

Avian and Pandemic Influenza Related Programmes and Projects Of the Inter-Governmental Entities In Asia and the Pacific



ASEAN
APEC
ASEF
SAARC
SPC
MBDS
ACMECS



Asia-Pacific Regional Hub
United Nations System Influenza Coordination (UNSIIC)

June 2011

**Avian and Pandemic Influenza Related Programmes and Projects
Of the Inter-Governmental Entities
In Asia and the Pacific**

**United Nations System Influenza Coordination (UNSIC)
Asia-Pacific Regional Hub**

June 2011

Published by United Nations System
Influenza Coordination (UNSIC)

© UNSIC 2011

All rights reserved. Reproduction and dissemination of material in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders.

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the United Nations System Influenza Coordination concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufactures, whether or not these have been patented, does not imply that these have been endorsed or recommended by the United Nations System Influenza Coordination in preference to others of a similar nature that are not mentioned.

The lead writer and coordinator:
Hitoshi Murakami, UNSIC Asia-Pacific Hub

Credit of cover photos:
ASEAN-US TATF (left) and The ASEF Public Health Network (right)

Executive summary

In the Asia-Pacific region, post-World War II regional cooperation initially focused on regional security. Eventually, more regional entities emerged to facilitate economic cooperation both within Asia-Pacific and with other regions such as the Eastern Pacific Rim and Europe. The emergence of Severe Acute Respiratory Syndrome (SARS) in 2002-2003 and the highly pathogenic avian influenza (HPAI) H5N1 in 2004 triggered these regional entities to extend their mandates from traditional diplomatic and economic spaces to the public goods space encompassing human public health and animal health. With such a shared sense of the new mandate, a large number of activities on avian and pandemic influenza (AI/PI) have been formulated by the inter-governmental entities in the region, particularly since 2005.

The purpose of this document is to capture the outline of the AI/PI-related initiatives undertaken since 2005 by the inter-governmental entities in Asia-Pacific, namely the Association of Southeast Asian Nations (ASEAN), Asia-Pacific Economic Cooperation (APEC), the Asia-Europe Meeting (ASEM)/the Asia-Europe Foundation (ASEF), the South Asian Association for Regional Cooperation (SAARC), the Secretariat of the Pacific Community (SPC), Mekong Basin Disease Surveillance (MBDS) and the Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS). It specifically seeks to elaborate the **values created** by various initiatives, **lessons learned** in implementing them and the **implications to wider non-pandemic crises**, identifying their future value.

As of early 2011, 16 programmes/projects on AI/PI had been conducted by the seven inter-governmental entities in Asia-Pacific since 2005. The countries of Southeast Asia are notable for their engagement in multiple such programmes/projects. Thailand and Viet Nam have been engaged in 13; Brunei, Indonesia, Malaysia, Philippines and Singapore in 11; and Cambodia, Lao PDR and Myanmar in 9 programmes/projects, respectively. Conversely, DPR Korea and Timor-Leste have not been engaged in any programme/project. The Australian, Japanese, US and New Zealand Governments, the Asian Development Bank (ADB) and the Rockefeller Foundation have been the notable financial backers of these initiatives. The Member States/economies have also contributed substantially to financing some programmes/projects.

There has been an almost even balance between the programme approach in which AI/PI initiatives are embedded in existing frameworks and the project approach with clearly timed objectives and period-specific external financial supports. The scopes of the 16 programmes/projects concerned correspond to all WHO pandemic phases. They also cover all areas of focus specified by the United Nations Consolidated Action Plan for Avian (Animal) and Human Influenza (UNCAPAH), namely:

1. Animal health and bio-security;
2. Sustaining livelihoods;
3. Human health;
4. Coordination of national, regional and international stakeholders;
5. Risk communication;
6. Continuity under pandemic; and
7. Humanitarian support.

Out of the 16 programmes/projects, 15 have touched upon human health issues. Coordination followed with 12, then animal health with 10. Livelihoods have been

touched upon by seven programmes/projects either in terms of the compensation aspect of the H5N1 control or assurance of business continuity and resilience. Only four have touched upon risk communication whereas three each on continuity under pandemic and humanitarian actions, respectively.

A remarkable volume and range of values have been created by the programmes/projects on AI/PI conducted by inter-governmental entities in Asia-Pacific. Regional cooperation networks are at the core of the values created, encompassing:

1. Multi-national cooperation;
2. Multi-sectoral cooperation (particularly between animal and human health sectors);
3. Public-private partnership; and
4. Interface with donors.

Information and experience sharing are the two fundamental functions that augment effective regional cooperation. Capacity building is another key value that has been created, particularly in terms of developing both human resources and capacity at the regional level. The most common specific technical accomplishment has been the development of guidelines, toolkits and standard operating procedures (SOPs). Other notable accomplishments include implementation of simulation exercises or scenario development for such exercises, implementation of assessments/development of assessment tools and assistance to national planning. Development of information and communication technologies (ICT) solutions, actual responses to Pandemic (H1N1) 2009 and research are among the specific values that have been created.

The key lessons learned focused particularly on the value of a regional approach and networking. The need to formalise regional networks and the importance of norm setting are two practical managerial aspects that have been elaborated. Emphasis was also put on human networking and mutual learning depending on the nature of the regional entities. The importance of clear role demarcation between stakeholders, stakeholder engagement and the sense of ownership of national governments were also learned referred to in this context. Lessons around communication were elaborated in reference to the importance of risk communication and the needs of transparency, advocacy and effective communication channels connecting different stakeholders. The need for high-level political commitment was also highlighted. A shortage of human resources and high turnover rates were perceived as major challenges by multiple programmes/projects. Other challenges elaborated include inter-sectoral barriers, language barriers, prioritising the AI/PI issue among other competing items on the development agenda and fragmentation along funding lines.

The values created and lessons learned through the programmes/projects have significant implications for regional resilience against wider non-pandemic crises. There are general policy-related and more specific operational components that the programmes/projects concerned have built and which have the potential to be applied to wider non-influenza crises. General policy-related components include regional collaboration frameworks, regional and national command and control systems, national planning capacity, inter-sectoral collaboration and legal assessments and streamlining. Specific operational components include development of business resilience, risk communication networks and the capacity to develop simulation scenarios, conduct simulation exercises and manage the stock and supply logistics of essential commodities.

The density and complexity of the multiple networks on AI/PI and emerging infectious diseases (EID) created by the inter-governmental entities in Asia-Pacific call for an

understanding of these invaluable contributions and consideration of how to interface effectively with these initiatives on the part of the UN system and agencies, national governments, development partners and NGOs.

Table of Contents

Executive summary	ii
Table of Contents	v
Abbreviations and Acronyms	vi
Acknowledgement	x
Preface	1
Part I: Summary Tables of Avian and Pandemic Influenza-Related Programmes/Projects of Inter-Governmental Entities in Asia-Pacific	3
Part II: Description of Avian and Pandemic Influenza-Related Programmes/Projects of Inter-Governmental Entities in Asia-Pacific	21
ASEAN	22
APEC	50
ASEM/ASEF	67
SAARC	76
SPC	81
MBDS	94
ACMECS	102
Part III: Synthesis and analysis	108
Conclusions	116

Abbreviations and Acronyms

AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ABAC	APEC Business Advisory Council
ACDM	ASEAN Committee for Disaster Management
ADSL	Asynchronous Digital Subscriber Line
ACMECS	Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy
ADB	Asian Development Bank
ADVANCE	ASEAN Development Vision to Advance National Cooperation and Economic Integration
AEGCD	ASEAN Expert Group on Communicable Diseases
AFP	Acute Flaccid Paralysis
AHI	Avian (or Animal) and Human Influenza
AHIF	Avian and Human Influenza Facility
AHMM	ASEAN Health Ministers Meeting
AI	Avian (or Animal) Influenza
AIDS	Acquired Immunodeficiency Syndrome
AINRD	Agriculture, Industry and Natural Resources Division (ASEAN Secretariat)
AMAF	ASEAN Ministers of Agriculture and Forestry
AMS	ASEAN Member States
APARWG	APEC Action Plan and Resources Working Group
APCSS	Asia-Pacific Center for Security Studies
APEC	Asia-Pacific Economic Cooperation
APL	ASEAN Plus Three Partnership Laboratories
APSED	Asia Pacific Strategy for Emerging Diseases (WHO)
ASAP	Accurate Scenarios Active Preparedness (ASEF)
ASEAN	Association of Southeast Asian Nations
ASEF	Asia-Europe Foundation
ASEM	Asia-Europe Meeting
ASWGL	ASEAN Sectoral Working Group on Livestock
ATCWG	Agricultural Technical Cooperation Working Group (APEC)
AWGPPR	ASEAN Working Group on Pandemic Preparedness and Response
AusAID	Australian Agency for International Development
BCP	Business Continuity Planning
CISCAI	Communication and Information Systems for the Control of Avian Influenza (ASEAN Foundation)
CRGA	The Committee of Representatives of Governments and Administration (SPC)
CSF	Classical Swine Fever
DAFF	Department of Agriculture, Fisheries and Forestry (Australia)
DDM	Data for Decision Making
DLD	Department of Livestock Development (Thailand)
DPR Korea	Democratic People's Republic of Korea
EID	Emerging Infectious Diseases
EINet	Emerging Infections Network (APEC)
EMT	Exercise Management Training
EpiNet	Regional network on outbreak response in the Pacific (PPHSN)
ERAT	ASEAN Emergency Rapid Assessment Team
EU	European Union

FAO	Food and Agriculture Organization
FEMM	Forum Economic Ministers' Meeting (Pacific Islands Forum)
FETP	Field Epidemiology Training Programme
FMD	Foot-and-mouth Disease
FOSS	Free and Open Source Software
FSM	Federated States of Micronesia
GDP	Gross Domestic Product
GF-TAD	Global Framework for the Progressive Control of Trans-boundary Animal Diseases
GIS	Geographic(al) Information System
GOARN	Global Outbreak Alert and Response Network
GPS	Global Positioning System
GRS	Ground Receiving Stations
HCDD	Health and Communicable Diseases Division (ASEAN Secretariat)
HIV	Human Immunodeficiency Virus
HPAI	Highly Pathogenic Avian Influenza
HPED	Highly Pathogenic Emerging Diseases
HTF	Health Task Force (APEC)
HWG	Health Working Group (APEC)
H1N1	Human influenza A subtype (H1 haemagglutinin; N1 neuraminidase)
H5N1	Avian influenza A subtype (H5 haemagglutinin; N1 neuraminidase)
ICS	Incident Command System
ICT	Information and Communication Technology
IEC	Information, Education and Communication
IHR	International Health Regulations (Revised Version in 2005)
ILO	International Labour Organization
IMCAPI	International Ministerial Conference on Avian (or Animal) and Pandemic Influenza
InSTEDD	Innovative Support to Emergencies Diseases and Disasters
ITRI	Information Technology Research Institute (Lao PDR)
JAIF	Japan-ASEAN Integration Fund
JICS	Japan International Cooperation System
JTF2	The Second Japan Trust Fund
LabNet	Public health regional laboratory network in the Pacific (PPHSN)
Lao PDR	Lao People's Democratic Republic
MBDS	Mekong Basin Disease Surveillance
MoFA	Ministry of Foreign Affairs
MoPH	Ministry of Public Health (Thailand)
MoHLW	Ministry of Health, Labour and Welfare (Japan)
MOU	Memorandum of Understanding
MPAT	Multinational Planning Augmentation Team
NECTEC	National Electronics and Computer Technology Center, Thailand
NLCPs	National Laboratory Contact Points (ASEAN+3 EID)
NGO	Non-Governmental Organisation
NTI	Nuclear Threat Initiative
OCHA	Office for the Coordination of Humanitarian Affairs
OIE	World Organisation for Animal Health
PacNet	Public health early warning system in the Pacific (PPHSN)
PCG	Programme Coordination Group (ASEAN+3 EID)
PFS	Programme Facilitation Section (ASEAN+3 EID)
PHEMAP	Public Health and Emergency Management in Asia and the Pacific

PHEIC	Public Health Emergency of International Concern
PHRD	Japan Policy and Human Resource Development Fund
PIC	Pandemic Influenza Contingency (OCHA)
PICNet	Pacific Regional Infection Control Network (SPC)
PICTs	Pacific Island Countries and Territories
PLGSME	Policy Level Group on Small and Medium Enterprises (APEC)
PPE	Personal Protective Equipment
PPHSN	Pacific Public Health Surveillance Network
PPTC	Pacific Paramedical Training Centre
PREPSOM	Preparatory Senior Officials Meeting
PRIPPP	Pacific Region Influenza Pandemic Preparedness Project (SPC)
ProMED	Program for Monitoring Emerging Diseases
RCM	Regional Coordination Mechanism (ASEAN HPAI Task Force)
RRT	Rapid Response Team(s)
SAARC	South Asian Association for Regional Cooperation
SARS	Severe Acute Respiratory Syndrome
SASOP	ASEAN Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response Operations
SAARC	South Asian Association for Regional Cooperation
SCE	Steering Committee on the Program for Economic and Technical Cooperation (APEC)
SEARO	WHO Office for Southeast Asia
SME	Small and Medium-sized Enterprise
SMEWG	Small and Medium Enterprises Working Group (APEC)
SMS	Short Mail Service
SOMHD	Senior Officials Meeting on Health Development (ASEAN)
SOM	Senior Officials Meeting (ASEAN)
SOPs	Standard Operating Procedures
SPC	Secretariat of the Pacific Community
SAR	(Hong Kong) Special Administrative Region of China
STI	Sexually Transmitted Infection
STL	Singapore Technologies Logistics Ltd.
SWG	Small Working Group (AWGPPR)
TADs	Trans-boundary Animal Diseases
TAG	Technical Advisory Group (WHO)
TATF	ASEAN-US Technical Assistance and Training Facility
TB	Tuberculosis
ToR	Terms of Reference
TWB	Technical Working Body (PPHSN)
UNCAPAHI	Consolidated Action Plan for Contributions of the UN System and Partners for Animal and Human Influenza
UNDP	United Nations Development Programme
UNOCHA	<i>See OCHA above</i>
UNSIC	United Nations System Influenza Coordination
USAID	United States Agency for International Development
US-CDC	US Centers for Disease Control and Prevention
VSAT	Very Small Aperture Terminal
WG	Working Group (SAARC)
WHO	World Health Organization
WiFi	Wireless Fidelity

WIMAX Wireless Interoperability for Microwave Access
WPRO WHO Office for the Western Pacific

Acknowledgement

UN System Influenza Coordination (UNSIIC) Asia-Pacific Hub acknowledges with gratitude the kind information provision and contributions from programme/project managers of ASEAN, APEC, ASEM/ASEF, SAARC, SPC, MBDS and ACMECS to this documentation. We particularly acknowledge the following individuals and units for their kind reviews and elaborations of the lessons learned. Without their support, this document would not have come into existence:

Dr. Noel Miranda (ASEAN-TATF), Health and Communicable Diseases Division, ASEAN Secretariat, Ms. Joy Caminade, Dr. Solomon Benigno (ASEAN-HPAI TF), Ms. Emi Inaoka (MoFA, Japan), Ms. Naoko Noda (ASEF/JICS), Mr. Bambang Wijayanto (ASEAN Foundation CISCAI), Professor Ann Marie Kimball (University of Washington), Dr. Yuzo Arima (University of Washington), Dr. Emiko Mizuki (University of Washington), Dr. Rodney Hoff (REDI Centre), Ms. Sharon Turner (DAFF, Australia), Dr. Koji Nabae (MoHLW, Japan), Dr. Lisa Koonin (US-CDC), the Communication and Public Affairs Team of the APEC Secretariat, Mr. Rachmat Irwansjah (Intellectual Exchange Department, ASEF), Ms. Sunkyong Lee (Intellectual Exchange Department, ASEF), the SAARC Secretariat, Dr. Seini Kupu (SPC), Dr. Tom Kiedrzyński (SPC), Ms. Radha Etheridge (SPC), Ms. Christelle Lepers (SPC), Dr. Moe Ko Oo (MBDS), and Ministry of Public Health and Ministry of Foreign Affairs, Thailand.

Preface

In the Asia-Pacific region, post-World War II regional cooperation initially focused mainly on regional security. Eventually, more regional entities emerged to facilitate economic cooperation both within Asia-Pacific and with other regions such as the Eastern Pacific Rim and Europe.

The emergence of Severe Acute Respiratory Syndrome (SARS) in 2002-2003 and the highly pathogenic avian influenza (HPAI) H5N1 in 2004 triggered these regional entities to extend their mandates from traditional diplomatic and economic spaces to the public goods space encompassing human public health and animal health. The regional, inter-country nature of these cooperation entities naturally made them consider that such public health emergencies as SARS and HPAI that extend beyond the boundary of a single country call for regional, inter-country actions both in terms of preparedness and response. With a common understanding of the new mandate, a large number of activities on avian and pandemic influenza (AI/PI) have been formulated and conducted by the inter-governmental entities in the region, particularly since 2005.

In September 2005, the UN Secretary General appointed a UN System Influenza Coordinator and formed UN System Influenza Coordination (UNSIC) to help make the UN system work to its best effect in support of national, regional and global efforts to address the threats posed by avian and pandemic influenza. Since then, UNSIC Asia-Pacific Regional Hub (APRH), among many tasks, has focused on the coordination and assurance of synergy at country and regional levels in planning and implementing programmes targeting AI/PI both within and outside the UN system. UNSIC is currently in a transitional phase until the end of June 2011, after which its key functions will be transferred within the existing UN structure. As part of this transition, the UNSIC-APRH is documenting the multi-faceted undertakings of the regional inter-governmental entities on AI/PI both for the UN system and other partners in the region to capture what has been and is being done by those entities.

The purpose of this document is to capture the outline of the AI/PI-related initiatives undertaken since 2005 by the inter-governmental entities in Asia-Pacific, namely the Association of Southeast Asian Nations (ASEAN), Asia-Pacific Economic Cooperation (APEC), the Asia-Europe Meeting (ASEM)/the Asia-Europe Foundation (ASEF), the South Asian Association for Regional Cooperation (SAARC), the Secretariat of the Pacific Community (SPC), Mekong Basin Disease Surveillance (MBDS) and the Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS). It specifically tries to elaborate the **values created** by various initiatives, **lessons learned** in implementing them and the **implications to wider non-pandemic crises** to identify their future value.

This documentation has been prepared for audiences including: UN agencies and offices at global, regional and country levels; inter-governmental entities in Asia-Pacific (for mutual understanding); the donor community; national governments; and NGOs active in AI/PI-related initiatives in the region.

UNSIC-APRH acknowledges that this document is limited to describing inter-governmental initiatives with which it has had a working partnership, and recognises that other programme/project activities conducted by inter-governmental entities contributing to the AI/PI response during 2005-2011 may exist with equally meaningful roles and contributions.

UNSIC sincerely hopes that this document facilitates further networking among all stakeholders contributing to the preparedness and response to AI/PI, other emerging infectious diseases (EID), other animal and human health emergencies and wider crises. It also hopes that those achievements and lessons generated by the efforts of several inter-governmental entities not be wasted, but rather be fully revisited and utilised in improving the Asia-Pacific region's resilience to a wide range of crises.

Part I

Summary Tables of Avian and Pandemic Influenza-Related Programmes/Projects of Inter-Governmental Entities in Asia-Pacific

The purpose of this part of the report is to concisely display the 16 programmes/projects concerned with avian and pandemic influenza (AI/PI) conducted by seven inter-governmental organisations in Asia-Pacific, namely ASEAN, APEC, ASEM/ASEF, SAARC, SPC, MBDS and ACMECS. To provide an easy guide for the reader to what kind of influenza-related initiatives organisations are doing, or have done, these tables summarise only the key parts of their programmes/projects. For more detailed background, activity contents, descriptions of values created, lessons learned and potential implications for wider crises, as well as a brief introduction to the seven organisations concerned, readers are encouraged to refer to Part II. Table 1 depicts the list of 16 programmes/projects on AI/PI conducted by the seven inter-governmental organisations in Asia-Pacific as an overview. The following 16 tables summarise each of the 16 programmes/projects of concern.

Table 1: List of programmes/projects on avian and pandemic influenza by inter-governmental organisations in Asia-Pacific

Organisation	Programmes/Projects
ASEAN (Association of Southeast Asian Nations)	1. ASEAN programmes towards regional multi-sectoral pandemic preparedness and response
	2. ASEAN+3 Emerging Infectious Diseases Project Phases I and II
	3. ASEAN Cooperation on Animal Health (ASEAN HPAI Task Force)
	4. ASEAN-Japan Project for Stockpile of Antivirals and PPE against Potential Pandemic Influenza
	5. ASEAN Foundation Communication and Information Systems for the Control of Avian Influenza (CISCAI)
APEC (Asia-Pacific Economic Cooperation)	6. Health Working Group (HWG)
	7. Agriculture and Technical Cooperation Working Group (ATCWG)
	8. Small and Medium-sized Enterprise (SME) Working Group
	9. APEC Business Advisory Council (ABAC)
ASEM (Asia-Europe Meeting, Asia-Europe Foundation)	10. The ASEF Public Health Network
	11. Japan/ASEM Initiative for the Rapid Containment of Pandemic Influenza Stockpile Component
SAARC (South Asian Association for Regional Cooperation)	12. Animal and Human Influenza-related Initiatives of SAARC
SPC (Secretariat of the Pacific Community)	13. Pacific Public Health Surveillance Network (PPHSN)
	14. Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP)
MBDS (Mekong Basin Disease Surveillance)	15. Mekong Basin Disease Surveillance
ACMECS (Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy)	16. ACMECS Initiatives on Animal and Human Influenza

1. ASEAN programmes towards regional multi-sectoral pandemic preparedness and responses

Implementation body	ASEAN Working Group for Pandemic Preparedness and Response (AWGPPR) supported by ASEAN-US Technical Assistance and Training Facility (TATF)
Timeline	Phase I: January-December 2007 (overall TATF activities; October 2004-December 2007) Phase II: January 2008-present (overall TATF activities; September 2007-September 2012)
Budget scale and financing	Phase I: US\$6 million (among which less than 4% for AI/PI) Phase II: US\$20 million (among which less than 6% for AI/PI) USAID through TATF
Overall objective(s)	To promote regional multi-sectoral pandemic preparedness and response
Values created	<ol style="list-style-type: none"> 1. A regional network for pandemic preparedness and response 2. A generic assessment tool of country pandemic preparedness 3. A regional multi-sectoral, multi-country pandemic preparedness and response table top exercise 4. Discussion on the revision of ASEAN's disaster management framework (AADMER) and its SOP (SASOP) in reference to pandemic
Lessons learned	<ol style="list-style-type: none"> 1. Importance of synergy with other existing key players such as those involved in non-health sectors 2. Value of regional approach
Implications to other non-pandemic crises	AADMER and SASOP provide a wider platform of disaster management in which pandemic may be embedded.

2. ASEAN+3 Emerging Infectious Diseases Project Phases I and II

Implementation body	ASEAN Plus Three Emerging Infectious Diseases (EID) Programme
Timeline	Phase I: August 2004-October 2005 Phase II: January 2007-June 2010
Budget scale and financing	Aus\$5 million from July 2006 to March 2010, mostly covering Phase II AusAID
Overall objective(s)	To enhance regional preparedness and capacity through integrated approaches to prevention, surveillance and timely response to EID
Values created	<ol style="list-style-type: none"> 1. Response to Pandemic (H1N1) 2009 2. Regional communication frameworks 3. Regional outbreak response capacity 4. Strengthened Public Health and Animal Health collaboration 5. Health and tourism sectors collaboration 6. Exploration on gender and EID 7. A regional laboratory network 8. Exercise Management Training (EMT) 9. Strengthening of the regional network on preparing for and responding to EID
Lessons learned	<ol style="list-style-type: none"> 1. Advantages of networking and stakeholder engagement 2. Importance of norm setting on top of technical capacity building
Implications to other non-pandemic crises	The established risk communication network and health-tourism collaboration may well cater to other crises such as natural and human disasters.

3. ASEAN Cooperation on Animal Health (ASEAN HPAI Task Force)

Implementation body	ASEAN Highly Pathogenic Avian Influenza (HPAI) Task Force
Timeline	Phase I: 2006-2008 Phase II: 2009-2010
Budget scale and financing	Phase I: US\$338,000 Phase II: US\$377,000 Asian Development Bank (ADB)
Overall objective(s)	To strengthen the ASEAN Secretariat's capacity for regional coordination and communication in controlling HPAI
Values created	<ol style="list-style-type: none"> 1. Enhanced ASEAN capacity in regional coordination 2. Compilation of regional HPAI control experiences 3. Provision of regional multi-sectoral and multi-agency collaboration platform 4. Regional strategy for HPAI control 5. Roadmap towards HPAI-free ASEAN Community by 2020
Lessons learned	<ol style="list-style-type: none"> 1. Importance of role clarification and the active engagement of key partners at the initial stage 2. Importance of a sense of ownership among national programme officers/focal points 3. Difficulty and importance of development of clear linkages and information-sharing with other non-veterinary sectors 4. Role of reliable and sufficient budgetary support 5. Need of high-level political support and commitment
Implications to other non-pandemic crises	ASEAN Cooperation on Animal Health oversees not only HPAI, but also other priority trans-boundary animal diseases such as foot and mouth disease (FMD) and classical swine fever (CSF).

4. ASEAN-Japan Project for Stockpile of Antivirals and PPE against Potential Pandemic Influenza

Implementation body	ASEAN Secretariat and Japan International Cooperation System (JICS)
Timeline	2006-2013
Budget scale and financing	US\$30 million Government of Japan through the Japan-ASEAN Integration Fund (JAIF)
Overall objective(s)	To establish and maintain a stockpile of antiviral drugs and personal protective equipment (PPE) against potential pandemic influenza for the ASEAN region
Values created	<ol style="list-style-type: none"> 1. Establishment of regional (in Singapore) and national antivirals and PPE stockpile 2. Guidelines for stockpile deployment for rapid containment 3. Clear definitions of roles of partners in rapid containment 4. Testing of protocol by simulation exercises (PanStop)
Lessons learned	<ol style="list-style-type: none"> 1. Need for wave and proactive deployment of supplies in rapid containment 2. Need for continuous advocacy of the concept of rapid containment
Implications to other non-pandemic crises	The expertise and experiences built around establishing and managing supply stockpiles for emergency may well cater to other crises. PanStop exercises also strengthened both exercise planning and management capacity and the deployment protocol, which are relevant for wider crises.

5. ASEAN Foundation Communication and Information Systems for the Control of Avian Influenza (CISCAI)

Implementation body	ASEAN Foundation
Timeline	2008-2010
Budget scale and financing	US\$1.1 million was granted by the ASEAN Foundation through Japan-ASEAN Solidarity Fund for 3 years
Overall objective(s)	To research, design, develop, field-test and deploy sustainable communication and information systems that will support national efforts to control the spread of avian influenza (AI) among animals and humans in Lao PDR and Viet Nam
Values created	<ol style="list-style-type: none"> 1. Software and hardware pilot deployment for reporting AI in Lao PDR and Viet Nam 2. Training of animal and human health officials on information and communication technologies (ICT)
Lessons learned	<ol style="list-style-type: none"> 1. Benefit of low cost, patent-free ICT 2. Challenges in human resources 3. Importance of stakeholder involvement 4. Need for civil involvement in disease surveillance
Implications to other non-pandemic crises	Geographic information system (GIS) platform is a useful tool to address not only health crises such as AI, but also other wider crises such as natural disasters.

6. APEC Health Working Group (HWG)

Implementation body	APEC Health Working Group (HWG)
Timeline	2003-present (started as Health Task Force and continuing as HWG since 2008)
Budget scale and financing	Budget for APEC Emerging Infections Networks (EINet) and its Expert Roundtable Series of Hot Topics in Infectious Diseases amounts to US\$700,000 and is financed by APEC, US Government and other private funding
Overall objective(s)	To plan and prepare for health-related threats to economies, trade and security, focusing mainly on naturally occurring and intentionally caused health threats
Values created	<ol style="list-style-type: none"> 1. APEC Emerging Infections Network (EINet) as an information sharing platform 2. Five EINet Expert Roundtable Series on Hot Topics in Infectious Diseases (videoconferences) 3. Collection of Domestic Measures to Prevent, Control and Respond to Avian Influenza among Member Economies 4. Workshops, meetings and trainings
Lessons learned	<ol style="list-style-type: none"> 1. Usefulness of multi-national videoconference 2. Importance of human networking 3. Value of mutual learning 4. Technical difficulties in videoconferencing
Implications to other non-pandemic crises	The established communication platforms, most notably the EINet, have started to address disasters as a related topic of emerging infectious diseases.

7. APEC Agricultural Technical Cooperation Working Group (ATCWG)

Implementation body	APEC Agricultural Technical Cooperation Working Group (ATCWG)
Timeline	2007-2008
Budget scale and financing	Budget scale is not available Australian Government Department of Agriculture, Fisheries and Forestry
Overall objective(s)	To collate the work of substantial global activity against the threat of H5N1 avian influenza into a comprehensive and accessible resource
Values created	<ol style="list-style-type: none"> 1. Development of the AI and EID Implementation Toolkit 2. H5N1 control experiences sharing
Lessons learned	<ol style="list-style-type: none"> 1. Value of experiences sharing 2. Once information is shared, many take immediate action to adopt successful measures employed by other countries 3. Toolkit assists with the engagement and maintenance of political commitment 4. Ensuring sustainability of ongoing financial commitment is a challenge
Implications to other non-pandemic crises	The structure and some core elements of the AI and EID Implementation Toolkit are directly applicable to the preparedness and response to wider crises.

