The Role of ASEAN in Developing Legal Frameworks and Management Systems in Tackling Avian Flu, including Singapore’s Response

by

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BIRD FLU DEATHS IN INDONESIA

The good news: No surge in number of cases  The bad news: Tamiflu may be losing effectiveness

BY SALEM OSMAN
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JAKARTA

INDONESIA, the nation hardest hit by bird flu, has recorded its 100th human death from the disease, as the virus spreads in its march across Asia.

Amid concerns about the mass movement of people over Chinese New Year and the usual winter surge in bird flu cases, Tamiflu -- regarded as one of the best defences against the flu -- appears to be losing its efficacy.

The Financial Times reported yesterday that the European Centre for Disease Control has said seasonal flu is now showing resistance to the drug, stockpiled by governments worldwide, in 13 per cent of cases.

Such warnings highlight the need to stamp out the deadly H5N1 virus at the source, but in Indonesia, the country at the eye of the viral storm, the man in charge of the bird flu fight says it is here to stay.

Dr Bayu Kusumadi, chief executive of the National Committee on Avian Influenza Control and Pandemic Preparedness, told The Straits Times bird flu would continue to haunt Indonesia like other diseases such as dengue and tuberculosis.

He also said he could not rule out the possibility of a global pandemic, but he added: "On our part, we are working hard to prevent a pandemic.

Health officials in Indonesia, which has recorded almost half the global human toll from the disease, said they are intensifying surveillance of the virus among both animals and humans.

"We are bracing ourselves for possible outbreaks and are continuously stepping up measures to combat the virus," Dr Bayu said.

Indonesia reported its first human death from H5N1 in July 2005, and reached the deadly century mark on Monday after the virus killed a nine-year-old boy and a 25-year-old woman on the outskirts of Jakarta.

The Health Ministry said a 31-year-old woman and a 32-year-old man had also tested positive for the virus and were receiving treatment in Jakarta.

But the ministry's director-general for Communicable Disease Control, Dr Nyoman Kusumadha, played down the significance of Monday's milestone, claiming that government efforts had been effective in curbing the disease.

"The 100th death toll figure is just a cumulative number over the years. Our surveillance has enabled us to detect bird flu cases," he said.

He also said transmission remained from animal to man, and that "there is no human-to-human transmission".

Bird flu remains hard for humans to catch, but experts fear the virus could mutate into a form that spreads easily among people, triggering a repeat of the deadly 1918 flu pandemic.

At the same time, however, Dr Kusumadha acknowledged that fighting bird flu in Indonesia remained a long battle, partly because of the size of the country, which is spread across 17,000 islands, as well as the fact that thousands of backyard farms exist in towns and villages.

"Unfortunately, the virus is endemic in poultry," he said.

The World Health Organisation (WHO) agreed with his assessment that there was no public health significance to the 100th death figure, telling The Straits Times: "Actually, we are not seeing a significant surge in numbers."

It said that with any disease, there are fluctuations in the number of cases according to a variety of factors, such as seasonal conditions.

An important point is that all of the cases recorded recently have been sporadic -- this reassures us that the virus has not developed the capacity for efficient human-to-human transmission," it added.

WHO also noted Indonesia has improved its efforts over the last few years in tackling bird flu, by adopting vaccination programmes and rapid-response procedures to deal with outbreaks among live-stock and humans.

Meanwhile, fresh bird flu outbreaks in poultry have been reported in several countries across Asia.

India has recorded its worst-ever outbreak, and officials are racing to contain 2.5 million birds in a bid to stop the virus from reaching Kolkata, a city of 14 million people.

China's agricultural authorities yesterday reported an outbreak in Tibet near the regional capital of Lhasa.

Thailand has also reported a fresh outbreak in the north of the country, while Turkey is scrambling to cull poultry before the disease spreads further.

ADDITIONAL INFORMATION FROM
AGENCE FRANCE-PRESSE, REUTERS
Next big pandemic could come from Asia, study warns

Region is a breeding ground for diseases that cross over from animals to humans

LONDON

PARTS of South-east Asia, East Asia and the Indian sub-continent have been identified as key ‘hot spots’ for emerging infectious diseases, with a likelihood of being the source of emerging or re-emerging pandemics.

A new study, published in the journal Nature on Wednesday, has highlighted these hot spots on a detailed map using data spanning 45 years, and concluded that health experts have been looking in the wrong places for the next pandemic.

The study also stated that 60 per cent of events of emerging diseases were caused by zoonoses, or diseases that have been transmitted from animals to humans, while 71 per cent of these outbreaks were caused by pathogens with a wildlife source.

“Zoonoses are the main sources of zoonoses, they wrote:

“We are crossing wildlife into ever smaller areas, and human population is increasing,” said co-author Marc Levy, a global change expert at Columbia University’s Earth Institute.

“Where these two things meet is the recipe for something crossing over.”

New zoonoses include AIDS, which is believed to have spread from chimpanzees, possibly through hunters who butchered bats, whose natural habitat is in Central Africa, and the Ebolavirus, which bubbles up in the African rainforest and affects animal primates and humans. Other examples include the Nipah virus from Malaysia and the 1918 strain of bird flu.

Diseases originating from wild animals have increased significantly over time, they warned, adding that because humans had not evolved resistance to these emerging diseases, the world could be “extraordinarily ill-equipped”.

“This supports the suggestion that recent pandemics represented an increasing and very significant threat to global health,” the paper’s authors wrote.

The research, from the Zoological Society of London (ZSL) and the US-based University of Georgia and Columbia University’s Earth Institute, analyzed 335 diseases that emerged in humans from 1940 to 2004.

They found that the 1940s had witnessed the emergence of more diseases, probably due to HIV, which might prove transmissible to other diseases.

Their computer model pointed out South Asia, tropical Africa and Central America as posing the greatest risk for future outbreaks.

They also warned that the public health resources of the world are misdirected.

Most are focused on richer countries that can afford surveillance, but most of the hot spots are in developing countries,” said co-author Peter Daszak, executive director of the Consortium for Conservation Medicine at the US-based Wildlife Trust.

“If you look at the high-impact diseases of the future, we’re missing the point.”

The researchers said that the priority should be to set up “smart surveillance” measures in the hot spots identified on the map.

Dr Daszak explained that logistically straightforward but high-impact measures, such as vaccinating people who come into contact with wild birds and mammals in the hot spots, could halt the “next AIDS or bird flu before it happened.”

“Simply following the old adage that prevention is better and cheaper than finding a cure,” he said.

AGENCE FRANCE-PRESSE, REUTERS
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Introduction

- Avian Flu (AF) – Zoonotic disease – disease of animals transmitted to human beings; caused by H5N1 strain.

- Symptoms: fever, cough, sore throat, muscle aches, conjunctivitis; severe cases can cause severe breathing problems and pneumonia - fatal.

- Outbreaks in Asia and other parts of the world.
  - 1997 - Hong Kong: first outbreak.
  - October 2003 – 2004: Cambodia, People's Republic of China, Hong Kong, Indonesia, Japan, Laos, Malaysia, Pakistan, South Korea, Taiwan, Thailand Vietnam. Subsequently, spread to parts of Europe (eg, Romania, Holland) Turkey, Russia, Central Asia, Canada and other parts of world.
  - November 2005 recurrences in parts of Asia (Cambodia, Indonesia, Thailand, Vietnam, China).
  - New infected areas 2008: Dorset, West Bengal
  - Risk of pandemic still pending.

Issues: human/animal health; biodiversity conservation

- When AF first occurred, ASEAN and the rest of the world did not quite know how to tackle the issues.
- Thailand – inadequate information- “we screwed up”
- Philippines – a Minister warned people not to feed migratory birds or go near them as they were deemed vectors of AF

*The Straits Times, 9 January 2004*
Since 2003: Govts, international & regional organizations (eg ASEAN, WHO, FAO, OIE, EU) have cooperated to tackle AF.

Multidisciplinary approach: inputs from scientists (vets, virologists, epidemiologists, ornithologists), medical practitioners, health ministers, policy makers, conservationists, economists, academics, etc.

Rich inputs for formulating legal frameworks, strategies, plans of action, programmes (soft and hard laws).
Part I

Human and Animal Health: ASEAN and its Collaboration with International Organizations and Other Countries – Developing Legal Frameworks and Management Systems

Setting the Stage – Meetings and Dialogues

A. Phase I: Aug 2004 – Oct 2005


Meeting of ASEAN Agriculture and Health Ministers, with observers from other countries: Cambodia, China, Republic of Indonesia, Japan, Republic of Korea, Laos, Malaysia, Singapore, Thailand, US & Vietnam. Also international organizations: EU, FAO, OIE and WHO.
Issues addressed – AF impact on human health and economy, review of measures adopted including rapid culling of infected and susceptible poultry population. The meeting:

- Recognize the potential serious impact of Avian Influenza on global public health, livestock production, trade and economic development.

