



**Report of the
Twenty-ninth Session of the
Animal Production and Health
Commission for Asia and the Pacific
(APHCA)**

**26–29 September 2005
Bali, Indonesia**



THE FIFTEEN APHCA MEMBER COUNTRIES

Australia

Bangladesh

Bhutan

India

Indonesia

Iran

Lao PDR

Malaysia

Myanmar

Nepal

Pakistan

Papua New Guinea

Philippines

Sri Lanka

Thailand



REPORT OF THE
TWENTY-NINTH SESSION
OF THE ANIMAL PRODUCTION
AND HEALTH COMMISSION FOR
ASIA AND THE PACIFIC
(APHCA)

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
REGIONAL OFFICE FOR ASIA AND THE PACIFIC
Bangkok, 2006

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Table of contents

	Page
Minutes of the 65 th executive committee meeting and the 29 th session of APHCA	1
Timetable and Agenda (APHCA 2005/01)	9
Dates and venues (host countries) of APHCA sessions (APHCA 2005/02).....	13
Minutes of the 64 th executive committee meeting and the 28 th session	19
of APHCA (<i>Chiang Mai, Thailand, 27 Sep–1 Oct 2004</i>) (APHCA 2005/03)	
Summary statement of APHCA account (APHCA 2005/04).....	29
Activities performed between Oct. 2004 and Sep. 2005 (APHCA 2005/05).....	37
Specific issues (APHCA 2005/06)	
FAO/OIE/JICA regional workshop on classical swine fever control.....	43
in Asia (in collaboration with the Bureau of Animal Industry, Philippines)	
Feed and food safety: updates and plans for 2005-2006	45
APHCA activities on BSE, WTO's SPS agreement and.....	47
veterinary public health	
Report on strategic priorities for action of AnGR	49
APHCA special session on avian influenza (APHCA 2005/07)	
Global strategy for the control of avian influenza in Asia.....	51
Update on HPAI situation in Asia	57
Update: sub-regional networks on disease surveillance	59
and diagnosis in Asia	
Eradicating animal influenza viruses at their source	61
Strategic vaccination for avian influenza in Asia	67
Response antibody of Pekin ducks in field vaccine trial of.....	73
avian influenza Indonesia – a preliminary study	
Vaccination strategy for controlling HPAI in Indonesia	77
Vaccination programme in Viet Nam.....	85

CPF compartmentalization (boiler integration)	89
Estimating economic impact of zoning in Malaysia.....	93
Surveillance of avian influenza in mixed farming system.....	101
and in live bird markets in Bali	
Benefits and costs of reducing risks in wet markets	103
Marikina city wet market case study	
Approaches to costing and budgeting for compensation in avian influenza	107
List of participants (APHCA 2005/08).....	113
Speech (APHCA 2005/09)	
Muhammad Afzal (APHCA's Chairperson)	125
Mathur Riady (DG, Livestock Service of Indonesia).....	127
Juan Lubroth	129
(Senior Officer and Head of Emergency Prevention System, FAO/Rome)	
Yoshiyuki Oketani	131
(OIE Deputy Regional Representative for Asia and the Pacific)	
Dewa Beratha (Bali Governor, Indonesia)	133

Minutes of the 65th Executive Committee Meeting and the 29th Session of APHCA

The 65th Executive Committee Meeting:

Sunday, 25 September 2005, 17.00-18.30 hours

- The meeting was chaired by Dr M. Afzal, delegate from Pakistan, who has taken over from Dr R.H. Raja upon his retirement. Present were the delegates from India, Indonesia and Thailand. The delegate from Nepal had not yet arrived.
- The Chairperson welcomed the delegates and thanked Indonesia for hosting this meeting.
- The Secretary also welcomed the delegates and expressed his appreciation for their presence. He informed that all APHCA member countries, with the exception of Iran, have accepted the invitation. He started his report to the meeting by stating that the general situation is marked by the continuous outbreaks of HPAI since 2003/04 in a number of APHCA member countries and the risks of the emergence of a pandemic of human influenza. Some countries have been hit in addition by the tsunami and suffered serious losses economically and in staff resources. This has contributed to National Veterinary Services being stretched to the limit or even beyond. HPAI has also affected the work of the RAP livestock group which has to focus almost exclusively on support to countries in their efforts to control HPAI. The officers and staff in the RAP livestock group/APHCA Secretariat have been involved in organizing conferences, meetings, workshops and training courses (29). They have also represented FAO in various regional meetings of ASEAN, SAARC, OIE and WHO (11). Substantial financial contributions from FAO-TCPs (US\$5.5 million) and a number of donors (European Union, Germany, Switzerland and the United States of America – totaling well over US\$10 million), have been or are being made available to countries in the region to control HPAI. Appropriate use of substantial funds will require a full commitment of all the staff concerned.
- The continuing threat of HPAI has led the APHCA Secretariat to modify the theme of the workshop attached to the 29th APHCA Session to “FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop”. AGAL, FAO-HQs, has kindly agreed to support this workshop with US\$ 10 000 while OIE provides two resource persons.
- The proposed agenda for the 29th Session of APHCA was approved (APHCA 2005/01).
- The meeting briefly reviewed the financial statement and cleared it for submission to the Session (APHCA 2005/04). The cash balance as of 1 January 2005 was US\$ 332 004. The contribution by countries up to 5 September 2005 was US\$ 83 224.91 against US\$ 84 104 due. This good response is due to the fact that two member countries paid part of their arrears. The current outstanding contributions amount to US\$ 69 387.88. An additional US\$ 20 000 in contributions is expected this year from countries which have different budgetary cycles. The budgetary situation is considered good.