8. APEC Small and Medium-sized Enterprises Working Group (SMEWG)

Implementation body	APEC Small and Medium-sized Enterprises Working Group (SMEWG)
Timeline	2007-present
Budget scale and financing	Not available
Overall objective(s)	To strengthen the resilience of SMEs to better respond to a pandemic
Values created	<ol style="list-style-type: none"> 1. The APEC Pandemic Flu Planning Guide designed to help SMEs develop a plan for a pandemic 2. Train the Trainer Workshops since 2007 targeting SME experts in member economies and affiliated organisations with standard toolkits for the trainers
Lessons learned	<ol style="list-style-type: none"> 1. Fund and human resources shortage posed a barrier for SMEs to effectively prepare for pandemic influenzas
Implications to other non-pandemic crises	<p>Resilience of SMEs against pandemic influenza promoted by the APEC SMEWG will also cater to their resilience to other crises including economic, natural and social calamities.</p> <p>The mainstream initiatives of the APEC SMEWG focus on the increased economic viability of SMEs. Thus, its attempt to prepare SMEs better for the pandemic is embedded in a larger programme to ensure livelihoods and employment, as well as the economic security of the APEC population.</p>

9. APEC Business Advisory Council (ABAC)

Implementation body	APEC Business Advisory Council (ABAC)
Timeline	2006-present
Budget scale and financing	Not available
Overall objective(s)	To promote business continuity planning and disaster preparedness for avian and pandemic influenza
Values created	<ol style="list-style-type: none"> 1. Online surveys on business sector pandemic preparedness 2. Web-based influenza pandemic preparedness planning checklist for small and medium-sized enterprises (SMEs) 3. List of useful websites for influenza pandemic preparedness for the business sector
Lessons learned	<ol style="list-style-type: none"> 1. Importance of public-private partnership 2. Effective communication channels are key for both governments and businesses 3. Importance of transparency 4. Prevention rather than cure
Implications to other non-pandemic crises	When ABAC started to embrace pandemic preparedness and business continuity under pandemics in 2006, the disaster preparedness concept served as a framework. The three outcomes of the ABAC's pandemic-related efforts can all potentially serve for other natural, human and business crises.

10. The ASEF Public Health Network

Implementation body	The ASEF Public Health Network
Timeline	2009-2013
Budget scale and financing	US\$3 million for five years* Government of Japan through Japan Trust Fund on Health (JTF2)
Overall objective(s)	To build platform for public health policy dialogue between Asia and Europe
Values created	<ol style="list-style-type: none"> 1. Insights into regional coordination and infectious diseases 2. Development of multiple pandemic scenarios 3. Collaboration platform between Asia and Europe involving public and private sectors as well as civil society organisations 4. Awareness of network building among Asian and European youth 5. Asia Europe Journal special issue on public health and vulnerable population
Lessons learned	<ol style="list-style-type: none"> 1. Importance of cross-sectoral collaboration in public health 2. Critical role of civil society in public health 3. Public health as inter-regional bridge
Implications to other non-pandemic crises	The unique scenario development process applied is applicable to other crises such as food security, climate change, natural disasters, regional conflicts, etc. The analysis of the affects of this global trend on infectious diseases can naturally be extended to other global issues mentioned above.

*Note: The ASEF Public Health Network is a part of the Japan/ASEM Initiative for the Rapid Containment of Pandemic Influenza.

11. Japan/ASEM Initiative for the Rapid Containment of Pandemic Influenza Stockpile Component

Implementation body	Japan/ASEM Initiative for the Rapid Containment of Pandemic Influenza
Timeline	2009-2013
Budget scale and financing	US\$28.85 million Government of Japan through Japan Trust Fund on Health (JTF2)
Overall objective(s)	To supplement the shortfall of stockpiles in Asia by adding to the ASEAN stockpile (see corresponding sections)
Values created	<ol style="list-style-type: none"> 1. Establishment of the regional anti-viral and PPE stockpile for Asia (stockpiled in Singapore) 2. Guidelines for stockpile deployment
Lessons learned	<ol style="list-style-type: none"> 1. Importance of routine response capacities 2. Need to be aware of drug regulation requirements of each country
Implications to other non-pandemic crises	The expertise and experiences built around establishing and managing supply stockpiles for emergencies may well cater to other crises such as natural and human disasters.

12. Animal and Human Influenza-related Programmes/Projects of South Asian Association for Regional Cooperation (SAARC)

Implementation body	South Asian Association for Regional Cooperation (SAARC)
Timeline	2008-present
Budget scale and financing	Asian Development Bank, World Bank, USAID, Government of Japan and the European Union provide the major financing
Overall objective(s)	To ensure that regional approaches develop regional institutional capacity and appropriate systems for surveillance, early warning and a rapid deployment of health response, and to review public health guidelines
Values created	<ol style="list-style-type: none"> 1. Institution building on regional cooperation on emerging infectious diseases including avian and pandemic influenza 2. Development of national pandemic plans 3. Better partner collaboration framework
Lessons learned	<ol style="list-style-type: none"> 1. Value of holistic multidisciplinary approach 2. Capacity at all levels counts 3. Importance of risk communication
Implications to other non-pandemic crises	The regional collaboration framework that SAARC provides is a very unique and valuable one and is not supplemented by any other arrangement.

13. Pacific Public Health Surveillance Network (PPHSN)

Implementation body	Pacific Island countries and territories, Secretariat of the Pacific Community (SPC), WHO and all PPHSN partner agencies
Timeline	1996-present
Budget scale and financing	PPHSN activities are supported by allied members and development partners (budget scale not available)
Overall objective(s)	To improve public health surveillance and response in the Pacific in a sustainable way
Values created	<ol style="list-style-type: none"> 1. Four regional networks on infectious disease surveillance and response in the Pacific Island countries and territories (PICTs): PacNet, LabNet, EpiNet and PICNet 2. Effective mechanisms for information and experience sharing 3. Sustainable collaboration platform among PICTs and partner agencies 4. Provision of operational frameworks for various projects
Lessons learned	<ol style="list-style-type: none"> 1. Experience of Pandemic (H1N1) 2009 and other outbreaks 2. Value of partner collaboration for effective information sharing 3. Importance of laboratory network
Implications to other non-pandemic crises	The early warning system consisting of PacNet and PacNet-restricted has the potential to also work in other public health emergencies of international concern, not restricted to infectious diseases within the existing framework of IHR 2005. Established relationships between PICT laboratories and reference laboratories can improve sample transport and confirmatory testing arrangements even for non-pandemic EID.

14. Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP)

Implementation body	Secretariat of the Pacific Community (SPC)
Timeline	2006-2011
Budget scale and financing	The first year budget was Aus\$4.5 million The Governments of Australia and New Zealand are the financers
Overall objective(s)	To have the PICTs able to effectively and efficiently respond to emerging diseases, in particular highly pathogenic avian influenza (HPAI) and pandemic influenza
Values created	<ol style="list-style-type: none"> 1. Development of national pandemic plans among Pacific Island countries and territories (PICTs) 2. Establishment of multi-sectoral taskforces 3. Assessment guidelines for legislative basis for pandemic preparedness 4. SOPs for animal and human health surveillance and response 5. Establishment of animal health capacity building training 6. Establishment of field epidemiology training as university-certified course 7. Strengthened infection control with development of regional infection control guidelines 8. Actual response to Pandemic (H1N1) 2009
Lessons learned	<ol style="list-style-type: none"> 1. Challenge in prioritising AI/PI and EID among other items on the development agenda 2. Need for high-level political commitment 3. Prospect of self-sustainability (need continued external support for surveillance)
Implications to other non-pandemic crises	National pandemic planning, exercises, legal assessment and streamlining stockpiling of essential commodities all benefit preparedness and response to wider crises.

15. Mekong Basin Diseases Surveillance (MBDS)

Implementation body	Mekong Basin Diseases Surveillance (MBDS)
Timeline	2001-present
Budget scale and financing	Major financers are the member country governments, the Rockefeller Foundation and the Nuclear Threat Initiative (NTI). The Rockefeller Foundation provided US\$3 million for the past three years.
Overall objective(s)	To develop mechanisms for building strong cross-border programmes, implement them in pilot sites and develop tools and skills among key stakeholders to solve issues of cross-border infectious disease epidemics in a coordinated way
Values created	<ol style="list-style-type: none"> 1. Development of mechanisms for building strong cross-border infectious disease surveillance and response 2. Tabletop exercises on pandemic preparedness and response at country and regional levels 3. Building MBDS capacity at central and provincial levels 4. Human resource development 5. Establishment of a cooperation platform
Lessons learned	<ol style="list-style-type: none"> 1. Need for clear role demarcation among development partners 2. Need for arrangements to formalise network 3. Instability in human resources posed challenges 4. Difficulty in coordinating activities with different fund sources 5. Language as a key barrier
Implications to other non-pandemic crises	The IHR core capacity development caters to all PHEIC. Strengthening of the central command system through the MBDS played a critical role in wider infectious disease hazards such as the severe diarrhoea outbreak in Myanmar in 2008, which occurred in conjunction with flooding.

16. ACMECS Initiatives on Animal and Human Influenza

Implementation body	Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS)
Timeline	2005-present
Budget scale and financing	Thailand has pledged 100 million Baht (about US\$3 million) as an initial fund for combating avian influenza and other communicable diseases
Overall objective(s)	To address animal and human influenza properly as part of efforts toward social progress under the public health and agriculture cooperation frameworks
Values created	<ol style="list-style-type: none"> 1. Human resource development for disease surveillance and control 2. Strengthened national pandemic preparedness plan 3. Promotion of emerging infectious disease control at borders 4. Enhanced network of officers in charge of health and pandemic control/prevention at both central and local levels through various programmes (e.g. Thai-Myanmar collaboration on avian influenza control)
Lessons learned	<ol style="list-style-type: none"> 1. Value of regional coordination mechanisms for project implementation 2. Importance of complementarities of ACMECS activities with other regional initiatives 3. Importance of information sharing among member states 4. Importance of human networking for maintenance of cross-border cooperation
Implications to other non-pandemic crises	ACMECS, with a wider scope of work beyond animal and human health, is in a good position to embed regional collaboration in preparedness and responses to wider public health emergencies and other crises, such as natural disasters.

Part II

Description of Avian and Pandemic Influenza-Related Programmes/Projects of Inter-Governmental Entities in Asia-Pacific

This section presents a brief introduction to the seven inter-governmental entities in Asia-Pacific concerned with avian and pandemic influenza (AI/PI), namely ASEAN, APEC, ASEM/ASEF, SAARC, SPC, MBDS and ACMECS followed by descriptions of their programme(s)/project(s) on AI/PI. Altogether, 16 programmes and projects are covered. For each of the seven inter-governmental entities, after the brief introduction of the body itself, all of its influenza-related programmes/projects are presented. The programme/project descriptions encompass the background, brief programme descriptions (elaborating key activities), timelines, budgets and financiers, values created, lessons learned and implications to preparedness and response to non-pandemic crises. Concise summaries of each of the 16 programmes/projects are contained in Part I above. Summary syntheses and analyses derived from the descriptions in this part are included in Part III below.

ASEAN in brief

1. History

The Association of Southeast Asian Nations, or ASEAN, was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by Indonesia, Malaysia, Philippines, Singapore and Thailand. Brunei Darussalam then joined on 8 January 1984, Viet Nam on 28 July 1995, Lao PDR and Myanmar on 23 July 1997 and Cambodia on 30 April 1999, making up what is today the 10 Member States of ASEAN. ASEAN's scope of work surpasses economic issues and includes political coordination and regional security with well-established diplomatic protocols.

2. Current Member States

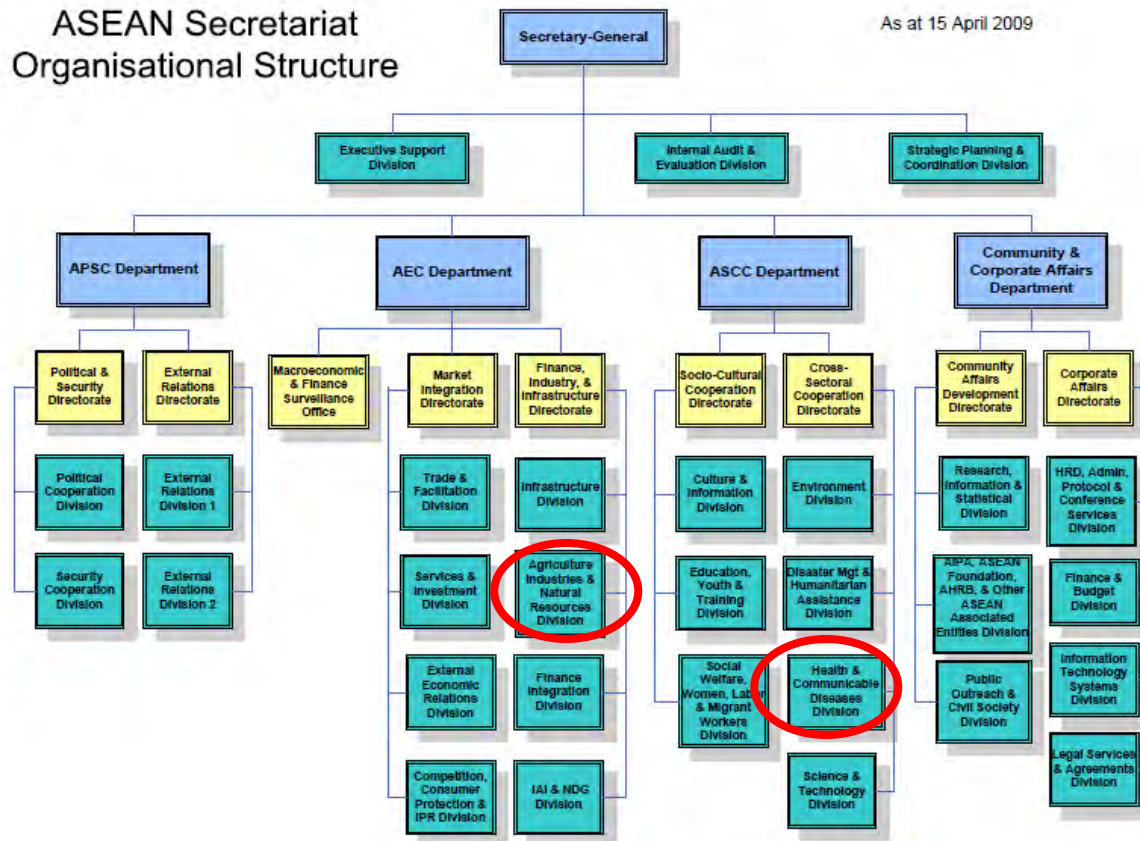
There are 10 ASEAN Member States, namely Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam (see map below).

Map1: Map of ASEAN Member States



2. Structure and the Section(s) in Charge of Influenza and EID

(Source: ASEAN website: <http://www.aseansec.org/13106-OrgStructure.pdf>)



1. ASEAN programmes towards regional multi-sectoral pandemic preparedness and response

1. Background

Since 2007 ASEAN has advanced a programme of regional multi-sectoral pandemic preparedness and response in cooperation with the US government-funded ASEAN-US Technical Assistance and Training Facility (TATF), located within the ASEAN Secretariat. TATF is a cross-cutting facility overseen by a joint ASEAN-US Project Steering Committee.

It should be noted that the TATF's scope of work is not limited to pandemic preparedness and response. Rather, wider trans-national, regional security, economic integration, and other socio-economically relevant aspects such as disaster management, climate change and food security issues are tackled by the Facility, particularly in the context of the ASEAN Development Vision to Advance National Cooperation and Economic Integration (ADVANCE) programme.

As mentioned in section 2.1 below, the TATF supported the establishment of the ASEAN Working Group on Pandemic Preparedness and Response (AWGPPR) in 2008. The Working Group is supported by the Division of Health and Communicable Diseases in the ASEAN Secretariat. The AWGPPR is a group under the Senior Officials Meeting on Health Development (SOMHD), working on multi-sectoral pandemic and public health emergency preparedness and responses. A new work plan covering 2011-2015 has been finalised to guide these initiatives.

2. Brief programme descriptions

2.1. Formation of AWGPPR

The idea for establishing a regional working group dealing with pandemic preparedness and response issues evolved through several workshops which involved human health, animal health and disaster management sectors. It started with identification of gaps in the national pandemic preparedness and response plans, followed by identification of needs for multi-sectoral coordination at both national and regional levels, and finally the discussion on establishment of an ASEAN working group to address the pandemic issues.

In November 2007, the TATF organised The ASEAN Regional Workshop on Multi-sectoral Coordination in Pandemic Preparedness and Response in Bangkok, Thailand. The workshop reviewed both health and non-health preparedness and responses. In March 2008, the ASEAN Regional Planning Meeting on Strengthening Multi-sectoral Pandemic Preparedness and Response was conducted in Kuala Lumpur, Malaysia, in which the terms of reference (ToR) of the AWGPPR were settled. The first meeting of the AWGPPR was held in Medan, Indonesia in July 2008.

2.2. Promoting regional pandemic preparedness

The multi-sectoral dimension of pandemic preparedness among the ASEAN Member States was spearheaded as early as in 2008. An ASEAN Workshop on Advocacy for

Promoting Multi-sectoral Responses to Pandemic Preparedness and Response was held in July 2008 in Bangkok, Thailand, to strengthen the capacity of the health sectors at national level to advocate to the non health sectors (identified as essential services and are required to maintain their services in times of a pandemic) to increase their involvement in pandemic preparedness and response.

In 2009, the TATF spearheaded the multi-sectoral dimension of pandemic preparedness among the ASEAN Member States. In February 2009, it organised the Consultative Meeting on Regional Cooperation in Pandemic Preparedness and Response in Phnom Penh, Cambodia to strengthen regional collaboration among existing national and regional initiatives in improving the planning for pandemic preparedness and response in a multi-sectoral context.

In 2010, ASEAN moved further with exploring utilisation of the incident command system (ICS) and multi-sectoral business continuity planning (BCP). In April 2010, it organised a workshop on Managing Public Health Emergencies and Pandemics using the ICS in Manila, Philippines. ICS is commonly defined as a systematic tool used for the command, control and coordination of emergency responses. The workshop provided valuable insights on how to organise the ICS for on-site disaster response, especially during a severe pandemic where urgent health issues and disruptions in various essential services need to be managed accordingly.

In July 2010, the ASEAN Consultative Meeting on Promoting Business Continuity Planning (BCP) within a Multi-sectoral Pandemic Preparedness and Response Action Plan was held in Ha Noi, Viet Nam. The sharing of country information on BCP allowed for a clearer appreciation of the achievements and gaps among countries, and encouraged countries to reconsider their respective systems and preparedness planning. The whole-of-society approach was discussed in relation to the need to strengthen governments' efforts to ensure continuity of businesses and essential services during a severe pandemic. The integration of pandemic preparedness and response into the disaster management structures and the promotion of the whole-of-society approach were key discussion points. Member States were advised to pursue the prescribed actions on promoting sector-wide continuity of operations planning and coordination within a multi-hazard disaster management system such as the national multi-sectoral pandemic preparedness assessments, simulation exercises and the implementation of the relevant action points of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme 2010-2015.

2.3. Assessing Member States' multi-sectoral pandemic preparedness

The first meeting of the AWGPPR in July 2008 in Medan, Indonesia reached an agreement on the assignment of a Small Working Group (SWG) to develop the ASEAN multi-sectoral indicators for pandemic preparedness and response. The SWG was formed with Malaysia as the lead country, Indonesia (Chair for the AWGPPR), Cambodia and the Philippines. In August 2008, a meeting of the SWG was held in Kuala Lumpur. During that meeting the SWG completed a draft of the indicators. These ASEAN-specific indicators were tailored to the region and were intended to be used as descriptions of the minimum structures and mechanisms that should be in place and functioning as an indication of a country's degree of multi-sectoral pandemic preparedness and response. The AWGPPR prepared ToR for ASEAN to proceed with a series of country assessments that would be based on the ASEAN indicators.

A multi-sectoral preparedness assessment was first pilot tested in Indonesia in June 2009. This was the initial trial of the actual assessment. The design and processes were guided by several underlying principles and assumptions. For example, as a means of fostering information sharing and support among ASEAN Member States, assessors drawn from the Member States would form joint multi-country teams to assess their own country and other countries. Issues to be addressed during country assessments were to be based on the criteria and standards suggested by the ASEAN indicators. The data gathering process would be more of a self-assessment than an audit, and information was to be accompanied by source documents whenever possible. The findings of the Indonesia pilot assessment were presented in an Indonesia Country Report on Multi-sectoral Pandemic Preparedness and Response, 2009 and were also presented to the 2nd Meeting of AWGPPR in 2009 in Bangkok, Thailand.

After the pilot assessment in Indonesia, recommendations and comments from the focal points of the AWGPPR were gathered by a consultant supported by TATF. The recommendations included modifying the questionnaire and reviewing the use of a quantitative rating scale, conducting self assessment instead of involving external assessors, requiring supporting documents for responses and suggesting that the assessment should not be a national survey, but a strategic qualitative needs assessment using an interview format. Based on these, a new approach to the assessment methodology based on an internal assessment process was pursued.

The final multi-sectoral pandemic preparedness and response assessment guidelines and tool were distributed to all AWGPPR focal points in May 2010. Member States were provided guidelines for the organisation of the inception meetings.

As of first quarter of 2011, assessment has been completed in Cambodia, Indonesia, Lao PDR, Malaysia, Singapore and Thailand whereas assessment meetings are ongoing in the remaining countries.

2.4. Conducting a multi-sectoral pandemic preparedness and response tabletop exercise

In a workshop on military humanitarian responses to pandemic, the Armed Forces of Indonesia and other regional militaries met with UN and other humanitarian organisations in early 2010 under the banner of the Multinational Planning Augmentation Team (MPAT). The event prompted the discussion between the MPAT and the ASEAN Secretariat of a possible exercise involving ASEAN Member States. Upon the endorsement of the AWGPPR, the Southeast Asia Regional Multi-sectoral Pandemic Preparedness and Response Tabletop Exercise was organised by MPAT in collaboration with ASEAN and TATF in Phnom Penh, Cambodia in late August 2010. The exercise received funding support from USAID and technical support from the UN Office for Coordination of Humanitarian Affairs (UNOCHA) and the Asia-Pacific Center for Security Studies (APCSS).

The following practical issues were identified as a result of the exercise:

1. The ASEAN standard operating procedure for regional standby arrangements and coordination of joint disaster relief and emergency response operations (SASOP) needs to be updated to incorporate pandemics and multi-sectoral considerations. It also requires synchronisation with other regional and international mechanisms where possible, preparedness documents and a method to ensure regional awareness of all readiness support documents and procedures;

2. Clear regional coordination and communication strategies for pandemics, guidelines for risk communications and a stronger information management system for pandemic response to ensure proper information provision to the public are required;
3. Issues regarding border management need to be streamlined since they open the door to many other critical issues (i.e. food supply, electric power, medicine, refugees and essential services);
4. Much work needs to be done regarding multi-sectoral coordination. Lack of training, awareness and understanding of regional responsibilities and readiness mechanisms, along with synchronising regional and international efforts were identified as concerns.

3. Timeline

As for the activities of AWGPPR, Phase I was from January to December 2007 and Phase II is ongoing since January 2008.

As for the overall TATF activities, Phase I (October 2004-December 2007) focused on meeting urgent needs, not only in pandemic preparedness and responses, but also wider trans-national and regional security and economic integration issues. Phase II (September 2007-September 2012) tries to build on the momentum generated by Phase I. It currently functions as the centrepiece of the ADVANCE programme (see section 1).

4. Budget and financing

USAID, through TATF, was the primary financier of all the undertakings on the multi-sectoral pandemic preparedness and response conducted by the TATF and AWGPPR.

The total budget of the Phase I (see above Programme timeline section) of the entire TATF was US\$6 million and Phase II US\$20 million including all trans-national, regional security and economic integration activities, not restricted to the multi-sectoral preparedness and response to pandemic influenza and EID.

5. Values created

1. **A regional network for pandemic preparedness and response:** The activities of the Facility created a network of stakeholders in each ASEAN Member States across different sectors on pandemic preparedness and response. Promotion of the multi-sectoral dimension of pandemic preparedness and response is one of the most valuable contributions of the TATF so far.
2. **A generic assessment tool of country pandemic preparedness:** The tool has been developed and field-tested. Country assessments are ongoing as of April 2011.
3. **A regional multi-sectoral, multi-country pandemic preparedness and response tabletop exercise:** The exercise conducted in partnership with MPAT in Phnom Penh, Cambodia in 2010 has set a prototype for such exercises in the future.
4. **Discussion towards the revision of SASOP:** The above exercise tested the relevance of SASOP (see section 2.4), which operationalises AADMER (see third paragraph, section 2.2) in pandemic scenario. This and also the BCP development support (see last paragraph, section 2.2) created opportunities to integrate pandemic

preparedness and response into a solid disaster management and humanitarian action framework established in ASEAN and its Member States.

6. Lessons learned

- 1. Importance of synergy with other players:** The initiative observed a need to address all issues relating to emerging pandemic threats and actual pandemics and public health emergencies, and concurrently the importance of avoiding overlaps with the technical initiatives of international organisations. There are a number of areas where ASEAN can establish a niche, and in this regard international organisations should recognise ASEAN efforts. Both should try to work collaboratively to synergise the efforts of all stakeholders.
- 2. Value of regional approach:** The regional approach is really based on the expectation that collective gains can be generated if the 10 Member States within ASEAN improve their coordination structures and mechanisms, and cooperative arrangements, toward achieving a common goal.

7. Implications to preparedness and response to non-pandemic crises

1. In December 2009, AADMER (see third paragraph, section 2.2) entered into force. Through AADMER, ASEAN had developed disaster preparedness and emergency response mechanisms and tools, including SASOP (see section 2.4), and the designation of the ASEAN Emergency Rapid Assessment Team (ERAT) under the SASOP. These further improve ASEAN responsiveness to disasters, including pandemics.
2. An ASEAN meeting including the focal points of the AWGPPR and ASEAN Committee for Disaster Management (ACDM) in February 2009 in Phnom Penh arrived at the recommendation for the AADMER to be used as the main mechanism for pandemic preparedness and response, and for specific protocols to be developed in this regard. This same recommendation was adopted during the second meeting of the AWGPPR held in June 2009 in Bangkok. In its 14th Meeting held from 30 November to 1 December 2009 in Bandung, Indonesia, the ACDM had accepted incorporated pandemic preparedness and response in the AADMER Work Programme (2010-2015).
3. The multi-sectoral tabletop exercise conducted in Phnom Penh in August 2010 tested the SASOP in a pandemic scenario. This exercise opened a wider window of opportunity for the ASEAN to place pandemic preparedness and response in a broader disaster management framework.
4. Furthermore, the operability of the SASOP and AADMER is augmented by the fact that the ASEAN Secretary General is the focal point for humanitarian actions that are to be implemented by the ASEAN.

8. Useful web links

1. US-ASEAN Technical Assistance and Training Facility (TATF) Phase II:
<http://www.advanceiqc.com/tatf>

2. ASEAN Agreement on Disaster Management and Emergency Response (AADMER): http://www.jus.uio.no/english/services/library/treaties/13/13-02/asean_disaster_management.xml
3. ASEAN standard operating procedure for regional standby arrangements and coordination of joint disaster relief and emergency response operations (SASOP): <http://www.aseansec.org/publications/SASOP.pdf>

2. ASEAN Plus Three Emerging Infectious Diseases (EID) Project

1. Background

ASEAN Plus Three (China, Japan and the Republic of Korea) cooperation commenced in 1997 and has broadened and deepened its scope ever since. The cooperation is now being pursued in 20 areas, covering politics and security, transnational crime, economics, finance and monetary issues, agriculture and forestry, energy, mining, tourism, health, labour, culture and arts, environment, science and technology, information and communication technology, social welfare, rural development and poverty eradication, disaster management, youth, women and other issues. There were 57 bodies (1 Summit, 14 ministerial, 19 senior officials, 2 directors general, 18 technical level meetings and 2 other track meetings) coordinating ASEAN Plus Three cooperation as of August 2009.

As one of the main activities on health issues, the ASEAN Plus Three Emerging Infectious Diseases (EID) Programme aimed to enhance regional preparedness and capacity through integrated approaches to prevention, surveillance and timely responses to EID, including Severe Acute Respiratory Syndrome (SARS) and avian and pandemic influenza. The SARS epidemic and spread of highly pathogenic avian influenza H5N1 in 2003 highlighted the need for an integrated regional approach to EID in Southeast Asia. To fill this need, the ASEAN Plus Three EID Programme commenced in 2004 with funding support from AusAID. Phase I terminated in 2005, followed by Phase II from 2007 to 2010, again with AusAID funding. The Programme was facilitated by Programme Facilitating Section (PFS) under supervision of the Health and Communicable Diseases Division (HCDD) of the ASEAN Secretariat.

2. Brief programme descriptions

2.1. Responses to Pandemic (H1N1) 2009

After the emergence of the Pandemic (H1N1) 2009 in April 2009, the Programme was mandated as the Coordinating Centre in ASEAN's response to the pandemic. Through its established networks and mechanisms, the Programme facilitated information sharing and identified gaps in the response measures of the ASEAN Member States. The Programme also coordinated some of the follow-up actions recommended in the Joint Ministerial Statement of the ASEAN Plus Three Health Ministers Special Meeting on Pandemic (H1N1) 2009.

2.2. Establishment of Implementing Mechanisms: Programme Coordination Group (PCG) and Programme Facilitation Section (PFS) in ASEAN Secretariat

A Programme Coordination Group (PCG) was formed among ASEAN Expert Group on Communicable Diseases (AEGCD), the Plus Three focal points on EID, AusAID, FAO, OIE, WHO and ASEAN Secretariat to provide strategic guidance, direction and priority setting for the Project. The Programme Facilitation Section (PFS), which composed of three public health experts and three supporting staff, was seconded at ASEAN Secretariat under the purview of the HCDD of the ASEAN Secretariat. Aside from playing a key role in the implementation of the EID Programme, the PFS also provided

technical and secretariat support to the ASEAN Working Group for One Health that drove the multi-sector response to pandemics.

