identified or suspected infectious livestock diseases occurring along the borders; exchange of regular reports on incidence and prevalence of disease in their respective countries; regular and adhoc cross-border meetings on exchange of information on animal disease and disease control, and exchange of information on examination and certification procedures, for animals and animal products, vaccination procedures, and quarantine and movement regulations. Cross-border meetings have been held with India on polio eradication, select vector borne and priority communicable diseases such as malaria, kala-azar, JE, leprosy and HIV.

The Epidemiology and Disease Control Division has been designated as the National IHR Focal Point. The National Public Health Laboratory, a national referral laboratory, has been participating in international laboratory networks. The World Bank assisted AI Control Project will be instrumental in development of core capacities required for implementation of IHR (2005). The response capacity to public health risks is low due to limited communication/access to some parts of the territory.

A network of EWARS covers 28 hospitals in the most populated districts of Nepal that conducts a weekly reporting of select diseases since 1996. A structure and a culture for data collection and reporting has been put in place. Rapid Response Teams have been operating in all 75 districts. The Animal Health Quarantine Network is fully operational.

The livestock sector is facing a major challenge in cross-border collaboration due to unregulated and unchecked animal movement both within the country and across international borders. The predominance of informal trading practices for livestock and livestock products, lack of institutional mechanisms for information exchange and technology transfer, and lack of standardization and absence of harmonized practices in matters related to information, laboratory, quality control and quarantine systems are also discernible challenges.

The Kingdom of Thailand

Thailand shares a total land boundary of 4863 km with Myanmar, Cambodia, Lao PDR and Malaysia. There are land ports in 30 sites, airports in 15 sites and seaports in 16 sites where health and animal quarantine units have been stationed. The number of people crossing the border was approximately 15 395 264 (11 313 373 foreigners and 4 081 891 Thais) in 2005.

Thailand has developed a system of border health surveillance in cross-border areas. There are several refugee camps in border provinces where outbreaks of diseases are reported due to frequent movement of people in cross-border areas. Outbreak of vibrio cholerae was reported in a refugee camp in Tak province between 11 June and 30 September 2005. A total of 321 suspect and 178 confirmed cases were detected. Similarly outbreak of brucella melitensis was reported among farm workers in Western Thailand in 2005. Attack rate was 32.84% (89 cases with positive serology).

The first outbreak of AI was reported in poultry population in 2003. Being a major exporter of poultry products in Asia, Thailand has to face serious socio-economic consequences in terms of income, investment and industry. During 2003, poultry exports dropped to 19 000 million Baht and tourist inflow dropped by 400 000 following the outbreak of AI.

The Communicable Diseases Act (1980) is the most important public health regulation for disease notification, surveillance and control. There is a list of notifiable diseases which are updated through ministerial announcements from time to time. HIV/AIDS (1991), acute flaccid paralysis (AFP) (1998), SARS (2003) and possible avian influenza (2004) were added for notification.

The Communicable Diseases Act (1980), Live Animal and Carcass Movement Act (2001) and Immigration Act (1979) are the basis for the regulation of cross-border movement of people, animals and livestock trade.

Thailand has been maintaining and strengthening cross-border collaboration with neighbouring countries through bilateral and multilateral agreements. A tripartite agreement has been signed among Thailand, Cambodia and Lao PDR. Four meetings to develop a Joint Action Programme had been organized in Phnom Penh (2005), Sa Kaeo (2006), Ubon Ratchathani (2006) and Bangkok (2007). Priority has been given to the establishment and capacity building of joint surveillance rapid response teams (SRRT) along the border. Joint investigation of disease outbreaks and joint monitoring and evaluation are vital to promote trust and mutual understanding. Strengthening preventive and control measures such as condom promotion for HIV/AIDS, distribution of insecticide treated bed nets for malaria are important public health interventions in cross-border areas.