- More stringent surveillance and effective response systems, improved research and development capabilities, and sharing of information and technology.
Cont’d

- Intensify national, regional and international efforts to tackle the outbreak of this disease and future similar threats.

- Implement domestic measures to control avian influenza having regard to the recommendations of the World Organization for Animal Health (OIE), World Health Organization (WHO) and the Food and Agriculture Organization (FAO).
Work closely with OIE to strengthen guidelines on reporting and surveillance systems:

- Promote rapid, transparent, and accurate exchange of scientific information to provide early warning of potential outbreaks, and consider to create a regional veterinary surveillance network and to link it with existing human health surveillance mechanisms, including the APEC Task Force on Health, ASEAN Ministers’ Health Special Meeting on Health in Kuala Lumpur and ASEAN Heads of States Meeting on SARS in Bangkok, respectively.
Strengthen cooperation with regional and international organizations on joint research and development initiatives to reduce the hazards of epizootic outbreaks on human health, share best practices, devise counter-measures, and develop effective, low-cost diagnostic test kits, vaccination and anti-viral drugs:

- Call for assistance and exchange of expertise to assist affected countries to enhance their epidemiological and laboratory capacity for prompt detection, monitoring, surveillance and controlling of the disease;
Cont’d

- Formulate effective outreach and communication strategies to promote transparency and better public understanding of the extent and nature of the disease.

- Investigate options for designing more bio-security developments of the poultry sector for both small scale and commercial production. We thank the representatives of the OIE, WHO, and FAO and other resource persons for their valuable contributions to control the poultry disease outbreak and protect international public health.
2. FAO/OIE Emergency Regional Meeting on Avian Influenza Control in Animals in Asia, Bangkok, 26-28 Feb 2004

Participants from many countries in Asia; also, international & regional organizations.

➢ Recommendations:

▪ International reporting standards of OIE; agreed mechanisms for systematic collection and epidemiologic analysis, public health surveillance system, response and prevention activities to be strengthened;
Organizational approach to the delivery of control strategies

- Establish a Veterinary Task Force in charge of preparing emergency control, contingency, and response plans.
- Zoning approach to expand free areas while driving the disease into smaller pockets for effective control.
- Regional laboratory network.
- Common educational materials for biosecurity.
Cont’d

- **Country Zoning/compartmentalization, Quarantine, Movement Controls and Surveillance**

  - The primary means of spread is by movement of infected birds, materials or means of transport. While each country has applied quarantine and movement controls in known infected areas, adequate surveillance may not have been conducted in what is thought to be “free” areas - need for a coordinated regional approach to eradication.

  - Poultry population should be divided into 3 categories (industrial commercial poultry, small commercial production and village poultry (subsistence farming and pet birds)).

  - Countries should move to a system of zones based on populations of poultry, geographic areas or disease status with the aim of developing free zones and recovery of export capacity.
Cont’d

- Epidemiology - conduct an epidemiologic assessment
- Strategic vaccination
- Stamping-out policy for infected poultry (including Valuation, Disposal, Cleaning and Disinfection, Biosecurity and Animal Welfare)
- Wildlife Management
  - Wild birds should not be depopulated in an attempt to control avian influenza but separation, as much as possible should be attempted.
  - Contact rates between wild birds and large commercial poultry operations must be reduced to prevent domestic birds and wild waterfowl from reciprocal direct or indirect contacts.
  - Health/husbandry.
  - Limit the trafficking of wild birds, and ban the mixing of domestic and wild animals in live markets.
Cont’d

**Human Health**
- Establish a Veterinary Task Force in charge of preparing emergency control, response plans.
- Preventing infection

**Regional and international co-ordination, approach to countries**

- A regional coordination group should be formed by FAO, OIE, WHO and the Central Governments of the Countries in the region to allow joint decision making, resource and information sharing. This group should establish goals and objectives of the regional plan in sufficient detail to guide planning and operations.
- Member countries and donors will refer to the OIE Standards as reference in the definition of new policies on animal health and zoonoses to be implemented through national and regional programmes for the short, medium and long-terms. These standards include: quality of vaccines; diagnostic methods; quality and evaluation of veterinary services.
3. The Agriculture and Health Ministers and Senior Officials of ASEAN + 3, and EU, WHO, OIE, FAO met in Feb 2004. Regarding poultry disease control of avian flu and the role of international cooperation in effectively tackling the emerging infectious diseases including avian flu.


Measures suggested include the following:

- Control spread of disease, **culling**, quarantine, **surveillance**, movement control, epidemiological investigations and monitoring.
- Intensify national, regional and international efforts, having regarding to recommendations of WHO, OIE, FAO.
- Promoting **transparent and accurate exchange of scientific information**.
Cont’d

- **Intensify** national, regional and international efforts to tackle the outbreak of this disease and future similar threats.
- **Implement** domestic measures to control avian influenza having regard to the recommendations of the World Organization for Animal Health (OIE), World Health Organization (WHO) and the Food and Agriculture Organization (FAO). Work closely with OIE to strengthen guidelines on reporting and surveillance systems.
- **Promote rapid, transparent, and accurate exchange of scientific information** to provide early warning of potential outbreaks, and consider to create a regional veterinary surveillance network and to link it with existing human health surveillance mechanisms, including the APEC Task Force on Health, ASEAN Ministers’ Health Special Meeting on Health in Kuala Lumpur and ASEAN Heads of States Meeting on SARS in Bangkok, respectively.
Cont’d

- Strengthen cooperation with regional and international organizations **on joint research** and development initiatives to reduce the hazards of epizootic outbreaks on human health, share best practices, devise counter-measures, and develop effective, low-cost diagnostic test kits, vaccination and anti-viral drugs.

- Call for assistance and exchange of expertise to assist affected countries to enhance their epidemiological and laboratory capacity for prompt detection, monitoring, surveillance and controlling of the disease.

- Formulate **effective outreach and communication strategies** to promote transparency and better public understanding of the extent and nature of the disease.
Cont’d

- Strengthen cooperation with regional and international organizations on joint research and develop initiatives and share best practices and develop low-cost diagnostic test kits vaccination and anti viral drugs.
- Investigate options for designing bio-security* development of the poultry sector for both small scale and commercial production.

(*Meaning of bio-security: “broad meaning means the safety of living things or the freedom of concerned for sickness or disease”; another definition is “security from transmission of infectious diseases, parasites and pests.” Also, “it is an approach to animal husbandry that has a focus on maintaining or improving the health status of animals and preventing the introduction of new disease pathogens by assessing all possible risk to human health”).
4. First ASEAN + 3 Health Ministers Meeting, 23 April 2004, Penang (with Republic of People's Republic of China, Japan and Republic of Korea)

<http://www.aseansec.org/16091.htm> accessed on 22 Feb April 2006

- ASEAN+3 Collaboration in Responding to Diseases - share information, making use of existing mechanisms such as the ASEAN+3 Health Ministers hotline, the ASEAN+3 List of Contact Points for Communicable Diseases, and the ASEAN Disease Surveillance.net website.

- Infectious Diseases Programme: The implementation of regional surveillance, early warning and response to emerging infectious diseases (*infra* – completed in Oct 2005).

- Strengthening capacities of countries to coordinate and managing effective implementation of the programme such as epidemiological surveillance, *laboratory diagnostics*, preparedness, *early warning* of outbreaks and rapid response to emerging infections.
5. WHO and ASEAN + 3 Health Ministers Meeting on Avian Influenza, 25-26 November 2004, Bangkok

<http://w3.whosea.org/EN/Section10/Section1027/Section1802_7735.htm> accessed on 22 Feb 2006

- Political commitment and policy outline to enhance collaboration to prevent and control AF.
- Joint Ministerial Statement on Prevention and Control of Avian Influenza, 26 November 2004, Bangkok:
  - Facilitate open exchange of information, transparency, facilitate consultation.
  - Develop pandemic plan (infra).
  - Harmonize activities.
  - Collaborate to develop vaccines, diagnostic test.
  - Promote food safety and safe animal husbandry.
B. Phase 2: 2006 – 2008: Meetings, Workshops

1. ASEAN Minister’s Meeting on plan to fight bird flu, 30 Sept 2005, Tagaytay, Philippines


2006 to 2008 to prevent, control and eradicate the disease.

- “Strategic areas” - cooperation in the action plan included disaster surveillance, containment measures, coordination in stamping out and vaccination policies and diagnosis.

- Improve sharing of information and public awareness campaigns and strengthen emergency preparedness as well as efforts to help revive the agriculture export sector hit hard by the crisis.