2.3. Establishment of risk communication network

Under the coordination of Indonesia, the Programme organised a network of communication focal points responsible for the development of a Protocol for Information Sharing, the establishment and management of the website for information sharing (www.ASEANplus3-eid.info) and training of 35 communication and laboratory focal points. The endorsement and approval at a high-level of governments of these mechanisms ensured that the content of the website caters to countries' needs. In the Pandemic (H1N1) 2009, the website was used as a mechanism for news surveillance and a platform for information exchange, not only with the health sector, but also with other relevant sectors.

With the coordination of Malaysia, the Programme also led the development of the ASEAN Risk Communication Strategy and Risk Communication Plans by ASEAN Member States that supported better understanding of the risks of infectious diseases. Training modules were developed and were used to train the 35 risk communicators from the ASEAN Member States. To facilitate the sharing of good practices, Thailand coordinated the documentation and information sharing on EID prevention and control, highlighting strategies that worked at the country level. Capacity development for documentation was an embedded element in this project.

Recognising the need to strengthen Member States' capacity to manage EID outbreaks through effective risk communication and to facilitate regional collaboration during disease outbreaks, the 10th AHMM in July 2010 agreed to establish an ASEAN Risk Communication Resource Centre. The Centre will be based in Malaysia and will undertake various research and training programmes to strengthen the region's risk communication capabilities based on the needs of the Member States.

2.4. Development of Minimum Standards on Joint Outbreak Investigation and Response

The Programme contributed to identify gaps in Member States' national legislation concerning the International Health Regulations (IHR 2005), with the coordination of Cambodia. In the 10th AHMM, ASEAN Health Ministers endorsed the Minimum Standards on Joint Multi-sectoral Outbreak Investigation and Response. It is expected that regional and national guidelines for coordination procedures to mount a clear, coordinated, timely and effective response to emergencies in ASEAN will be developed in due course. Outbreak response teams have been established in ASEAN Member States and efforts to build networks and linkages between these national teams continue. These outbreak response team leaders have developed a common basis for coordination based on WHO's Global Outbreak Alert and Response Network (GOARN).

2.5 Strengthening Public Health and Animal Health Collaboration

The ASEAN Plus Three EID Programme, in support of One Health and at the request of the Member States who recognised the need for a stronger collaboration between the two sectors, developed a Joint Recommendations on Human and Animal Health Collaboration on Emerging and Neglected Zoonoses as well as a Framework and a detailed Workplan on Human and Animal Health Collaboration in support of the Joint Recommendations. The Framework and Workplan consist of the following six key

components that the delegates agreed for close coordination, collaboration and cooperation between the two sectors at the national and regional levels:

1. Policy;
2. Communication and information sharing;
3. Surveillance, Prevention and Control;
4. Laboratory;
5. Capacity Development; and
6. Research and Development.

These have been endorsed by the Preparatory Senior Officials Meeting of the 31st Meeting of the ASEAN Ministers on Agriculture and Forestry (PREPSOM-31st AMAF) held in November 2009. Later, it has been supported at the 10th AHMM held in Singapore during July 2010.

2.6. ASEAN Plus Three Healthy Tourism Initiative

Strengthened collaboration between the health and tourism sectors in preparation for, and in response to EID was pursued under this innovative initiative. Its main objective was to promote protection of nationals of host countries and tourists from EID outbreaks and to avoid negative impacts of diseases on the tourism industry. Specific objectives were:

1. To provide a forum for closer interaction and communication between the public health and the tourism sectors;
2. To conduct research on the current needs and resources for promotion of Healthy Tourism;
3. To identify action priorities to promote health and safety of both travellers and host communities; and
4. To develop guidelines on Healthy Tourism focusing on vector control, sanitation and hygiene, prevention of zoonotic diseases, etc.

Throughout the Initiative's activities, most notably the Joint Workshop held in Bangkok in September 2008 followed by assessment visits, gaps such as the following were identified:

1. Lack of awareness in the public and private sectors of the important linkage between health and tourism;
2. Need to address local poverty issues if health issues are to be addressed effectively; and
3. Lack of appropriate health and safety advice to tourists.

Preliminary research has been carried out on selected tourist destinations in the region. Healthy Tourism standards and a prototype work plan for tourist destinations has been developed focusing on priority EID. The Initiative identified the concept of Healthy Tourism as a way to integrate tourism planning and practice with health protection and promotion, and to provide mechanisms to protect tourists' health. It is seen as a tool for community development in the host countries.

2.7. Research to support mainstreaming of gender and social issues in the prevention and control of EID

To promote effective and focused preventive strategies and a greater understanding of the social and economic impacts of EID outbreaks on both genders, the Programme coordinated a gender research project. Gender-based information on selected health determinants, impacts of diseases and health-seeking behaviours focusing on early recognition and preventive measures for EID (i.e. avian influenza and dengue) were collected. The information will be used as the basis for recommendations to high-level ASEAN bodies for policy development.

2.8. Establishment of Laboratory Based Surveillance of 13 pathogens and the ASEAN Plus Three Laboratory Partnership

A workshop was held in Malaysia in 2008 during which common standard operating procedures (SOPs) for laboratories in 13 ASEAN Plus Three nations were drafted regarding 13 specific pathogens. During the first regional meeting of ASEAN Plus Three Partnership Laboratories (APL) in Singapore in 2009, the Terms of Reference (ToR) for APL and the development of a work plan were agreed upon. The APL is a partnership between laboratories of the 13 ASEAN Plus Three countries, which enables sharing of information and expertise. The 4th ASEAN Plus Three Health Ministers Meeting held in Singapore in July 2010 endorsed the establishment of the APL to further strengthen laboratory surveillance and networking within the region.

2.9. Exercise management training programme

With the coordination of Thailand, the Programme implemented an exercise management training programme to bring together various sectors that would play critical roles during severe outbreaks of EID. Regional as well as sub-regional training workshops were held, focusing on the planning and management of both tabletop and field simulation exercises.

2.10. Strengthening collaboration with partner organisations

Offices for the Western Pacific (WPRO) and the Southeast Asia (SEARO) of WHO have been regular members of the Programme Coordination Group (PCG) and Core PCG, and are consulted on decision-making processes of the Programme. To ensure inputs from the animal health sector, the Food and Agriculture Organisation (FAO) and the World Organisation for Animal Health (OIE) have officially been invited as regular members of the PCG. The Programme also proactively involves WHO, OIE, FAO and other partners in the implementation of its projects.

3. Timeline

2004-2010

4. Budget and financing

AusAID was the primary financial backer of the Programme (both Phase I and II). Aus\$5.6 million were granted from 2004 to 2010, mostly covering Phase II of the Programme.

5. Values created

- 1. Responding to actual pandemic:** The Programme has been at the forefront of all the key initiatives on pandemic preparedness and response since the emergence of Pandemic (H1N1) 2009.
- 2. Regional communication framework:** Communication Focal Points have been identified in Member States and tasked with sharing information regarding outbreaks, guided by the agreed Protocol for Information Sharing. The Programme maintained an information sharing website for them to share information regarding outbreaks. Coherent/aligned regional and national Risk Communication Strategies have been developed and are supported with training.
- 3. Regional outbreak response capacity:** The Minimum Standards on Joint Outbreak Investigation and Response were developed on the basis of identified gaps in the implementation of the International Health Regulations (IHR, 2005). The roles, responsibilities and minimal standards for all relevant sectors have been defined to guide cross-border outbreak investigation and response. Outbreak response teams have been established in ASEAN Member States and networks and linkages are being built between these national teams. The outbreak response team leaders have developed a common basis for coordination based on WHO's Global Outbreak Alert and Response Network (GOARN).
- 4. Strengthened Public Health and Animal Health collaboration:** Endorsed by senior officials responsible for both sectors, Joint Recommendations on Human and Animal Health Collaboration on Emerging and Neglected Zoonoses as well as a Framework and a detailed Workplan on Human and Animal Health Collaboration in support of the Joint Recommendations provide a significant official backing to the collaboration. The Framework and Workplan consist of six key components that the delegates agreed for close coordination, collaboration and cooperation between the two sectors at the national and regional levels. They include policy, communication and information sharing, surveillance, prevention and control, laboratory, capacity development, and research and development.
- 5. Health and tourism sectors collaboration:** Through the ASEAN Plus Three Healthy Tourism Initiative, collaboration between the health and tourism sectors was strengthened. Preliminary research has been carried out on selected tourist destinations in the region. Healthy Tourism standards and a prototype work plan for tourist destinations have been developed focusing on priority EIDs.
- 6. Exploration on gender and EID:** Gender-based information on selected health determinants, impacts of diseases and health-seeking behaviours focusing on early recognition and preventive measures of EID (i.e. avian influenza and dengue) were generated.
- 7. Laboratory network:** ASEAN Plus Three Partnership Laboratories (APL), a partnership between laboratories of the 13 ASEAN Plus Three countries that enables sharing of information and expertise, was established with standard operative procedures (SOPs) for 13 pathogens of particular concern in the region.
- 8. Exercise Management Training (EMT):** A series of EMT were conducted targeting personnel from Ministry of Health and other relevant agencies. These training sessions facilitated regional capacity building on the management of tabletop and field simulation exercises on pandemic influenza and other EID outbreaks.
- 9. Strengthened coordination and networking:** The coordination and networking of the regional network in Southeast Asia that is preparing for and responding to EID was strengthened, including among Member States governments, United Nations agencies and other partners.

6. Lessons learned

1. **Power of networking:** Investment in regional networks and communication protocols was rewarded following the H1N1 outbreak, when ASEAN Plus Three Partnership Laboratories (APL) exchanged relevant information such as training opportunities, offers of assistance and diagnostic methods. Personal relationships and networks facilitated by the Programme have fostered more open and efficient communication between key stakeholders in relation to EID. For example, the flow of timely and relevant information between National Laboratory Contact Points (NLCPs) was ensured this way during the Pandemic (H1N1) 2009.
2. **Importance of norm setting on top of technical capacity building:** National outbreak response team leaders not only benefited from technical training to improve their capacity, but also from the establishment of minimum standards by a Cambodia-led project to streamline the collaboration of various government departments in the event of an outbreak in the region.

7. Implications to preparedness and response to non-pandemic crises

1. The established risk communication network may well cater to other crises such as natural and human disasters in line with the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) and The ASEAN standard operating procedure for regional standby arrangements and coordination of joint disaster relief and emergency response operations (see the ASEAN-US Technical Assistance and Training Facility/TWGPPR section for details of AADMER and SASOP).
2. Strengthened ties between the health and tourism sectors can feature wider issues than EID, such as food safety, endemic infectious diseases, road traffic safety and injury prevention, etc.

8. Useful web links

1. Joint Ministerial Statement of the ASEAN+3 Health Ministers Special meeting on Influenza A(H1N1), Bangkok, 8 May 2009: <http://www.aseansec.org/22543.htm>
2. Joint Statement of the 10th ASEAN Health Ministers Meeting Singapore, 22 July 2010: <http://www.aseansec.org/24938.htm>
3. ASEAN Plus Three EID website for information sharing: www.ASEANplus3-eid.info
4. ASEAN Plus Three Emerging Infectious Diseases Programme 2008-2009 Report: [http://www.aseanplus3-eid.info/newsfiles/2008-2009%20Programme%20Report%20\(Published%20July2009\).pdf](http://www.aseanplus3-eid.info/newsfiles/2008-2009%20Programme%20Report%20(Published%20July2009).pdf)

3. ASEAN Cooperation on Animal Health (ASEAN HPAI Task Force)

1. Background

ASEAN's cooperation in agriculture dates back to the 1960s and the ASEAN Ministers of Agriculture and Forestry (AMAF) group has been functional since the 1970s. The ASEAN Sectoral Working Group on Livestock (ASWGL), under the purview of the AMAF, is the main sectoral body responsible for addressing issues and challenges in the sustainable development of livestock and trans-boundary animal diseases (TADs). The ASWGL advances strategic approaches towards regional cooperation on animal health and zoonoses. One such approach includes the strengthening of regional coordination on trans-boundary animal diseases. The group has prioritised highly pathogenic avian influenza (HPAI), foot-and-mouth disease (FMD) and classical swine fever (CSF) among other animal diseases for regional cooperation.

In this overall strategic framework, the ASEAN Highly Pathogenic Avian Influenza (HPAI) Task Force was established in October 2004 by the 26th Meeting of the AMAF. The Group is under the auspices of the Agriculture, Industry and Natural Resources Division (AINRD) of the ASEAN Secretariat.

2. Brief programme descriptions

2.1. Regional capacity building through implementation of ADB-supported HPAI Projects

ASEAN-ADB HPAI Project phase I was launched in 2006 and was implemented until 2008. It mainly focused on strengthening the ASEAN Secretariat's capacity for regional coordination and communication. It convened a series of workshops that focused on HPAI control and eradication in ASEAN.

Phase II followed from 2009 and was implemented in 2010. Four notable contributions were attributed to this phase, including:

1. Enhancement of the ASEAN Secretariat's capacity in regional coordination for the implementation of the control and eradication of HPAI;
2. Compilation and stock-taking of experiences and best practices on HPAI control in the form of various documents;
3. Provision of a regional collaboration platform for animal and human health collaboration; and
4. Development of the Roadmap for an HPAI-free ASEAN community by 2020 (see 2.4 below).

The main documents produced in 2. above include the following: *Prevention, control and eradication of avian influenza in ASEAN: Strategies and success stories, September 2009-August 2010*, recapping the regional HPAI status, then introducing the Regional Framework for the Control and Eradication of HPAI in ASEAN, formulated by the ASEAN HPAI Task Force and eventually converted into the ASEAN Regional Strategy for the Progressive Control and Eradication of HPAI for 2008-2010 (see section 2.2). It also highlights useful country success stories. The *Directory of ASEAN HPAI Experts* lists technical resource persons in each ASEAN Member State. This will serve as an easy

reference for regional resource mobilisation. *Summary of accomplishments: ASEAN-ADB Project on Strengthening Regional Coordination in the Control and Eradication of HPAI in ASEAN* summarises the accomplishments of Phase II of the ADB-supported HPAI Project along with its components. The advocacy/promotional video entitled '*Towards an HPAI-free and safer ASEAN*' highlights the multidimensional impacts, coordinated responses, significant achievements and the way forward in addressing HPAI in the region.

2.2. ASEAN Regional Strategy for the Progressive Control and Eradication of HPAI for 2008-2010

Along with the implementation of the ASEAN-ADB HPAI Project, the ASEAN Regional Strategy for the Progressive Control and Eradication of HPAI for 2008-2010 was also developed. Its goal was to protect and maintain HPAI-free countries/zones and to control/eradicate HPAI in the remaining infected zones such as Viet Nam and Indonesia. The Strategy had five focus areas, namely:

1. Strengthen regional cooperation through sustained coordination and partnership with stakeholders;
2. Pursue regional arrangements for sustainable HPAI control (e.g., ASEAN Animal Health Trust Fund established in 2006 and the declaration by Heads of States to commit to HPAI control);
3. Develop short-, mid- and long-term HPAI eradication strategies (e.g. application of zoning, strengthening veterinary services and vaccination);
4. Country capacity building (e.g., surveillance and epidemiology, laboratory, information system, risk communication, preparedness and contingency planning, legislation, bio-security measures, culling poultry and compensation, risk analysis and animal-human health interface);
5. Research and development (e.g., vaccine and vaccination, economic implications of compensation and HPAI impact on livestock industry, epidemiology of HPAI virus, market chain study, traditional movement of poultry and other operations research).

Before this Strategic Plan, the ASEAN HPAI Task Force, in consultation with FAO and OIE, formulated the Regional Framework for the Control and Eradication of HPAI in ASEAN. The Framework, with its 14 associated projects, became the Work Plan for the Control and Eradication of HPAI in ASEAN 2006-2008 during their second and third meetings held in Kuala Lumpur in July 2005 and January 2006, respectively. The Regional Framework provided strategic direction in the effort and encouraged cooperation to improve the implementation of HPAI prevention and control measures, with reference to eight strategic areas, namely:

1. Disease surveillance;
2. Containment measures;
3. Culling and vaccination policy;
4. Diagnostic capability;
5. Establishment of disease free zones;
6. Information sharing;
7. Emergency preparedness plans; and
8. Public awareness and communication.

These were compatible with the five focus areas in the 2008-2010 Strategy mentioned above.

2.3. Regional Coordination Mechanism for Animal Health and Zoonosis

In the ASEAN Workshop on Regional Coordination on Animal Health and Zoonosis held in Lao PDR in May 2010, the need to establish a unified and broader coordination mechanism in its concrete form was agreed upon. The Workshop proposed to the ASWGL to establish a Regional Coordination Mechanism (RCM) for Animal Health and Zoonosis in ASEAN. The Special SOM-31st AMAF in August 2010 and the SOM-32nd AMAF Meetings agreed to establish the RCM and also establish an *ad hoc* task force to facilitate the development of the RCM. The *ad hoc* task force aims to gather, deliberate on and synthesise inputs from the ASEAN Member States on the study on regional coordination and the results of the ASEAN RCM Workshop. It has been mandated to develop a detailed and comprehensive plan for the RCM by the SOM-33rd AMAF Meeting in 2011.

2.4. Roadmap for an HPAI-free ASEAN Community by 2020

The ASEAN HPAI Task Force is working toward the roll out and financing of the Roadmap developed during Phase II of the ASEAN-ADB HPAI Project (see 2.1 above), which sets out the timeline and specific achievement goals towards H5N1 elimination in ASEAN, including Indonesia and Viet Nam, while maintaining the H5N1-free status of Philippines, Singapore, etc. The 32nd AMAF meeting in October 2010 approved the Roadmap. It is positioned within the overall policy framework towards the making the ASEAN Community HPAI-free by 2020.

The basic rationale of the Roadmap is to categorise ASEAN Member States based on their current HPAI status into those that are HPAI-free (Brunei, Philippines and Singapore), those that have regained HPAI-free status (Malaysia and Thailand), those that have sporadic outbreaks (Cambodia, Lao PDR and Myanmar) and those that are HPAI-persistent (Indonesia and Viet Nam). Different measures are then applied in each category as well as for cross border transmission control. The Roadmap is a directional and action-oriented long-term strategy to prevent, control and eradicate HPAI and other highly pathogenic emerging diseases in ASEAN. It is aiming for consistency with previous regional frameworks, the Global Framework for the Progressive Control of Trans-boundary Animal Diseases (GF-TAD) and the One Health approach.

The Roadmap has seven strategic goals:

1. Strengthening veterinary services;
2. Achievement of disease-free status in a progressive manner at country group (category), national and sub-national levels;
3. Effective reduction of circulating HPAI virus in the environment leading to its progressive control and eradication;
4. Effective and rapid containment of outbreaks in affected flocks or zones;
5. Effective surveillance capacity;
6. Sustainable market chain policies and intervention in reducing risks to poultry and human populations; and
7. Enhanced bio-security as a long-term, cost-effective preventive measure to keep HPAI away from farms and flocks.

3. Timeline

2004-present

4. Budget and financing

The Asian Development Bank (ADB) has been the main financial supporter of the ASEAN-ADB HPAI Project (both Phases I and II). The Project received US\$338,000 from ADB for two years, from March 2006 to February 2008, which covered the implementation of Phase I. The implementation of Phase II from 2009 to 2010 had a budget estimated at US\$377,000 from ADB.

5. Values created

- 1. Enhanced ASEAN capacity in regional coordination:** The capacity of the ASEAN Secretariat in regional coordination of implementation of the control and eradication of HPAI programme was strengthened through the ASEAN-ADB HPAI Project Phase I and II.
- 2. Compilation of regional HPAI control experiences:** Stocktaking of experiences and best practices on HPAI control were compiled in the form of various documents. It deepened the understanding of animal health issues and strengthened cooperation and collaboration among AMSs and development partners.
- 3. Provision of a regional multi-sectoral and multi-agency collaboration platform:** ASEAN Cooperation on Animal Health (ASEAN HPAI Task Force) has provided a platform for animal and human health collaboration, including various regional stakeholders such as governments and UN agencies. The platform increased understanding between the animal health and public health sectors in conducting collaborative activities and it symbolised the intent of the two sectors to work closely together. The Regional Coordination Mechanism for Animal Health and Zoonosis is currently under development.
- 4. Regional strategy for HPAI control:** The ASEAN Regional Strategy for the Progressive Control and Eradication of HPAI for 2008-2010 was developed. It aims to protect and maintain HPAI-free countries/zones and to control/eradicate HPAI in the remaining infected zones.
- 5. Roadmap towards HPAI-free ASEAN Community by 2020:** The ASEAN HPAI Task Force is now targeting the roll-out and financing of the Roadmap, which sets out the timeline and specific achievement goals towards H5N1 eradication from ASEAN by 2020 when the ASEAN Community will commence. The Roadmap is expected to further strengthen national and regional coordination for the mid- and long-term.

6. Lessons learned

- 1. Importance of role clarification and active engagement of key partners at the initial stage:** By clarifying the roles and responsibilities between and among the main implementers of this Project (ASEAN Secretariat and HPAI Taskforce) in the beginning, more open communication and enhanced cooperation were established, paving the way for a 'teamwork' spirit during the course of its implementation. This also involved technical and development partners such as FAO and OIE.
- 2. Importance of the sense of ownership among national programme officers/focal points:** Consultation with and involvement of the members of the HPAI Taskforce in the development of the Project Work Plan, HPAI Roadmap, advocacy/promotional video and other resource/knowledge materials, hastened not

only the realisation of these outputs on paper but more importantly, the recognition that their usefulness and eventual success, depends on them. This was particularly highlighted with the statement of the HPAI Taskforce Chairman during one of the technical working group meetings that the “HPAI Roadmap is the strategy developed by and for the Member States.”

3. **Difficulty and importance of developing clear linkages and information sharing with other non-veterinary sectors:** Advancing collaboration with other sectors, particularly with public health, presented quite a challenge during the implementation of the Project. Although representations from the HCDD and ASEAN Expert Group on Communicable Diseases (AEGCD) were made during the working group and coordination meetings, linkages to elicit more constructive engagement as guided by the Joint Recommendations on Animal and Human Health Collaboration, still need to be worked out and clarified. The Joint Declaration on Human and Animal Health Collaboration on Emerging and Neglected Zoonoses is expected to provide a platform to accelerate the linkages (see ASEAN Plus Three EID Project section above).
4. **Role of reliable and sufficient budgetary support:** ADB’s support to this Project has been pivotal as it continued setting significant milestones in the regional campaign against avian influenza. Equally important was the support provided by the ASEAN Secretariat’s Finance and Budget Division in providing guidance and facilitating the necessary processes to ensure that Project needs and activities were properly supported and carried-out.
5. **Need for high-level political support and commitment:** The continued support and commitment of senior officials and ministers, as highlighted by the ‘ASEAN Ministerial Statement on Animal Health and Zoonoses: HPAI and Beyond’, could be considered one of the significant contributions of the HPAI Campaign. This will be very useful in collectively advancing various, but inter-dependent approaches to establish sustainable animal health systems and to improve our capacity to prevent, control and eradicate trans-boundary animal and zoonotic diseases, thus safeguarding the security and well-being of all the peoples of ASEAN.

7. Implications to preparedness and response to non-pandemic crises

1. ASEAN Cooperation on Animal Health oversees not only HPAI, but also other priority trans-boundary animal diseases such as FMD and CSF (see section 1 above). Therefore, this framework not only caters to zoonosis with pandemic potential, but also to other diseases with national, regional and global significance.

8. Useful web links

1. ASEAN Regional Strategy for the Progressive Control and Eradication of HPAI for 2008-2010:
<http://www.aseansec.org/documents/ASEAN%20Regional%20Strategy%20for%20HPAI%202008-2010.pdf>
2. Roadmap for an HPAI-free ASEAN community by 2020:
<http://www.asean.org/publications/HPAI-Roadmap.pdf>

4. ASEAN-Japan Project for Stockpile of Antivirals and PPE against Potential Pandemic Influenza (The Japan-ASEAN Integration Fund: JAIF)

1. Background

In March 2006, the signing ceremony to establish the Japan-ASEAN Integration Fund (JAIF) was held in Tokyo, Japan pledged to contribute 7.5 billion yen (approximately US\$70 million). The Fund is expected to strengthen ASEAN-Japan relations by implementing various projects such as stockpiling half a million courses of antiviral drugs for a novel influenza, projects in the counter-terrorism, economic integration, youth exchanges and others.

As a part of the implementation of the JAIF, the Project for Stockpile of antiviral drugs and personal protective equipment (PPE) against potential pandemic influenza was officially launched in Jakarta in May 2006 with a fund allocation of US\$30 million from JAIF. The Project has been a joint undertaking among ASEAN Member States and Secretariat, WHO, the Ministry of Foreign Affairs of Japan (MoFA Japan) and Japan International Cooperation System (JICS). The timeframe for stockpiling is from 2006 to 2010, but an extension to 2013 was granted during which stock will be replenished supplementing the pre-positioning of antivirals at the national level.

2. Brief programme descriptions

2.1. Stockpile contents (regional and national)

At the regional store in Singapore, 500,000 courses of antivirals (oseltamivir) and PPE for 700,000 persons were stockpiled at the beginning. In August 2008, the PPE stockpile had been depleted to a supply for 350,000 persons due to the pre-positioning of antivirals at the national level. At the national level, a total of 500,000 courses of antivirals were stockpiled on the basis of the population sizes of the Member States. PPE for 350,000 persons were distributed equally to 10 Member States, thus each country stockpiled PPE for 35,000 persons. In response to the pre-positioning of antivirals at the national level, 500,000 courses of additional antivirals (oseltamivir and zanamivir) were stockpiled in the regional store.

2.2. Stockpile deployment guidelines

Through the annual meetings among MoFA Japan, the ASEAN Secretariat, WHO and JICS and meetings of consignees, the Project Guidelines were formulated. When an outbreak occurs, ideally on the basis of an official notification by Member State(s) of the incidence of the outbreak in line with the International Health Regulation (IHR), the WHO shall advise the Government of Japan, governments of affected ASEAN Member States and the ASEAN Secretariat on the commencement of the deployment and the amount of antivirals and PPE to be shipped to each of the affected countries. Immediately, the ASEAN Secretariat will instruct, through JICS, the shipping agent, ST Logistics Pte Ltd., to transfer these commodities to the affected countries. Within 24 hours, as a target time, after this instruction by the ASEAN Secretariat, the commodities will be transferred to the affected country. The governments of recipient countries are responsible for facilitating immediate customs clearance upon arrival of the shipment at the airport, rapid

distribution of the commodities to target areas and to bear the cost of in-country transportation. They also need to designate appropriate warehouses for PPE and storage facilities for antivirals.

2.3. Roles of partner organisations in the Project

ASEAN Member States are expected to approve the Project and project design, determine the amount of antivirals and PPE required in case of outbreaks in consultation with WHO, provide the cost of in-country transport, provide appropriate warehouses and storage facilities and facilitate swift customs clearance at the airport. They are also expected to establish a logistical support plan, designate consignees particularly for the Project, attend the meetings and workshops organised by the Project and inform WHO and the ASEAN Secretariat on the occurrence of outbreaks.

The ASEAN Secretariat is expected to coordinate and monitor the implementation of the Project, work closely with the Member States, Senior Officials Meeting on Health Development (SOMHD), the ASEAN Expert Group on Communicable Diseases (AEGCD), project consignees and JICS and sign the contract with JICS. They are also expected to work in consultation with the Government of Japan, WHO and JICS on the delivery of the commodities, trigger the deployment of the stockpile through JICS and STL in case of outbreaks and report to AEGCD, SOMHD and the ASEAN Health Ministers' Meeting (AHMM) on updates and developments.

The Government of Japan is expected to provide funding through JAIF, approve the Project and consult the ASEAN Secretariat and WHO on project management and monitoring. JICS is expected to sign the contract with the ASEAN Secretariat and work closely with and report to them, work in liaison with the shipping agent, coordinate the project consignees and procure/manage stockpiles. They are also expected to make necessary arrangements to ship stockpiles to target country(ies) upon receiving instructions from the ASEAN Secretariat, which shall be authorised by the Governments of Japan and ASEAN Member States. The shipping agent is expected to sign the contract with JICS and follow their instructions, monitor the inventories of the stockpile and arrange shipment once an outbreak is announced.

WHO is expected to provide technical assistance to the Project, give guidance to the affected ASEAN Member States, notify the Government of Japan, the ASEAN Secretariat and its Member States of the outbreak(s) and act as a resource organisation in organising exercises, assessments and workshops/training.

2.4. PanStop exercises

PanStop is a series of pandemic influenza preparedness exercises that has been designed to test specific aspects of the rapid containment protocols in the Asia-Pacific region. A series of three rehearsals of the full rapid containment plan with rapid deployment of antivirals and PPE from the regional stockpile to the affected countries has been conducted so far. PanStop tested rapid notification and reporting of outbreak events and accurate tracking of outbreak information along an unpredictable mock scenario. It also tested procedures to initiate ground and air transport of the stocks from warehouses to the outbreak area, including tracking the disposition of supplies and ensuring accelerated receipt such as expedited customs clearance and issuance of visas to the WHO monitoring team.

The initial PanStop 2007 took place in Cambodia on 2-3 April 2007. A mock scenario and a series of updates were presented to the participants over two days. The exercise

scenario involved the simulated discovery of cases of avian influenza in a village followed by sustained human-to-human transmission. The second exercise, PanStop II, was conducted in the Philippines on 5-6 March 2008. It embraced non-pharmaceutical interventions in the early containment efforts. The third exercise, PanStop III, took place in Malaysia on 6-7 April 2009. A modified functional exercise to test decision-making processes was included.

3. Timeline

2006-2013

4. Budget and financing

Government of Japan, through JAIF, granted US\$30 million for this project.