- The Secretary reported on the first meeting of the Steering Committee of the GF-TAD for Asia held in March 2005 in Tokyo. Considering that APHCA is a Commission representing 15 Asian countries through their CVOs or Directors-General of livestock services and given the mandate of APHCA, the Ex-com members feel strongly that the APHCA Chairperson should become a member of this Steering Committee. Respective recommendations shall be formulated during the business session.
- The term of the Chair and the members of the Ex-com is expiring and have to be re-elected. According to the APHCA tradition, the host country will be proposed for the Chair. The Indonesian delegate indicated his availability and agreed to stand for the election. He indicated, however, that he will not be able to attend the full APHCA Session due to pressing HPAI issues in the country.
- BSE – The Secretary proposed that the activities in the areas of BSE diagnosis, surveillance, risk assessment, management and communication be phased out in 2006. The delegate from India suggested that some assistance might be required once OIE has come up with the criteria for recognition of BSE freedom, if countries require assistance in collating information to prepare dossiers so that their BSE status can be assessed. The advanced hands-on training course on BSE diagnosis and surveillance for selected APHCA countries will be held jointly with OIE and the Government of Japan in Tsukuba science city, Japan, between 30 November and 9 December 2005.
- The issue of the re-appearance of *Brucella melitensis* and its threat as a zoonotic disease was raised by the delegate of Thailand who requested APHCA to organize a relevant workshop. This suggestion was supported by the delegates of Pakistan and India. A workshop on *Brucella* in sheep and goats addressing *Brucella* in general and *Brucella melitensis*, including vaccination, will be proposed to the Session.
- The issue of management of waste (from cattle farms) in the urban centres of big cities in South Asia was raised again and APHCA should do something in this field. This includes the question of composting of cattle manure.
- Lao PDR confirmed its invitation to host the next session, which would mark the 30th anniversary of APHCA. It was recorded that this invitation has been maintained, and although this would contradict to the agreed two year's cycle meeting outside Thailand, APHCA should proceed.

The 29th APHCA Session:

Monday, 26 September 2005 - morning

1. The opening was presided over by the Assistant to the Governor of Bali who also officially opened the APHCA Session. Dr M. Afzal, on behalf of APHCA, welcomed the delegates and observers. Other welcoming speeches were delivered by Mr Mathur Riady, Director-General of Directorate General of Livestock Services of Indonesia, Dr Yoshiyuki Oketani, Representative of OIE Regional Representation for Asia and the Pacific, Dr Juan Lubroth, Representative of FAO-HQ. The Session was attended by delegates from APHCA member countries (with the exception of Iran and Nepal – the latter joined subsequently), and observers from Cambodia, China, Viet Nam, ACIAR, ILRI and OIE.

2. The Agenda was adopted.
3. Election of the Chairperson and the members of the Executive Committee: For the Chair, Indonesia, Sri Lanka and Thailand were proposed. Sri Lanka and Thailand declined and Indonesia was elected. Thailand was then proposed for Vice-chair and was elected. India, Myanmar, Philippines and Sri Lanka were proposed for Ex-com members. Philippines declined due to fact that the delegate has only recently been appointed to the present position. He promised to play an active role in the future. There were no further nominations, thus, the three countries were elected. Pakistan, being immediate past Chairperson, turned to be Ex-officio member.

The Executive Committee comprises:

Chairperson:	Indonesia
Vice-chairperson:	Thailand
Members:	India, Myanmar and Sri Lanka
Ex-officio member:	Pakistan

The outgoing Chairperson, Dr Afzal thanked the delegates for their support and requested Mr Mathur Raidy, Director-General of Directorate General of Livestock Services of Indonesia to further chair the Session.

4. The Minutes of the 64th Executive Committee Meeting and the 28th APHCA Session were reviewed and approved by the delegates.

5. Statement of Accounts:

The Secretary presented the status of the APHCA accounts for 2004 and status of expenditures for 2005. The approved budget for 2004 was US\$100 598, while the expenditures amount (APHCA 2005/04) to US\$44 973. The reason for this under spending is the already mentioned fact that the RAP livestock group/APHCA Secretariat focused on HPAI-related activities. Furthermore, substantial co-funding for various activities was made available by other agencies such as OIE, JLTA, JICA and by FAO-HQ. The APHCA Secretariat is most grateful for these contributions. All delegates appreciated the activities of the Secretariat in liaising for the co-funding activities. The financial situation of APHCA has improved as countries regularly pay their annual contributions and two countries have paid a substantial part of their arrears. At present, only one country has arrears of more than three years' contributions. The cash balance without interests as of 1 January 2005 is US\$332 004.

The statement of accounts for the year 2004 was approved.