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Participants include ADB, FAO, OIE and Dept of Agriculture, Philippines

- **WG 1:** Establishment of Free Zones and compartments for implementation of biosecurity

- **WG 2:** Public Awareness and Communication
   (ASEAN cooperated in formulating above guidelines)


- ASEAN and SAARC (South Asia Association for Regional Cooperation) to coordinate regional policies for animal health.
- Regional avian influenza coordination group to be formed to facilitate joint decision making, information sharing and training.
- Strengthen national capacity of national animal and public health service surveillance, response, control and prevention activities.
Cont’d

- OIE standards (quality of vaccines, diagnostic methods and quality and evaluation of veterinary services) to be used in the definition of new policies on animal health and zoonosis to be implemented through national and regional programmes.
- National surveillance and notification procedures of animal disease to OIE.
- WHO guidelines for occupational human health and safety to be followed.
- Infected animals to be disposed within 24 hours.
- Regular inspection of susceptible animals and suspect premises for over 2 or more incubation periods of the disease.
- Biosecurity procedures to prevent the spread of avian influenza to be implemented within 24 hours of the identification of the first presumptive positive premises.
- Development of common educational materials for biosecurity and public health.
- Establish Veterinary Task Force for emergency control.
- Public awareness to focus on health hazards of handling infected or diseased birds, etc.
Cont’d

- Introduce good hygienic practices in food preparation.
- Diseased or culled animals should not enter the food chain.
- Strategic vaccination of birds. Vaccine must be produced in accordance with OIE guidelines.
- Wild birds should not be depopulated in an attempt to control avian influenza but separation as much as possible should be attempted.
- Reduce contact rates between wild birds and large commercial poultry operations to prevent wild waterfowl from direct or indirect contact.
- Village poultry health care programmes (surveillance operations).
- Reduce trafficking of wild birds, and ban the mixing of domestic and wild animals in live markets.
- Integrate health monitoring programs into natural resource management efforts.
- Reestablishment of poultry industry in a more biosecure position and protect livelihoods.
2. Vientiane Action Program, 2004 - 2010

<http://www.aseansec.org/16474.htm>, accessed on 13 April 2006

Adopted at the Tenth ASEAN Summit, Vientiane, 29-30 November 2004 - Annex 3 of VAP, ‘Programme Areas and Measures’ includes a plan to prevent the spread of infectious diseases including zoonoses. The following paragraph deal with zoonotic diseases:

- 3.1.7.8 – Put into place regional systems, networks and procedures for communication diseases (including animal diseases, surveillance, early warning and response).

- 3.1.7.10 – Activate regional simulation exercise of an outbreak response.

- 3.1.7.11 – Involve the Plus Three partners in sharing expertise and in strengthening networks for outbreak response.

- 3.1.7.12 – Complete Phase 1 of the ASEAN + 3 Emerging Infectious Diseases (EID) programme (see above, ASEAN+3 Emerging Infectious Diseases (EID) Programme), and convene a donor’s forum to mobilize resources to develop and implement Phase II of the ASEAN + 3 EID programme.
Dr Nabarro of United Nations Chief co-ordinator said that while he was “pretty satisfied with the governments’ efforts and its sharing of information and materials, he warned that People's Republic of China faces a ‘long haul’ in its fight against the virus and urged officials at all levels to remain eternally vigilant”. More recently (The Straits Times, 12 April 2006) he again appealed for better disclosure in Asia as that would be the way to deal with the problem; Dr Henk Bekedam, the WHO representative in People's Republic of China, said: “We need to share information and samples in a timely manner and also globally. The reasons for non-disclosure include fear that the tourist industry would be affected, as well as economies as - Thailand is an exporter of poultry.
3. Draft Directions for ASEAN Regional Cooperation on Highly Pathogenic Avian Influenza Control and Prevention, 8 October 2005

http://www.litbang.depkes.go.id/download/asean/AEGCD%20Compilation%20Docs/Ref%20docs,Al%20regional%20coop%20Direction%20Direction%2020%200c
t.doc> accessed on 22 Feb 2008

Objectives of cooperation:

- Strengthen national and regional capacity in surveillance, early warning and response.
- Strengthen capacity to prepare for pandemic.
Main principles of cooperation in the Draft Directions:

- **Undertake** the programmes and measures under the Vientiane Action Programme (VAP) adopted at the ten ASEAN summit in November 2004 (*infra*).

- **Implement** the ASEAN emerging and resurging Zoonotic Diseases Initiatives Programmes.

- **Collaborate** between ASEAN sectoral bodies and all institutions and sectors involved in the response to the outbreak at local, national and regional levels.

- Implement the ASEAN Emerging and Resurging Zoonotic Infectious Diseases Initiatives Programme (2006-2008) which aim to build capacity in improving animal and human health laboratory diagnostics for emerging and resurging zoonotic diseases, improving animal and human health surveillance and reporting for emerging and resurging zoonotic diseases and strengthen capacity in regional emergency preparedness for and response to emerging and resurging zoonotic diseases.
Cont’d

- Harmonize the Regional Framework for Control and Eradication of Highly Pathogenic Avian Influenza (HPAI) (2006-2008) proposed by the ASEAN Task Force on HPAI and the work plan of the ASEAN +3 EID Programme Phase II.

- Establish a regional effective coordination mechanism in supporting the sustainable implementation of the collaborative efforts among Member Countries.

- Work closely with international organizations, such as World Health Organization (WHO), Food and Agriculture Organization (FAO), World Organization for Animal Health (OIE).

- Mobilize and allocate resources for HPAI control and prevention from dialogue partners and through active donor liaison.
The more immediate specific areas of cooperation are as follows:

- **Implement domestic and regional measures** to control avian influenza having regard to the recommendations of the World Organization for Animal Health (OIE), World Health Organization (WHO) and the Food and Agriculture Organization (FAO).

- Promote rapid, transparent, and accurate exchange of scientific information to provide early warning of potential outbreaks, and consider to create a regional veterinary surveillance network and to link it with existing human health surveillance mechanisms.

- Formulate effective outreach and communication strategies to promote transparency and better public understanding of the extent and nature of the disease.
Cont’d

- Strengthen cooperation with regional and international organizations on joint research and development initiatives to reduce the hazards of epizootic outbreaks on human health, share best practices, devise counter-measures.
- Take the necessary steps to develop and implement effective national and regional influenza pandemic preparedness plans.
- Strengthen and harmonize activities related to all important aspects of Avian Influenza, including surveillance, joint outbreak investigation, simulation exercise, characterization of the epidemiology of the disease, sharing of virus strain, defining appropriate public health responses, etc.
- Implement expertise exchange programmes, workshops and seminars in epidemiological and laboratory surveillance, case management, and risk communication.
Cont’d

- **Develop the capacity** of Member Countries to use findings of and recommendations from risk assessment to improve prevention and control.
- **Build consensus** on regional need to stockpile vaccines and antivirals*… at various levels in view of regional solidarity. The establishment of the stockpile is in the best interest of the global health security, not only for the benefit of the particular countries of the region.

* Eg. Tamiflu (Roche): shortage - compulsory license for generic production? TRIPS Agreement in WTO; Doha Declaration on TRIPS and Public Health (WT/MIN(01)/DEC/2)
Eight areas of cooperation will be coordinated by the following Member Countries (see Regional Framework for Control and Eradication of Highly Pathogenic AF (HPAI) endorsed (27th AMAF, Sept 2005) :

- Disease surveillance – coordinated by Thailand.
- Effective containment measures – coordinated Malaysia.
- Stamping out and vaccination policy – coordinated Indonesia.
- Diagnostic capabilities – coordinated Thailand.
- Establishment of disease free zones – coordinated Malaysia.
- Information sharing – coordinated Singapore.
- Public Awareness – coordinated Philippines.
The program focused on the following areas of collaboration between the ASEAN + 3 countries:

- **Improve institutional capacity** of ASEAN to coordinate and manage effective implementation of the program coordinated by ASEAN Secretariat.
- **Improve capacity of the ASEAN Disease Surveillance Network** to meet the needs of ASEAN member countries in Emerging Infectious Disease Surveillance, Preparedness and Response coordinated by Indonesia.
- **Improve capacity of national and regional laboratories** in routine diagnostics, laboratory-based surveillance, preparedness and rapid response coordinated by Malaysia and
- **Improve national and regional capacity in epidemiological surveillance, preparedness, early warning of outbreaks and rapid response to emerging infections** coordinated by Thailand.
4. East Asia Summit Declaration on Avian Influenza Prevention, Control and Response, 14 Dec 2005, Kuala Lumpur


ASEAN + Australia, China, India, Japan, Korea, New Zealand, participating countries of the First East Asia Summit

- Undertake bilateral, regional and multilateral channel to enhance national, regional and international capacities to deal with AF...through improving national policies for prevention and control of EID.

- Controlling and eradicating AF.

- Ensure rapid, transparent and accurate risk communications.
Undertake a well-coordinated, multi-sectoral/multi-disciplinary approach.