Special attention has been placed on strengthening Thai-Myanmar border collaboration. Four ministerial meetings had been organized to provide policy/guidelines and to follow up on the progress of health collaboration. Similarly, nine local cross-border meetings were held at Mae Sai-Tachileik, Mae Sot-Myawaddy, Sangkhlaburi- Pagoda, and Ranong-Kawthaung. Information sharing has been done on a regular basis and standard operating procedures for a border health quarantine have been developed. The Border Health Goodwill Committee has been formed.

The Thai government has been working towards border health and migrant health issues and several successes have been achieved to improve disease surveillance, access of migrant workers to basic health services and cross-border collaboration at local levels. A Border Health and Migrant Health Committee have been established as a mechanism for policy

development and support. Focal points for collaboration and coordination on border health and migrant health development have been identified. A Border Health Master Plan is being developed to serve as a framework for border health and migrant health development. Annual meetings on border health development have been organized as a forum for sharing information and discussing common border health issues among organizations concerned. The meetings have been held at Mae Sot (2002), Ranong (2003), Chiang Mai (2004), Kanchanaburi (2005) and Ratchaburi (2006). Provincial health coordination meetings have been also organized to serve as a forum for health coordination and collaboration at the provincial level. An inventory of organizations working along the border has been prepared for coordination and sharing of information. A joint action plan on health collaboration between Thailand and Myanmar for areas along the border (2000-2002) has been prepared.

ART (anti-retroviral treatment) guidelines for migrants and cross-border population have been developed to increase access to ART among migrants. Migrant health workers have been recruited and trained for carrying out health education and reporting on potential health problems in the community.

In order to improve access to health-care services, a standardized multi-lingual medical record book has been developed and used as a tool to increase access to Maternal and Child Health (MCH) care, Expanded Programme on Immunization (EPI) vaccines and family planning among migrant population. TB practice guidelines for migrant population have been developed to increase access to TB treatment and care among migrants and to standardize case management. A standardized data collection tool and a process for collection of agreed upon migrant data has been developed. A comprehensive database on border and migrant health information has also been developed. Joint action programmes have been initiated between Thailand and Cambodia and Thailand and Lao PDR on the control of communicable diseases along the border, including HIV/AIDS, TB, malaria, avian influenza and disease outbreak response.

The Thai Government is committed for implementation of IHR (2005). National IHR Committee has been set up. IHR working group is working on various aspects of IHR (2005) implementation. Review Committee and Emergency Committee for PHEIC has been set up. Circular

letter has been issued to other concerned ministries for amendment of health related laws in line with IHR (2005).

Lao People's Democratic Republic

Lao PDR People's Democratic Republic (Lao PDR) is a landlocked country bordering with China in the north, Viet Nam in the east, Myanmar and Thailand in the west and Cambodia in the south. Lao PDR has three international airports, 11 other international points for local crossings and 17 local border points. A total of 1 250 232 people entered Lao PDR through various border entry points in 2006, of whom 753 036 were foreigners. Similarly a total of 1 339 164 people left Lao PDR in 2006.

Health units have been stationed in border points under Agreement No. 1263 of the Ministry of Health dated 28 September 2006 on their establishment and implementation. MBDS Cross Border Project and Communicable Diseases Control Project are vital to strengthen border health activities in Lao PDR.

The Decree on Domestic Animal Management No. 0004-0005 dated 2 January 1997 is an integral part of animal health regulation in Lao PDR. Animal quarantine units have been stationed in border points under the 'Law for the control of movement of animals'. These units examine authorization documents for import and export, vaccination certificates and other relevant documents and spray vehicles for animal transportation. There is also a task force for checking animals at border checkpoints. A certificate of animal products and an authorization document from the Industry Department are required for the export of livestock products. Illegal import of live animals and animal products may be responsible for epizootic outbreak of FMD, HPAI. Strict inspection and control of imported products are carried out for the prevention of entry of infectious diseases such as FMD, HPAI, anthrax, rabies, etc. A ban is imposed on the import and export of poultry and poultry products during AI outbreaks.