6. Report of Activities:

The Secretary presented the activities conducted by APHCA and the RAP livestock group solely or in support of HQ divisions: AGAP, AGAL, AGAH and projects during 2004-05, irrespective of sources of funding and following the APHCA agreed priority areas.

- Control of transboundary animal diseases
 - Avian influenza – addressed in the workshop
 - GF-TAD SAARC Establishment of a Regional Support Unit
 - GS-HPAI and ASEAN initiative
 - GF-TAD meeting of the first steering committee
 - Classical Swine Fever
- Small-scale dairy and meat production and processing
 - New projects and TCPs approved
 - CFC proposal submitted, comments received – further processing awaited
- Feed and food safety
- Industrialization, poverty reduction and environment
 - GEF-PDF-B Phase of Animal Waste Management completed full project (to start in 2006)
- Training on WTO's SPS, BSE and VPH

In the subsequent discussion, the delegates requested further clarification with regard to the composition of the GF-TAD Steering Committee for Asia and the Pacific and the selection of the three CVOs in the Committee. The representative from OIE explained that these CVOs are the three OIE Regional Commission Members. The delegates, considering the role of APHCA and the fact that it represents 15 Asia-Pacific member countries, proposed that the APHCA Chairperson should be included in this Steering Committee. The APHCA Secretariat is requested to approach the FAO-HQ to request a review of the selection of the CVO representatives on this Steering Committee and to ensure that the Chair of APHCA is included.

The delegates from Pakistan and India repeated their request to look into cattle waste and manure management in the urban dairy production of the big cities in their countries.

Other specific issues requiring feed-back by the delegates were addressed in detail as the follows:

- a. FAO-APHCA/OIE/JICA Regional Workshop on Classical Swine Fever (CSF) Control in Asia, in collaboration with the Bureau of Animal Industries, Philippines;
- b. FAO-APHCA/OIE Feed and Food Safety;
- c. FAO-APHCA/OIE joint activities on WTO's Sanitary and Phytosanitary (SPS) Agreement, Bovine Spongiform Encephalopathy (BSE) and Veterinary Public Health; and
- d. Strategic Priorities for Action Report in the context of the First Report on the State of the World's AnGR.

The 29th APHCA Session (continues):

Monday, 26 September – afternoon

Chairperson – Dr Syamsul Bahri (Indonesia)

- 7 The following activities for the year 2006 are proposed by the Secretariat for the approval by the delegates:
- a. 2nd Workshop on Feed and Food Safety – US\$30 000
 - b. Workshop on Brucella in sheep and goats with specific attention to *B. melitensis* as a zoonotic threat and the use of vaccination – US\$20 000
 - c. Author's contract for an APHCA publication on breeding plans, with specific attention to small-scale dairy improvement – US\$12 000
 - d. Support to finalize an APHCA publication on meat and meat products by the CFC Project – US\$10 000
 - e. Consultant for waste/manure management and manure composting for urban and suburban dairy production in big cities in South Asia – US\$15 000
 - f. A proposal for small-scale dairy in Asia and the Pacific to answer the following questions:
 - i. what is the economic/resource impact of changing the mix of dairy types in a province ?
 - ii. what is the impact of small change in inputs (e.g. dairy type, feed, land use) ?
 - iii. should the community/province increase the number of low input or intensive dairy farms ?
 - iv. how can a particular dairy co-operative reduce costs while maintaining good production ?
 - v. changes in the demand and options to meet these demands.

Through the development of a flexible sector model of smallholder dairying that incorporates options for:

- evaluating and assessing options for meeting changing market demand for milk and milk products
- several scales of production
- several scales of resource allocation
- providing capacity to illustrate differences in optimal solutions based on:
 - economic returns
 - resource allocation
 - level of production.

The proposed budget is US\$80 000 for two years (of which up to US\$50 000 will be contributed by APHCA and at least US\$30 000 from other sources).

In a subsequent discussion, delegates requested clarification with regard to the choice of countries, the linkage with other activities such as the PPLPF and ILRI as well as the International Farm Comparison Network. Delegates agreed in principle, subject to further clarification, which will be circulated to the delegates.

The new (amended) budget proposal was circulated to the delegates for review and for final decision at the wrap-up meeting on 29 September 2005.

Further requests by the Delegates:

- Bhutan requested support in small-scale slaughterhouse and meat processing facilities. This gave rise to a general discussion with regard to meat inspection, meat hygiene, meat processing, halal slaughter, slaughter-slabs and slaughterhouse hygiene. The great deficiency in these areas was highlighted and the need for assistance was stressed. The CFC Project provides some support but much more is required. Malaysia, through its own TCP programme, provided assistances to some countries through several meat processing and inspection training courses.
- Papua New Guinea inquired about the possibility of support to smallholder honey producers and in residue monitoring to meet international export requirements. As honey bees are not covered by APHCA and residue monitoring is part of the FFS activities, the Secretariat will follow up this request and investigate the possibility of a TCP to develop a residue monitoring plan.
- The meeting requested the Secretariat to convey APHCA's appreciation to Dr J.Q. Molina and Dr Tri Satya Putri Naipospos for their support and contributions to APHCA during the past years and in particular to Dr Naipospos for her support in organizing the 29th APHCA Session and the AI Workshop in Bali.
- The Secretariat was requested to pursue with China in joining APHCA and to invite new members such as Afghanistan, Cambodia and Viet Nam.