Establish national, regional pandemic preparedness strategies.

Strengthening institutional capacities.

Establishing information, sharing protocols.

Increasing cooperation… among ASEAN member countries, international organizations, the World Bank, ADB… through existing ASEAN mechanisms.
5. ASEAN Plus Three Emerging Infectious Diseases Programme (EID) (2004 - 2008)

<http://www.cafte.gov.cn/include/linshiwenjian/download/6ASEAN.ppt#266,4,ASEAN Initiatives: Human/Public Health>,
accessed 20 Feb 2008

(ASEAN Secretariat)
Phase I (July 2004 – Oct 2005)

- Institutional strengthening:
  - ASEAN Secretariat – coordinator/facilitator.
  - ASEAN Disease Surveillance Network. [http://www.ads-net.org](http://www.ads-net.org)
  - Co-ordination with WHO on assessments; and Guidelines for evaluating Early Warning and Response System.
  - MDGs - implementation of international Public Health Regulations, 2005.
Phase II (commence late 2006 - 2008)

- Strengthen regional and national laboratories; surveillance networks (internet); training; deploying multinational response teams.
- ASEAN-Japan Antiviral Drugs and Personal Protective Equipment (PPE) Stockpile Project.
- ASEAN Plus 3 EID Fund.
6. ASEAN Institutional Framework To Tackle Avian Flu


ASEAN Co-ordinating Mechanisms

- ASEAN Health Ministers and Senior Officials on Health Development
- ASEAN Expert Group on Communicable Diseases
- ASEAN Ministers and Senior Officials on Agriculture and Forestry
  - ASEAN Sectoral Working Group on Livestock (ASWGL)
ASEAN’s Collaboration with Dialogue Partners and International Organizations

- Japan (Tamiflu regional stockpile)
- Australia (ASEAN Plus Three EID Programme)
- WHO (human health)
- FAO and OIE (animal health)
- ADB (cross-sectoral capacity strengthening)

Task Force on Highly Pathogenic Avian Influenza (HPAI) est. Oct 2004 under the ASWGL

<www.who.int/entity/mediacentre/events/2005/ASEAN_Somsak.pdf> accessed on 13 April 2006

- To formulate coordinated multi-agency and multi-sectoral approach
Role of WHO and recommendations for national measures before and during pandemics.

- Guide to inform and harmonize national, regional, and int’l preparedness and response on AF pandemic. Does not replace national plans.
- Defines “phases” of increasing public health risks to achieve public health goals for each phase eg, overarching goals, strengthen preparedness, minimize risks, notification, etc.
- Guide deals with “WHO Actions” and “National Actions”. National authorities to develop pandemic plans – responsibility and management on them.
- National authorities to play part towards harmonization of preparedness measures.
8. (WHO) Responding to the Avian Influenza Pandemic Threat: Recommended Strategic Actions, 2005

WHO has played a pivotal role in coordinating the global response to avian flu. It has made certain recommend strategic actions to respond to avian flu pandemic:

- Phase: pre-pandemic.
- Reduce opportunities for human infection.
- Strengthen the early earning system.
- Phase: emergency of a pandemic virus.
- Contain or delay spread at the source.
- Phase: pandemic declared and spreading internationally.
- Reduce morbidity, mortality, and social disruption.
- Conduct research to guide response measures.
The Strategy is used a strategic framework to guide national capacity building (Partners to the Strategy include ASEAN).

- **Objective 1** - Reduce the risk of emerging disease.
- **Objective 2** - Strengthen early detection of outbreaks of emerging diseases.
- **Objective 3** – Strengthen early response to emerging diseases.
- **Objective 4** – Strengthen preparedness of emerging diseases.
- **Objective 5** – Develop sustainable technical collaboration within the Asia Pacific Region.
Guiding principles

- The primary focus of the strategy is on country activities supported by partnerships between countries and at subregional, regional, and global levels.
- The actions taken are sustainable and build on existing structures.
- The actions are based on a combination of knowledge and experience of effective public health policies and practices.
- Networks and partnerships are the mechanisms most likely to optimize the use of limited resources and provide equity of access to regional and global public goods through implementation of the Strategy.
- Consultation, collaboration, and the support from regional solidarity are keys to success.
- The achievement of self—reliance for the Asia Pacific Region.
10. FAO/OIE Initiative  A Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza (HPAI), 2005


- Long term vision, common approach for implementation at national, regional and global level.

- Strategy – prepared by key partners from Asia after meeting in FAO’s Regional Office for Asia and the Pacific, Bangkok, 17 – 18 May 2005.
- **Strategy** - coordination plan for short, medium and long term priority activities, to be endorsed by individual countries and regional organizations - collaboration of WHO.

- **Control of transboundary animal diseases**; presents first step in global strategy to be complimented by countries specific AF control plans. Main partners, ASEAN and SAARC, FAO, OIE and WHO, etc (pte sectors, NGOs).

- Main partners, ASEAN and SAARC, FAO, OIE and WHO, etc (pte sectors, NGOs).
Cont’d

- Implementation:
  - National level – specific projects.
  - Subregional level - three subregional HPAI support units (SEA, EA and SA); surveillance, social economic and policy networks from support units; provide lead in development of harmonized technical standards and regional policies relating to live animal movement, compensation plans, capacity building, disease reporting requirements and long term planning to restructure poultry sectors.
  - International level – coordinating of national programmes and subregional networks; technical assistance, promote international cooperation and mobilize and coordinate resources.
Cont’d

• **Strategy** – reduced risk of human pandemic.

  - **Goal** progressive control and HPAI eradication from poultry, promote viable poultry production, increase safety of food and feeds, improve livelihoods of poultry stakeholders.
  - **Guiding principles** for global vision, multi disciplinary approach; broad collaboration; adaptable and knowledge based responding to changing environment and new knowledge; pro-poor; economically sustainable encouraging equitable poultry sector.
Agreement deals with a “disaster” which includes a serious disruption of the functioning of a community or a society causing widespread environmental losses.

The objective of this Agreement is to provide effective mechanisms to achieve substantial reduction of disaster losses and to jointly respond to disaster emergencies through concerted national efforts and intensified regional and international co-operation (Art 2).
General obligations (Art 4):

- Co-operate in developing and implementing measures to **reduce disaster losses** including identification of disaster risk, development of monitoring, assessment and early warning systems. .... immediately respond to a disaster occurring within their territory.

- Take **legislative, administrative and other measures** as necessary to implement their obligations under this Agreement.
Disaster Prevention and Mitigation (Art 6)

- Develop strategies to identify, prevent and reduce risks arising from hazards.

- Undertake measures to reduce losses from disasters which include:
  - Developing and implementing legislative and other regulatory measures, as well as policies, plans, programmes and strategies.
  - Strengthening local and national disaster management capability and co-ordination.
Cont’d

- Public awareness and education and strengthening community participation; and
- Co-operate in developing and implementing regional disaster prevention and mitigation programmes to complement national-level efforts.

- Other provisions include disaster early warning, disaster relief, emergency response.

- Institutional arrangements: eg National Focal Point and ASEAN Co-ordinating Centre for Humanitarian Assistance (AHA Centre), ASEAN Secretariat.
12. (WHO) International Health Regulations, 2005 (enter into force in June 2007)


- Purpose and scope (Art 2) - prevent, protect, control and provide public health response to international spread of disease in “public health risk” (likelihood of event that may affect adversely the health of human populations…) - includes AF.

- Surveillance* (Art 5)– develop disease surveillance system to detect public health risk, establishment of national HR Focal Point (Art 4).

- * Surveillance means the systematic ongoing collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response as necessary.”
Notification of public health emergency of international concern within a territory (Art 6).

Role of WHO to take account reports of sources other than notifications of consultations for assessment to response to public health risk – can communicate info to other States Parties.

Determination of a public health emergency of international concern (Art 12) – WHO empowered to determine but no power to ensure compliance.

Cooperation of WHO with intergovernmental organizations and international bodies (Art 14).


Work Plan adopted by Heads of States/government of ASEAN Plus Three on 20 Nov 2007 includes Public Health:

- Strengthen cooperation in capacity building and enhance cooperation in Public and Environmental Health, and Public Health Emergency Disaster Management
- Reduce the impact of pandemic diseases, such as Avian Flu
- Implement the ASEAN Plus Three Emerging Infectious Diseases Programme
- Continue to improve ASEAN’s emergency preparedness against the outbreak of pandemic influenza, including information sharing and early warning systems, immediate transfer from the existing ASEAN stockpile of antiviral and personal protection equipment to the sites of pandemic influenza outbreak, and establish a network of antiviral drug stockpiles.

End of Part I
Part II
Avian Flu and Biodiversity Conservation
Are migratory birds to be blamed for spread of AF: are they vectors or victims?
At the outbreak of AF in Feb 2003, experts in public health did not consider or paid little attention to the interaction of human and animal health.