5. Values created

- 1. Establishment of regional and national antivirals and PPE stockpile:** The Project has set up a regional stockpile of 500,000 courses of antivirals and PPE for 350,000 persons in the regional warehouse in Singapore, as well as a national stockpile of a total of 500,000 courses of antivirals and PPE for 350,000 persons.
- 2. Guidelines of stockpile deployment for rapid containment:** The sequence of actions and their timeline have been agreed upon to deploy the stocks to affected countries in case rapid containment of potential pandemic influenza is to be triggered.
- 3. Clear definitions of roles of partners in rapid containment:** To underpin the above, roles to be played by each of the Project partners, namely ASEAN Member States and Secretariat, Government of Japan, JICS, the shipping agent and WHO have been clearly defined.
- 4. Testing rapid containment/supply deployment protocol by simulation exercises:** A series of PanStop exercises tested rapid notification, tracking of outbreak information and procedures to initiate ground and air transport of the stocks from warehouses to the outbreak area, including tracking the disposition of supplies and ensuring accelerated receipt such as expedited customs clearance and visa arrangements for the international teams.

6. Lessons learned

- 1. Need of wave and proactive deployment of supplies in rapid containment:** Given the logistical constraints in deploying materials and personnel and the risks of not responding quickly, it was considered safer to deploy resources in waves. Also the proactive deployment, while having insufficient data, was considered necessary in order for the intended rapid containment to be successful. These two points were derived from the PanStop exercises.
- 2. Need of continuous advocacy on the concept of rapid containment:** It was necessary to ensure that ASEAN Member States understand the concept and

incorporate it in their countries' pandemic preparedness plans since persons in charge for pandemic preparedness might be replaced by others.

7. Implications to preparedness and response to non-pandemic crises

1. The expertise and experiences built around establishing and managing supply stockpile for emergency may well cater to other crises.
2. PanStop exercises also strengthened both exercises planning and management capacity and the deployment protocol, which are relevant for wider crises.

8. Useful web links

1. Joint Statement of the Ninth ASEAN-Japan Summit Deepening and Broadening of ASEAN-Japan Strategic Partnership, Kuala Lumpur, 13 December 2005:
<http://www.aseansec.org/18076.htm>
2. Japan-ASEAN Project for Stockpile of Antivirals and PPE against Potential Pandemic Influenza:
http://beid.ddc.moph.go.th/th/images/cooperation/twg_ppr22_24_06_52/asean_japan_tamiflu_project.ppt
3. PanStop 2007 frequently asked questions:
http://www.wpro.who.int/sites/csr/data/data_FAQPanstop.htm

5. The ASEAN Foundation Communication and Information Systems for the Control of Avian Influenza (CISCAI)

1. Background

ASEAN leaders agreed to establish the ASEAN Foundation on 15 December 1997 in Kuala Lumpur during the Association's 30th Anniversary Commemorative Summit. The ultimate aim was to help bring about shared prosperity and a sustainable future for all ASEAN Member States. The objectives of the Foundation are to promote greater awareness of ASEAN, and greater interaction among the peoples of ASEAN as well as their wider participation in ASEAN's activities, especially through human resources development that will enable them to realise their full potential and capacity to contribute to the progress of ASEAN Member States as productive and responsible members of the society. It also aims to contribute to the evolution of a development cooperation strategy that promotes mutual assistance, equitable economic development and the alleviation of poverty.

The ASEAN Foundation launched the project Communication and Information Systems for the Control of Avian Influenza (CISCAI) in 2008 in order to research, design, develop, field-test and deploy sustainable communication and information systems that will support national efforts to control the spread of avian influenza among animals and humans in Lao PDR and Viet Nam. Specific objectives of CISCAI included:

1. To research the information and communication requirements of livestock and public health agencies in Lao PDR and Viet Nam;
2. To design and develop an integrated web geographical information system (GIS) based on free and open source software (FOSS) and a mobile reporting system that will allow human and animal health surveillance data to be collected in a centralised database and displayed visually so that experts from both the livestock and public health sectors can track both sets of data. This will enable public health specialists to anticipate possible impacts on human health due to disease outbreaks among the animal population;
3. To research, design and commission stable, broadband-wireless networks to be used by key livestock and public health agencies in Lao PDR and Viet Nam in executing national avian influenza control plans, and providing them with secure and reliable channels of communication with their personnel confined within quarantine zones; and
4. To field trial and analyse the performance of wireless technologies deployed to confirm their readiness for reliable operation in the event of avian influenza outbreaks.

2. Brief programme descriptions

2.1. Software and hardware deployment for managing infectious diseases

Software

The Viet Nam Component has been tasked to provide technology transfer through training on the development and use of FOSS and mobile GIS applications. The

information systems were designed based on a user need assessment from the Ministries of Health and the Ministries of Agriculture of both Lao PDR and Viet Nam. It was developed by the Viet Nam Component and then duplicated, modified, enriched and localised within Lao PDR and Indonesia. The uses of FOSS have the following advantages:

1. Affordable deployment with low cost maintenance to be replicated to other AMS;
2. Can be expanded and modified to meet the AMS needs on fighting avian influenza and other EID;
3. Can be integrated with existing information systems in the AMS and;
4. Easy to translate into other languages and dialects.

The Integrated web GIS provides decision makers in the Ministry of Health and the Ministry of Agriculture with real time avian influenza outbreak data visualisation layered with other information such as locations of hospitals, laboratories, chicken farms, markets, etc. The outbreak information from the field will be sent using the mobile reporting system. It will enable the field health workers to send the information along with global positioning system (GPS) coordinates and pictures of the outbreak, which will be plotted on the web GIS map. This mobile reporting uses wireless fidelity (WiFi) and general packet radio service (GPRS) connections. Further application of short mail service (SMS) is being explored.

The system has several levels of users: data collectors, processors, decision makers and administrators. Decision makers can see merged information on outbreaks in humans, as well as those in poultry on the web GIS map.

Hardware

In Lao PDR, a functioning fixed WIMAX (Wireless Interoperability for Microwave Access) network was piloted in Vientiane Capital and Savannakhet province. The initial plan was to purchase WIMAX equipment under the CISCAI Lao PDR component. Recently, Lao PDR launched the Lao PDR e-Government Project, linking government ministries and other organisations in Vientiane and throughout the country in 2009 using WIMAX technology. In light of this development, the CISCAI Lao PDR component was 'retrofitted' to ride on Lao' e-Government Project to avoid WIMAX network redundancy. Through this network, the users can access the CISCAI integrated web GIS using the secure and reliable intranet network. Currently the e-Government project has deployed about nine WIMAX base stations to cover the whole of Vientiane Capital, but not Savannakhet province. Therefore the CISCAI project depends on the use of an asynchronous digital subscriber line (ADSL) connection to link the provincial hospital and government offices to the WIMAX network operating centre.

Viet Nam is using satellite broadband with portable Very Small Aperture Terminal (VSAT) ground receiving stations (GRS) for connectivity. The GRS was retrofitted on a vehicle provided by the National Institute of Hygiene and Epidemiology (NIHE) of the Viet Nam Ministry of Health. This mobile WIMAX will provide a connection between rapid response teams deployed in the outbreak area and NIHE.

To gauge its performance, the CISCAI project conducted a series of performance tests and research to see how the system performs in a real deployment environment. This was done by NECTEC (National Electronics and Computer Technology Center) of Thailand, which hosts experts on wireless networks and provides technical backstopping for the CISCAI project.

2.2. Training of animal and human health officials on ICT

Since human resource development is the most important component for the success of project implementation, the Project conducted several capacity building activities such as training and seminars targeting ICT engineers and users from the public health and animal health sectors, such as members of the national AI emergency response teams in Lao PDR and Viet Nam. They were trained in the use of the software and hardware developed by the Project and how to maintain it.

Other important events included:

1. Inaugural Meeting in Ha Noi and Sapa (Lao Cai Province), Viet Nam in March 2008;
2. Research Methodologies for User Need Assessment Training in Vientiane, Lao PDR in July 2008;
3. The maiden 3-country mission in November-December 2008 to harmonise the then asynchronous project schedule, as well as to consult with key CISCAI partner agencies;
4. Formal Launch of the CISCAI-Lao and CISCAI-Viet Nam Components in December 2008;
5. Mini-Workshop on State-of-the-art ICT Applications for the Monitoring and Management of Avian Influenza (AI) in Indonesia in June 2009;
6. CISCAI GIS Training for the staff of Information Technology Research Institute (ITRI) of Lao PDR and CISCAI's Project Coordination Unit (PCU) in August 2009;
7. First and Second CISCAI WIMAX Engineering Workshop in Thailand in March 2009 and January 2010, respectively; and
8. First and Second CISCAI-Viet Nam and First CISCAI-Lao Tabletop Simulation Exercises in September 2010 in which not only software and hardware, but also human capacity were tested.

2.3. Information dissemination

CISCAI exploits the advantages of electronic information dissemination, as well as those of conventional face-to-face information promotion, through participation in seminars and technical conferences. The following are some of the activities related to information dissemination undertaken:

1. Regular release through mass e-mailing of important CISCAI events via the CISCA E-News;
2. Refurbishment and continuous updating and maintenance of content on the CISCAI website;
3. Establishing several web portals such as CISCAI Facebook, CISCAI Twitter and CISCAI videos on Youtube; and
4. Deployment of video-streaming broadcasting technology for CISCAI special events (i.e. 1st CISCAI WIMAX Engineering Workshop in March 2009).

The project also participated in several regional and national avian influenza-related activities such as:

1. Workshop on the Use of Wireless Technologies to Bridge the Digital Divide in Bangkok in April 2008;
2. The 8th ASEAN Science and Technology Week, Scientific and Technical Conferences in Manila in July 2008;
3. The 16th Asia-Pacific Regional Space Agency Forum in Bangkok in January 2010;
4. The ASEAN Cost Meeting in Singapore: and

5. The Asean-ADB HPAI Taskforce Workshop in Bali, Indonesia in March 2010.

An open-source based CISCAI integrated web GIS for human and animal health surveillance systems and mobile reporting system and SMS gateway were made available free-of-cost to be localised to meet the requirements of all ASEAN countries. The systems have also been disseminated with some modifications and additional functions to meet the requirements of the Bantul District, Yogyakarta, Indonesia in collaboration with Muhammadiyah-Avian Influenza Task Force Team. This dissemination strategy is in support of CISCAI's over-arching strategy of achieving project continuity and sustainability through a knowledge-transfer mechanism in ASEAN Member States.

3. Timeline

The initial project lifespan was from 2008-2010. The project has been extended until the end of December 2011 for the purpose of enhancing GIS web based and mobile reporting software development, information dissemination and a possible conversion into a comprehensive disaster management system.

4. Budget and financing

The ASEAN Foundation through the Japan ASEAN Solidarity Fund provided US\$1.1 million for the implementation of the CISCAI project in Lao PDR and Viet Nam and for related avian influenza activities in the ASEAN region for 3 years.

5. Values created

- 1. Software and hardware pilot deployment for reporting AI in Lao PDR and Viet Nam:** Two functioning national integrated web GIS systems have been developed and put in place based on free and open source software (FOSS) and mobile reporting systems that integrate the human and animal health surveillance data plotted against geographic information in pilot sites in Lao PDR and Viet Nam.
- 2. Training of animal and human health officials on ICT:** Members of the national emergency response teams in Lao PDR and Viet Nam responsible for controlling outbreaks of avian influenza and other infectious animal-borne diseases were trained in the use of the software and hardware developed by the Project.

6. Lessons learned

- 1. Benefit of low cost, patent-free technologies:** The systems developed can be a comprehensive tool for country surveillance that is quite flexible and can be modified at low cost since it is based on open source software.
- 2. Challenge in human resources:** Human resource development has been one of the main challenges in the project. For this reason, the project made efforts to build human capacity.
- 3. Importance of stakeholder involvement:** The involvement of the stakeholders in the design and development process is crucial.
- 4. Civil involvement in disease surveillance:** Disease surveillance is not only the government task, but also involves various stakeholders.

7. Implications to preparedness and response to non-pandemic crises

1. GIS platform is a useful tool to address not only health crisis such as avian influenza, but also other crises such as natural disasters.
2. Community based surveillance systems are essential to detect and respond to any kind of crisis.

8. Useful web links

1. CISCAI website: <http://www.ciscai.org/>
2. ASEAN Foundation website: www.aseanfoundation.org

APEC in brief

1. History

Asia-Pacific Economic Cooperation, or APEC, is the premier forum for facilitating economic growth, cooperation, trade and investment in the Asia-Pacific region. Established in 1989, APEC initiatives work to create an environment for the safe and efficient movement of goods, services and people across borders in the region through policy alignment and economic and technical cooperation. APEC is unique in that it operates on a basis of non-binding commitments – all decisions are reached by consensus and commitments are undertaken on a voluntary basis.

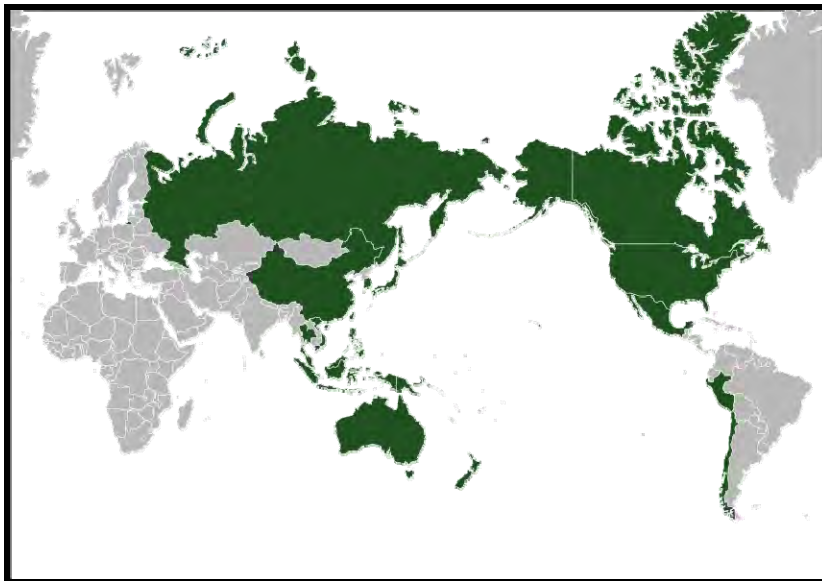
Since its inception, APEC has worked to reduce tariffs and other trade barriers across the Asia-Pacific region, creating efficient domestic economies and dramatically increasing exports. Key to achieving APEC's vision are what are referred to as the 'Bogor Goals' of *free and open trade and investment in the Asia-Pacific by 2010 for industrialised economies and 2020 for developing economies*. These goals were adopted by Leaders at their 1994 meeting in Bogor, Indonesia.

2. APEC Member Economies

APEC has 21 members, referred to as 'member economies', which account for approximately 40 percent of the world's population, 44 percent of world trade and 54 percent of world GDP.

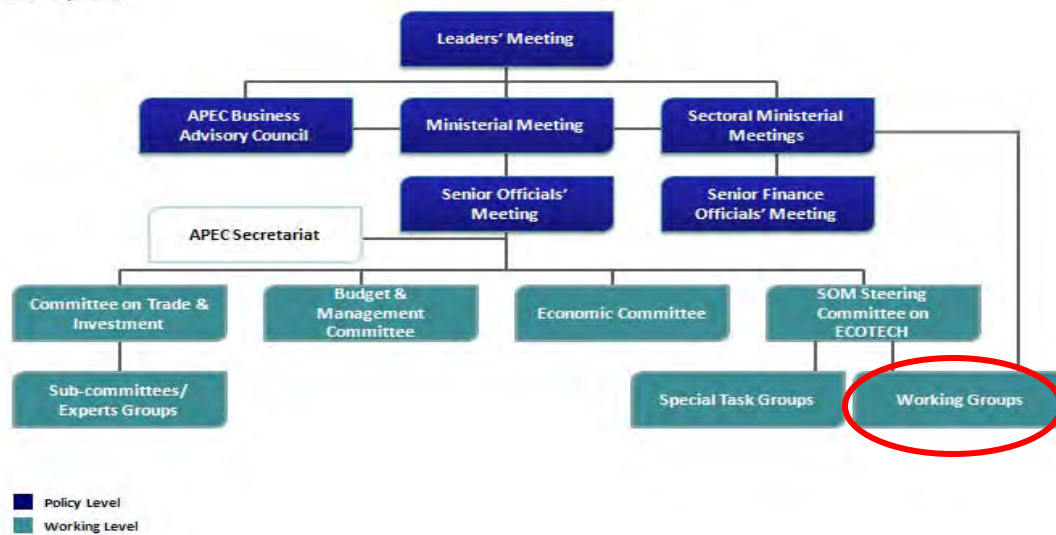
APEC's 21 member economies are Australia; Brunei Darussalam; Canada; Chile; China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; Philippines; Russia; Singapore; Chinese Taipei; Thailand; United States; and Viet Nam.

Map 2: Map of APEC member economies



3. Structure and the Section(s) in Charge of Influenza and EID

(Source: <http://www.apec.org/About-Us/How-APEC-Operates/Structure.aspx>)



6. APEC Health Working Group (HWG)

1. Background

The emergence of Severe Acute Respiratory Syndrome (SARS) in 2002-2003 and the highly pathogenic avian influenza H5N1 in 2004 underscored for the Asia-Pacific region the major impact a public health emergency can have on individual economies and the entire region. In 2003, the APEC Senior Officials created an *ad hoc* Health Task Force (HTF) to focus on natural and intentionally caused health threats that would disrupt regional economies, trade and security.

The HTF mandate ended in December 2007. Over the four years of HTF activities, priority issues such as avian and pandemic influenza, HIV/AIDS and improving health outcomes through advances in health information technology were identified. The Steering Committee on the Program for Economic and Technical Cooperation (SCE) of APEC conducted a 2006 review of APEC working groups and task forces, including the HTF, and recommended that the HTF be transformed into a Health Working Group (HWG). The SCE directed the HTF to develop a draft Terms of Reference (ToR) and a draft medium-term work plan for the HWG. The establishment of the HWG was subsequently endorsed by Health Ministers in June 2007 and by APEC Ministers in September 2007. The first meeting of the HWG was held in Lima, Peru on 21-22 February 2008 where they approved the new ToR and the 2008 work plan.

The current HWG ToR stipulates its mandate to be to plan and prepare for health-related threats to economies, trade and security, focusing mainly on naturally occurring and intentionally caused health threats. Objectives of the HWG include:

1. To enhance economies capacity to minimise health-related threats;
2. To enhance APEC cooperation and integration of health-related efforts across relevant APEC sectors;
3. To implement explicit priorities of Leaders and Ministers and to inform Leaders of emerging health threats; and
4. To take a primarily strategic and efficient approach in determining priorities for cooperation.

2. Brief programme descriptions

2.1. APEC Emerging Infections Network (EINet)

Asia-Pacific Economic Cooperation Emerging Infections Network (APEC EINet), founded in 1996, is an APEC-approved project based at the University of Washington in Seattle, USA. APEC EINet is dedicated to providing timely and reliable information via the Internet on issues of emerging infectious diseases in the Asia-Pacific region. The moderator controlled e-mail server notifies and fosters online information sharing. By enhancing the knowledge, awareness and understanding of emerging infectious diseases, the Network intends that health, trade and policy professionals are better prepared against such diseases and other bio-threats. The Network also actively promotes communication, coordination and collaboration between the 21 APEC member economies to enhance regional bio-preparedness.

The aims of the APEC EINet are:

1. To provide the latest news, journal articles and notifications for emerging infections affecting the APEC member economies;
2. To increase collaboration between academia, government officials and business/trade professionals concerned with emerging infections in APEC member economies;
3. To increase communication and collaboration among the 21 APEC member economies to better coordinate bio-preparedness activities;
4. To provide online learning tools, such as distance-learning course materials on emerging infectious diseases at no cost; and
5. To explore advanced networking technologies to improve communication and collaboration between public health sectors among the APEC member economies.

2.2. APEC EINet Expert Roundtable Series on Hot Topics in Infectious Diseases

This project supports EINet as an ongoing asset by continuously tailoring, enhancing and populating its 10-year EINet archives of weekly disease alert information through the maintenance of a weekly bulletin for the APEC EINet user community. Furthermore, by providing a high-speed networking platform that has been established and regularly tested for ongoing preparedness activities in Asia-Pacific region, it intends to ensure that the EINet gains support as an ongoing asset.

This project has facilitated four multi-point videoconferences among APEC economies on hot topics in infectious diseases in order to facilitate communications and information sharing to increase pandemic preparedness throughout the region, as well as to increase leadership development among APEC economies through a rotating facilitation and hosting schedule. Specifically, this project virtually brings together an expert forum (videoconferences) on emerging infections from participating economies. A major component of the project is to enhance participation in advanced network-supported activities to explore emerging modes of real-time communication to improve regional preparedness in the Asia-Pacific region.

So far, five EINet Hot Topic videoconferences on influenza have been organised. The first one was held in May 2006 and focused on pandemic preparedness. In May 2008 the virtual symposium focused on public private partnerships in preparedness. In November 2009 a third conference was convened with the title of Pandemic H1N1 Preparedness: Lessons Learned & Preparing for the Second Wave. The fourth conference took place in March 2010 with the title of Pandemic influenza H1N1: Lessons Learned from the 2009 Flu Season. Finally the focus has shifted to other challenges in emerging infections in the region with a fifth session, Infectious Disease Challenges following Natural Disasters: Information Sharing through a Virtual Symposium, which took place in December 2010.

Nineteen out of 21 (91percent) of the APEC member economies have participated in at least one video symposium. These video symposia have been highly rated by the majority of participants. Participants have also expressed their interest in continuing these activities.

2.3. Collection of Domestic Measures to Prevent, Control and Respond to Avian Influenza among APEC Member Economies

At the 2nd HWG Meeting held in Lima, Peru, Japan presented a collection of domestic measures to prevent, control and respond to avian influenza among the member

economies. The collection of information was presented in an aggregated table and posed a useful snapshot of where the member economies were at the time of the assessment.

In November 2005, Leaders of APEC agreed on the APEC Initiative on Preparing for and Mitigating an Influenza Pandemic. In this Initiative, APEC economies agreed to work collectively to enhance capacity building in preventing and controlling a pandemic of avian origin at its source. Furthermore, in the APEC Action Plan agreed at the APEC Ministerial Meeting on Avian Influenza Pandemics in May 2006, Ministers agreed to promote adequate systems in each economy to encourage timely and complete reporting of disease and implementation of appropriate disease control measures, and to share reports on domestic measures to mitigate the negative effects of avian influenza.

To put the Action Plan into practice, Japan and the US, co-sponsored by Canada, Indonesia and Viet Nam, jointly organised the APEC Capacity Building Seminar on Avian Influenza: Preventing AI at its Source and a Dialogue on Indemnity in September 2006 in Hoi An, Viet Nam. The Seminar aimed to assist in building capacity to take effective domestic measures to prevent and control avian influenza, and contributed to helping APEC economies share useful information and best practices to do so. In response to a call from Japan, as a follow-up action to the Seminar, 16 APEC member economies shared brief discussions of their domestic measures, which were compiled as the 'Collection.'

2.4. Workshops, Meetings and Trainings

APEC Workshop to Improve International Risk Communications: 'Talking To Media'

An APEC workshop to improve international risk communications, 'Talking to Media', was held in Cairns, Australia in June 2007, on the margins of the third Senior Officials Meetings (SOM). The workshop, which was organised by Canada, brought together executive level officials from participating departments and ministries responsible for responding to pandemics, and key communications and technical specialists from various health and agriculture ministries of APEC economies. Representatives from international organisations such as WHO, US Centers for Disease Control and Prevention (US-CDC) and the Associated Press also attended. There were over 40 participants from 17 economies. The purpose of the workshop was to build and increase skills and techniques consistent with risk communications principles to effectively deal with international media before or during an outbreak of avian or pandemic influenza. The workshop was developed and implemented in close cooperation with the Agricultural Technical Cooperation Working Group (ATCWG).

'One World, One Health': Moving from Concept to Practice through Risk Communications

The purpose of this workshop was to advance the concept of 'One World, One Health' (more recently recognised as 'One Health') through a three-day policy dialogue and risk communications workshop to build capacity within the APEC region to address public health threats. Both components relate to multi-stakeholder engagement in controlling infectious diseases. A combination of animal, human and environmental health experts, including communication specialists, participated in the event in Lima, Peru in August 2008 on the margins of the third SOM.

Many of the goals of good governance (early detection, transparency and rapid response) are the same for animal and human health systems, but training and other activities are often developed and conducted independently. In addition, the interactions between environmental changes/pressures and human/animal health are not always considered when managing infectious disease events. Integrated approaches which include multiple sectors must be enabled and encouraged at all levels including national, regional and international levels.

After defining the concept, APEC economies shared examples of emerging diseases that illustrate the interface between animals, the environment and humans and the need for a multi-sectoral, multi-stakeholder approach. Ultimately, the workshop aimed to identify barriers and solutions to implementing the 'One Health' approach.

Training Course for Rapid Response Team (RRT) on Human Highly Pathogenic Avian Influenza (HPAI) Containment

This project was designed to promote technical capacity for AI surveillance, and to strengthen field investigation and emergency response by holding a training course for rapid response teams (RRT) on the economic and provincial levels in China and possibly other economies from late June through early July in 2008 in China. The project was based on the summary of the former training experience and best international practices.

3. Timeline

2003-present (Started as HTF and has continued as HWG since 2008)

4. Budget and financing

Below are the budgets and financing for 2.1 APEC Emerging Infections Networks (EINet) and 2.2 APEC EINet Expert Roundtable Series on Hot Topics in Infectious Diseases only.

APEC Funding	US\$224,500
United States Government Funding	US\$419,582
Private Funding	US\$50,000
Total funding for APEC EINet	US\$694,082

5. Values created

- 1. APEC Emerging Infections Networks (EINet):** Since 1996, APEC EINet, though its moderator controlled e-mail server, continued to provide timely and reliable information via the Internet on issues of emerging infectious diseases in the Asia-Pacific region.
- 2. EINet Expert Roundtable Series on Hot Topics in Infectious Diseases:** Five international videoconferences connecting different member economies and institutes have been organised so far, proving the usefulness of a high-speed networking platform that has been established through regular testing for ongoing preparedness activities in Asia-Pacific region.

3. **Collection of Domestic Measures to Prevent, Control and Respond to Avian Influenza among APEC Member Economies:** This collection of information has been presented in a aggregated table and provides a useful snapshot of where the member economies were at the time of the assessment in 2008.
4. **Workshops, Meetings and Trainings:** A number of international collective functions have been organised by the HWG on avian and pandemic influenza addressing risk communication, the 'One Health' approach and rapid response.

6. Lessons learned

1. **Benefit of multi-national videoconference:** Videoconferencing is a robust means of creating an international community for information dissemination, collaboration enhancement and the promotion of best practices regarding the response and control of emerging infections. It is especially effective and efficient when travel may be restricted due to funding constraints.
2. **Importance of human networking:** Human networks are important in order for the videoconferences to be successful. The strong relationships established by the EINet's advanced networks of professionals prior to the events allowed for better collaboration and communication.
3. **Value of mutual learning:** Though the videoconference presentations reflected each economy's unique experience and response, common themes emerged and a valuable interchange of common problems between the economies occurred. Participants could learn from each other and formulate effective preparedness and control strategies. All the EINet videoconferences were well received. Participants gave high ratings regarding the quality of the presentations, the organisation of the videoconference and its effectiveness at promoting regional information sharing. Economies expressed enthusiasm for participating in future video symposia.
4. **Technical difficulties in videoconferencing:** Technological difficulties have been experienced during the videoconferences. However, with each additional videoconference conducted, more experience was gained and the planning and testing strategies of the technology have significantly improved.

7. Implications to preparedness and response to non-pandemic crises

1. The established communication platforms, most notably the EINet, have started to address disasters as a related topic of emerging infectious diseases. It is notable that the fifth EINet Hot Topic videoconference focused on disaster and infectious diseases.

8. Useful web links

1. APEC HWG portal web page: <http://www.apechwg.org/>
2. APEC EINet home: <http://depts.washington.edu/einet/about.html>
3. Collection of Domestic Measures to Prevent, Control and Respond to Avian Influenza among APEC Member Economies:
http://un-influenza.org/files/APEC_DomesticMeasures_Final.pdf

7. APEC Agricultural Technical Cooperation Working Group (ATCWG)

1. Background

The Agricultural Technical Cooperation Working Group (ATCWG) was established in 1996 as an official agency of APEC. It aims to improve economic development and social welfare in the APEC region by promoting agricultural technical cooperation between APEC member economies. The Group meets to enhance the capacity of the agriculture sector and its related industries, to propose APEC funded projects and to share information and experiences in the areas of agriculture, biotechnology, animal and biogenetic resource management.

The Avian Influenza (AI) Toolkit, which was developed by ATCWG and the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF Australia) has been published and is currently available online. The AI Toolkit aims to collate the products of substantial global activity against the threat of H5N1 avian influenza into a comprehensive and accessible resource. It incorporates management guidelines, information resources, case studies and examples of practical tools used by countries around the world, which are being shared in the hope that they may assist others to implement strengthened animal disease preparedness and response measures.

The Toolkit is constructed in modules based upon key elements critical to effective animal (zoonotic) disease prevention, preparedness, control and response. These elements have been built upon the United Nations System Influenza Coordination (UNSIC) Six Success Factors-which summarise the key elements of effective preparedness and control strategies that determine a country's success or otherwise in dealing with emergency animal diseases-and the New Delhi Roadmap, a 21-point vision and roadmap for dealing with avian and pandemic influenza adopted at the New Delhi Ministerial Conference on Avian and Pandemic Influenza in December 2007.

Examples of Toolkit content include: guidelines on the development of compensation schemes, practical advice and case studies on the implementation of vaccination strategies, bio-security and operating standards for live bird markets, examples of animal health legislation and examples of effective models for private-public sector partnerships.

2. Brief programme descriptions

2.1. Development of the AI and EID Implementation Toolkit

A series of workshops to develop Practical Management Strategies for Avian Influenza and Emerging Infectious Diseases, 'The Implementation Toolkit' were held in 2008. Eventually, 12 proposed Toolkit elements were formulated and completed.