Regular meetings are held with neighbouring countries at the central, provincial and local level on health issues.

The Asia-Pacific Strategy for Emerging Diseases (APSED) is the guiding document for strengthening the disease surveillance and response system in Lao PDR. A plan is underway to collect baseline data on surveillance and response, laboratories, infection control, risk communication and zoonoses.

Core capacity development for implementation of IHR (2005) is a major challenge. So far IHR (2005) has been translated into Lao version and disseminated through advocacy meetings. IHR (2005) will be endorsed and approved by the Ministry of Health.

There were outbreaks of AI (H5N1) in early 2004, July 2006 and early February 2007 which were brought under control through implementation of national strategies on Communicable Diseases Control and execution of stamping out policy for control of poultry outbreaks.

Cooperation among officials of the departments of health, immigration, livestock and fisheries, and Customs is vital for border health and animal quarantine management and prevention of illegal import of animal products. There is a need for strengthening of laboratory capacity for diagnosis of diseases and improvement of quarantine facilities at border checkpoints. Inter-country meetings on information exchange and technical expertise will play a vital role in strengthening cross-border collaboration.

The Socialist Republic of Viet Nam

The Socialist Republic of Viet Nam shares land borders with China, Lao PDR and Cambodia. It has 25 provinces and cities, 86 districts and 381 communes. There are 50 international entry points, 41 national entry points, four aviation entry points, three railway entry points, 37 ground crossings and 47 marine crossings. A total of 315 health quarantine officers are working for border health management throughout the country. There are inland and border quarantine stations. The number of people crossing the border amounts to between four and five million annually.

The health/animal quarantine service is the specialized administrative agency which is responsible for frontier health/animal quarantine functions. Cooperation between the frontier health/animal quarantine service and other relevant agencies at the border checkpoints has been ensured in order to facilitate synergistic action and avoid overlapping and duplication. The health/animal quarantine service is placed under the supervision of the border checkpoint administration and subject to the regulations governing border checkpoint management. The frontier health/animal quarantine service shall work closely with other specialized agencies at the border check points in gathering data and information related to the health/animal quarantine service so as to facilitate supervision and enable timely detection of disease-carriers and bringing them under health/animal quarantine.

Live animal movement and livestock trade are important activities carried out in cross-border points. Live animals are imported from Malaysia, Thailand, the United States of America, the United Kingdom, France and the Netherlands. A total of 204 000 heads of swine and poultry, 7000 monkeys and 32 600 tonnes of animal products had been exported and 516 000 heads of poultry, 320 heads of swine, 300 dogs and 210 000 tonnes of animal products imported in 2006. A total of 16 000 tonnes of frozen suckling pigs and pork was exported to Hong Kong SAR, Malaysia and the Russian Federation in 2006. There is a growing trend of livestock movement and trade in cross-border areas that has created a threat for introduction of TADs like FMD and avian influenza. Similarly, the movement of people by land, sea and air route may be responsible for introduction of SARS and cholera.

Cross-border collaboration is important to prevent the entry of human and animal disease or infection and Viet Nam is working together with neighbouring countries through bilateral and/or multilateral agreements. Regular meetings of health/animal quarantine and inspection officials from PR China, Lao PDR, Cambodia and Viet Nam's frontier health/veterinary stations were organized. These meetings emphasized the need for strengthening of the control mechanism for animal and animal products exported/imported across border areas and for organizing training courses on health/animal quarantine and inspection techniques for frontier health/veterinary stations. Cooperation agreements exist with PR China, Lao PDR and Cambodia at the central and local level for controlling the illegal movement of human/animal and animal products across the border. Bilateral agreements have been signed with the PR China in 1992, Lao PDR in 2001 and Cambodia in 2006 for cross-border collaboration.