Some wetlands (habitats of migratory birds) were poisoned as a method of culling wild migratory birds perceived to be endemic to AF, and spreading the disease.

There was also a failure also to recognize other environmental repercussions of culling migratory birds on ecosystems, and also their flight patterns.
The inconnectivity of things – an example of the culling of sparrows in China

“The inconnectivity of things – an example of the culling of sparrows in China”, The Straits Times, 28 July 2005

“One day, it hit Mao that a good way to keep food safe would be to get rid of sparrows, as they ate grain,” begins one anecdote, in a sardonic voice dripping with the blackest humour. “Pests once kept down by sparrows now flourished, with catastrophic results. It was not long before a request from the Chinese government marked Top Secret reached the Soviet embassy in Peking. In the name of socialist internationalism, it read, please send us 200,000 sparrows from the Soviet Far East as soon as possible.”
Issues and challenges in biodiversity conservation and AF

- Indiscriminate culling of wild migratory birds and poultry – short term solution
- Destruction of wetlands which are habitats to migratory birds
- Inadequate or reluctance to provide information (at outset of AF); public fear
- Gaps in scientific knowledge of patterns of migratory birds and impact on AF
- Lack of veterinary capacity
Cont’d

- **Eco-health:** linkages between human health as a function of health of ecosystem - degradation of which affects human health.

- **Major cause of AF** – close contact of wild birds and migratory species.

- Illegal trade in affected animals.

- Lack of good animal husbandry.

- Lack of funding.

- Lack of education, public awareness.

- **Lack of management system** to integrate animal/human health and biodiversity conservation.
Cont’d

- Lack of holistic approach from stakeholders: policy makers, virologists, vets, ornithologists, agriculturists, epidemiologists, medical experts in public health, biodiversity conservationist, private sector, scientists, academics.
Culling: Policy Challenges

Extent of Culling at outset of AF from 2004 – 2006: millions of poultry including wild migratory birds, etc were indiscriminately culled:

- **China:** China culled many migratory birds in Taizhou City and Jiangsu Province. Also 35,000 chickens culled in Chiayi farm.
- **Taiwan:** 20,000 birds culled in Changhwa farm.
- **Japan:** 34,600 sick birds culled.
- **South Korea:** 1.8m birds slaughtered.
Vietnam: 2m chickens culled.

Subsequent years where other countries affected and where recurrence – more were culled

Should there be a threshold to culling?

- Estimated more than 100 million birds culled (perhaps 200 million died or destroyed) - as at January 2004. Now…?

The Straits Times, 4 June 2005:

Bird flu fears lead to Ubin poultry ban
Fears of human-to-human spread and pandemic flu, health risks – led to extensive culling of poultry and wild birds: justified?

- *The Straits Times*, 15 September 04, “Bird flu outbreak: worst yet to come”
- Bird flu fears rise in Pakistan ahead of winter migration – 5.5 million birds migrate from the colder regions of Central Asia to Pakistan every year to avoid a harsher winter (source: NewsDesignerz.com, 25 October 04), but false alarm – did not occur!
- *The Straits Times*, 4 June 05, “Bird flu fears lead to Ubin poultry ban” (ST, 30 June 05 - total ban implemented). However, in *Today*, 30 June 05, “Risk downgraded but Ministry taking no chance”!
Cont’d

- Singapore – reported action by Wildlife Reserve Singapore (WRS) in culling all the chickens, ducks and geese as ‘pre-emptive culling’ was criticized by the Singapore Nature Society (source: ‘Birdpark, Zoo to cull birds’, see Straits Times, 27 August 04; Wild Pigeons and Crows Pose Danger, ST, 3 Sept 04)
  - Proposals to chip their wings
- Nature Society Singapore criticised WRS’s as birds with clipped wings unable to fly and find sufficient food to survive. It cited FAO’s statement that eliminating wild birds is not an appropriate measure (source: ST, 9 Oct 04)
- Also unwarranted actions by WRS give rise to misconception among public that all wild birds are dangerous carriers of avian flu
1. Precautionary Principle: how useful in determining policy of culling?

Principle 15 Rio Declaration: “Where there are threats of serious and irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.”
2. How can PP be applied to AF?

- PP - action taken based on potential risk/harm in face of scientific uncertainty that a pathogen [H5N1 virus] might cause; prudent to restrict or regulate the pathogen until the uncertainty can be resolved, if ever [in AF!].

- Can PP justify policy of widespread culling and destruction of wetlands (habitats of wild migratory birds) as a preventive measure?
3. Is PP a useful principle to determine the policy of culling?

Governments in the region seem to have used PP to justify the culling of wild and domesticated animals affected by AF, irrespective of whether they are ‘victims’ (e.g., wild migratory birds) or ‘vectors’ (e.g., poultry).

Factors that should be taken into consideration:

- Number of AF cases in animals and humans.

- Should culling be limited to poultry and migratory birds/waterfowls that have the virus. What if they have the virus but it does not spread?
Cont’d (factors to be taken into consideration)

- Potential/immediate risk of a pandemic affecting millions of people worldwide - justified in applying PP in culling (or overculling)? Risk downgraded, see “Good news” ST, 30 June 05.


- Bird flu can result in other illnesses, ST, 19 February 2005.

- AF endemic in poultry and waterfowls – culling justified?

- Should culling be done only at the ‘affected ‘ area where AF occurs or should it be extended further afield?
4. Does PP take into consideration the consequences on conservation (eg destruction of ecosystems), sustainable development, etc?

Danger of applying PP in risk assessment – Tuchman (former Policy Analyst in NY City’s Dept Env Protection), “Risk Assessment and the Precautionary Principle” : policy makers “must do their best, through the fog of uncertainty, to steer a safe passage between two kinds of error-

- on the one side, not heeding early warnings, and by accepting false reassurances, allowing harm to occur that could have been prevented [ie pandemic, human – to - human spread];

- on the other side, over – reacting, with costly and unnecessary precautions, in response to false alarms [ie, over-culling which might subsequently turn out to be based on subsequent scientific reports that AF would not lead to a pandemic and that it would not lead to ‘human-to-human spread’ – latest news that there is no likelihood of human – to human spread. Undesirable consequences of upsetting the ecosystem]”
5. Efficacy of PP in determining culling policy

- PP unclear in setting standards – it stipulates that the absence of scientific certainty should not be used as a reason for taking action – too vague and capricious – has led to confusion (absence of full scientific knowledge does not mean zero risk)!

- Not always a practical means of responding to risk management.
Tuchman: (gave eg of swine fever in US in 1976 – 40 million inoculated as fear of pandemic but 2 months later - withdrawn as false alarm – pandemic did not occur). “Now as the WHO warns of a new peril from AF, both scientists and policy-makers must draw appropriate lessons from past mistakes. More generally, when a decision turns out to be a losing gamble, we must inquire whether that failed outcome could have been avoided. We have to ask: are we still confident in how we made the decision; what can we do to lessen the risk of error, and would the benefits of such changes be worth the cost? When we face new problems, how does the tool of risk assessment and the precautionary principle help us understand what is at stake and what our options are?”
ERA ( “Env Risk Assessment” ) approach: principles- (1) hazard identification; (2) consequences; (3) estimate probability-persistence; (4) evaluation; (5) involve stakeholders, cost effectiveness- can it be alleviated?

- ERA and PP can be complementary or opposing, with different outcomes.

- Indur M Goklany, *The Precautionary Principle: A Critical Approach o Environmental Risk Assessment* (Cato Institute 2001) - points out that does not provide method of resolving such dilemmas in environmental policy – must consider nature of threat, magnitude, immediacy, uncertainty, persistence and extent to which they can be elevated.
Cont’d

- “Risk Assessment” (RA) approach based on scientific data (probability and consequences of risks), cost benefit analysis, eg. consequences on ecosystem, conservation, sustainability, etc.

- Scientists and policy makers must together determine the risks at stake.

- RA and PP complementary or opposing, with different outcomes?
6. Does culling of wild birds or poultry, etc solve the problem of controlling spread of AF or preventing future outbreaks?

- Food and Agriculture Organization (FAO), 2004: “Eliminating wild birds is not an appropriate way to control the spread of avian flu virus... killing wild birds will not help to prevent future bird flu outbreaks...”
  - How to prevent: put in place a system of good animal husbandry; control, surveillance and monitoring, vaccination of chickens, see *infra*.

MEAs Relating to Biodiversity – Culling Issues

1. Convention on Migratory Species of Wild Animals (Bonn), 1979 (Philippines is the only ASEAN country that ratified Bonn)

- Preamble: recognizes value of wild animals from environmental, ecological, genetic, scientific, aesthetic, recreational, cultural, educational, social and economic points of view.