The initiative was a follow-up to the APEC Sharing Experiences with the Management of the Avian Influenza H5N1 Threat Workshop held in Bangkok, Thailand in June 2007. That workshop provided a unique opportunity for APEC member economies to come together and discuss their experiences with highly pathogenic avian influenza (HPAI) against the backdrop of UNSIC and the World Bank's 'Six Success Factors.'

These factors include:

1. A strong commitment and institutional arrangements ensuring implementation at the highest political level, accompanied by effective leadership of all concerned stakeholders;
2. Clear procedures and systems for managing the rapid implementation of priority actions;
3. Primary attention to improved functioning of veterinary and human health services at all levels;
4. Incentives and/or compensation schemes combined with effective communication with communities on the importance of immediately reporting disease outbreaks in animals to responsible authorities;
5. Effective mobilisation of civil society and the private sector as well as all levels of government; and
6. National mass communication campaigns that promote healthy behaviour and focus on reducing the extent to which humans might be exposed to HPAI viruses.

Subsequently, a Steering Group was formulated to lead the development of the Toolkit. In the first Steering Group Meeting in April 2008 in Jakarta, Indonesia, the members noted the DAFF Australia initiative to follow-up on the Bangkok Workshop. Steering Group members agreed that as well as the Success Factors, the Toolkit should take into consideration the New Delhi Ministerial Conference Road Map milestones and incorporate the concept of 'One Health' to ensure that the Toolkit reflects the global policy approach on avian influenza and other emerging infectious diseases. Accordingly, the Steering Group agreed that the Toolkit should be categorised according to the following 12 core elements:

1. Bio-security;
2. Building and maintaining commitment;
3. Assessments;
4. Surveillance;
5. Incentive and compensation schemes;
6. Preparedness planning;
7. Response and emergency management;
8. Effective mobilisation of civil society and the private sector;
9. Communication;
10. 'One Health';
11. Strategic planning; and
12. Global, regional and cross-border collaboration.

The first workshop to actually design the Toolkit was held in June 2008 in Bangkok, Thailand. The Workshop was again convened by DAFF Australia in conjunction with the ATCWG. The aim of the Workshop was to introduce the Toolkit project to APEC member economies and to engage participants in discussion on the Toolkit framework and content. The workshop noted that the following areas should be added to the Toolkit framework:

1. Social and economic issues;
2. Markets and slaughter (bio-security);
3. Vaccination in animals; and
4. Governance and veterinary legislation.

The second workshop to further design the Toolkit took place in September 2008 in Ha Noi, Viet Nam. DAFF Australia, in conjunction with the ATCWG, organised this workshop entitled The APEC Workshop on Practical Management Strategies for Avian Influenza

and Emerging Infectious Diseases: 'The Implementation Toolkit'. Participants attended from 11 APEC member economies, Lao PDR, Myanmar, FAO, WHO, UNDP and UNSIC. The aims of the Workshop were to obtain member economy feedback on the draft 'Implementation Toolkit', consider progress on the development of the Toolkit, share information on successful initiatives of member economies that will be featured in the Toolkit and further identify specific needs, materials and experiences that member economies want included in the Toolkit. The workshop also further identified information gaps and areas for future work.

The Toolkit was designed to evolve with country experiences, policy directions and technical advances. As such, countries, international organisations and others are invited to actively contribute to the Toolkit, and use the site for the promotion and dissemination of new materials relating to avian influenza or other emerging infectious diseases.

3. Timeline

2007-present

4. Budget and financing

The primary financing came from DAFF Australia.

5. Values created

- 1. Development of the AI and EID Implementation Toolkit:** The Avian Influenza (AI) Toolkit developed by ATCWG and DAFF Australia has been published by the latter and is currently available online. The AI Toolkit aims to collate the products of substantial global activity against the threat of H5N1 avian influenza into a comprehensive and accessible resource.
- 2. H5N1 control experiences sharing:** Through the Toolkit development, experiences of H5N1 control of different member economies have been shared among themselves.

6. Lessons learned

- 1. Value of experiences sharing:** Information sharing among member economies, particularly those that had been affected by H5N1, has been very useful and welcomed. It has also promoted development of member economy networks.
- 2. Relevance:** The input from member economies, international and regional agencies in the Toolkit's development and in provision of Toolkit resource materials has ensured content is relevant. The organisation of resource materials into elements that are critical to effective zoonotic disease management helps policy makers to more easily access information that will assist in implementation of strategies and systems.

3. **Toolkit as a tool for ministries buy-in:** Involvement in the development of the Toolkit facilitated the buy-in of ministries of member economies.
4. **Sustainability as a challenge:** The Toolkit will evolve with international policy developments and technical advances, and be continuously updated as new 'best practice' studies emerge. So far the AI Toolkit website (see the link below) has been well-maintained. However, the long-term sustainability poses a challenge.

7. Implications to preparedness and response to non-pandemic crises

The structure and some core elements of the AI and EID Implementation Toolkit are directly applicable to the preparedness and response to wider crises.

8. Useful web links

Avian Influenza Toolkit web page: <http://www.aitoolkit.org/Default.aspx>

8. APEC Small and Medium-sized Enterprises Working Group (SMEWG)

1. Background

In the APEC region, small and medium-sized enterprises (SMEs) account for around 90 percent of all businesses and employ as much as 60 percent of the work force. At present however they generate only around 30 percent of exports. The objective of the Small and Medium Enterprises Working Group (SMEWG) is to encourage the development of SMEs and to build their capacity to engage in international trade. First established in February 1995 as the *Ad Hoc* Policy Level Group on SMEs (PLGSME), the aim was to assist SMEs to improve their competitiveness and to facilitate a more open trade and investment environment. Originally set up for two years, its term was extended in 1996 and again in 1998. In 2000, this group was renamed the SMEWG and granted permanent status. The SMEWG provides the foundation for other APEC groups to incorporate SME considerations into their mandates and activities. A meeting of Ministers responsible for SMEs has been held annually since 1994.

2. Brief programme descriptions

2.1. Development of the APEC Pandemic Flu Planning Guide for SMEs

The APEC Pandemic Flu Planning Guide for Small and Medium Enterprises was prepared in conjunction with the United States Department of Health and Human Services and the US-CDC. The Guide was launched at the 14th APEC SME Ministerial Meeting in March 2007 in Hobart, Tasmania, Australia. At the same meeting, the Ministers endorsed the Guide as part of a menu of materials for economies to use to help their SMEs develop a plan for a pandemic. The Guide is a straightforward checklist to help businesses to plan ahead and protect their staff and businesses in the event of pandemic influenza. The Guide served as the basis for the APEC SMEWG Pandemic Influenza Train the Trainer Workshop (see following section), which complements the initiatives towards strengthening the resilience of SMEs to better respond to a pandemic.

To ensure simplicity, the guide is separated into three sections that cover the areas of making plans to stay in business, to protect employees' health and to make preparations in their homes. First, businesses operators need to consider how they will deal with the interruptions to their businesses in the event of a pandemic. This includes preparing plans for dealing with supply chain disruptions, planning for employees being unable to come to work (due to personal or family illness, or school closures) and the possibility of reduced sales if customers choose to stay away from shops and public places. Second, businesses should also identify what protections need to be in place to ensure the safety of staff in the workplace, ensuring that staff who are sick do not come to work and expose others to the illness, planning to prevent people from congregating in large groups and promoting good hygiene practices such as frequent hand washing. Finally, preparations for SME operators and employees should start with being prepared at home, including making sure there is a good supply of resources at home, such as water and non-perishable food, soap, flashlights and other essential goods.

2.2. APEC SMEWG Pandemic Influenza Train the Trainer Workshops

In the 25th Meeting of the APEC SMEWG in Bali, Indonesia in August 2007, the organisation of the APEC SMEWG Pandemic Influenza Train the Trainer Workshop was announced. In March 2008, the first APEC SMEWG Pandemic Influenza Train the Trainer Workshop was organised in Kaohsiung, Chinese Taipei, back-to-back with the 26th APEC SMEWG Meeting. On the occasion of the 16th SME Ministerial Meeting held in Singapore in October 2009, the second Pandemic Influenza Train the Trainer Workshop was conducted. Updated information products produced by different member economies (such as the Flu Pandemic Business Continuity Guide developed by Spring Singapore) were shared and explained. In June 2010, the region's SME experts shared lessons learned from the recent Pandemic (H1N1) 2009 in Hong Kong SAR, China. Key concepts on how to protect the health of SMEs workforces and implementing business continuity planning (BCP) measures for SME survival were addressed. This workshop and others have provided training on pandemic planning to over 1,000 SMEs.

The Workshops used the APEC Pandemic Flu Planning Guide for SMEs as a basis for developing tools. They covered, in depth, the three sections of the APEC Guide that address the preparedness of SMEs. These included making plans to stay in business, protecting employees' and family members' health and making preparations at home. Government leaders and local-level business 'champions' have been trained to reach out to SME owners and operators. They also aimed to help APEC member economies develop training materials and tools and to share information across member economies on effective strategies to assist SMEs to plan and prepare for an influenza pandemic.

2.3. Development of Standard Inventory of Pandemic Planning Tools

Along with implementing the Train the Trainer Workshops, a standard inventory of Pandemic Planning Tools was developed. The inventory is a collection of materials developed by various organisations and agencies that help the trainers to conduct further training. They include workshop slides and planning tools i.e. business planning checklist, pandemic influenza planning guide, stopping the spread of disease at work guide, schools and universities planning toolkits, 'Preparing for the second wave: Lessons from current outbreak of Pandemic (H1N1)', the US-CDC's 'Cover your cough' poster, 15 key questions: Pandemic influenza train the trainer job aid and other supplemental resources on humanitarian pandemic preparedness.

3. Timeline

2007-present

4. Budget and financing

Information not available

5. Values created

1. **The APEC Pandemic Flu Planning Guide:** The Guide was developed and made available for reference by SMEs in the region. It also serves as the basis of the Pandemic Influenza Train the Trainer Workshops.
2. **APEC SMEWG Pandemic Influenza Train the Trainer Workshops:** SME experts in member economies and affiliated organisations were trained since 2007. The workshops also contributed to the development of the standard inventory of toolkits for the trainers.

6. Lessons learned

1. **Barriers to SME preparedness to pandemic:** Fund and human resources shortage posed a barriers for SMEs to effectively prepare for pandemic influenzas.

7. Implications to preparedness and response to non-pandemic crises

1. Resilience of SMEs against pandemic influenza promoted by the APEC SMEWG will also cater to their resilience to other crises including economic, natural and social calamities.
2. The mainstream initiatives of the APEC SMEWG focus on the increased economic viability of SMEs. Thus, its work to better prepare SMEs for pandemic is embedded in a larger programme to ensure livelihoods and employment, as well as the economic security of APEC population.

8. Useful web links

1. APEC Small and Medium-sized Enterprises Working Group (SMEWG):
<http://www.apec.org/Home/Groups/SOM-Steering-Committee-on-Economic-and-Technical-Cooperation/Working-Groups/Small-and-Medium-Enterprises>
2. The APEC Pandemic Flu Planning Guide:
http://www.bcmpedia.org/w/images/4/45/APEC_Guide_Pan_Flu_Plan_SMEs.pdf

9. APEC Business Advisory Council (ABAC)

1. Background

The APEC Business Advisory Council (ABAC) was created by the APEC Economic Leaders in November 1995 to provide advice on the implementation of the Osaka Action Agenda that stipulates the general principles and framework of the APEC liberalisation and facilitation process and on other specific business sector priorities, and to respond when the various APEC forums request information about business-related issues or to provide the business perspective on specific areas of cooperation.

ABAC comprises up to three members of the private sector from each economy. ABAC members are appointed by their respective leaders, and represent a range of business sectors, including small and medium-sized enterprises (SMEs). The economy determines the term of membership of each appointee, as well as its own administrative arrangements and staff support. The ABAC International Secretariat is based in Manila, Philippines. Funding is provided through a system of annual dues, which are structured to reflect the size of each economy.

ABAC first embraced the challenge of avian and pandemic influenza preparedness during the Seminar on Business Contingency Planning and Disaster Preparedness for Avian Influenza held in Singapore in January 2006. This was followed by a workshop entitled Business Continuity Planning and Disaster Preparedness for Avian Influenza in Hong Kong in May 2006. Since then, online surveys on business sector pandemic preparedness, development of a web-based influenza pandemic preparedness planning checklist for SMEs and development of a list of useful websites for influenza pandemic preparedness in the business sector constitute the three major ABAC activities on pandemic influenza.

2. Brief programme descriptions

2.1. Online surveys on business sector pandemic preparedness

In 2007, ABAC conducted an online survey on business sector pandemic preparedness. The United Nations System Influenza Coordination (UNSIC) and the UN Office for the Coordination of Humanitarian Affairs (OCHA) provided technical assistance in the development of the questionnaire. The survey indicated that awareness and perception of the risk of influenza pandemic among the business sector were high, and that governments and the media played major roles in messaging. Larger companies were better prepared than SMEs. Although employee health and safety were well addressed in pandemic preparedness plans, business continuity was often not addressed sufficiently. The lack of information was a major barrier to the development of the plan, thus many companies mentioned that it would be useful if tools and opportunities for training were made available. In 2009 a second online survey was launched in cooperation with OCHA's Pandemic Influenza Contingency (PIC) Team on the impact of the Pandemic (H1N1) 2009 on business operations. The survey revealed that the impact of the H1N1 pandemic on business was rather limited.

2.2. Web-based influenza pandemic preparedness planning checklist for small and medium-sized enterprises (SMEs)

In 2008, a web-based checklist for SMEs to self-assess their pandemic preparedness was developed. It aims to assist SMEs to prepare themselves for an influenza pandemic based on the 'APEC Pandemic Flu Planning Guide for SMEs' developed by the APEC SME Working Group (SMEWG), and the 'Action Checklist for Small and Medium-Sized Enterprise' developed by the International Labour Organization (ILO), with the support of UNSIC and the OCHA Regional Office for Asia-Pacific. It is an interactive checklist that provides users with preparedness 'scores' and recommendations for actions. The demo version was first developed and tested in 2008.

In 2009, after a demo version of the checklist was uploaded and tested, a number of comments, including those from the ABAC Action Plan and APEC Resources Working Group (APARWG) members, were received and used for its improvement. The complete version was ready and uploaded at the ABAC website (see the web link in section 8 below). The list was also printed in the form of a leaflet and was distributed.

2.3. List of useful websites for influenza pandemic preparedness in the business sector

A collection of useful web links for influenza pandemic preparedness in the business sector has been developed and uploaded on the ABAC website (see the web links in section 8). The list provides links to useful pages developed by international organisations, governments, private groups, businesses and academia.

3. Timeline

2006-present

4. Budget and financing

Not available.

5. Values created

- 1. Online surveys on business sector pandemic preparedness:** The initial online survey on business sector pandemic preparedness conducted in 2007 identified some critical gaps such as the discrepancy in preparedness between large corporations and SMEs, and the need for information on preparedness planning. The second survey in 2009 revealed that the impact of the Pandemic (H1N1) 2009 on business was limited.
- 2. Web-based influenza pandemic preparedness planning checklist for small and medium-sized enterprises (SMEs):** An interactive checklist that provides users with preparedness 'scores' and recommendations for actions was developed and made available on the web.
- 3. List of useful websites for influenza pandemic preparedness in the business sector:** A collection of useful web links for influenza pandemic preparedness in the business sector has been developed and updated on the ABAC website.

6. Lessons learned

4. **Importance of public-private partnership:** Public-private partnership is crucial in prevention/response to a potential pandemic.
5. **Effective communication channels are key for both governments and businesses:** Media play a critical role and must be given clear and accurate, updated information.
6. **Importance of transparency:** Transparency is key in combating a potential pandemic effectively and efficiently.
7. **Prevention rather than cure:** Contingency preparedness is necessary in order to ensure business continuity. There are simple, low-cost measures that businesses can implement to prepare for an outbreak and protect their business. These include the following:
 - a. Becoming familiar with public information about the various stages of development in a pandemic to track the spread of the disease and the need to implement business continuity measures;
 - b. Obtaining freely available checklists and templates for business contingency plans from government agencies and business groups;
 - c. Developing a business continuity plan and educating staff on their specific roles in the event of an outbreak; and
 - d. Identifying the critical people and functions of the business and how operations would be adjusted to protect the business during an outbreak.

7. Implications to preparedness and response to non-pandemic crises

1. When ABAC started to embrace pandemic preparedness and business continuity under pandemics in 2006, the disaster preparedness concept served as a framework. The three outcomes of ABAC's pandemic-related efforts can all potentially apply to other natural, human and business crises.

8. Useful web links

1. Web-based influenza pandemic preparedness planning checklist for small and medium-sized enterprises (SMEs): <https://www.abaonline.org/v4/sme-checklist.php>
2. List of useful websites for influenza pandemic preparedness in business sector: <https://www.abaonline.org/v4/content.php?ContentID=3890>

ASEM/ASEF in brief

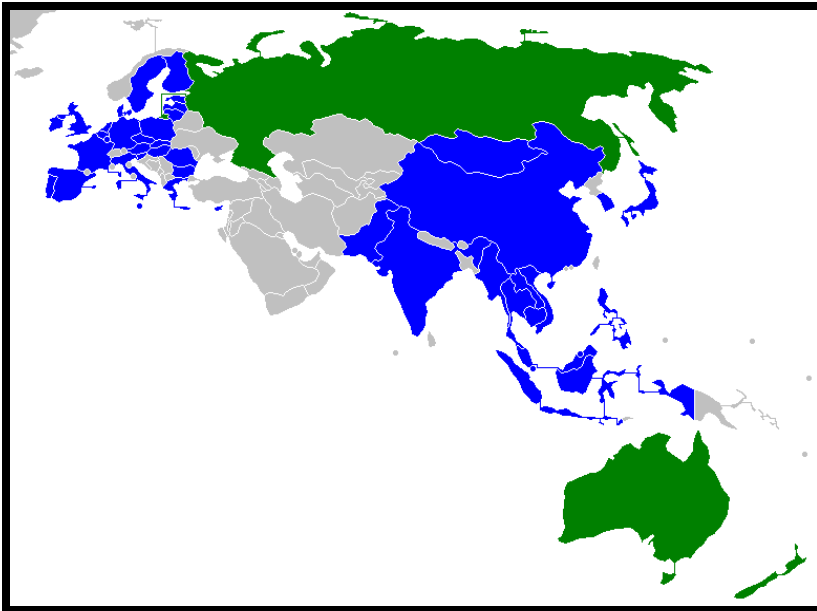
1. History

The Asia-Europe Meeting, or ASEM, is an informal process of dialogue and cooperation bringing together nations in Europe and Asia and some notable regional inter-governmental entities such as the European Commission and ASEAN. The ASEM dialogue addresses political, economic and cultural issues with the objective of strengthening the relationship between the two regions in a spirit of mutual respect and equal partnership.

The Asia-Europe Foundation (ASEF), the sole physical institution of ASEM, was launched in 1997, just one year after the launch of ASEM in 1996. ASEF is funded by voluntary contributions from its partner governments and shares the financing of its projects with its civil society partners across Asia and Europe.

2. Current Member States

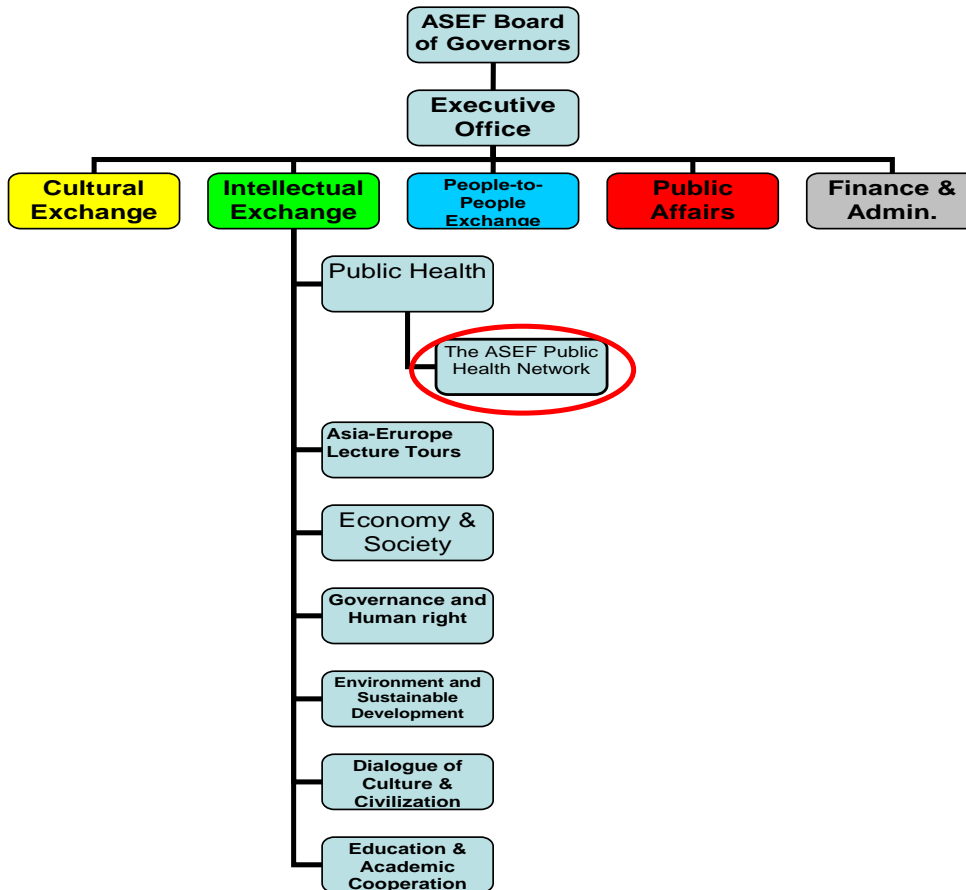
Currently, there are 48 partners altogether; 27 EU Member States and European Commission with 19 Asian countries and the ASEAN Secretariat (see map below). The initial ASEM partnership consisted of 15 EU Member States and 7 ASEAN Member States plus China, Japan, Korea and the European Commission. In 2004, new EU Member States (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia) and three new ASEAN countries (Cambodia, Lao PDR and Myanmar) joined. In 2007, it brought in Bulgaria, India, Mongolia, Pakistan, Romania and the ASEAN Secretariat. During the 8th ASEM Summit held in Brussels in 2010, three new members joined the ASEM process: Australia, New Zealand and Russia.

Map 3: Map of ASEM Member States

Note: Green countries are those that have joined since 2010.

3. Structure and the Section(s) in Charge of Influenza and EID

(Source: Adapted from the ASEF website)



10. The ASEF Public Health Network

1. Background

Recognising the urgent need to address the challenges presented by an avian influenza pandemic, ASEM leaders at the 7th ASEM Summit in 2008 stated their determination to combat avian influenza and a possible human influenza pandemic. On the occasion of the 9th ASEM Foreign Ministers' Meeting in May 2009, they launched the ASEM Initiative of Rapid Containment of Pandemic Influenza in collaboration with the Ministry of Foreign Affairs of Japan (MoFA Japan) and the MoFA Viet Nam. They encouraged new initiatives for transparent and effective responses to and prevention of human pandemics. ASEM leaders highlighted their renewed commitment to regional and international cooperation in coping with non-traditional security issues, in particular trans-boundary and cross-continental disease transmission.

The Japanese Government, in response to this mandate, initiated rapid containment stockpile projects with ASEAN and ASEF (see respective sections for these two stockpile projects). In addition to the stockpile, ASEF set up a Network which brings together key public sector and civil society actors in Asia and Europe for public health dialogues complementing the initiatives of the WHO and other institutions. It mainly focused on the exchange of best practices between Asia and Europe, including a strong focus on public communication.

The ASEF Public Health Network is managed by ASEF and aims at building a platform for public health policy dialogues between Asia and Europe. The Network supports multi-stakeholders' partnerships to meet challenges of global health security and promotes experience sharing between organisations from Asia and Europe. A wide range of members from international organisations, the public and private sectors as well as civil society organisations, are involved from both regions.

2. Brief programme descriptions

The ASEF Public Health Network has three pillars of activities: regional integration and infectious diseases, multi-sector pandemic planning and response and public health dialogue.

2.1. Regional Integration and Infectious Diseases

The ASEF Public Health Network aims to promote the exchange of information and experiences as a key vehicle for regional cooperation, in order to deal with infectious diseases in Asia and Europe. Under this theme, in 2010 ASEF commissioned the London School of Hygiene and Tropical Medicine (LSHTM) to conduct a research study to identify the mechanisms and gaps in regional and inter-regional cooperation in the field of infectious disease control in Asia and Europe. The research resulted in a set of recommendations which highlighted the importance of closer cooperation between the two regions on public health issues. The research study also illustrated the need for long-term collaborations and initiatives to foster closer connections between the two regions.

The Network also convened public health experts in an Expert Group Meeting in May 2010 under the auspices of the European Commission's Directorate-General for Health and Consumers and in close collaboration with the ASEAN Secretariat. The meeting discussed the outcomes of the above-mentioned research study and explored possible areas for future collaboration between Asia and Europe. Following the recommendations made on both occasions, the ASEF Public Health Network has set its focus towards:

1. Provision of a long-term platform for exchanging information and experience by bringing together researchers from Asia and Europe on regional integration and infectious diseases; and
2. Translation of the research outcomes into policy recommendations for political discussion among ASEM countries.

2.2. ASEF-ASAP (Accurate Scenarios Active Preparedness): Multi-sectoral Scenarios for Pandemic Preparedness

This project aims to support the development and deployment of strategies for multi-sector preparation on the basis of future scenarios on pandemics in Asia and Europe. The scenarios were developed during the course of three workshops conducted in Cambodia (March), China (June) and Belgium (September) in 2010. On the basis of these scenarios, multi-sector strategies will be identified in 2011, followed by outreach and implementation activities across Europe and Asia.

A multi-stakeholder panel composed of participants from a wide range of sectors developed the scenarios. The panel was facilitated in a participatory process in developing scenarios and was further assisted by a number of resource persons. Through three workshops, the multi-stakeholder panel sketched the realm of possible future developments on pandemics and their effects on multiple sectors in and across Asia and Europe, developing plausible future scenarios for active pandemic preparedness.

Three scenarios are now nearly complete. Each of them assumes different global governance prospects. The first scenario assumes a much more enhanced global collaborative mechanism than we see today, but with increased costs and inefficiencies in some areas. The second anticipates increased regionalisation in handling global issues that trigger tensions between different regions. The last one presumes diminished political commitment among the nation states in tackling global issues, leading to domination by private multinational corporations and other civil society actors in global governance. Different scenarios embed different turn-outs of drivers of pandemic emergence, (i.e. constraints due to environment, climate change, food demands, migration, etc.).

As a further step from scenario-building, the ASEF Public Health Network is moving to development of strategies. Through this process, ASEF aims to demonstrate the usefulness of the scenarios and to mark the visibility of the scenario building to better prepare for pandemics. The strategies will be developed through multiple workshops where the participants will formulate feasible and appropriate multi-sector strategy for pandemic planning and responses on participatory basis. The workshop will convene groups of people from multi-sectoral entities to brainstorm on collective strategies for pandemic. For the effective dissemination of the scenarios and its development process, a set of communication tool will be developed.

2.3. Public Health Dialogue

The core activity in the thematic area of ‘public health dialogue’ is communicating with people to improve their awareness and understanding of public health issues related to vulnerable groups. These marginalized communities include young people, migrants and sexual as well as ethnic minority groups. Under this topic, ASEF has so far organised “the 16th ASEF University” and has published a special issue of the Asia Europe Journal with the theme of “Public Health and Vulnerable Groups.”

The ASEF University Programme is a long-standing programme that has continued since before the installation of the ASEF Public Health Network. The Programme has been a regular undertaking of the Intellectual Exchange Section of ASEF, which implements the ASEF Public Health Network, since 1998. It aims to provide a positive environment that fosters inter-cultural dialogue among university students from Asia and Europe on a broad range of issues with a view to reducing points of divergence and increasing points of convergence between the two regions; inculcate in university students of Asia and Europe a better appreciation of the history, culture, economics and politics of the other region and of current cooperation between Asia and Europe; and to foster the establishment of people-to-people linkages and a strong and sustainable network among top university students from Asia and Europe who have the potential to become part of the future intellectual leaders in their regions.

The 16th ASEF University was entitled Public Health and Vulnerable Groups: Access to Quality Health Care Services and was conducted at the University of Lodz, Poland during June and July 2010. University undergraduates from both Asia and Europe participated in this programme and addressed public health issues from their points of view, and explored possible approaches to tackle the barriers to health disparities in a way that encourages their contributions. The main objectives of the programme under this topic were:

1. To understand public health issues and challenges from the perspectives of Asia and Europe;
2. To promote discussion on how reducing barriers to quality healthcare services can be addressed; and
3. To encourage young people to play an active role in promoting better health.

Lecturers from Asia and Europe representing diverse backgrounds provided unique lectures and facilitated discussions around the main topic of public health and vulnerable groups. Participants agreed upon a set of recommendations that were presented at the Workshop on the Role of Youth in Promoting Public Health on the occasion of the 4th Connecting Civil Societies Conference, a side-event to the 8th ASEM Summit in Brussels in October 2010.

The Asia Europe Journal is the quarterly research-based periodical by ASEF and publishes interdisciplinary and intercultural studies and research between Asia and Europe in the social sciences and humanities. Fields of interest include various aspects of bilateral relations, comparative studies, Asia area studies from a European perspective or European studies from an Asian viewpoint. Each volume is intended to focus on one major theme and the latest volume published in April 2011 is on public health and vulnerable groups. Under this topic, ASEF involved 3 Guest Editors and selected 10 articles on migration, gender, ageing populations and health policy. The Journal also featured a leading essay as well as a book review.

ASEF will continue to facilitate dialogues to address the health needs of these vulnerable groups. ASEF will also explore multi-disciplinary platforms through which it combines public health with various domains such as education, arts, volunteering, etc.

3. Timeline

2009-2013

4. Budget and financing

US\$3 million was granted by the Government of Japan through Japan Trust Fund (JTF2) for 5 years.