¹Conclusion and adoption of Minutes of the 65th Ex-com Meeting/the 29th APHCA Session

Thursday 29 September 2005 - afternoon

Chairperson – Dr Chaweewan Leowijuk (Thailand)²

The Minutes of the 65th Ex-com and the 29th APHCA Session were adopted with some amendments and modifications.

The proposed budget for 2006 with the necessary amendments for the Regional Dairy Initiative was approved.

¹ The FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop (27-29 September 2006).

² As the Chairperson was urgently called back by his Minister, the Vice-chairperson took the responsibility in chairing and closing the Session on 29 September 2005.

The delegate from Lao PDR invited the 30th Session to be held in Luang Prabang, during the second week of October 2006.

The delegate from Myanmar proposed to host the 31st APHCA Session in Yangon or Mandalay in 2007.

Other business:

The delegate from Australia informed the meeting about the forthcoming International Symposium on Veterinary Epidemiology and Economics, which will be held in Cairns, Australia, between 6 and 11 August 2006. The main themes of this Symposium comprise:

1. Aquatic animal epidemiology;
2. Investigation of disease distribution and determinants (companion/food animals and wildlife);
3. Animal health delivery and response;
4. Tools and training for epidemiologists;
5. Evaluation of animal disease;
6. Global response (to AI, BSE and FMD); and
7. Epidemiology of emerging and zoonotic diseases

The Secretary informed the meeting that sponsorship for officials from APHCA countries to the above Symposium, in the context of the APHCA partnership programme (still limited to the least costly airfare only), can be envisaged subject to the agreement of the APHCA Executive Committee and acceptance of the paper by the Symposium organizer.

The representative from ILRI informed the meeting about the International Conference on Livestock Services Enhancing Rural Development which will be organized in Beijing, China, between 16 and 22 April 2006.

The delegate from Lao PDR requested that the APHCA website should be more regularly updated with details on relevant APHCA events and activities.

The representative from OIE informed the meeting about the OIE's forthcoming events:

1. The 24th Conference of the OIE Regional Commission for Asia, the Far East and Oceania, 15-18 November, Seoul (Republic of Korea); and
2. OIE Regional Meeting on Avian Influenza Control (legislation and preparedness including carcass disposal workshop) and OIE workshop on development of animal health legislation (highly pathogenic avian influenza prevention and control) to be organized in Asia in January 2006; and
3. Session on Vaccines and Vaccination of Transboundary Animal Diseases to be organized in Asia in February 2006.

The delegate from Bangladesh urged the APHCA Secretariat to support and follow-up the country's request for FAO assistance in activities relevant to HPAI.

The delegate from Papua New Guinea requested training in TAD-Info. He was informed that the country is part of a recently approved regional project on disease information systems with a component on training.

The delegates reminded the secretariat to send the letters of appreciation to Dr Molina and Dr Naipospos.

The Chairperson and the Secretary thanked the host country and all those involved in organizing the APHCA Session and the AI Workshop for the excellent arrangements and the great hospitality.

The next session will take place in Luang Prabang in 2006.

The Session was closed at 17:30 hours.

Summary of the actions requested:

- a. Circulate for final endorsement the proposal of small-scale dairying.
- b. To explore with / propose to FAO-HQ that the APHCA Chairperson become a member in the Regional GF-TAD Steering Committee.
- c. Workshop on Brucella in sheep and goats with specific attention to *B. melitensis* as a zoonotic threat and the use of vaccination.
- d. Consultant for animal waste management and composting.
- e. Small-scale slaughterhouse and meat processing facilities.
- f. Possibility of TCP or other support to residue monitoring.
- g. Support to countries once OIE pathway for BSE-free declaration is decided.

Timetable and Agenda

Sunday, 25 September 2005

Arrival of guests

The 65th executive committee meeting (*for APHCA executive members – India, Indonesia, Nepal, Pakistan, and Thailand*) – between 17:00 and 18:00 hours

Free evening

Monday, 26 September 2005

Morning

0900 – 0930	Registration
0930 – 1030	Opening ceremony
1030 – 1100	Tea/coffee break
1100 – 1245	29 th APHCA business session
1245 – 1400	Lunch

Afternoon

1400 – 1600	29 th APHCA business session – continued
1600 – 1630	Tea/coffee break
1630 – 1730	29 th APHCA business session - continued
2000 – 2200	Welcoming Bar B-Q dinner (hosted by APHCA)

Tuesday, 27 September 2005

Morning

Chairperson: Dr Syamsul Bahri

0830 – 1000	<ul style="list-style-type: none"> ▪ Global strategy (Juan Lubroth) ▪ Update on the disease situation in Asia (Carolyn Benigno) ▪ Update: sub-regional network on disease surveillance and diagnosis in Asia (Wantanee Kalpravidh)
1000 – 1030	Tea/coffee break