Veterinary Ordinance No. 18/2004 is the main legal framework for regulating animal health services and livestock trade. There are Government Decrees and Decisions which provide the basis for standards, specifications and procedures for export and import of live animals and livestock products. The Government Decree No. 33(2005) provides detailed guidance for the implementation of a number of articles of the Veterinary Ordinance. Six Government Decisions (Nos. 15, 45, 46, 47, 49 and 86) made during 2005 and 2006 provide the basis for animal quarantine management, veterinary hygiene inspection and transportation.

Viet Nam is committed to the implementation of IHR (2005). The National IHR Focal Point for IHR (2005) has been established. APSED workplan will be used for strengthening core capacities for implementation of IHR (2005). Baseline data collection will be collected in March 2007 as a part of workplan. A national workshop will be organized on introducing IHR (2005) with ministries/sectors/agencies in April 2007.

International cooperation is essential for strengthening surveillance and response system in Viet Nam. Information related to human and animal health has been regularly updated through international organizations such as: WHO, OIE, FAO, etc and through the relevant countries. Regular contacts have been maintained with technical experts of WHO, FAO, OIE, CDC and WRL for surveillance, prevention and control of human/animal diseases. Successful implementation of AI surveillance and control programme serves as an example of synergistic action of Public Health and Veterinary sectors in one hand and government and international partners on other hand. Close relations between human and animal disease specialists have to be maintained to exchange experiences, to organize workshops and to obtain technological advances.

The Department of Animal Health in cooperation with experts from RCU and JICA is looking for a FMD, AI control and eradication project from time to time with neighbouring countries.

2.4 Conclusion and recommendations

The draft recommendations for cross-border collaboration, surveillance and response mechanism and multi-sectoral cooperation were presented and discussed. The participants raised concerns over practical aspects of implementing the recommendations based on lessons learnt while implementing bi-lateral cross-border agreements and plans of action in the past. Bilateral cross-border activities did not produce the desired results and the expected output till date.

Cross-border issues being sensitive, greater political commitment is necessary to move forward. The need to involve regional political and economic institutions such as SAARC and ASEAN was emphasized to ensure political commitment, regional cooperation and sustainable development of cross-border activities.

Information exchange and surveillance and response at the local level in cross-border areas are critical. Event-based surveillance activities should be promoted and there should be a joint monitoring system or coordinated approach as a part of the cross-border surveillance system. Laboratory confirmation seems to be the crucial issue in disease surveillance and response and it is necessary to develop a referral laboratory at the regional level to expedite the confirmation of the event. IHR contact points should be designated at central and local levels to coordinate surveillance and response.

NGOs are playing an important role in providing health services in cross-border areas, particularly in disputed territories. They should be involved not only in implementation of cross-border activities but also in planning of border health management. NGOs can share best practices and practical experiences which may be part of cross-border collaboration.

The recommendations were made separately for Member States and WHO, FAO, OIE and other international organizations.

Recommendations for Member States

The following recommendations were made for Member States:

- Ensure political will and commitment at the highest levels to implement coordinated border health measures at jointly designated border crossings in line with the stipulations of IHR (2005).
- Use APSED as a strategic framework to build and strengthen local core capacities for emerging infectious diseases and IHR implementation, including inter-sectoral collaboration in cross-border areas.
- Develop coordinated/integrated surveillance for priority communicable diseases at cross-border areas, establish mechanisms for multi-sectoral intervention and referral arrangements and develop preparedness and contingency plans for border health management.
- Ensure regular contact/meetings between neighbouring countries for information sharing and monitoring implementation of activities under APSED strategic framework or MoU between bordering countries.

- Increase access of migrant/displaced populations to health services and strengthen surveillance system in this population.
- Strengthen rapid response teams with multi-sectoral membership.