5. Values created

- 1. Insights into regional coordination and infectious diseases:** A scientific review of the implications of regional coordination on infectious diseases has been conducted and useful preliminary findings have been derived.
- 2. Development of multiple pandemic scenarios:** Three pandemic scenarios assuming different global governance status have been developed. They will be refined and used for exercises and other relevant activities to strengthen pandemic preparedness.
- 3. Collaboration platform between Asia and Europe involving public and private sectors as well as civil society organisations:** A unique process of bringing together diverse expertise from both Asia and Europe, across different sectors encompassing both the private and public sectors was piloted for pandemic scenario development. It will supply a prototype for the creation of inter-disciplinary innovations.
- 4. Awareness and network building among Asian and European youth:** Undergraduate university students from Asia and Europe were educated on public health and vulnerable groups at the University of Lodz in Poland and created a youth network.
- 5. Asia Europe Journal:** The Journal collected contributions of academic research papers on the topic of public health and vulnerable groups.

6. Lessons learned

- 1. Importance of cross-sectoral collaboration:** Cross-sectoral collaboration is essential in the field of public health.
- 2. Critical role of civil society in public health:** The role of civil society in public health is also critical.
- 3. Public health as an inter-regional bridge:** Public health issues, such as pandemic influenza, create potential bridging/fostering factors in the relationship between Asia and Europe.

7. Implications to preparedness and response to non-pandemic crises

1. The unique scenario development process applied by the ASEF Public Health Network is applicable to other crises such as food security, climate change, natural disasters, regional conflicts, etc. In fact, these factors were embraced as drivers to increase pandemic risk in the three pandemic scenarios developed.
2. Regionalisation occurring in Southeast Asia and Europe has important implications to global governance status in the 21st century. The analysis of the impact of this global trend on infectious diseases can naturally be extended to other global issues.

8. Useful web links

ASEF Public Health Network: <http://www.asef.org/>

11. Japan/ASEM Initiative for the Rapid Containment of Pandemic Influenza, Stockpile Component

1. Background

The Project for Stockpile of Antivirals and Personal Protective Equipment (PPE) against Potential Pandemic Influenza conducted jointly by ASEAN, the Government of Japan, WHO and the Japan International Cooperation System (JICS) was mentioned in the previous section. The Japanese Government proposed an additional stockpile project be introduced for ASEM partners, with 500,000 courses of antiviral drugs and PPE being stored in Singapore under ASEF (Asia-Europe Foundation) supervision. This support was provided with the Second Japan Trust Fund (JTF2) of the Government of Japan in 2009. The project received the total fund of US\$28.85 million in total among which US\$18 million were allocated to purchase, store and manage the antivirals and PPE. As in the case of the ASEAN stockpile, it is implemented by JICS under the technical advisory of the WHO Office for the Western Pacific (WPRO). It is intended to supplement the shortfall of stockpiles in Asia.

2. Brief programme descriptions

2.1. Stockpile contents (regional)

This project, in contrast to the ASEAN stockpile, contributed all procured commodities to the regional stockpile in Singapore, but not to the national stockpiles. Oseltamivir (400,400 courses) and zanamivir (100,008 courses) were procured. Up to 500,000 pieces of various PPEs were also procured.

2.2. Stockpile deployment guidelines

The basic protocol regarding the deployment of the stockpiled commodities is almost identical to the procedure for the ASEAN stockpile project. The only remarkable difference is that instead of the ASEAN Secretariat instructing JICS to commence deployment, for the ASEM stockpile, the instruction will be given by WHO/WPRO. ASEF will receive a report of such decision from the WHO afterwards. Designation of the consignees in each partner country and expedited customs clearance arrangement are required of the recipient governments as in the case of the ASEAN stockpile.

3. Timeline

2009-2013

4. Budget and financing

The project received US\$18 million to purchase, store and manage the antiviral drugs and PPE.

5. Values created

1. **Establishment of regional antivirals and PPE stockpile:** The Project has set up the regional stockpile of 500,000 courses of antivirals and PPE for up to 500,000 persons in Singapore.
2. **Guidelines of stockpile deployment:** The sequence of actions and their timeline have been settled to deploy the stocks to affected countries in case rapid containment of potential pandemic influenza is triggered.

6. Lessons learned

1. **Importance of routine response capacities:** Strengthened routine response capacities, including risk communication and response logistics, are essential components for a successful rapid containment operation.
2. **Need to be aware of drug regulation requirements of each country:** There is a need to complete registration for both oseltamivir and zanamivir in all countries that can expect to receive the stockpile.

7. Implications to preparedness and response to non-pandemic crises

1. The expertise and experiences built around establishing and managing the supply stockpile for emergencies may well be useful for other crises such as natural and human disasters.

8. Useful web links

1. ASEM Initiative for the Rapid Containment of Pandemic Influenza:
http://beid.ddc.moph.go.th/th/images/cooperation/twg_ppr22_24_06_52/asef_initiative.pdf
2. Japan/ ASEM Initiative for the Rapid Containment of Pandemic Influenza Stockpile Component:
<http://www.asef.org/index.php?download=cHJvamVidHMvZG9jdW1lbnRzLzEwMjk%3D>

SAARC in brief

1. History

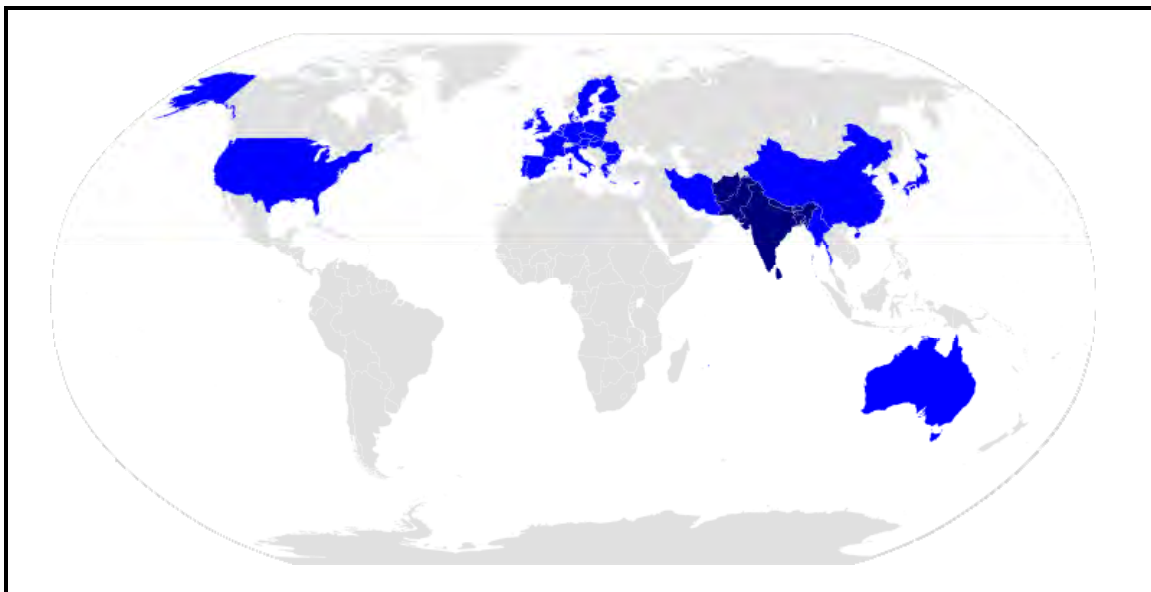
The South Asian Association for Regional Cooperation (SAARC) is an organisation of South Asian countries founded in 1985 and dedicated to economic, technological, social and cultural development emphasising collective self-reliance. Headquarters are in Kathmandu, Nepal.

The concept of SAARC was first adopted by Bangladesh in 1977, during the administration of President Ziaur Rahman. In late 2000, SAARC nations agreed upon the creation of a trade bloc consisting of South Asian countries. The idea of regional cooperation in South Asia was again mooted in May 2001. The foreign secretaries of the seven countries met for the first time in Colombo in April 2002. The Committee of the Whole, which met in Colombo in August 2002, identified five broad areas for regional cooperation. New areas of cooperation were added in the following years.

2. Current Member States

SAARC's seven founding members are Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. Afghanistan joined the organisation in 2007, making the number of Member States eight altogether. US, Republic of Korea, Japan, China, Myanmar, Mauritius, Iran, EU and Australia are Observer States.

Map 4: Map of SAARC Member and Observer Countries



Note: Dark blue: Current Member States. Light blue: Observer States.

3. Structure and the Section(s) in Charge of Influenza and EID

SAARC's organisation is complex, but is structured around four layers. The political level has two layers, the annual Summit and the bi-annual Council of Ministers. The administrative level consists of two layers, the Standing Committee that administratively organises the Council of Ministers and the Technical Committee underneath it that administers thematic/sectoral matters. Chairmanship of the Council of Ministers that directly governs the SAARC Secretariat rotates among the Member States.

The Fifth Session of the Standing Committee was held in Dhaka in December 1985, and set up the Programming Committee to assist the Standing Committee in matters relating to selection of regional projects including their location, cost-sharing modalities among the Member States, mobilisation of external resources, inter-sectoral prioritisation of work programmes and review of the calendar of activities. It generally meets preceding the sessions of the Standing Committee. It is also mandated to convene on a stand-alone basis to coordinate the implementation of approved SAARC programmes and activities.

Working Groups (WG) formulate and oversee programmes and activities within the framework of SAARC to strengthen and promote regional cooperation in their respective areas. The WGs coordinate, monitor and evaluate programmes in this regard. In recommending target-bound programmes and activities, they also propose mechanisms and sources of finance to implement them. Further, they also carry out directives from higher SAARC bodies. The following WGs meet regularly to provide input on their respective areas of cooperation: Working Group on Biotechnology; Working Group on Energy; Working Group on Information and Communication Technology (ICT); and Working Group on Tourism.

Among the Divisions of the SAARC Secretariat, the Division of Health and Social Affairs and the Division of Agriculture and Rural Development are the two divisions that work on animal and human influenza.

12. Animal and Human Influenza-related Initiatives of South Asian Association for Regional Cooperation (SAARC)

1. Background

SAARC's health-related initiatives have mostly focused on HIV, tuberculosis (TB), telemedicine, communicable diseases and surveillance and pandemic preparedness. A particular emphasis has been placed on HIV.

During the Eleventh SAARC Summit in Kathmandu on 4-6 January 2002, the leaders recognised the debilitating and widespread impact of HIV/AIDS, TB and other communicable diseases on the population of South Asia and stressed the need for creating a regional strategy to combat these diseases.

During the Thirteenth SAARC Summit in Dhaka on 13 November 2005, the leaders further underscored the need for increasing cooperation to develop regional strategies for the prevention and treatment of dengue, malaria and other infectious or communicable diseases constituting major public health concerns.

The SAARC Expert Group Meeting to Develop SAARC Regional Strategy on Communicable Diseases was held in Paro, Bhutan on 7-8 July 2008. The Meeting developed the Draft Framework for the SAARC Regional Strategy on Communicable Diseases. The SAARC Secretariat has engaged the services of two consultants to develop the framework into the Regional Strategy.

2. Brief programme descriptions

2.1. Institutional building on regional cooperation on emerging infectious diseases including avian and pandemic influenza

At the Twelfth SAARC Summit held in Islamabad in January 2004 and the subsequent Health Ministers meetings held in 2005 and 2006, the leaders and the Ministers for Health reiterated the importance of taking necessary steps to ensure that there is a collective, systematic and coordinated approach towards disease surveillance in the region.

Increasing emergence and re-emergence of epidemics and communicable diseases such as SARS, avian influenza, Chikungunya fever, etc. in the region raises the urgency of developing appropriate regional measures and capacity for disease surveillance and pandemic preparedness.

The Thirteenth SAARC Summit was held in Dhaka in November 2005 and recognised the need to collaborate on preparedness for addressing health emergencies, including prevention and control of pandemics like avian influenza, as these pose a major global threat with impacts on health, trade and tourism involving human mobility. The Summit called for early establishment of a SAARC Health Surveillance Centre and a Rapid Deployment Health Response System to deal with emerging and re-emerging diseases.

The SAARC Expert Group Meeting on Disease Surveillance and Rapid Deployment of Health Response System to deal with Emerging and Re-emerging Diseases was held in Delhi on 26-27 November 2008 and recommended regional approaches and a way

forward to develop regional institutional capacity and appropriate systems for early warning, rapid deployment health response and to review public health guidelines.

Currently, SAARC also coordinates the HPED (Highly Pathogenic Emerging Diseases) Programme in the South Asia region funded by the European Union through FAO, OIE and WHO. The objective of the HPED programme is to improve epidemic and pandemic preparedness in the region. Key activities include enhancing capacities and capabilities of the SAARC Secretariat and member countries to prevent, control and eradicate HPED, and strengthening veterinary services in SAARC countries.

3. Timeline

Avian and pandemic preparedness programme: Ongoing.

Development of Core Capacities for Implementation of International Health Regulations (2005): 2008-2012.

HPED Project: Four years (December 2009- December 2013).

4. Budget and financing

Capacity building for avian and pandemic influenza preparedness in SAARC Member States has been supported at regional and country levels by international donors and partners such as the Asian Development Bank, World Bank, USAID, the Japanese Government, the European Union and others.

Financing by country for avian and pandemic influenza preparedness as of 31 December 2009 as reported by donors are following (US\$ millions):

Countries	Total committed	Total Distributed	Key Donors
Afghanistan	18.84	8.8	PHRD, US and World Bank
Bangladesh	41.12	19.08	US, World Bank
Bhutan	3.7	1.3	World Bank
India	47.57	14.77	ADB, AHIF, Australia, Germany, Japan, Netherlands, US
Maldives	0	0	
Nepal	21	9.72	US and World Bank
Pakistan	8.04	6.86	US
Sri Lanka	4.94	3.91	European Union and US
Total	145.21	64.44	

AHIF: Avian and Human Influenza Facility

PHRD: Japan Policy and Human Resource Development Fund

Source: Animal and Pandemic Influenza: A Framework for Sustaining Momentum: Fifth Global Progress Report July 2010. United Nations and the World Bank

5. Values created

1. **Institution building on regional cooperation on EID including AI/PI:** A way forward to develop regional institutional capacity and appropriate systems for early warning, rapid deployment health response and to review public health guidelines has been embraced and in progress.
2. **Development of national pandemic plans:** All Member States have avian and pandemic influenza preparedness plans in place, which helped to deal with the Pandemic (H1N1) 2009. The level of avian and pandemic preparedness is better than 2005, although the level of preparedness differs from country to country.
3. **Better partner collaboration framework:** Better coordination and cooperation among UN agencies, international partners and regionally specialised organisations was crucial for developing a holistic, multidisciplinary approach for avian and pandemic influenza at the regional and country levels.

6. Lessons learned

1. **Value of holistic, multidisciplinary approach:** A holistic, multidisciplinary approach in programming supported by long-term investment in animal and human health is essential to address emerging health risks at animal-human-ecosystems interfaces.
2. **Capacity at all levels counts:** Effective responses to animal and pandemic influenza are best implemented locally and IHR (2005) demands development of core capacity at all levels (i.e. national, sub-national and local levels).
3. **Importance of risk communication:** Risk communication is critical during outbreaks, and requires the consideration of country specific situations.

7. Implications to preparedness and response to non-pandemic crises

1. The regional collaboration framework that SAARC provides is a very unique and valuable one and is not supplemented by any other arrangement. The direct linkages between the current SAARC initiatives on animal and human influenza are yet to be seen, but potentially the region-wide capacity built around these can serve for other wider public health emergencies and natural disasters.

8. Useful web links

SAARC website: <http://www.saarc-sec.org/>

Secretariat of the Pacific Community (SPC) in brief

1. History

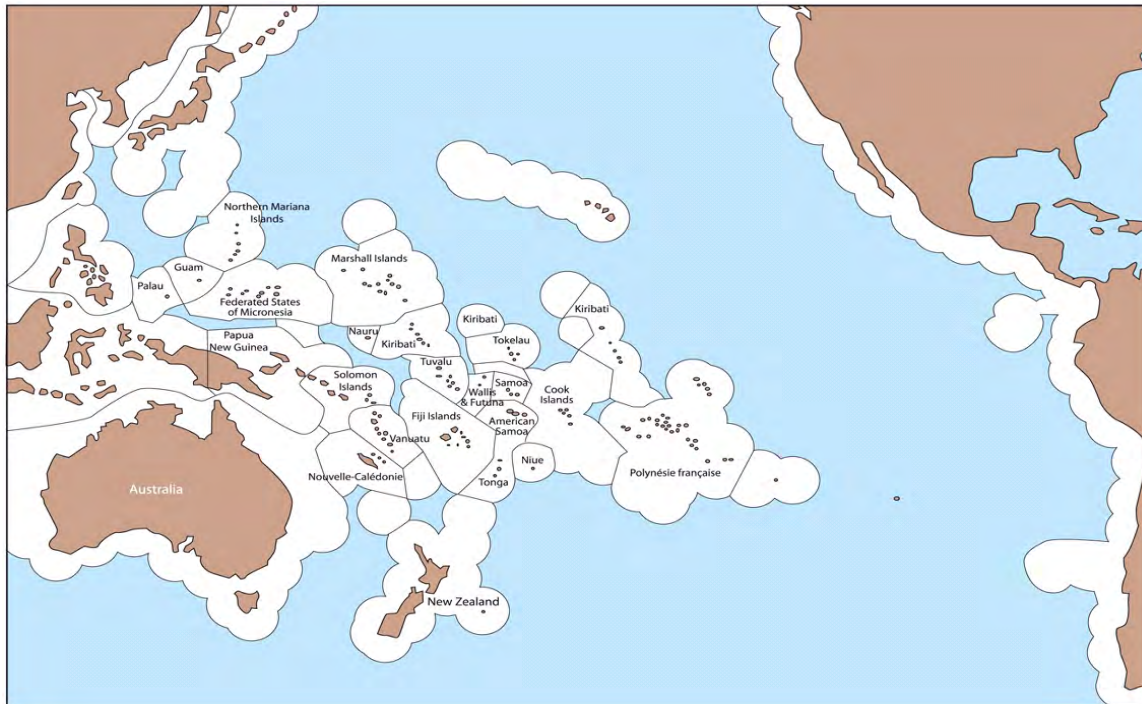
The Secretariat of the Pacific Community (SPC) is an international organisation that was established in 1947 by Australia, France, the Netherlands, New Zealand, the United Kingdom and the United States. It now has 26 member countries and territories (see next section). SPC's mission is to help Pacific Island people position themselves to respond effectively to the challenges they face and to make informed decisions about their future and the future they wish to leave for the generations that follow.

Presently SPC has over 600 staff and works in a wide range of sectors with the aim of achieving three development outcomes – sustainable economic development, sustainable natural resource management and development, and sustainable human and social development. SPC's headquarters is in Noumea, New Caledonia. It has also regional offices in Suva, Fiji Islands, and Pohnpei, Federated States of Micronesia, and country offices in Honiara, Solomon Islands, and Port Vila, Vanuatu.

2. Current Member States

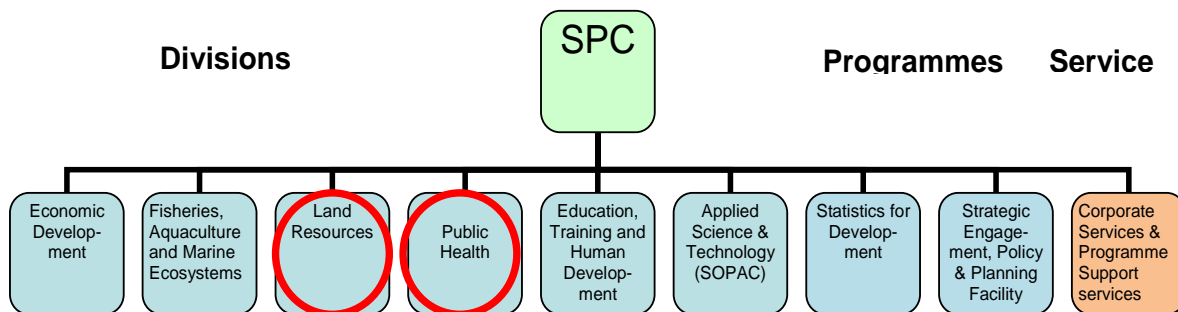
The SPC has 26 Member States including: American Samoa, Australia, Cook Islands, Federated States of Micronesia, Fiji Islands, France, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Pitcairn Islands, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United States, Vanuatu, and Wallis and Futuna.

Map 5: Map of SPC Member States (Pacific Island Countries and Territories)



Note: All SPC Members are spelled out names in above maps. Those areas without names are not the members except the US, France and Pitcairn Islands, which are Members.

3. Structure and the Section(s) in Charge of Influenza and EID



Note: The SPC's organisational structure is currently under review (as of 2011).

The organisation is headed by the Director General supported by an executive team consisting of two Deputy Directors General and the Directors of each division. Its governing body is the Conference of the Pacific Community, which is held every two years. Decision-making is by consensus, but each member is entitled to one vote on matters requiring a vote. The Committee of Representatives of Governments and Administrations (CRGA) meets annually, and in the years that the conference does not meet, is empowered to make decisions on the governance of SPC.

The Public Health Division assists Member States by providing assistance in public health surveillance, prevention and control of communicable and non-communicable diseases and promotion of adolescent reproductive health.

13. Pacific Public Health Surveillance Network (PPHSN)

1. Background

The Pacific Public Health Surveillance Network (PPHSN) was created in 1996 under the joint auspices of the SPC and WHO. It is a voluntary network of countries and organisations dedicated to the promotion of public health surveillance and appropriate response to the health challenges of 22 Pacific Island countries and territories (PICTs). The first priorities for PPHSN are communicable diseases, especially those that are outbreak-prone. At present the target diseases include dengue fever, measles, rubella, influenza, leptospirosis, typhoid fever, cholera, severe acute respiratory syndrome (SARS) and HIV and sexually transmitted infections (STIs).

PPHSN's core members are the 22 PICTs, whose representatives constitute the governing body of the network. It is further supported by allied members – regional training institutions, agencies, laboratories and other organisations or networks with an interest in public health surveillance in the region. PPHSN has also a 12 member Coordinating Body, which serves the network with the support of a focal point (SPC). This network provides the framework within which a number of projects operate, such as the Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP).

2. Brief programme descriptions

The goal of PPHSN is to improve public health surveillance and response in the Pacific Islands in a sustainable way. PPHSN currently provides four main services to PICTs with specific operational targets. It also includes valuable information and communication resources and offers training opportunities to PICTs.

2.1. PacNet: Public health early warning system in the Pacific

PacNet, created in 1997, is an e-mail-based forum for communication regarding public health emergencies, including those of international concern. PacNet thus assists in implementing the International Health Regulations (IHR 2005) in the PICTs. If an outbreak occurs, the country/territory concerned is encouraged to post a message on PacNet without delay, even if not all information on the outbreak is available, to warn health professionals in the region about the potential threat and to encourage preparedness. PacNet also gives access to resources, including technical expertise. As of March 2011, 696 health professionals from the Pacific region and beyond were subscribed to PacNet.

PacNet-Restricted is another list that was created in 2000 to complement PacNet by enabling the sharing of outbreak-related information that is perceived to be sensitive (e.g. not confirmed yet) among a restricted number of members. The list comprises a subset of PacNet members: national EpiNet team members (see details below) and additional *ad hoc* staff from PICTs' departments/ministries of health (i.e. Directors of Health), PPHSN Coordinating Body members and WHO Country Liaison Officers.

2.2. LabNet: Regional network of public health laboratories

LabNet was inaugurated in April 2000 at a meeting in Noumea, New Caledonia. The idea for LabNet came from the recognition that many PICTs have little or no ready access to public health laboratory services. Existing laboratory services are usually hospital-based.

LabNet is a three-level network of laboratories (L1, L2 and L3), where level refers not to the capacity of the lab, but to its role in the network. L1 labs are the labs of the PPHSN member countries and territories. This level is the closest to patients and clinicians facing an outbreak alert. L1 labs collect samples from suspected cases and when possible use screening tests. They should have access to L2 or L3 lab confirmation services for selected diseases.

L2 regional labs perform the first level of confirmation testing for some L1 labs. The techniques they employ require more training and equipment than those used at L1 labs. They are further supported by L3 labs. L2 regional labs also serve as L1 labs for those countries or territories in which they are located. L3 labs are reference laboratories. They are usually internationally recognised labs (e.g. WHO-associated centres) located in the Pacific Rim countries (mainly Australia, New Zealand and USA). In addition to the disease-specific functions of L2 labs, they usually perform more sophisticated, less urgently needed tests, providing important epidemiological information for the region or in the context of the worldwide surveillance of major diseases (such as dengue virus genotyping, influenza subtyping or *Leptospira* serogrouping).

LabNet gives recommendations and support for shipping and testing of specimens and has a dedicated e-mail communication list (PacNet-Lab). A Technical Working Body (TWB) – including New Caledonia's Pasteur Institute, WHO, SPC and the Pacific Paramedical Training Centre (PPTC) – was created for the facilitation and coordination of LabNet development. This working group is currently being revived with new members and revised ToRs that will take into account animal health issues and interests.

LabNet partners, especially SPC, through the US-CDC project on lab-based influenza sentinel surveillance executed under PPHSN, as well as WHO, supported the surveillance of Pandemic (H1N1) 2009 as it spread quickly across PICTs during 2009.

2.3. EpiNet: National outbreak response teams

EpiNet is the response arm of the network. It consists of multi-disciplinary national/territorial outbreak response teams. These teams were formed by Pacific Island health authorities in every PICT in 2001. In addition to coordinating surveillance and response field activities, EpiNet's role is also to establish and maintain relevant surveillance and response protocols for PPHSN target diseases, including technical and resource-related aspects of all operations. A regional EpiNet team is also being established.

2.4. PICNet: Regional network for infection control

PICNet was officially launched in February 2006. It aims to support and advocate for capacity building for infection control professionals and to strengthen institutional linkages with regional and national expert bodies. PicNet's objectives for infection control in PICTs are to set minimum standards, develop capacity, raise awareness of the issues, develop and maintain links among entities in health and other sectors (e.g. other government departments and development partners) and develop a strategic plan for the

network. Its future objective is to develop and maintain standardised surveillance and response mechanisms for healthcare-associated infections.

PRIPPP (see below) contributed to the development of PICNet. Under the project, assistance was provided to the PICTs to strengthen national infection control capacity. This assistance included the provision of basic infection control training and programme establishment. PICNet has a dedicated e-mail communication list (Picnet). Infection control posters and regional infection prevention and control guidelines were also published and widely distributed in the PICTs. It is envisaged that these regional guidelines will be used as a reference for PICTs to develop national guidelines tailored to suit their unique healthcare environments.

2.5. Information/publication resources

In July 1998, SPC started the publication of *Inform'ACTION*, the PPHSN information bulletin. Since then, 32 issues have been published, with contributions from many PPHSN health professionals. Each issue contains news and information about public health surveillance activities in the Pacific Islands. Since 2006, SPC has also produced a directory of PPHSN resources. The directory provides information on the wide range of resources and technical expertise available within the network. It is regularly updated to ensure that it stays current and relevant.

2.6. Training

Since 1996, PPHSN partners have conducted training workshops in a number of areas: public health surveillance; outbreak investigation and communicable disease epidemiology; data for decision making and field epidemiology; identification, surveillance and control of vector mosquitoes; infection control and laboratory testing methods; and collection and shipment of laboratory specimens.

3. Timeline

1996-present

4. Budget and finance

PPHSN activities are supported by allied members and development partners.

5. Values created

1. Four tangible regional networks on infectious disease surveillance and response in the PICTs:

- a. *PacNet and PacNet-restricted*: The early warning system and e-mail-based forums for communication regarding public health emergencies, including those of international concern.
- b. *LabNet*: The three-tier network of public health laboratory services.

- c. *EpiNet*: The response arm of the network, consisting of multi-disciplinary national/territorial outbreak response teams in every PICT. Establishment and operationalisation of a regional EpiNet team is in progress.
 - d. *PICNet*: The Pacific regional infection control network.
- 2. Effective mechanisms for information and experience sharing:**
 - a. PacNet and PacNet-restricted have been widely used for information sharing and have made timely dissemination of information possible. They played an important role in the response to Pandemic (H1N1) 2009.
 - b. *Inform'ACTION*, the PPHSN's information bulletin, is another established mode of epidemiological information sharing.
 - 3. Sustainable collaboration platform among PICTs and partner agencies:** PPHSN provides a platform of cooperation and collaboration among countries and territories, international organisations, training institutions, laboratories, networks and associations and aid donors. It has been operating for 14 years, since its inception in 1996.
 - 4. Provision of operational framework:** PPHSN provides the framework within which a number of projects operate in the Pacific.

6. Lessons learned

- 1. Experiences of Pandemic (H1N1) 2009 and other outbreaks:** PPHSN, through its PacNet service, proved to be the best platform for communicating timely information/advice on Pandemic (H1N1) 2009, as well as other communicable disease outbreaks, among PICTs and their working partners.
- 2. Value of partner collaboration for effective information sharing:** Good collaboration between agencies, especially WHO, SPC, US-CDC and other PPHSN-allied members led to timely sharing of updated information.
- 3. Importance of laboratory network:** Well established mechanisms for sample referral and transport to reference laboratories are critical for effective public health surveillance.

7. Implications for preparedness and response to non-pandemic crises

1. The early warning system consisting of PacNet and PacNet-restricted also has the potential to be applied to other public health emergencies of international concern, not restricted to infectious diseases, within the existing framework of IHR 2005.
2. Established relationships between PICT laboratories and reference laboratories can improve sample transport and confirmatory testing arrangements even for non-pandemic EID.

8. Useful web links

Pacific Public Health Surveillance Network (PPHSN):
<http://www.spc.int/phs/pphsn/index.htm>

14. Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP)

1. Background

The Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP) was designed to build the capacity of the Pacific Island countries and territories (PICTs) to effectively and efficiently respond to emerging diseases, in particular highly pathogenic avian influenza (HPAI) and pandemic influenza. PRIPPP was initially a four-year project to be implemented from July 2006 to June 2010, but it has been granted a 12-month extension to June 2011.