- 1030 – 1245
- OIE’s Terrestrial Animal Health Code – new chapter on AI: compartmentalization, zoning and trade (Christianne Brusckke)
 - Strategic vaccination against AI in Asia – from experiences in Hong Kong (Howard KH Wong)
- 1245 – 1400 Lunch
- Afternoon Chairperson: Dr Chaweewan Leowijak**
- 1400 – 1425 Vaccination strategy for controlling HPAI in Indonesia (Syamsul Bahri and Nana Supriatna)
- 1425 – 1450 Results of duck vaccine trial in Indonesia (Agus Wiyono)
- 1450 – 1520 Vaccination program in Vietnam (Van Dang Ky)
- 1520 – 1610 Group Discussions: Economic and policy considerations for AI vaccination strategy in Indonesia, Pakistan, and Viet Nam
- Group 1: Indonesia
 - Group 2: Vaccination strategy
 - Group 3: Non-vaccination strategy
- 1610 – 1630 Tea/coffee to be served during group discussions
- 1630 – 1730 Group summary presentations and plenary discussion (Rapporteur: Anni McLeod)
- 2000 – 2200 Indonesian dinner (hosted by OIE)

Wednesday, 28 September 2005

- Morning Chairperson: Dr Tenzin Dhendup**
- 0830 – 0900 Compartmentalization model in Thailand and its estimated economic impact (Boonpeng Santiwattanatam)
- 0900 – 0930 Estimating economic impact of zoning in Malaysia (Abdul Kadir bin Osman)
- 0930 – 1000 Results of surveillance of live bird market and mix farming system in Bali (Anak Agung Gde Putra and Ketut Santhya)
- 1000 – 1030 Tea/coffee break
- 1030 – 1245
- Benefits and costs of reducing risks in “clean” wet markets (Carolyn Benigno)
 - Plenary Discussion: Economic impact and assessment of alternate control and risk reduction options (Rapporteur: Anni McLeod)

1245 – 1400	Lunch
Afternoon	Chairperson: Dr Salehuddin Mahmud
1400 – 1600	<ul style="list-style-type: none"> ▪ Approaches to costing and budgeting for compensation (David Hall) ▪ Plenary Discussion: Economic assessment of scenarios for AI control measures for infected and non-infected countries discussion (Rapporteur: David Hall)
1600 – 1630	Tea/coffee break
1630 – 1730	Plenary Discussion: Conclusions and recommendations (Rapporteur: Anni McLeod) <ul style="list-style-type: none"> • Economic and policy considerations • Approaches to economic assessment
2000 – 2200	Italian dinner (hosted by FAO-AGAL)

Thursday, 29 September 2005

0730 – 1245	Field trip to duck/native chicken/pig farms in Mengwi (Western Bali)
1245 – 1400	Lunch and return to the session venue
1400 – 1600	APHCA session (adoption of the minutes/session report)
1600 – 1630	Tea/coffee break
2000 – 2200	Farewell Maxican dinner (hosted by Government of Indonesia)

Friday, 30 September 2005

Departure of guests

Agenda

*(*The 65th executive committee meeting – for India, Indonesia, Nepal, Pakistan, and Thailand – to be organized between 17:00 and 18:00 hours on Sunday, 25 September 2005.)*

1. Opening of the session
2. Adoption of the agenda, induction of chairperson and election of executive committee members
3. Minutes of the 64th executive committee meeting and the 28th session of APHCA
4. Statement of accounts of APHCA trust fund for 2004 and other financial matters
5. Report on APHCA activities during 2004-2005
6. Future workplan/activities: - HPAI, GF-TADs, SSD project in Asia, GEF-AWI, state of the world on AnGR, etc.
7. APHCA programme of work and budget for 2005 and 2006
8. Regional Avian Influenza Economic Assessment Workshop
9. Provisional agenda for the 66th executive committee meeting and the 30th session of APHCA
10. Venue and dates for the 66th executive committee meeting and the 30th session of APHCA
11. Other business
12. Adoption of the minutes/report of the session

Dates and venues (Host Countries) of APHCA Sessions

First

Bangkok, Thailand, 7-11 Jun 1976
 Chairperson:
 Dr J.C. Madamba (Philippines)
 Vice-Chairperson:
 Dr M.N. Menon (India)
 Members of the Executive Committee:
 Delegates from Malaysia,
 Sri Lanka and Thailand

Second

Kuala Lumpur, Malaysia, 22-26 Aug
 1977
 Chairperson:
 Dr S. Thuraisingham (Malaysia)
 Vice-Chairperson:
 Dr A. Bandaranayake (Sri Lanka)
 Members of the Executive Committee:
 Delegates from Australia,
 Nepal and Thailand

Third

Bangkok, Thailand, 16-21 Jul 1978
 Chairperson:
 Dr S. Thuraisingham (Malaysia)
 Vice-Chairperson:
 Dr A. Bandaranayake (Sri Lanka)
 Members of the Executive Committee:
 Delegates from Australia,
 Philippines and Thailand

Fourth

Manila, Philippines, 3-7 Sep 1979
 Chairperson:
 Dr S.H. Escudero III (Philippines)
 Vice-Chairperson:
 Dr Y. Prased (India)
 Members of the Executive Committee:
 Delegates from Bangladesh,
 Malaysia and Singapore