Recommendations for WHO/FAO/OIE and other international organizations

The following recommendations were made for WHO/FAO/OIE and other international organizations:

- Support country core capacity-building and preparedness planning through effective implementation of APSED and IHR (2005), and other relevant strategies in FAO and OIE, and monitor implementation progress of APSED and cross-border collaborative activities.
- Establish a mechanism of information exchange, alert and response between contact points for EIDs and other disease events in WHO, FAO and OIE, and create an interagency forum with other international organizations to support coordination and harmonization of cross-border collaboration and coordinated/joint simulation exercises in border areas.
- Support standardization and updates of guidelines and case definitions and ensure harmonized treatment policies across the border in accordance with WHO recommendations.
- Support the development of appropriate national legislation in line with IHR (2005).
- Support networking of national laboratories and the extension of regional reference laboratories.

2.5 Closing session

The closing session was chaired by Dr Touch from Cambodia and co-chaired by Dr Preecha from Thailand. Dr Khanchit presented the final recommendations prepared separately for Member States and international partners, which were endorsed by all participants. The recommendations stressed the need to strengthen coordination and cooperation among

stakeholders for cross-border collaboration at the local, national and international levels in line with IHR (2005) and APSED.

Dr Fujita from OIE expressed satisfaction over the initiative taken to organize unique cross-sectoral and multidisciplinary group meetings for cross-border collaboration and stressed the need of working together for mutually targeted missions to avoid duplication of effort and achieve maximum synergy in action.

Dr Habib from ADB highlighted the importance of this meeting with the participation of Member country representatives, bilateral and multilateral organizations and NGOs and reiterated the need of coordinated efforts by agencies and the cooperation of border communities and migrants for implementation of health development in border areas.

Representatives from the 12 participating countries expressed their happiness over sharing their experience and knowledge and urged periodical follow-up action in implementation of recommendations. Cross-border collaboration has been a neglected issue, they said, thanking WHO for the timely initiative involving the key stakeholders. Though coordination and cooperation among line agencies is always a difficult task to achieve, the meeting was a step forward to improve understanding and create a working relationship among them.

Dr Khanchit delivered the concluding remarks on behalf of WHO. This being the first meeting in 2007 to prepare the ground for the implementation of IHR/APSED, he committed WHO's support to provide technical assistance for developing core capacities for IHR implementation. Outlining the meetings to be organized in 2007 by the Regional office for south East Asia, expressed the hope that these recommendations will serve as guiding principles for future activities. He thanked all for their active participation and valuable contribution in making the meeting successful.

Dr Preecha gave the vote of thanks on behalf of the Ministry of Public Health of Thailand, calling the meeting extremely useful to develop a common understanding on cross-border collaboration. He hoped that this meeting will further enhance the concept of border health management. He thanked the World Health Organization for facilitating the same.

Annex 1

Programme

Monday, 26 February 2007

08:30 – 09:00 **Registration**

Agenda I: Inaugural session

Rapporteur – Dr G.N. Gongal

09:00 – 10:00 Opening address by the Regional Director of the South East Asia and Western Pacific Regions, to be read by Dr Maureen Birmingham on behalf of WR Thailand

Opening remarks by Permanent Secretary, Ministry of Public Health (MoPH), Thailand, to be read by Dr Kumnuan Ungchusak

Objectives of the meeting by Dr Khanchit Limpakarnjanarat, CSR/SEARO

Introduction of participants by Dr Takeshi Kasai, CSR/WPRO

Nomination of Chair, Co-chair and Rapporteur

Announcements

10:00 – 10.30 Group photograph

Agenda II: Technical session

Chairperson – Dr Zainudin (Malaysia)
Co-chairperson – Dr P.B. Chand (Nepal)
Rapporteur – Dr Maureen Birmingham

10:30 – 11:00 **Communicable diseases and cross-border collaboration** Dr Gyanendra Gongal, CSR/SEARO

(Presentation – 20 minutes,
Discussions – 10 minutes)

11:00 – 11:30 **Cross-border collaboration for disease control and lessons learnt** Dr Sangay Thinley, Coordinator, HTM/SEARO