PRIPPP covers both the animal and human health sectors and it is managed by the Secretariat of the Pacific Community (SPC) under its Public Health Surveillance and Communicable Disease Control Section and its Animal Health and Production Section. Funding for PRIPPP is provided by Australia and New Zealand through AusAID and New Zealand Aid Programme (formerly called NZAID). PRIPPP is implemented in strategic partnership with WHO, OIE and FAO.

2. Brief project descriptions

2.1. Component 1: Preparedness and broader emergency plans

Component 1 includes the following five activities:

1. Development of standards for preparedness and broader emergency plans in line with best practice international guidelines;
2. Facilitation of the development of national influenza plans in all PICTs;
3. Capacity mapping and needs assessments including International Health Regulations (IHR 2005) core capacity assessment and gap assessment against national preparedness standards;
4. Technical assistance to assist in addressing legislative and legal gaps; and
5. Development of a communications and advocacy strategy.

In 2006, avian and pandemic influenza checklist was developed. It currently serves as an internal project monitoring mechanism complementing the APSED (Asia Pacific Strategy for Emerging Diseases) checklist set forth by WHO. All PICTs have in place a national influenza pandemic preparedness plan. A number of plans have been endorsed at the highest level by national cabinets. The PRIPPP staff continue to work with national level counterparts to operationalise plans and to strengthen the necessary surveillance and response systems which the plans draw upon.

PRIPPP supported a number of testing exercises carried out by the PICTs. In Niue, a functional exercise with field activities was conducted focusing on field and hospital services needed in an influenza pandemic. In Fiji Islands and Solomon Islands, scenario-based tabletop exercises were conducted to test national pandemic plans. Tabletop testing exercises were also conducted in conjunction with the respective national disaster management groups in Kiribati, Tonga and Tuvalu. The PRIPPP staff have also assisted with a range of other testing approaches in the Cook Islands (drill exercise to assess the infection control capabilities of health care workers from triaging at community health clinic to admission and management at hospitals), Samoa and

Tonga (orientation exercise using scenarios covering avian influenza threats, infection control and border control during update of the National Influenza Pandemic Preparedness Plans) and Tuvalu (orientation exercise for the border control and disaster teams). American Samoa, Northern Mariana Islands, Federated States of Micronesia (FSM), Guam, Palau and Marshall Islands have undertaken testing exercises in conjunction with the US authorities. PRIPPP also conducted drill exercises in the Marshall Islands and Kosrae State of FSM to assess infection control capabilities among health care workers at hospitals as well as those front-liners as border control teams. Vanuatu had infection control drills and orientation exercises with PRIPPP assistance and also had a real time exercise based on the all hazards approach through the programme of Public Health and Emergency Management in Asia and the Pacific (PHEMAP). PRIPPP staff also supported a number of taskforces with information and guidance upon request during Pandemic (H1N1) 2009.

A checklist and accompanying guidelines to assess the strength of PICTs' legislative basis for pandemic preparedness were completed under PRIPPP. A strong public health legislative framework will ensure that countries can legally undertake measures such as vector control, quarantine, maintenance of public orders and surveillance and notification of cases in humans and animals. The framework supports combined action by human and animal health as well as other agencies, such as customs. The guidelines also support PICTs' compliance with IHR (2005) and provide a useful starting point for updating their public health legislation.

PRIPPP has also worked with UNICEF and WHO to develop a number of information, education and communication (IEC) materials to support actions for preparation and response to avian and pandemic influenza. Key publications are available through the SPC website (see end of section). PRIPPP also assisted UNICEF with advocacy efforts for pandemic preparedness such as communication planning.

2.2. Component 2: Surveillance and response by animal and public health systems

This component consists of the following activities:

1. Establishment of an animal health laboratory network with upgrading of national animal health laboratories and clear referral agreements with the reference laboratory on the basis of the baseline assessment on diagnostic and referral systems;
2. Development of regional infection control standards and strategies;
3. Training;
4. Support for outbreak response at the national level; and
5. Development of key standard operating procedures (SOPs) for animal health workers.

Establishment of the Pacific Animal Health Laboratories Network (Activity 1) has been a key activity for the project. PRIPPP aims to establish a three-tier laboratory network structure similar to the one established by LabNet of PPHSN (see above). For Activity 2, in 2008, the PRIPPP staff helped PICTs strengthen their national infection control capacity by providing basic infection control training and establishing programmes. Regional Infection Control Guidelines were also developed, providing a model that is suitable for the Pacific context and can be adapted by PICTs. These activities contributed to the development of the Pacific Regional Infection Control Network (PICNet) launched in 2006 under the framework of PPHSN (see above).

As for Activity 3, a para-veterinarian (Paravet) course has been developed in response to the extremely low number of skilled veterinarians in the Pacific region. The course aims to provide animal health workers within the ministries of agriculture and forestry with basic skills in such areas as collection of blood and tissue specimens, infection control during specimen collection and packaging of samples for transport to overseas laboratories. For human health workers, a key training activity has been the Data for Decision Making (DDM) course, a Pacific model of the Field Epidemiology Training Programme (FETP) aiming to build surveillance and response capacity in line with IHR (2005). PRIPPP has worked with the College of Medicine, Nursing and Health Science, Fiji National University to organise and run the course, which has now been accredited to issue a Postgraduate Certificate in Field Epidemiology from the College. So far, there have been 14 graduates from Solomon Islands in 2010 and 17 from Fiji Islands in early 2011.

For Activity 4, PRIPPP has a component to support PICTs during outbreaks. Outbreaks also provide an opportunity to build the skills and capacity of local counterparts for response. The H1N1 outbreak drew heavily on PRIPPP response resources, and the project provided a key focal point to assist PICTs to respond to the pandemic. PRIPPP helped mobilise additional procurement to support the response and provided technical advice (both from a distance and on site) and guidance during the pandemic. In the area of animal health outbreaks, due to the limited numbers of veterinarians in the Pacific, PRIPPP has a vital role in assisting national animal health workers in responding to suspected incidences. During 2009, PRIPPP assisted the Solomon Islands and Samoa in undertaking an investigation of a poultry die-off in the outer islands and provided advice to the Fiji Islands for the eradication of bovine brucellosis.

For Activity 5, PRIPPP has been developing model SOPs for animal health workers because there is extremely limited technical capacity in Pacific countries to undertake animal health policy and planning work.

2.3. Component 3: Regional coordination and project management

Key activities of this component over the life of the project have been:

1. Development of a regional procurement and stockpiling strategy for key and emergency supplies;
2. Regional coordination;
3. Development of a small grants scheme;
4. Contributions to regional policy debate and dialogue; and
5. Project governance and management with the establishment of a project management unit at SPC.

PRIPPP played a vital role in coordinating the selection, quantification, procurement and distribution of essential medication, medical supplies and equipment for both animal and human health sectors of each of the 22 member PICTs (Activity 1). In addition, the role entailed the assessment of PICTs' capacity to receive, store and manage strategic national stockpiles to be deployed in the event of a public health emergency. Procurement has involved antivirals, PPE, rapid test kits and other equipment for rapid containment. Guideline documents have been developed to support these procurement activities.

PRIPPP has worked with stakeholders and development partners in the region in the field of avian and pandemic influenza and sought to ensure its activities are undertaken in a coordinated fashion (Activity 2). In particular, close collaboration has been

maintained with WHO during the project implementation. A small grants scheme has been developed under the project at the request of the PICTs (Activity 3). These grants allow the PICTs direct access to funds up to Aus\$45,000 to build national response capacity for avian and pandemic influenza.

SPC and the project has sought to contribute to regional dialogue on emerging infectious diseases and undertaken advocacy at events such as Asia Pacific Economic Cooperation (APEC) meetings, the Forum Economic Ministers' Meeting (FEMM), the Pacific Ministers of Health meetings and in international forums such as the WHO 5th Technical Advisory Group (TAG) on Emerging Infectious Diseases and the International Ministerial Conference on Avian and Pandemic Influenza (IMCAPI) in Ha Noi, Viet Nam in 2010. In 2011 the project commissioned advice on the role of gender in emerging infectious diseases, as well as the economic cost associated with pandemics.

3. Timeline

July 2006-June 2011

4. Budget and finance

The governments of Australia and New Zealand finance PRIPPP. The total project size is Aus\$12.4 million. The small grants facility allows PICTs direct access to funds up to Aus\$45,000 to build national response capacity for avian and pandemic influenza.

5. Values created

- 1. Development of national pandemic plans:** All 22 PICTs have national influenza pandemic preparedness plans, 15 endorsed their national plans and 12 tested their national plans using a formal exercise mechanism.
- 2. Establishment of multi-sectoral taskforces:** Multi-sectoral task forces established for pandemic influenza in PICTs can be an effective model when responding to other infectious disease outbreaks and crises.
- 3. Assessment guidelines for legislative basis for pandemic preparedness:** PRIPPP made a significant contribution to developing IHR compliant guidelines for assessing the PICTs' legal frameworks.
- 4. SOPs for animal health surveillance and responses:** Eight PICTs have developed standard operating procedures (SOPs) for animal health surveillance and rapid containment of animal diseases. These lay the groundwork for appropriate responses to emerging disease outbreaks.
- 5. Establishment of animal health capacity building training:** Basic animal health investigation and disease control capacity was expanded by the Paravet training under PRIPPP.
- 6. Establishment of field epidemiology training as a university certified training programme:** Data for Decision Making training (Pacific model of FETP) was conducted in the Solomon Islands and the Fiji Islands and became an accredited course of the College of Medicine, Nursing and Health Sciences, Fiji National University.

7. **Strengthened infection control with development of regional infection control guidelines:** Regional guidelines for infection control were developed in the second year of the project and 10 PICTs benefited from strengthening infection control activities.
8. **Actual response to Pandemic (H1N1) 2009:** In its third year, the Project played a key role in responding to the Pandemic (H1N1) 2009. Logistical support was one of the most notable activities undertaken by the Project.

6. Lessons learned

1. **Challenges in prioritising AI/PI and EID among items on the development agenda:** It has been challenging to maintain a focus on avian/pandemic influenza and emerging infectious disease preparedness in PICTs in the face of other development priorities and limited resources.
2. **Need for high-level political commitment:** High-level political negotiations were needed to allow pandemic preparedness to be contextualised within the broader health agenda and drive the Project forward.
3. **Prospect of self-sustainability:** There is recognition that some activities will require ongoing external technical support, in particular those activities associated with surveillance.

7. Implications for preparedness and response to non-pandemic crises

1. National pandemic plans developed and endorsed through PRIPPP along with other plans related to other crises such as natural disasters will provide the basis for strengthened preparedness and response to public health emergencies of international concern (PHEIC) and other crises.
2. The experience gained from the real, tabletop and functional exercises in various countries and territories in the region increased the regional capability to respond to real crises.
3. The legal assessment and streamlining for emergency preparedness and response not only benefit the pandemic-focused activities, but also the ones targeting a wider range of crises. This, however, requires longer term inputs.
4. Streamlining the stockpiling of essential commodities for rapid response to avian and pandemic influenza, along with the existing logistics arrangements for other disasters such as natural disasters, will cater to the rapid deployment of the essential commodities in a wide range of crises.

As alluded to in the description of SPC and PPHSN, there was previously no SPC division/section specialising in disaster management, but SOPAC (the Pacific Islands Applied Geoscience Commission) merged with SPC and brought that role to SPC. Also, there is a plan in progress towards an emergency and outbreak preparedness cluster within SPC's Public Health Division as part of a Pacific One Health Initiative proposal led by SPC and WHO.

8. Useful web links

1. PRIPPP home page: <http://www.spc.int/pripped/>

2. SPC website (PRIPPP):

http://www.spc.int/phs/index.php?option=com_content&task=view&id=40&Itemid=108

MBDS in brief

1. History

MBDS (Mekong Basin Disease Surveillance) is a self-organised sub-regional cooperation network among six Mekong Basin countries (and provinces of China), namely Cambodia, Yunnan and Guangxi provinces of China, Lao PDR, Myanmar, Thailand and Viet Nam. It aims to strengthen national and sub-regional capabilities in infectious disease surveillance and outbreak response, especially for priority diseases, to rapidly and effectively control them. The cooperation focuses on cross-border cooperation at selected sites and has matured through several phases of implementation.

In 1999, some surveillance functions were started. In 2001, MBDS partners commenced their formal cooperation by focusing on building basic epidemiology capacity at national and local levels with the agreement of the first memorandum of understanding (MOU). In 2003, the first four MBDS cross-border sites were established, with initial activities focusing on exchange of surveillance information on both sides of the border at each site for agreed-upon prioritised diseases and reporting frequencies. In 2006, MBDS expanded its efforts beyond surveillance and undertook a series of provincial, national and regional tabletop exercises related to pandemic influenza preparedness.

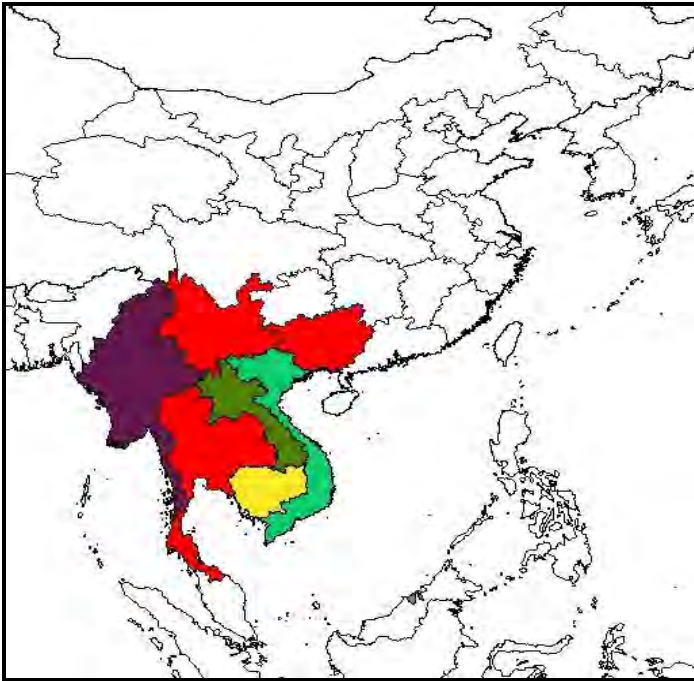
The second MOU, agreed in 2007, widened the scope of the MBDS activities to a multi-strategies approach. Thus, the scope of activities expanded from the cross-border surveillance to seven inter-related core strategies stipulated in the new 6-year action plan:

1. Maintenance and expansion of cross-border sites to a total of 23 sites;
2. Animal-human interface and community surveillance;
3. Epidemiology capacity and human resources development;
4. Information and communications technology development;
5. Laboratory capacity development;
6. Risk communications; and
7. Policy research.

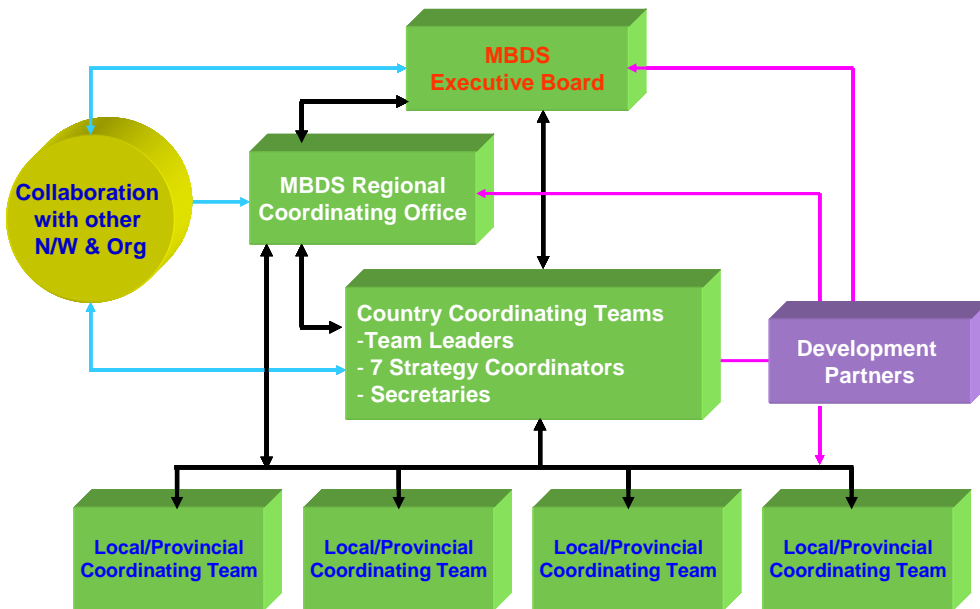
2. Current Member States

Currently, MBDS includes Cambodia, Yunnan and Guangxi provinces of China, Lao PDR, Myanmar, Thailand and Viet Nam.

Map 6: Map of MBDS Member Countries and Provinces



3. Structure and the Section(s) in Charge of Influenza and EID



MBDS's highest governance body is the MBDS Executive Board that oversees both the Regional Coordinating Office and the Country Coordinating Teams. It maintains its regional office within the Ministry of Public Health, Thailand. The office has an MBDS Coordinator, an MBDS Administrative Officer and an Information and Communication

Technology Collaboration Specialist. Country coordinating teams include team leaders, coordinators for seven strategy areas and secretaries. Local/provincial coordinating teams report to the corresponding country coordinating team.

15. Mekong Basin Diseases Surveillance (MBDS)

1. Background

Initiated in 2001, MBDS (Mekong Basin Disease Surveillance) is a self-organised sub-regional cooperation network among six Mekong Basin countries (two Mekong Basin provinces in the case of China), namely Cambodia, Yunnan and Guangxi provinces of China, Lao PDR, Myanmar, Thailand and Viet Nam. It aims to strengthen national and sub-regional capabilities in infectious disease surveillance and outbreak response, especially on designated priority diseases, to rapidly and effectively control them. The cooperation focuses on cross-border collaboration activities.

Its general objectives are to develop mechanisms for building strong cross-border programmes, implement them in pilot sites and develop tools and skills among key stakeholders to solve issues of cross-border infectious disease epidemics in a coordinated way. The specific objectives are to:

1. Enhance activities for information exchange across borders;
2. Develop and conduct training courses to strengthen capacities for disease surveillance;
3. Develop a strategy for joint cross-border outbreak investigation and response;
4. Share experiences in dealing with surveillance as well as solving border health issues as a coordinated team;
5. Strengthen cross-border laboratory capacity to support surveillance activities;
6. Develop indicators for monitoring progress;
7. Use planning process (plan-implement-evaluate-act-plan) to promote team development; and
8. Develop research knowledge and skills for further strengthening and development of a concrete model for disease surveillance and control of communicable diseases among the member countries.

Its core values are mutual trust, transparency and a cooperative spirit.

Currently, the network addresses 18 priority diseases, namely Severe Acute Respiratory Syndrome (SARS), avian influenza, malaria, dengue, human immunodeficiency virus (HIV), cholera, acute flaccid paralysis (AFP), typhoid, measles and tuberculosis (TB).

The MBDS network has been well established and is based on core values. A new Memorandum of Understanding (MOU) signed by MBDS health ministers in May 2007 in Geneva is currently in effect to stipulate the cooperation framework from 2008 to 2013. International Health Regulations (IHR 2005) requirements to build core capacities to respond promptly and effectively to Public Health Emergencies of International Concern (PHEIC) have been pursued. The MBDS has been supported by the Rockefeller Foundation, the Nuclear Threat Initiative and has collaborated with Google, the RAND Corporation, InSTEDD, ProMed-MBDS, the Kenan Institute Asia, ASEAN, US-CDC and WHO.

2. Brief programme descriptions

2.1. Development of mechanisms and models for building strong cross-border infectious disease surveillance and response

Cross-border cooperation for infectious disease surveillance and response started in 2003 at four sites:

1. Savannakhet (Lao PDR)-Mukdaharn (Thailand);
2. Savannakhet (Lao PDR)-Quang Tri (Viet Nam);
3. Champasak (Lao PDR)-Stung Treng (Cambodia); and
4. Luang Namtha (Lao PDR)-Mengla (China).

In 2008, five sites were added, bringing the number of sites to 10:

5. Bo Kaeo (Lao PDR)-Chiang Rai (Thailand);
6. Sakaeo (Thailand)-Banteay Meacheay (Cambodia);
7. Takaeo (Cambodia)-An Giang (Viet Nam);
8. Kampot (Cambodia)-Kien Giang (Viet Nam);
9. Lai Chau (Viet Nam)-Luchun (Yunnan, China); and
10. Lang Son (Viet Nam)-Ping Xiang (Guang Xi, China).

In 2009, three more sites were added, forming a total of 13 sites:

11. Borikhamxay (Lao PDR)-Ha Tinh (Viet Nam);
12. Vientiane (Lao PDR)-Nongkhai (Thailand); and
13. Nan (Thailand)-Sayabury (Lao PDR).

Twelve more sites, making 25 sites total, were established by March 2011. Fourteen of them are regularly sharing information and all are having regular meetings and conducting other activities.

A cross-border surveillance and response mechanism has been developed in those sites through regular information exchanges, joint outbreak investigations, cross-border meetings, monitoring and evaluation, multi-sector engagement (especially with local migration authorities), collection of cross-border epidemiologic case histories and cross-border medical care and clinical follow-up. Most notably, these sites are reporting disease incidence at agreed-upon frequencies to the MBDS regional office. The mechanism has been expanded to nearby provincial areas as well.

2.2. Tabletop exercises on pandemic preparedness and response at country and regional levels

MBDS has undertaken a series of provincial, national and regional tabletop exercises related to pandemic influenza preparedness. After national exercises in six countries, a regional pandemic tabletop exercise was conducted in Siem Reap, Cambodia in March 2007 with the participation of 59 national and provincial government officials from the six countries and 25 international observers. The exercise aimed to strengthen regional pandemic influenza preparedness. It focused on three main preparedness areas:

1. Surveillance and information sharing;
2. Disease prevention and control, and communications; and
3. Elaboration of lessons that can be used to strengthen national preparedness and guide future MBDS programming.

The participants recognised key challenges in financing, logistics, limited laboratory and communications infrastructure, maintenance of public order and technical expertise for maintaining web-based communication in responding to a pandemic. Particularly in surveillance, the exercise identified challenges in the high volume of travellers across borders, virus transmission by asymptomatic hosts, the policy dilemma of balancing industrial/economic impacts (e.g. on tourism) and public health needs and administrative issues related to specimen transport across borders. In joint cross-border investigations, administrative challenges related to timely border crossings by investigation teams, language barriers and disease control concerns with personnel travelling between affected and unaffected areas were identified as issues to be addressed. In control activities, the need for greater clarity on national versus MBDS-wide decision making, and the productive involvement of all relevant sectors (e.g., border control) were recognised. In risk communication, participants identified challenges related to national versus sub-regional authority for communications planning, language barriers and maintenance of critical communications infrastructures. A follow-up assessment of the actions taken and the status of preparedness was done in 2010 and is planned again for 2011.

2.3. Building MBDS capacity at central and provincial levels

One of the goals of the current action plan (2008-2013) is to strengthen epidemiological capacity. The plan intends for each member country in the Mekong Subregion to have improved their capacity in epidemiological surveillance and health emergency response, both at the local and national levels. Long-term training for field epidemiology has been developed and sustained, which will continue to be used to build in-country human capacity for surveillance and response. More specifically, it aims to:

1. Strengthen capacity for field epidemiology;
2. Strengthen and support the epidemiological network in MBDS countries;
3. Develop capacity and promote collaboration among human and animal health sectors; and
4. Improve capacity for early detection and response to disease outbreaks.

Human resource development indicators were settled to augment this initiative.

Related to overall epidemiological capacity building, the plan also includes a goal to strengthen laboratory capacity, to provide laboratory-based evidence for outbreak investigation and response and to provide laboratory data for routine surveillance and control of some core diseases. More specifically, it aims to:

1. Assess lab and bio-safety capacity needs at cross-border sites in conjunction with IHR/APSED country assessment;
2. Support laboratory capacity development for core diseases;
3. Improve laboratory testing proficiency for core diseases;
4. Develop regional protocols for specimen identification, collection and transport for reference testing;
5. Promote adoption of new diagnostic technologies; and
6. Follow up on specific priority actions from national and regional pandemic preparedness tabletop exercises regarding laboratory functions.

In addition, an assessment of regional laboratories, both central and at cross-border sites, was conducted in 2009.

Another goal of the plan specifies the strengthening of the information and communication technology (ICT) in place for disease surveillance and response. It aims to strengthen early warning and regional cooperation for emerging diseases through ICT at all MBDS cross-border sites and relevant provincial and central offices. More specifically, it aims to:

1. Establish ICT in MBDS cross-border sites;
2. Connect between central and sub-regional levels;
3. Establish a regional policy for ICT procurement, licensing, application and sharing; and
4. Follow up on specific ICT priority actions for national and regional pandemic preparedness identified through the tabletop exercises.

So far, a short message service (SMS) based reporting system (GeoChat), a web-based reporting system and monitoring and evaluation have been set in place. MBDS response to Pandemic (H1N1) 2009 was assessed in 2010 and another assessment is planned for 2011.

3. Timeline

2001-present

4. Budget and financing

Major financial backing for MBDS comes from the member country governments, the Rockefeller Foundation and the Nuclear Threat Initiative (NTI). The Rockefeller Foundation has provided US\$3 million for the past three years.

5. Values created

1. **Development of mechanisms for building strong cross-border infectious disease surveillance and response:** A cross-border surveillance and response mechanism has been developed at 25 border sites (as of March 2011) through regular information exchanges, joint outbreak investigations, cross-border meetings, monitoring and evaluation, multi-sector engagement (especially with local migration authorities), collection of cross-border epidemiologic case histories and cross-border medical care and clinical follow-up.
2. **Tabletop exercises on pandemic preparedness and response at country and regional levels:** A series of provincial, national and regional tabletop exercises on pandemic influenza preparedness have been conducted, identifying key challenges in surveillance, response (in particular cross-border joint investigations and control measures) and risk communication with follow-up assessment and actions in 2010 and 2011.
3. **Building MBDS capacity at central and provincial levels:** Building of MBDS capacity has been pursued under the 2008-2013 Action Plan mainly focusing on field epidemiology, laboratory capacity, utilisation of ICT and policy research.
4. **Human resource development:** Various training programmes covering the areas of field epidemiology, use of epidemiological/statistical software and ICT have been

conducted. A set of regional human resource development indicators was developed.

5. **Establishment of a cooperation platform:** MBDS established a platform for regional disease surveillance activities and a gateway for implementing activities from partner organisations.

6. Lessons learned

1. **Need for clear role demarcation:** Stipulation of clear roles and responsibilities among different stakeholders and development partners has been a key to success.
2. **Need for arrangements to formalise network:** Networking among a wide range of stakeholders was augmented by political commitment, strong leadership and official documentation of agreements through MOUs.
3. **Instability in human resources posed challenge:** Rapid staff turnover and the loss of key staff to long-term training in member countries posed a major challenge in maintaining the MBDS functions.
4. **Difficulty in coordinating activities with different fund sources:** Sometimes, the activities of the partner agencies were not well harmonised with the plan of the regional MBDS, leading to uncoordinated implementation of various workshops.
5. **Language as a key barrier:** Language has been a notable barrier to the regional implementation especially because the MBDS functions involve a great deal of cross-border activities at the local level.

7. Implications to preparedness and response to non-pandemic crises

1. Though the network is specifically focusing on infectious disease surveillance and response, there are two aspects that may potentially contribute to preparedness and response to other non-pandemic crisis. First, it is embracing the IHR core capacity development as its mandate, thus encompassing preparedness and response to all PHEIC. Second, through the tabletop exercises on pandemic, the planning capacity may also translate into preparedness and response to other non-pandemic crises with a cross-border nature.
2. Strengthening of the central command system through the MBDS also played a critical role in a wide range of infectious disease hazards such as the severe diarrhoea outbreak in Myanmar in 2008, which occurred with flooding.

8. Useful web links

MBDS website: http://www.mbdsoffice.com/index_2008.php

ACMECS (Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy) in brief

1. History

At the special ASEAN Summit on SARS, held in Bangkok on 29 April 2003, the then Prime Minister of Thailand raised the idea of establishing what was then called the Economic Cooperation Strategy with the leaders of Cambodia, Lao PDR and Myanmar. The objectives of this new initiative are to bridge the economic gaps among the four countries, and to promote prosperity in the sub-region in a sustainable manner. Such prosperity will not only benefit the four countries, but also add value to ASEAN and its solidarity.

Leaders of Cambodia, Lao PDR, Myanmar and Thailand met for the first time on 12 November 2003 in Bagan, the Union of Myanmar. At the Summit, the four leaders adopted the Bagan Declaration, affirming their commitment to cooperate in five priority areas of cooperation, and endorsed the Economic Cooperation Strategy Plan of Action under which 46 common projects and 224 bilateral projects were listed for implementation over the next 10 years. The leaders agreed to call this newly created economic cooperation framework the Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy or ACMECS.

The addition of Viet Nam to the group on 10 May 2004 has made ACMECS a strategy with five member countries. The emphasis of ACMECS is on using self-help and partnership to achieve sustainable development, including poverty reduction, in line with the UN Millennium Development Goals.

ACMECS intends to act as a catalyst to build upon existing regional cooperation programmes and complement bilateral frameworks with a view to transform the border areas of the five countries into zones of economic growth, social progress and prosperity, and to blend local, national and regional interests for common benefits, shared prosperity, enhanced solidarity, peace, stability and good neighbourliness.