Fifth

Bangkok, Thailand, 6-11 Oct 1980
 Chairperson:
 Dr Tim Bhannasiri (Thailand)
 Vice-Chairperson:
 Dato' Dr Osman bin Din (Malaysia)
 Members of the Executive Committee:
 Delegates from India,
 Indonesia and Sri Lanka

Sixth

Colombo, Sri Lanka, 10-15 Aug 1981
 Chairperson:
 Dr S.B. Dhanapala (Sri Lanka)
 Vice-Chairperson:
 Dr J.H. Hutasoit (Indonesia)
 Members of the Executive Committee:
 Delegates from Australia,
 India and Malaysia

Seventh

Surabaya, Indonesia, 13-18 Dec 1982
 Chairperson:
 Prof. Dr J.H. Hutasoit (Indonesia)
 Vice-Chairperson:
 Dato' Dr Osman bin Din (Malaysia)
 Members of the Executive Committee:
 Delegates from India,
 Philippines and Thailand

Eighth

Bangkok, Thailand, 3-8 Oct 1983
 Chairperson:
 Dato' Dr Osman bin Din (Malaysia)
 Vice-Chairperson:
 Dr O.N. Singh (India)
 Members of the Executive Committee:
 Delegates from Australia, Bangladesh
 and Papua New Guinea

Ninth

New Delhi, In, 8-13 Oct 1984
Chairperson:
Dr O.N. Singh (India)
Vice-Chairperson:
Dr I.G.R. Davis (Australia)
Members of the Executive Committee:
Delegates from Nepal,
Singapore and Sri Lanka

Tenth

Melbourne, Australia, 7-13 Oct 1985
Chairperson:
Dr R.W. Gee (Australia)
Vice-Chairperson:
Dr Giam Choo Hoo (Singapore)
Members of the Executive Committee:
Delegates from Pakistan,
Sri Lanka and Thailand

Eleventh

Bangkok, Thailand, 7-13 Oct 1986
Chairperson:
Dr Giam Choo Hoo (Singapore)
Vice-Chairperson:
Dr J.A. deS. Siriwardene (Sri Lanka)
Members of the Executive Committee:
Delegates from Iran,
Malaysia and Philippines

Twelfth

Islamabad, Pakistan, 5-10 Oct 1987
Chairperson:
Dr M. Anwar Khan (Pakistan)
Vice-Chairperson:
Dr A. Mustaffa Babjee (Malaysia)
Members of the Executive Committee:
Delegates from India,
Philippines and Thailand

Thirteenth

Bangkok, Thailand, 25-31 Oct 1988
Chairperson:
Dr Vitoon Khumnirdetch (Thailand)
Vice-Chairperson:
Dr Soehadji (Indonesia)
Members of the Executive Committee:
Delegates from India,
Malaysia and Sri Lanka

Fourteenth

Jakarta, Indonesia, 30 Oct. - Nov 1989
Chairperson:
Dr Soehadji (Indonesia)
Vice-Chairperson:
Dr A.K. Chatterjee (India)
Members of the Executive Committee:
Delegates from Australia,
Philippines and Sri Lanka

Fifteenth

Bangkok, Thailand 17-22 Oct 1990
Chairperson:
Dr A M B H Babje (Malaysia)
Vice-Chairperson:
Dr R N Alcasid (Philippines)
Members of the Executive Committee:
Delegates from Australia,
Iran and Pakistan

Sixteenth

Kuala Lumpur, Malaysia, 7-12 Oct 1991
Chairperson:
Dr R. N. Alcasid (Philippines)
Vice-Chairperson:
Dr W. A. Geering (Australia)
Members of the Executive Committee:
Delegates from Iran,
Myanmar and Thailand

Seventeenth

Manila, Philippines, 17-21 Nov 1992

Chairperson:

Dr W. A. Geering (Australia)

Vice-Chairperson:

Dr A.A. Motallebi (Iran)

Members of the Executive Committee:

Delegates from Indonesia,
Malaysia and Thailand**Eighteenth**

Darwin, Australia, 17-20 Aug 1993

Chairperson:

Dr A.A. Motallebi (Iran)

Vice-Chairperson:

Dr Wipit Chairisongkram (Thailand)

Members of the Executive Committee:

Delegates from Nepal,
Philippines and Singapore**Nineteenth**

Tehran, Iran, 20-24 Nov 1994

Chairperson:

Dr Wipit Chairisongkram (Thailand)

Vice-Chairperson:

Dr S K Shrestha (Nepal)

Members of the Executive Committee:

Delegates from Australia,
India and Indonesia**Twentieth**

Bangkok, Thailand, 30 Aug-2 Sep 1995

Chairperson:

Dr S. K. Shrestha (Nepal)

Vice-Chairperson:

Mr K. Rajan (India)

Members of the Executive Committee:

Delegates from Australia,
Malaysia and Sri Lanka**Twenty-first**

Kathmandu, Nepal, 3-6 Mar 1997

Chairperson:

Mr G. R. Patwardhan (India)

Vice-Chairperson:

Dr A. S. Abeyratne (Sri Lanka)