- Protection of migratory birds from threats including deliberate killing and destruction of their habitats. Effect of culling of birds, etc on nature conservation and impact on ecosystems.
Cont’d

- Parties must endeavor to conserve habitats for migratory species and to prevent reduce or control factors that endanger or are likely to endanger these species.

- Migratory birds - shared resources of Range States - responsibility.

- Art III (Appendix I – endangered migratory species): Parties prohibited from taking animals. Exceptions “... extraordinary circumstances so require; provided that such exceptions are precise as to content and limited in space and time. Such taking should not operate to the disadvantage of the species.”
cont’d

- Emagazine.com – “One –fifth of bird species flying toward extinction.” (Habitat loss and introduced pests). Birdlife International 14 June 2005. This has led to migratory birds foraging for food in the farms thus coming into close contact with poultry and other animals – cause of AF.

- The Straits Times, 29 June 2005 migratory birds died in Qinghai – these are protected species WHO/FAO call for testing migratory birds before they migrate to neighboring regions (but birds may not be showing symptoms).
Cont’d

- to strengthen ongoing efforts to improve, integrate and analyse existing data sets across different flyways to determine precise migratory routes, fluxes and population dynamics of species, and to disseminate the results.

- to apply internationally agreed quarantine and health standards for the cross-border transport of bird products and captive birds of all kinds and further calls for a crackdown on the illegal transport of bird products and captive birds of all kinds, both nationally and internationally.
Cont’d

➢ Follow-Up in COP8 Decisions: Scientific Task

Force on Avian Flu (Res. 8.27) 28 -29 Sept 2006


➢ Task Force – to obtain best scientific advice on conservation impact of AF, accessing the role of migratory birds as vectors, giving advice on its root causes.
Strategic advice

- **Notes** the overriding importance of *enhanced bio-security measures* and the need for competent authorities to develop strategies that limit the risk of disease transmission between wild and domestic animals (through enhanced bio-security measures) and humans.

- **Underlines** the importance of *developing and implementing national contingency or action plans* related to the potential risk of disease transmission, and the need for national preparedness to respond effectively to instances of detection of HPAI in birds, notably in wetland-dependent species.
2. UNEP/CMS Resolution 8.27 on Migratory Species and Highly Pathogenic Avian Influenza
(Adopted by Convention on Migratory Species (CMS) – 8th Meeting of COP, Nairobi from 20-25 November 2005)

It calls for fully integrated approaches by bringing ornithological, wildlife, and wetland management expertise, including veterinary, agricultural, virological, epidemiological, and medical expertise;
3. The Ramsar Convention on Wetlands, 1971
http://www.ramsar.org/

(Ratification by ASEAN countries – India, Malaysia, Myanmar, Philippines, Thailand & Vietnam)

AF Issues:

- UNEP News Release 2006/24: “The loss of wetlands around the globe is forcing many wild birds into alternative sites … bringing them into direct contact with domesticated fowl. Close contact with birds and poultry species is believed to be major cause behind the spread of AF.”
- Destruction of wetlands means of culling wild waterfowl – as wetlands are used to poisoned wetlands and rice fields as a means of eradicating wild birds.
4. RAMSAR Resolution IX.23 Highly Pathogenic Avian Influenza and its Consequences for Wetland and Waterbird Conservation and Wise Use, 8 -14 November 2005

<http://www.ramsar.org/res/key_res_ix_23_e.htm> assessed on 22 Feb 2008 - 9th COP Meeting Kampala, 8-15 November 2005

- Developing and implementing national contingency or action plans related to the potential risk of disease transmission, and the need for national preparedness to instances of detection of HPAI in birds, notably wetland-dependent species.

- Requests the Secretary General to explore possibilities for establishing partnerships so as to support the development of long-term funding for monitoring schemes that are relevant to the Convention's interests, and as soon as possible.
Cont’d

- Notes the need for adequate standards for farming and aquaculture, and the need to develop strategies that limit the risk of disease transmission between wild and domestic birds through enhanced biosecurity.

- Urges the Scientific Task Force on Avian Influenza to provide relevant input on practical measures to reduce the risk of disease transmission between wild, captive and domesticated birds, to those agencies developing contingency and wetland management plans related to HPA.

- Assist relevant international agencies and the Scientific Task Force on Avian Influenza, in sharing information.
Cont’d

- Need for adequate standards for farming and aquaculture, and the need to develop strategies that limit the risk of disease transmission between wild and domestic birds through enhanced biosecurity
- Scientific Task Force to provide relevant input on practical measures to reduce the risk of disease transmission between wild, captive and domesticated birds, to those agencies developing contingencies and wetland management
UNEP Report (scientific findings by a team led by Dr David Rapport, a Canadian academic)

- Clearing intensive poultry rearing units from the “flyways’ of migratory birds would also be prudent.
- Intensive poultry operations along migratory wild bird routes are incompatible with protecting the health of ecosystems that birds depend upon. They also increase the risks of transfer of pathogens between migrating birds and domestic fowl.
6. Can CITES be Extended to Cover Illegal Trade in Animals which May Cause AF?

Trade in Wild Birds and Illegal Bird Smugglers: AF

- Countries in Asia where illegal trade is rampant: People's Republic of China, India, Cambodia, Indonesia, Malaysia, Philippines, S Korea, Thailand, Vietnam, etc
- Trade in fighting cocks, parrots, and other wildbirds
Embargo of birds from specified countries

Source

(US Dept of Agriculture-Bird import restrictions of birds and unprocessed birds products from):

- East Asia and the Pacific: Burma, Cambodia, China, Indonesia, Japan, Laos, Malaysia, South Korea, Thailand and Vietnam
- South Asia: Afghanistan, India, Kazakhstan and Pakistan
- Europe and Eurasia ...
- Africa...
- Near East ...

(As of 5 Feb 2007)
7. Convention on Biological Diversity, 1992


(All ASEAN member states except Brunei have ratified)

- **Article 1: Objectives**

  The objectives ... are the conservation of biological diversity, the sustainable use of its components....

- **Article 2: Use of Terms**

  “Biological resources” includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.

- “Country providing genetic resources” means the country supplying genetic resources collected from in-situ sources, including populations of both wild and domesticated species (includes poultry, pigs, etc).
“Domesticated or cultivated species” means species in which the evolutionary process has been influenced by humans to meet their needs.

“Genetic resources” means genetic material of actual or potential value.

“Sustainable use (genetic resources)” means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.
Cont’d

- Biodiversity and conservation (Arts 6-9; 11 & 14)

- Art 6: General measures for conservation and sustainable use, eg: biodiversity strategies, plans or programmes (eg best management practices and appropriate biosecurity measures to reduce spread of Avian Flu).
Cont’d

What constitutes “sustainable use” (Art 10, CBD)?

- Concept still being developed – includes conserving not only particular species but associated ecosystems.

- Species is sustainable if it does not reduce the future use potential of the target population or impair its long term viability and also those of other species.
• Article 10 (b) calls for adoption of measures to minimise adverse impacts on biological diversity and ecosystems.

• Production of poultry for export (they are reared in crammed cages and the chickens are stressed). Also, they are crowded together with thousands of birds where disease can be spread easily (eg in Thailand).

• What about small free range farming?

• Adopt ecosystem approach in production.
Meeting of CBD Experts (organized by UNEP), Curitiba, March 2006


- First ever scientific assessment of the impact of AF and biodiversity was carried out in conjunction with the eighth meeting of the Conference of the Parties to CBD, held in Curitiba, Brazil, in March 2006. Among the outcomes of this meeting were a number of suggestions and recommendations including increased surveillance and monitoring of wild birds and mammals in affected countries with a special focus on Asia where H5N1 has become endemic.

- Dr Ahmed Djoghlaf, Ex Sec of CBD: “the threat to wildlife of AF may be significant and could have devastating effects on our ecosystems and livelihoods. There is evidence that the H5N1 virus can infect, in addition to poultry and migratory birds, a number of other animals in nature or in captivity, some of which are endangered. There is also a need to consider the potential impact of measures taken to prevent avian flu on biodiversity and the goods and services it provides. Such information is required for the development of adequate strategies to prevent or control further spread of the virus.


- CBD experts concern that development of genetic mono-culture of domestic poultry makes many domestic fowl less disease resistant.
In integrating biodiversity conservation in the management of AF, we need to keep in mind the goals of the MDG:

- Goal 1 Eradicate extreme poverty and hunger
- Goal 6 - Combat diseases
- Goal 7 – Ensure environmental sustainability
- Goal 8 Develop global partnership for development
9. UN Millennium Ecosystem Assessment (MEA)  

- The Millennium Ecosystem Assessment is an international assessment process that was launched in 2001 to help meet the assessment needs of the CBD and other biodiversity conventions.

- It is an attempt to assess the links between ecosystems and human well-being and provide a global overview of the status of biodiversity.