11:30 – 12:00 **Cross-border movement/trade and outbreaks of zoonotic diseases** Dr Teruhide Fujita, OIE Tokyo

12:00 – 12:30 **Current status of avian influenza and importance of cross border collaboration** Dr Wantanee Kalpravith, ECTAD/FAO/Bangkok

Agenda III: Country presentations

Chairperson – Dr Thinley (SEARO)
Co-chairperson – Dr Ha Huy Toan (Viet Nam)
Rapporteur – Dr Sampath Krishnan

13:30 – 14:00 **Presentation of Country Reports** (10 minutes each with another 10 minutes for discussions)

Malaysia
Myanmar
Thailand

14:30 – 15:10 **Presentation of Country Reports** (10 minutes each with another 10 minutes for discussions)

Cambodia
Lao PDR
Viet Nam

15:10 – 16:00 **Presentation of Country Reports** (10 minutes each with another 10 minutes for discussions)

Bangladesh
Bhutan
India
Nepal

16:00 – 16:30 **Presentation of Country Reports** (10 minutes each with another 10 minutes for discussions)

China
Mongolia

16:30 – 17:00 Orientation of Working Group

Tuesday, 27 February 2007

Agenda IV: Cross-border collaboration

Chairperson – Dr Shiv Lal (India)
Co-chairperson – Dr Sithat Insiengmay (Lao PDR)
Rapporteur – Dr Ailan Li/Dr Ong Bee Lee

09:00 – 09:30	Overview of IHR (2005) implementation in the Asia-Pacific Region	Dr Ailan Li, CSR/WPRO
09:30 – 10:30	Cross-border collaboration in the context of IHR (2005) implementation	Dr Max Hardiman, WHO/HQ
11:00 – 11:30	Asia-Pacific Strategy for Emerging Diseases in the context of cross-border collaboration	Dr Takeshi Kasai, CSR, WPRO
11:30 – 12:30	Strategic framework of cross-border collaboration (Presentation –30 minute, Discussion –30 minute)	Dr Supang Chantavanich
13:30 – 14:30	Presentation of cross-border activities (Presentation – 15 minute, Discussion – 5 minute)	
	Mekong Basin Disease Surveillance	Dr Moe Ko Oo
	Asian Development Bank	Dr Najibullah Habib
	Thailand MoPH and US CDC Collaboration	Dr Susan Maloney
	International Field Epidemiology Training Programme	Dr Sopon Lamsirithaworn
	Malaria Mekong Project	Dr Charles Delacollette
	Borderless Action Against Microbes	Mr James Hopkins

Agenda V: Group discussions

14:30 – 17:30 Group work

Wednesday, 28 February 2007

Agenda VI: Presentation of group work

Chairperson – Dr Hla Hla Aye (Myanmar)
Co-chairperson – Dr Oyunchimeg (Mongolia)
Rapporteur – Dr Augusto Pinto

9:00 – 10:30 Group work presentation

Agenda VII: Conclusion and Recommendations

Chair person – Prof. Rahman (Bangladesh)
Co-chair person – Dr Zhipeng Li (China)
Rapporteur – Dr Sampath Krishnan

10:30 – 11:15 Small working group meeting to draft recommendations under the chairmanship of Dr Shiv Lal (India)

11:15 – 12:00 Discussions on draft recommendation and finalization

Agenda VIII: Concluding session

Chairperson – Dr Sok Touch (Cambodia)

Co-chairperson – Dr Sirisak (Thailand)

Rapporteur – Dr G.N. Gongal

12:00 – 12:30 Presentation of recommendations

Remarks by CDS/SEARO

Remarks by partners (FAO, OIE and ADB)

Feedback from country representatives

Remarks by Representatives of SEARO and WPRO

Vote of thanks

Agenda IX: Cross-border meetings

13:30 – 17:00 **Informal Bilateral/Multilateral meetings**

Annex 2

List of participants

South-East Asia Region

Bangladesh

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