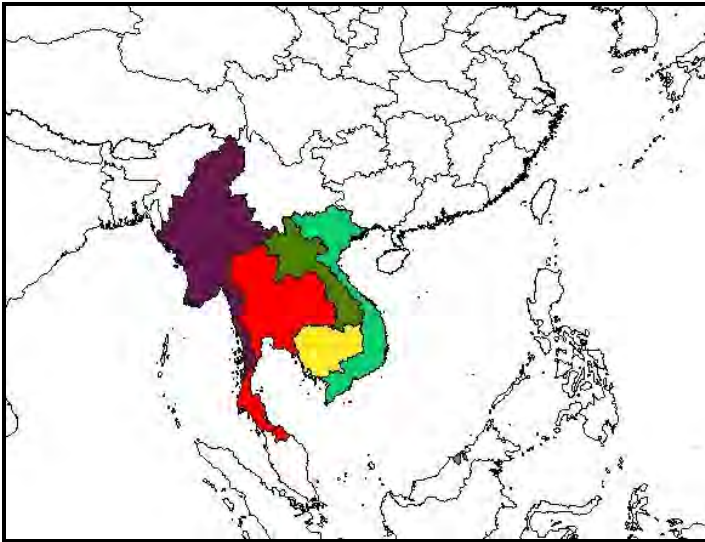
ACMECS activities aim to be:

1. Complementary to and enhancing existing bilateral and regional economic cooperation;
2. Deliverable with tangible results, utilising the comparative advantages of each country;
3. Feasible and acceptable to the countries concerned; and
4. Undertaken on the basis of voluntarism, consensus and equitable sharing of benefits.

2. Current Member States

Currently, ACMECS includes 5 Member Countries: Thailand, Cambodia, Myanmar, Lao PDR and Viet Nam.

Map 7: Map of ACMECS Member Countries



3. Sectors of Cooperation under ACMECS and Lead Countries

1. Trade and Investment Facilitation (Thailand)
2. Agricultural Cooperation (Myanmar)
3. Industrial and Energy Cooperation (Viet Nam)
4. Transport Linkages (Lao PDR)
5. Tourism Cooperation (Cambodia)
6. Human Resources Development (Viet Nam)
7. Public Health Cooperation (Thailand)
8. Environment Cooperation (Cambodia and Viet Nam)

For year 2010-2012, leaders have adopted the ACMECS Plan of Action comprising of prioritised areas within the eight sectors of cooperation under ACMECS, and enhanced cooperation with private sectors as well as the local communities in realising ACMECS goals.

16. ACMECS Initiatives on Animal and Human Influenza

1. Background

As described in the previous section, ACMECS intends to act as a catalyst to build upon existing regional cooperation programmes and complement bilateral frameworks with a view to transform the border areas of the five countries into zones of economic growth, social progress and prosperity, and to blend local, national and regional interests for common benefits, shared prosperity, enhanced solidarity, peace, stability and good neighbourliness.

ACMECS initiatives on animal and human influenza belong to the efforts toward social progress and consist of those projects implemented under the public health and agriculture cooperation frameworks. Mutual assistance among the five member countries is an important feature of those projects.

2. Brief programme descriptions

2.1. ACMECS Health Sector's Plan for Combating Avian Influenza and Other Emerging Infectious Diseases (2006-2008)

ACMECS Public Health Sector was initiated and endorsed during the ACMECS Summit in Bangkok, 2005. Thailand was requested to serve as country coordinator for public health. ACMECS' leaders have issued a joint statement to combat AI/PI. The statement recognised that there was a need to invest in public health surveillance (both in human and animal), rapid response and containment and using ACMECS collaboration to overcome limitations that cannot be solve by a single country. This joint effort would help safeguard the population of the region from pandemic influenza and other EID outbreaks.

The overall objective of the plan was to strengthen national capacity and regional cooperation to prevent and control AI/PI and other infectious diseases related to water, hygiene and food, as well as HIV/AIDS. Specific objectives included:

1. Building up national surveillance and laboratory capacity in both the human and animal sectors;
2. Facilitating information sharing on AI and other EID surveillance;
3. Supporting and strengthening the national influenza preparedness plan and initiating efficient joint rapid containment;
4. Promoting other emerging disease control at the cross-border level;
5. Introducing consumer protection regarding quality of essential drugs to treat EID;
6. Enhancing Human Resource Development; and
7. Strengthening collaborative mechanism for ACMECS Health Sector.

Under this Plan, ACMECS formulated six public health projects. Among them, three directly relate to animal and human influenza. The project on human resource development for disease surveillance and control conducted numerous training courses and workshops from 2006 to 2008, mainly focusing on surveillance and rapid response as well as avian influenza outbreak investigation. The project to strengthen national pandemic preparedness plans conducted a joint tabletop simulation exercise to test cross-border pandemic preparedness and response plans. A tabletop exercise for

ACMECS and MBDS countries was conducted on 12-15 March 2007 in Siem Reap, Cambodia with the support of the Rockefeller Foundation. The project to promote infectious diseases control at the borders emphasises the cross-border cooperation of surveillance and response, particularly on HIV/AIDS, tuberculosis, malaria, dengue fever and avian influenza. This activity has many similarities with the undertakings of the MBDS (see corresponding section).

2.2. ACMECS Public Health Sector's Plan of Actions 2010-2012

The ACMECS Public Health Sector's Plan of Actions 2010-2012 is an updated version of the ACMECS Health Sector's Plan 2006-2008, reflecting the current circumstances, priorities and needs of the ACMECS countries, to guide ACMECS cooperation through 2012.

The objective of this plan is to forge closer national and regional cooperation at all levels, within ACMECS and with other regional cooperation frameworks, such as ASEAN and MBDS, to prevent and control the spread of infectious diseases by enhancing national and regional preparedness and response capacity through integrated approaches, through the following activities:

1. Build up national and regional surveillance and response including laboratory capacity both in human and animal sectors;
2. Facilitate information sharing through the IHR (2005) National Focal Point on infectious disease surveillance, prevention and control through collaborative activities and existing information sharing systems and networks;
3. Promote prevention and control of emerging and re-emerging infectious diseases at cross-border, particularly avian and pandemic influenza;
4. Strengthen collaborative efforts among ACMECS countries and with other existing regional frameworks, such as ASEAN and MBDS, on human capacity building, information sharing and disease surveillance, prevention and control at cross-border taking into account the core capacity requirements under the International Health Regulation (IHR 2005) for designated airports, ports and land crossings; and
5. Advance national coordinating epidemic preparedness plan of ACMECS countries, particularly at border provinces and border check points.

2.3. Influenza-related initiatives under ACMECS agricultural cooperation

In agricultural cooperation, Thailand initiated a programme on prevention and control of avian influenza in 2005. In 2006, Thai consultants on highly pathogenic avian influenza (HPAI) from Department of Livestock Development (DLD) have visited Myanmar in May and worked closely with Myanmar staff during HPAI outbreak in some provinces. In July, Thai Government provided US\$100,000 for procurement of PPE and rapid test kits, and conducted a technical workshop on surveillance and rapid response team. In 2008, the Director General and staff of DLD visited Eastern Shan State of Myanmar and met with the Director General of Livestock Breeding and Veterinary Department of the State to discuss prevention and control measures of HPAI and trans-boundary animal diseases. Myanmar trainees participated in a training on disease diagnosis in August in Thailand.

3. Timeline

2005-present

4. Budget and financing

Thailand has pledged to provide 100 million Baht (about US\$ 3 million) as an initial fund for ACMECS public health sector in combating avian influenza and other communicable diseases.

5. Values created

- 1. Human resource development for disease surveillance and control:** Through numerous training courses and workshops, health officials gained competency in surveillance and rapid response as well as avian influenza outbreak investigation from 2006 to 2008.
- 2. Strengthened national pandemic preparedness plan:** Through a joint tabletop simulation exercise, the cross-border pandemic preparedness and response plans were tested and refined. This work was conducted in close collaboration with the MBDS (see corresponding section).
- 3. Promotion of emerging infectious disease control at the borders:** Similar to the core functions of the MBDS, cross-border cooperation for surveillance and response, particularly on HIV/AIDS, tuberculosis, malaria, dengue fever and avian influenza, was promoted.
- 4. Enhanced human network:** The network of officers in charge of health and pandemic control/prevention at both central and local levels was enhanced through various programmes such as visits, donations and training courses. Such enhanced human network is particularly notable in Thai-Myanmar collaboration on avian influenza control.

6. Lessons learned

- 1. Value of regional coordination mechanisms for project implementation:** Improved coordination together with strengthened project monitoring and follow-up mechanisms greatly contributed to successful project implementation. This includes clear and updated list of focal points and contact persons.
- 2. Importance of complementarities of ACMECS activities with other regional initiatives:** Complementarities of ACMECS activities with other existing regional forums such as MBDS helped strengthen collective efforts for combating avian influenza and other communicable diseases in an effective and efficient manner.
- 3. Importance of information sharing among member states:** Sharing of best practices and experts' viewpoints on management of health service system, health infrastructure, and administrative organization and related regulations of the member countries ensured timely endorsement and implementation of the project activities.
- 4. Importance of human networking for maintenance of cross-border cooperation:** The ability to use language and strengthened coordination amongst contact persons/ agencies are keys for enhanced cross-border activities at the local level.

7. Implications to preparedness and response to non-pandemic crises

ACMECS, with a wider scope of work beyond animal and human health, is in a good position to embed in other programmes the regional collaboration in preparedness and response to wider public health emergencies and other crises such as natural disasters.

8. Useful web links

ACMECS website: <http://www.acmeecs.org/>

Part III

Synthesis and analysis

1. Membership of Asia-Pacific* countries in different AI/PI programmes/projects

Note: Countries/economies of the Americas and Europe are not included in this analysis.

Table 2: Membership of Asia-Pacific countries in programmes/projects on AI/PI conducted by regional inter-governmental entities

Countries	ASEAN	ASEAN+3	APEC	ASEM	SAARC	SPC	MBDS	ACMECS	TOTAL
Southeast Asian Countries									
Brunei Darussalam	4	1	4	2	-	-	-	-	11
Cambodia	4	1	-	2	-	-	1	1	9
Indonesia	4	1	4	2	-	-	-	-	11
Lao PDR	4	1	-	2	-	-	1	1	9
Malaysia	4	1	4	2	-	-	-	-	11
Myanmar	4	1	-	2	-	-	1	1	9
Philippines	4	1	4	2	-	-	-	-	11
Singapore	4	1	4	2	-	-	-	-	11
Thailand	4	1	4	2	-	-	1	1	13
Timor-Leste	-	-	-	-	-	-	-	-	0
Viet Nam	4	1	4	2	-	-	1	1	13
South Asian Countries									
Afghanistan	-	-	-	-	1	-	-	-	1
Bangladesh	-	-	-	-	1	-	-	-	1
Bhutan	-	-	-	-	1	-	-	-	1
India	-	-	-	2	1	-	-	-	3
Maldives	-	-	-	-	1	-	-	-	1
Nepal	-	-	-	-	1	-	-	-	1
Pakistan	-	-	-	2	1	-	-	-	3
Sri Lanka	-	-	-	-	1	-	-	-	1
East Asian Countries									
China	-	1	4	2	-	-	1	-	8
DPR Korea	-	-	-	-	-	-	-	-	0
Japan	-	1	4	2	-	-	-	-	7
Mongolia	-	-	-	2	-	-	-	-	2
Chinese Taipei	-	-	4	-	-	-	-	-	4
Republic of Korea	-	1	4	2	-	-	-	-	7

Note: Numbers indicate the number of programmes/project conducted by each entity

Table 2: Membership of Asia-Pacific countries in programmes/projects on AI/PI conducted by regional inter-governmental entities (continued)

Countries	ASEAN	ASEAN+3	APEC	ASEM	SAARC	SPC	MBDS	ACMECS	TOTAL
Pacific Island Countries and Territories (PITCs) and Australia/New Zealand									
American Samoa	-	-	-	-	-	2	-	-	2
Australia	-	-	4	2	-	2	-	-	8
Cook Islands	-	-	-	-	-	2	-	-	2
FS Micronesia	-	-	-	-	-	2	-	-	2
Fiji Islands	-	-	-	-	-	2	-	-	2
French Polynesia	-	-	-	-	-	2	-	-	2
Guam	-	-	-	-	-	2	-	-	2
Kiribati	-	-	-	-	-	2	-	-	2
Marshall Islands	-	-	-	-	-	2	-	-	2
Nauru	-	-	-	-	-	2	-	-	2
New Caledonia	-	-	-	-	-	2	-	-	2
New Zealand	-	-	4	2	-	2	-	-	8
Niue	-	-	-	-	-	2	-	-	2
N. Mariana Islands	-	-	-	-	-	2	-	-	2
Palau	-	-	-	-	-	2	-	-	2
Papua New Guinea	-	-	4	-	-	2	-	-	6
Pitcairn Islands	-	-	-	-	-	2	-	-	2
Samoa	-	-	-	-	-	2	-	-	2
Solomon Islands	-	-	-	-	-	2	-	-	2
Tokelau	-	-	-	-	-	2	-	-	2
Tonga	-	-	-	-	-	2	-	-	2
Tuvalu	-	-	-	-	-	2	-	-	2
Vanuatu	-	-	-	-	-	2	-	-	2
Wallis and Futuna	-	-	-	-	-	2	-	-	2

Table 2 summarises the membership of Asia-Pacific countries in 16 programmes/projects on avian and pandemic influenza (AI/PI) conducted by regional inter-governmental entities. Multiple engagements of countries in Southeast Asia are notable. Thailand and Viet Nam have been engaged in 13; Brunei, Indonesia, Malaysia, Philippines and Singapore in 11; and Cambodia, Lao PDR and Myanmar in 9 programmes/projects. These multiple engagements are mainly due to the larger number of activities hosted by ASEAN and APEC. Key countries in Oceania and East Asia followed: Australia, New Zealand and China have been engaged in eight; Japan and the Republic of Korea in seven; and Papua New Guinea in six activities. Pacific Island countries and territories (PITCs) except Papua New Guinea have primarily only been engaged in two activities hosted by SPC. South Asian Countries have only been engaged in SAARC activities, except India and Pakistan that are also members of ASEM.

Mongolia only participates in ASEM. DPR Korea and Timor-Leste have not been engaged in any programme/project.

2. Financing of different AI/PI programmes/projects

Table 3 shows the financing of different AI/PI programmes/projects. The Australian and Japanese Governments have been the two major donors, whereas the US and New Zealand, ADB and the Rockefeller Foundation have also been notable financial backers of these initiatives. The Member States/economies have contributed substantially to financing some programmes/projects.

Table 3: Financial support to programmes/projects on AI/PI conducted by inter-governmental entities in Asia-Pacific

Entity	Programme/Project	Main Funder
ASEAN	1. ASEAN programme towards regional multi-sectoral pandemic preparedness and response	US through TATF
	2. ASEAN+3 Emerging Infectious Diseases Project	Australia
	3. ASEAN Cooperation on Animal Health	ADB
	4. ASEAN-Japan Project for Stockpile of Antivirals and PPE	Japan
	5. ASEAN Foundation CISCAI	Japan-ASEAN solidarity fund
APEC	6. Health Working Group (HWG)	APEC, US & others
	7. Agriculture and Technical Cooperation Working Group (ATCWG)	Australia
	8. Small and Medium Enterprise Working Group (SMEWG)	N.A.*
	9. APEC Business Advisory Council (ABAC)	N.A.*
ASEF	10. The ASEF Public Health Network	Japan
	11. Japan/ASEM Initiative for the Rapid Containment of Pandemic Influenza: Stockpile Component	Japan
SAARC	12. Animal and Human Influenza-related Initiatives of SAARC	ADB, WB, Japan, US & others
SPC	13. Pacific Public Health Surveillance Network (PPHSN)	Members & donors
	14. Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP)	Australia, New Zealand
MBDS	15. Mekong Basin Diseases Surveillance	Members, Rockefeller & KIA, etc.
ACMECS	16. ACMECS Initiatives on Animal and Human Influenza	Thailand

Note: N.A. (Information not available).

3. Balance between long-term programmes and period-specific projects

Table 4 classifies the 16 programmes/projects featured in Parts I and II into either long-term, continuous programmes, or period-specific projects with time-bound objectives.

Table 4: Classification between programmes and projects of AI/PI initiatives by inter-governmental entities in Asia-Pacific

Body	Programmes/Projects	Programmes	Projects
ASEAN	1. ASEAN programme towards regional multi-sectoral pandemic preparedness and response		√
	2. ASEAN+3 Emerging Infectious Diseases Project		√
	3. ASEAN HPAI Task Force		√
	4. ASEAN-Japan Stockpile of Antivirals and PPE		√
	5. ASEAN Foundation CISCAI		√
APEC	6. Health Working Group (HWG)	√	
	7. Agriculture and Technical Cooperation Working Group (ATCWG)	√	
	8. Small and Medium Enterprise Working Group (SMEWG)	√	
	9. APEC Business Advisory Council (ABAC)	√	
ASEM/AS EF	10. The ASEF Public Health Network		√
	11. Japan/ASEM Rapid Containment Stockpile		√
SAARC	12. Animal and Human Influenza-related Initiatives of SAARC	√	
SPC	13. Pacific Public Health Surveillance Network (PPHSN)	√	
	14. Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP)		√
MBDS	15. Mekong Basin Diseases Surveillance	√	
ACMECS	16. ACMECS Initiatives on Animal and Human Influenza	√	

There has been an almost even balance between the programme approach, in which avian and pandemic influenza initiatives are embedded in existing frameworks, and the project approach with clearly timed objectives and period-specific external financial supports.

4. Areas of focus of different AI/PI programmes/projects

Table 5 depicts the classification of the areas of focus of different programmes/projects on avian and pandemic influenza conducted by inter-governmental entities in Asia-Pacific by the targeted pandemic phase. The 16 programmes/projects were classified into those focusing on avian influenza with sporadic human infection (WHO Phase 3), rapid containment of the initial human-to-human transmission of a novel human influenza virus strain (WHO Phase 4) and mitigation of pandemic caused by a novel human influenza strain (WHO Phase 5 and 6).

Table 5: Classification of AI/PI programmes/projects conducted by inter-governmental entities in Asia-Pacific by targeted pandemic phase

Body	Programmes/Projects	AI control (Phase 1-3)	PI containment (Phase 4)	PI mitigation (Phase 5-6)
ASEAN	1. ASEAN multi-sectoral pandemic prep & response			√
	2. ASEAN+3 EID Project	√	√	√
	3. ASEAN HPAI Task Force	√		
	4. ASEAN-Japan Stockpile		√	
	5. ASEAN Foundation CISCAI	√		
APEC	6. HWG	√	√	√
	7. ATCWG	√		
	8. SMEWG			√
	9. ABAC			√
ASEM/ ASEF	10. ASEF Public Health Network			√
	11. Japan/ASEM Stockpile		√	
SAARC	12. AHI initiatives of SAARC	√	√	√
SPC	13. PPHSN	√	√	
	14. PRIPPP	√	√	√
MBDS	15. MBDS	√	√	√
ACMECS	16. ACMECS Initiatives on AHI	√	√	√

The programmes/projects of concern cover the whole spectrum of AI/PI, thus corresponding to all WHO pandemic phases.

Table 6 depicts the classification of areas of focus of the programmes/projects across the seven objectives of AI/PI initiatives specified by the United Nations Consolidated Action Plan for Avian (Animal) and Human Influenza (UNCAPAHI). They include:

1. Animal health and bio-security;
2. Sustaining livelihoods;
3. Human health;
4. Coordination of national, regional and international stakeholders;
5. Risk communication;
6. Continuity under pandemic; and
7. Humanitarian support.

Table 6: Classification of areas of focus of AI/PI programmes/projects conducted by inter-governmental entities in Asia-Pacific by objectives

Body	Programmes/ Projects	Animal health	Liveli- Hood	Human health	Coordi- nation	Risk com.	Conti- nuity	Humanit- arian
ASEAN	TATF/AWGPPR		√	√	√		√	√
	ASEAN+3 EID	√	√	√	√	√		√
	ASEAN HPAI	√	√	√	√			
	ASEAN Stockpile			√	√			
	CISCAI	√		√				
APEC	HWG	√		√	√	√		
	ATCWG	√	√					
	SMEWG		√	√			√	
	ABAC		√	√			√	
ASEM/ ASEF	ASEF PH Network		√	√	√			
	ASEM Stockpile			√	√			
SAARC	SAARC	√		√	√			
SPC	PPHSN	√		√	√			
	PRIPPP	√		√	√	√		√
MBDS	MBDS	√		√	√	√		
ACMECS	ACMECS AHI	√		√	√			

Out of the 16 programmes/projects, the vast majority (15) have touched upon human health issues. Coordination followed with 12, then animal health with 10. Being inter-governmental regional entities, they naturally assume coordination as their core mandate. Livelihoods have been touched upon by seven programmes/projects either in terms of the compensation aspect of H5N1 control or the assurance of business continuity and resilience. Only four have touched upon risk communication whereas three each on continuity under pandemic and humanitarian actions, respectively. These areas potentially are the ones that require better coordination of limited regional resources and more attention in the future.

Looking more in detail, there are particular aspects of work in which multiple entities are concurrently functioning, sometimes in collaboration, but at other times not knowing each other's initiatives. Such aspects include:

1. Inter-regional collaboration and public-private partnerships (APEC and ASEF Public Health Network);
2. Collaboration between animal and human health sectors (ASEAN-AWGPPR/TATF, ASEAN+3 EID, ASEAN-HPAI, APEC-HWG, SAARC, SPC-PRIPPP and MBDS);
3. Local cross-border public health collaboration (MBDS and ACMECS);
4. Utilisation of ICT for public health surveillance (ASEAN-CISCAI, SPC-PPHSN and MBDS); and
5. Stockpile and deployment of supplies (ASEAN stockpile, ASEM stockpile and SPC-PRIPPP).

Further synergies in these aspects may derive more effective and efficient regional functions. Synergy effects can also be pursued not only within the same aspect of work, but also between different areas/aspects of work.

5. Summary of values created

A remarkable volume and range of values have been created by the programmes/projects on AI/PI conducted by inter-governmental entities in Asia-Pacific. The values created by the AI/PI initiatives, as featured in the summary tables in Part I as well as in programme descriptions in Part II, range from general framework building to specific technical accomplishments.

Managers of 8 out of 16 programmes/projects listed the development of regional cooperation networks as a key value created. Some programmes/projects have been providing a consolidated platform on which various activities are conducted while others have been hosting different regional networks for specific functions such as the PacNet, LabNet, EpiNet and PICNet, concurrently operated by the PPHSN of SPC. Inter-sectoral collaboration, particularly between animal and human health, is pursued in at least seven programmes/projects. Some entities embrace an added dimension of public-private partnership. Interfacing with development partners (donors) also constitutes an important aspect of regional cooperation. Thus, the regional networking on AI/PI encompasses four dimensions:

1. Multi-national cooperation;
2. Multi-sectoral cooperation;
3. Public-private partnership; and
4. Interface with donors.

Information and experience sharing are the two fundamental functions augmenting effective regional cooperation, which are touched upon by three and two programmes/projects, respectively. Capacity building is another key value created. Human resource development has been touched upon by six programmes/projects and regional capacity building by three.

The most common specific technical accomplishment has been the development of guidelines, toolkits and SOPs. Sometimes, the SOPs have been developed or discussed not only to guide the specific actions, but also to provide normative regional frameworks, as in the case of SASOP in the ASEAN programmes towards regional multi-sectoral pandemic preparedness and response. Six programmes/projects have worked on guidelines, toolkits and SOPs. The implementation of simulation exercises or scenario development for such exercises has involved five programmes/projects. The implementation of assessments and the development of assessment tools and assistance to national planning involved three each. Development of ICT solutions, actual responses to Pandemic (H1N1) 2009 and research are some of the most specific values created.

6. Summary of lessons learned

Managers of six programmes/projects listed the value of a regional approach and networking as a key lesson learned. Within the regional approach and networking there are some specific dimensions. The need to formalise regional networks and the importance of norm setting are two practical managerial aspects elaborated by the managers. Others put more emphasis on human networking and mutual learning, depending on the nature of the regional entities they belong to. The importance of clear role demarcation between stakeholders was listed in this regard by two managers. Another common lesson elaborated is the importance of stakeholder engagement. Out

of the five managers who listed it, three referred to either civil society or private sector engagement, whereas one emphasised cross-sectoral collaboration. One pointed out the importance of the sense of ownership of national governments.

Lessons around communication were elaborated by four managers in reference to the importance of risk communication and the need for transparency, advocacy and effective communication channels connecting different stakeholders. The need for high-level political commitment was mentioned by the managers of two rather formal regional entities.

Human resources shortages or turnover were perceived as major challenges by two programmes/projects. Other challenges elaborated include inter-sectoral barriers, language barriers, prioritising the AI/PI issue among other competing items on the development agenda and fragmentation of activities along funding lines.

7. Summary of implications to preparedness for non-influenza crises

There are general policy-related and more specific operational components of the programmes/projects concerned that have the potential to cater to wider non-influenza crises. General policy-related components include regional collaboration frameworks, regional and national command and control systems, national planning capacity, inter-sectoral collaboration and legal assessment and streamlining. Specific operational components include development of business resilience, risk communication networks, capacity to develop scenarios and conduct simulation exercises and management of stock and supply logistics of essential commodities.

Some programmes/projects cover more infectious diseases than just AI/PI. SPC-PPHSN targets 10 infectious diseases, while MBDS focuses on 18. ASEAN-HPAI TF focuses on non-influenza trans-boundary animal diseases (TADs) as well. Such focuses on the existing range of wider, non-influenza EID in both the human and animal health sectors indicates the potential for expansion to wider public health and animal health emergencies of international concern, such as nuclear, chemical, environmental and food safety crises.

The linkage of influenza-related initiatives with non-health, non-veterinary crises such as natural disasters has already been explicitly pursued in some programmes/projects. The ASEAN programmes towards regional multi-sectoral pandemic preparedness and response aims to embed multi-sectoral pandemic influenza preparedness and response to the regional disaster management and humanitarian assistance framework stipulated by AADMER and SASOP. APEC-HWG's EIDNet addressed natural disasters and EID in one of the most recent multi-national videoconferences. MBDS has responded to a flood-related diarrhoea outbreak in a member country.

Conclusions

There have been 16 programmes/projects on avian and pandemic influenza (AI/PI) conducted by the seven inter-governmental entities in Asia-Pacific, namely ASEAN, APEC, ASEM/ASEF, SAARC, SPC, MBDS and ACMECS between 2005 and early 2011. Multiple engagements of countries in Southeast Asia in these programmes/projects are notable. The Australian, Japanese, US and New Zealand Governments, ADB and the Rockefeller Foundation have been notable financial backers of these initiatives. The Member States/economies have also been contributing substantially to financing some programmes/projects.

There has been an almost even balance between the programme approach in which AI/PI initiatives are embedded in existing frameworks and the project approach with clearly timed objectives and period-specific external financial supports. The scopes of 16 programmes/projects of concern correspond to all WHO pandemic phases. They also cover all areas of focus specified by the United Nations Consolidated Action Plan for Avian (Animal) and Human Influenza (UNCAPAHI):

1. Animal health and bio-security;
2. Sustaining livelihoods;
3. Human health;
4. Coordination of national, regional and international stakeholders;
5. Risk communication;
6. Continuity under pandemic; and
7. Humanitarian support.

Out of the 16 programmes/projects, the vast majority (15) have touched upon human health issues. Coordination followed with 12, then animal health with 10. Livelihoods have been touched upon by seven programmes/projects, either in terms of the compensation aspect of H5N1 control or the assurance of business continuity and resilience. Only four have touched upon risk communication whereas three each on continuity under pandemic and humanitarian actions, respectively.

A remarkable volume and range of values have been created by the programmes/projects on AI/PI conducted by inter-governmental entities in Asia-Pacific. Regional cooperation networks are at the core of the values created, which include:

1. Multi-national cooperation;
2. Multi-sectoral cooperation (particularly between animal and human health sectors);
3. Public-private partnerships; and
4. Interface with donors.

Information and experience sharing are the two fundamental functions augmenting effective regional cooperation. Capacity building is another key value created, particularly in terms of developing both human resources and capacity at the regional level. The most common specific technical accomplishment has been the development of guidelines, toolkits and SOPs.

The key lessons learned focused particularly on the value of a regional approach and networking. The need to formalise regional networks and the importance of norm setting are two practical managerial aspects elaborated. Emphasis was also put on human

networking and mutual learning, depending on the nature of the regional entities. The importance of clear role demarcation between stakeholders, stakeholder engagement and the sense of ownership of national governments were also referred to in this context. Lessons around communication were elaborated in reference to the importance of risk communication and the needs of transparency, advocacy and effective communication channels connecting different stakeholders. The need for high-level political commitment was also highlighted. Human resources shortages or turnover were perceived to be a major challenge by multiple programmes/projects. Other challenges elaborated include inter-sectoral barriers, language barriers, prioritising the AI/PI issue among other competing items on the development agenda and fragmentation along funding lines.

The values created and lessons learned through the programmes/projects have significant implications to the region's resilience against wider non-pandemic crises. There are general policy-related and more specific operational components of the programmes/projects concerned that have the potential to cater to wider non-influenza crises. General policy-related components include regional collaboration frameworks, regional and national command and control systems, national planning capacity, inter-sectoral collaboration and legal assessments and streamlining. Specific operational components include development of business resilience, risk communication networks and the capacity to develop scenarios, conduct simulation exercises and manage stock and supply logistics of essential commodities.

The density and complexity of the multiple networks on AI/PI and EID created by the inter-governmental entities in Asia-Pacific call for the understanding of these invaluable contributions and effective interfacing with these initiatives on the side of the UN system and agencies, national governments, development partners and NGOs. The UN system needs to pursue more active dialogue with inter-governmental entities in advancing its core global and regional initiatives such as Asia Pacific Strategy for Emerging Diseases (APSED) as an implementation framework of the WHO International Health Regulation (IHR 2005), the FAO Emergency Centre for Trans-boundary Animal Diseases (ECTAD) and the OIE Performance of Veterinary Services (PVS) pathways. It can also play a role in focused matchmaking between different inter-governmental actors in the Asia-Pacific region to develop stronger and wider resilience not only to AI/PI, but also to wider crises on the foundations created by these AI/PI programmes/projects.