- The MEA examines how changes in ecosystems are likely to affect humans in the future. The assessment has also developed response options on how to best improve ecosystem management and thereby contribute to human well-being and poverty alleviation.
End of Part II

Cont’d Part III
Part III

Singapore’s Response in Combating Avian Flu

KEEPING SINGAPORE SAFE

To keep bird flu out of Singapore, all live chickens imported here are put through stricter checks. SHARMILPAKAU follows a chicken from the Tuas checkpoint to AVA’s laboratory for a behind-the-scenes look at how the birds are tested.

1. Every day, between 50 and 60 birds travel into Singapore. Shipment sizes range from 500 to 1,000. Only healthy birds that pass all the tests will be allowed to enter Singapore.

2. At the lab, the randomly picked chickens are gassed with carbon monoxide. A net covers the cage, and they are kept under a heat lamp.

3. The tissue samples are carefully placed and capped into a sealed bottle. To detect bird flu, researchers use PCR to test if the samples contain the virus. This means one sample has been sampled or tested. The samples are then sent to the lab is the test is performed. If the virus is detected, the chicken is destroyed.

4. If all is clear, the birds are wrapped in tissue paper for two days. If they are in good health, they are then allowed to enter Singapore.

5. If all is clear, the birds are wrapped in tissue paper for two days. If they are in good health, they are then allowed to enter Singapore.

6. The egg is then put into a sterile container, and the egg is placed into a sterile container. The egg is then incubated at 37°C for 3 days. If there is no virus, it will continue developing normally. If there is virus, the eggs will be destroyed.

7. If the eggs are healthy after three days, they are disposed of as waste and recycled into our food chain.

8. If the eggs are still healthy after three days, they are disposed of as waste and recycled into our food chain.

9. If the eggs are still healthy after three days, they are disposed of as waste and recycled into our food chain.

10. If the eggs are still healthy after three days, they are disposed of as waste and recycled into our food chain.
The Straits Times, 29 October 2005

**Flight Plans**

From September to March every year, about four million birds flee the harsh winter in the northern hemisphere, flying almost 12,000km along a route known as the East Asian-Australasian Flyway. Singapore is one of the pit-stops. Marcel Lee Pereira and Daryl Loo report.

**Main Migratory Bird Areas in Singapore**
- Almost 25,000 or more migratory shore birds such as the Pacific Golden Plover, Mongolian Plover, Little Stint, Red Knot, Greater Yellowlegs, Common Greenshank, and Whimbrel.
- Some of these spend the non-breeding season here, and others use Singapore as a transit point. They may stop here for a few days and move to their permanent wintering grounds in Brunei, Malaysia, or New Zealand.
- Hardwicks are found at the mainland estuaries, the Changi coastal area, and Pulau Ubin. The mangrove and mudflats there provide suitable conditions for the birds to feed and rest.

**What's Being Done in S'pore**

Migratory Birds

AVA and NParks are... (text cut off)
S'pore battle-ready for any bird flu outbreak

320 isolation rooms set up: stockpile of anti-viral drugs and protective gear

By BABBAI BASHI & CHANG AI-LIN

SARS may have caught everyone off-guard but a bird flu epidemic was well-prepared for.

A test of preparedness is already in place to contain potentially deadly influenza outbreaks, the Health Ministry revealed yesterday.

The response

S’pore battle-ready for any bird flu outbreak
Bird flu fears lead to Ubin poultry ban

Residents have two weeks to get rid of their birds; farmers offered compensation

BY CHANG AI-LIEN
Science Correspondent

The authorities have moved to seal a potential chink in Singapore’s bird flu armour, by banning poultry on Pulau Ubin.

Residents on the remote island have been given two weeks to get rid of their chickens and ducks.

“In disease control, we cannot afford to have half measures,” said Agri-Food and Veterinary Authority (AVA) chief executive officer Ngiam Tong Tan yesterday.

“It’s not done well, then it leaves a weakness in the system that could allow the disease to come into Singapore.”

The nine licensed farms and 17 residents who rear chickens and ducks on the island have until June 16 to get rid of them. The AVA will buy any remaining birds at market prices, it said.

From June 17, no one will be allowed to keep, breed, sell or buy live poultry on the island.

Singapore has so far kept bird flu at bay, but it is now endemic in the region, with infections killing more than 50 people.

Experts have blamed backyard farming for the outbreaks, and the World Health Organisation fears the H5N1 strain could spawn the next global flu outbreak, which could kill millions of people.

Singapore remains on high alert against the deadly virus, with both the Health Ministry and AVA monitoring the situation closely.

AVA, for example, said samples of up to 1,000 birds have been tested for the virus every month since April last year. They are from local and imported poultry, birds from the Singapore Zoo and Jurong BirdPark, migratory birds and imported ornamental birds.

The ban on Pulau Ubin extends the restriction imposed last year, when AVA prohibited farms and homes on the island from keeping more than 10 poultry each. They also had to be caged properly to stop them mixing with wild birds.

But some people continued to let their fowl roam free, despite checks and reminders from AVA officers. Also, the number of birds kept on the island has risen from 225 last year to about 300.

“We anticipate that the ban will be in place for the next few years at least, because the disease is entrenched in the region,” said Dr Ngiam.

Those caught flouting the rules face a minimum punishment of a $30,000 fine and a year in jail.

But the island’s wild, free-ranging red junglefowl — the father of all domestic chickens — has been spared for now.

A species considered globally vulnerable to extinction, the shy bird is unlikely to transmit the illness to people because it runs at the sight of them, Dr Ngiam said.

The ban has also not been extended to homes on the mainland.

Families can still keep up to 10 pet chickens, provided they are caged.

Those at the Zoo and BirdPark have been vaccinated against bird flu, while those at the Botanic Gardens are regularly checked for the disease, he added.

The Government has offered to resettle Pulau Ubin’s affected farmers. They will be offered standard resettlement benefits, and compensated for removing their coops and other poultry structures.

Farmers who spoke to The Straits Times said it was getting difficult to eke out a living and they would consider moving to the mainland.

Mr Tan Hai Lian, who lives on Pulau Ubin with his 100-year-old father, is one of them. The 53-year-old, who has a small provision shop and a 2-ha plot with fruit trees, said: “I used to have a few hundred chickens to supplement my income.

“Now, that is gone and it may be easier to leave Ubin.”
Big poultry round-up at Ubin

As ban looms on Friday, nine farms emptied to keep bird flu virus away

BY CHANG AI-LIUN
Science Correspondent

OFFICIALS rounded up most of the remaining poultry on Pulau Ubin yesterday, buying what was left of the 300 chickens, ducks and geese for slaughter before the poultry ban on the island takes effect on Friday.

The move is part of Singapore's efforts to keep the deadly bird flu at bay, as backyard farming in the region has been blamed for recent outbreaks.

It is also the end of an era for poultry farmers like Mr Vincent Chew, whose family has reared chickens — several thousand during its heyday — for over 50 years.

“This is the responsible thing to do,” said the 38-year-old, who sold his last 10 chickens to friends over the weekend. They had rushed over for their final chance to savour tasty kampong chicken after hearing about the impending ban.

Mr Chew's family, which operates one of nine licensed farms on Pulau Ubin, has accepted the Government's offer to resettle on the main island.

Five families have taken up the offer so far.

Full-time farmers have been offered compensation of $26,000 to give up their farming licences, as well as further payment for their houses, farm structures and improvements.

Most farmers and residents who spoke to The Straits Times yesterday shared Mr Chew's views, although some were sad to see the end of the line for their feathered friends.

"It can't be helped," said Mr Hassan Ali, 45, looking on as the sole goose in his brother's house was taken away. The booking bird had acted as a security guard and snake-killer, he said.

The ban extends a restriction imposed last year, when the Agri-Food and Veterinary Authority (AVA) prohibited farms and homes on the kampong island from keeping more than 10 birds each. The animals also had to be caged. But this did not work because some people continued to let their fowl roam free.

Yesterday, most of the nine farms and 17 households rearing poultry sold their remaining birds to the AVA and the Poultry Merchants' Association, at market prices.

About 90 birds were caught in nets and caged, before being taken back to the main island for slaughter.

From Friday, no one will be allowed to keep, breed, sell or buy live poultry on Pulau Ubin.

The ban has not been extended to homes on the main island, where families can still keep up to 10 pet chickens, provided they are caged.

Singapore is on high alert for the deadly virus, which is endemic in the region and has devastated poultry stocks and killed more than 50 people.

The worry is that the H5N1 strain could spread to the next global flu outbreak, which could kill millions.

AVA officers will be conducting spot checks on Pulau Ubin and anyone caught flouting the rules could be fined up to $10,000 or jailed for a year.

AVA's assistant director for agricultural infrastructure Chin Yew Neng said: "We thank the residents for playing their part in keeping Singapore free of bird flu." The remaining few birds on Pulau Ubin will have to be removed by tomorrow.

The association's secretary, Mr Chew Kian Huat, said that whatever birds he collected would be cooked and distributed among members of the tribe.

"There are too few to make it worth our while to sell them to the public, but we wanted to do our duty to help keep bird flu away," he said in Mandarin.
Ubin ostrich saved from chopping block

100kg pet bird escapes poultry cull with offer of new home at bird park

BY CHANG AI-LIEN
Science Correspondent

FOR a while, its fate hung in the balance, but now the heftyest member of Pulau Ubin's poultry family has been given a last-minute reprieve from the chopping block.

The ostrich, reared by the headman’s son, will be adopted by Jurong BirdPark, along with two peacocks.

“The bird has grown so big, it’s good if it goes to a good home where it can get proper care,” said owner Lim Choo Zhi, 76, in Mandarin.

The Agri-Food and Veterinary Authority (AVA) recently banned all poultry on Ubin, including the ostrich, as part of ongoing efforts to keep the deadly bird flu out of Singapore.

On Tuesday, Mr Lim’s handful of remaining chickens were rounded up and taken away for slaughter.

The same day, the AVA and Poultry Merchants’ Association bought most of Ubin’s remaining poultry — what was left of 300 chickens, ducks and geese — before the ban takes effect tomorrow.

Mr Lim has been caring for the male ostrich for a year, since his wife was given the half-grown bird by a friend.

“I had no idea it would grow so big,” he said, pointing at the bird, which is now 2m tall and eats 7kg of chicken feed and two coconuts a day.

AVA’s assistant director of corporate communications Goh Shih Yong started the life-saving action when the deadline for the ostrich’s removal was pending.

“This was a family pet and it would have been a pity to put it down, so I decided to ask Jurong BirdPark for help,” he said.

Mr Lim said the ostrich, which weighs about 100kg, is tame. Even so, moving it to the mainland will be quite a task.

“Since it tends to follow Mr Lim around, he will lure it into a specially constructed box, before it is sent across by boat.

The AVA will also work with the park to make sure the ostrich is healthy and disease-free. It will be quarantined for a month before being introduced to the other ostriches there.

Dr Wong Hon Mui, executive director of Jurong BirdPark, said the ostrich will join the park’s existing group of three females and one male.

“This is part of our bird conservation programme. As far as possible we want to preserve exotic birds, and ostriches are a rare sight here.”

Including those at the zoo, there are fewer than 10 ostriches — the world’s biggest bird — here.

And it is hoped the new addition will be a father soon.

The park’s male bird, which is at least 20 years old, has not helped expand the family for several years and eggs produced have not been fertile, said Dr Wong.

“We hope that the young male, which we’re calling Ubin, will do what the other one can’t seem to, and help to introduce some new blood lines into our ostriches.”
Now we can’t even farm chickens here for income. I hope the government will develop Pulau Ubin as a tourist attraction, so that we islanders can make a living.

Mr Tan Hai Lian, 100+, former Pulau Ubin chief.
1. Animals and Birds Act, Cap 7


Article 20 Director General may require isolation or destruction of any animal or bird if it is affected with disease; or has reasonably cause for believing that the animal or bird is infected with disease.
2. Infectious Disease Act, Cap 137

“Infectious disease" means —

(a) any of the diseases specified in the First Schedule; and

(b) for the purposes of sections 7, 8, 9, 10, 13, 14, 15, 16, 19, 47, 55 and 73 (1) (g), includes any other disease —

(i) that is caused or is suspected to be caused by a micro-organism or any agent of disease;

(ii) that is capable or is suspected to be capable of transmission by any means to human beings; and

(iii) that, the Director has reason to believe, if left uninvestigated or unchecked, is likely to result in an epidemic of the disease;
Infectious Diseases Act, First Schedule, sect II

Medical practitioner who has reason to believe or suspect that any person attended or treated by him is suffering from an infectious disease or is a carrier of that disease shall notify the Director within the prescribed time and in such form or manner as the Director may require having medical examination and treatment. The Director may require any person who is, or is suspected to be, a case or carrier or contact of an infectious disease to submit to medical examination or medical treatment at such times and at such hospital or other place as the Director may determine.
Cont’d

➢ If any person fails to comply with the requirements of the Director under this section –
(a) that person shall be guilty of an offence; and
(b) the Director may order the removal of that person to any hospital or other place where the person may be detained and (if necessary) isolated until he has been medically examined or treated. Other amendments include post mortem examination treated of premises or vessels isolation of persons, surveillance, isolation …
3. (Singapore) Influenza Pandemic Readiness & Response Plan (updated May 07)
accessed on 12 Feb 2008

- National strategy: surveillance system*, mitigation, minimizing mortality, health care management, vaccination…
  (*Internal external monitoring for virus strains and disease activity – integrated systems: community, laboratory, hospital, veterinary and external surveillance).

- Maintain essential services to limit social and economic disruptions
- Limit spread of influenza – border health control measures, health care; community wide measures
Disease outbreak response system (DORS) – infection control in healthcare institutions; and public health measures.


Muslims … para 5 (e)

Crisis Communications (para 59) – accurate up to date info
4. (Singapore) Influenza Pandemic Preparedness: Guide on Infection Control Measures for Workplaces (Jan 06)


Guidelines on infection control measures and practices at work place

- Hospital Pandemic Preparedness
- Planning
- Multi-sectoral approach and roles of stakeholders
- Community mitigation strategies
Cont’d

Further measures

- Tan Tock Seng Hospital will be centre for patients in the event of a flu pandemic (*Mediacorp News*, 21 July 2006).
5. Singapore and Indonesia project to control avian flu

- Surveillance, management and examination of viral samples and also a plan to enable timely response if a pandemic occurs.

- Project covers training and technical support to help Indonesia in surveillance, outbreak management, diagnostics and infection control. Under this initiative, Singapore will provide 5,000 doses of antiviral medication or Tamiflu, 5000 sets of personal protective equipment for Indonesian health-care workers and 5,000 rapid diagnostic kits. [The Straits Times, 19 November 2005; and The Straits Times, 26 November 2005.]
Cont’d

- Targets of the Singapore / Indonesia AF Plan

  Control bird flu in poultry and humans.
  Increase integrated surveillance.
  Protect high risks groups.
  Build capacity of medical workers and labs.
Closed-house system – no contact with wild birds or other animals

- Food and water are kept in closed containers to prevent bird droppings or other contaminants.
- Disinfection of workers, visitors and vehicles to control disease
- Health of animals constantly monitored.
- Heavy penalties for failure to meet requirements set by AVA (Agriculture Food and Veterinary Authority of Singapore).

Semi-opened system

- Chickens are kept on raised floor with their cages enclosed in netting to prevent contact with wild birds.
- Natural ventilation.
- Other conditions same as under closed-house system (above), etc.
6. Malaysia/S’pore Joint Poultry Farming: Biosecurity & Good Husbandry

FAO and other organizations suggested good husbandry

- Wild birds to be separated from farmed birds.
- If ill wild birds are encountered or captured, they should be isolated until examined by a veterinarian.
- Any wild bird carcasses should be submitted to authorities for testing.
- Under no circumstances should there be attempts to exterminate healthy wild birds.

The Straits Times, 11 March 2006
The United States and Singapore signed REDI to collaborate in preventing and responding to AF and other emerging diseases in South East Asia.

The following are some of the objectives:

- Extend the perimeter of defence for emerging infectious diseases and health security threats.
- Widen the international network for research in emerging infectious diseases.
- Translate the findings of research into improved public health.
- Promoting integrated emergency preparedness for communicable disease outbreaks within and among participants economies to enhance security. In addition, the REDI Center and MOH are working on three technical assistance training courses offered to our Indonesian neighbors on infection control, outbreak response and laboratory techniques.
- The threat of an outbreak of pandemic influenza is real. An influenza virus strain with potential to cause a pandemic of human disease could emerge with little or no warning and in almost any part of the world?
Conclusions (Parts I, II & III)

- There should be an integrated approach to tackling AF, encompassing human and animal health together with environmental measures.

- Daunting challenges – should work with all stakeholders.

- Emerging disease – daunting challenges – should work with all stakeholders.

- Requires sound scientific knowledge – more scientific research.

- More research should be done on eco-health and AF.
Cont’d

- Establish effective public health system at national, regional and international levels.

- Cooperation is vital as each country has no perfect system.

- Put in place a management system in each country and also at regional and global levels.
Emerging disease – daunting challenges – should work with all stakeholders.
Requires sound scientific knowledge and integrated approach to deal with the challenges.
Establish effective public health system at national, regional and international levels.
Cooperation is vital as each country has no perfect system.
The United Nations should develop a convention on Avian Flu taking into consideration elements for harmonization of laws at the national, regional and international level.

End
Thank you

Kheng-Lian KOH
Feb 2008