Members of the Executive Committee:

Delegates from Australia,
Indonesia and the Philippines**Twenty-second**

Bangkok, Thailand, 22-24 Jun 1998

Chairperson:

Dr S. S. E. Ranawans (Sri Lanka)

Vice-Chairperson:

Mr G. R. Patwardhan (India)

Members of the Executive Committee:

Delegates from Laos,
Myanmar and Thailand**Twenty-third**

Kochi, India, 4-6 Sep 1999

Chairperson:

Dr V. K. Taneja (India)

Vice-Chairperson:

Dr T. A. Abilay (Philippines)

Members of the Executive Committee:

Delegates from Nepal,
Papua New Guinea and Thailand**Twenty-fourth**

Dhaka, Bangladesh, 6-9 Nov 2000

Chairperson : Dr V. K. Taneja (India)

Vice-Chairperson :

Dr T. A. Abilay (Philippines)

Member of the Executive Committee:

Delegates from Bangladesh,
Papua New Guinea and Nepal

Twenty-fifth

Manila, Philippines, 24-26 Sep 2001

Chairperson:

Dr Jose Q. Molina (Philippines)

Vice-Chairperson:

Dr Mohd Nordin Mohd Nor (Malaysia)

Member of the Executive Committee:

Delegates from Australia,
Bhutan, and Thailand

Twenty-sixth

Subang Jaya, Malaysia, 24-26 Aug 2002

Chairperson:

Dr Jose Q. Molina (Philippines)

Vice-Chairperson: Dato' Dr Mohd.

Nordin Haji Mohd. Nor, (Malaysia)

Members of the Executive Committee:

Delegates from Bhutan,
Pakistan and Thailand

Ex-Officio Member: Delegate from India

Twenty-seventh

Lahore, Pakistan, 25-29 Aug 2003

Chairperson:

Dr Rafaqat Hussain Raja, (Pakistan)

Vice-Chairperson:

delegate from Indonesia

Members of the Executive Committee:

Delegates from India,
Nepal and Thailand

Ex-Officio Member:

Delegate from Philippines

Twenty-eight

Chiang-Mai, Thailand, 27 Sep-1 Oct
2004

Chairperson:

Dr Rafaqat Hussain Raja, (Pakistan)

Vice-Chairperson:

delegate from Indonesia

Members of the Executive Committee:

Delegates from India,
Nepal and Thailand

Twenty-ninth

Bali, Indonesia, 26-29 Sep 2005

Chairperson:

Dr Syamsul Bahri (Indonesia)

Vice-Chairperson:

delegate from Thailand

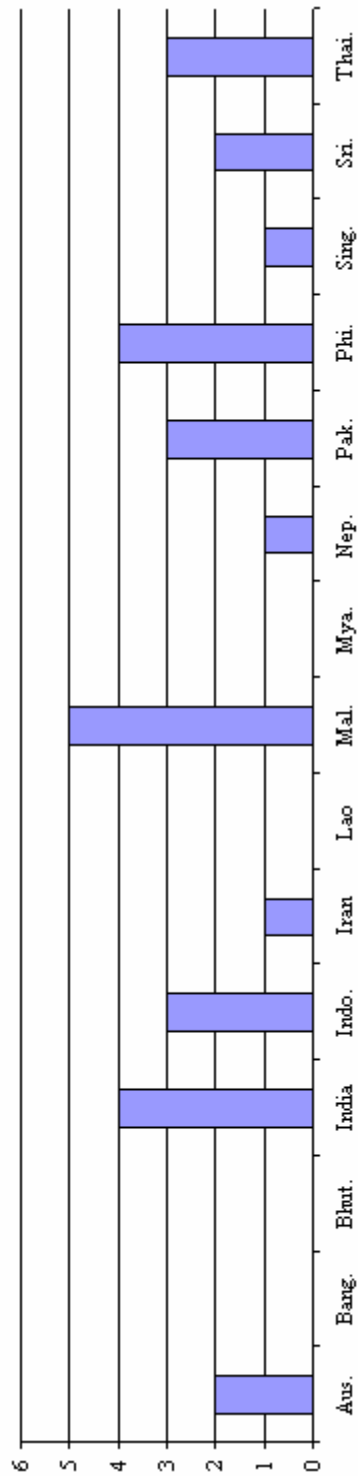
Members of the Executive Committee:

Delegates from India,
Myanmar and Sri Lanka

Ex-Officio Member:

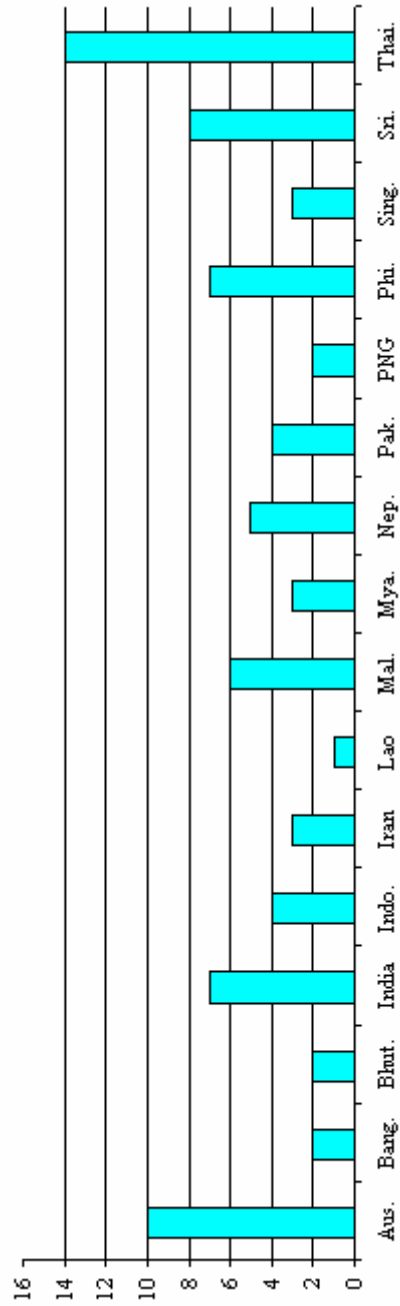
Delegate from Pakistan

**List of APHCA chairpersons by country
(as of year 2005)**



Australia	2	Myanmar	0
Bangladesh	0	Nepal	1
Bhutan	0	Pakistan	3
India	4	Philippines	4
Indonesia	3	Singapore	1
Iran	1	Sri Lanka	2
Lao PDR	0	Thailand	3
Malaysia	5		

**List of APHCA executive committee members by country
(as of year 2005)**



Australia	10	Myanmar	3
Bangladesh	2	Nepal	5
Bhutan	2	Pakistan	4
India	7	Papua New Guinea	2
Indonesia	4	Philippines	7
Iran	3	Singapore	3
Lao PDR	1	Sri Lanka	8
Malaysia	6	Thailand	14

Minutes of the 64th executive committee meeting and the 28th session of APHCA

The 64th executive committee meeting: Sunday, 26 September, 16.00-17:30 hours

- The meeting was chaired by Dr R.H. Raja, delegate from Pakistan. Present were the delegates from India, Indonesia, Nepal, Philippines and Thailand.
- As a follow-up to the proposal made at the 27th session to have, only every second year, a session officially hosted by an APHCA member country and one meeting in Thailand in the years in-between. The theme proposed by the 27th session for this 28th session was “small-scale dairying (SSD)”. Due to the emergency of HPAI, it was decided to include a one-and-a-half day session to update member countries on the situation of HPAI and discuss future activities to prevent and control the disease.
- The proposed agenda for the 28th session of APHCA was approved.
- The Secretary reported that, due to the outbreak of highly pathogenic avian influenza (HPAI) at the beginning of 2004 – which required inputs from all officers in RAP Livestock Section – the envisaged programmes could not be delivered. The resurgence of HPAI, with additional human fatalities in June indicates that the disease has become endemic in some countries and continues to require great attention. So far, 12 FAO Technical Cooperation Programme (TCP) projects for the control and rehabilitation of HPAI have been approved by the FAO Director-General with a total value of about US\$5.6 million. The implementation of these TCPs require substantial attention and efforts by the RAP officers (who also serve the APHCA Secretariat).
- The meeting briefly reviewed the financial statement and cleared it for submission to the session. The cash balance as of 1st January 2004 was US\$ 291 031. The contribution by the members in 2004 is US\$ 55 235.34 against US\$ 84 104 due. US\$ 6 502 were received, for which the contributor could not yet be identified. Necessary steps to identify the donor country have been initiated. The amount of outstanding contributions has decreased and only two countries have major arrears.
- A brief discussion reviewed the consequences of the GF-TADs agreement between FAO and the Office International des Epizooties (OIE). The committee concluded that there should be no problem as OIE’s mandate is in the area of regulation and standards while FAO’s strength is more downstream in the development and implementation of programmes.
- Subsequent to the discussion at the 27th session that, for continuity reasons, the Chairperson and the members for the ex-com should serve for two periods (two years), the members of the ex-com and the Chairperson agreed to stand for re-election.
- The ex-com confirmed that the APHCA priorities identified in 2003 continue to be valid.

APHCA business session:

Monday, 27 September - morning

1. At the opening, Dr R.H. Raja, Chairperson of APHCA, welcomed the participants. Dr J. Lubroth, Senior Animal Health Officer/EMPRES transmitted the greetings from FAO headquarters, Rome. The session was attended by delegates from APHCA countries (with the exception of Papua New Guinea), observers from OIE, Japan International Co-operation Agency (JICA), Southeast Asia Foot and Mouth Disease Campaign (SEA-FMD), Faculty of Veterinary Medicine/Chiang Mai University (FVM-CMU) and International Livestock Research Institute (ILRI).
2. The Agenda was adopted.
3. In following up to the proposal at the 27th session that the Chairperson and the members of the ex-com should serve for two periods (two years) with necessary re-election, the delegate from the Philippines proposed to re-elect the Chairperson and the ex-com members. This motion was seconded by the delegate from India.

The Executive Committee continues as the follows:

Chairperson: Pakistan

Vice-chairperson: Indonesia

Members: India, Nepal and Thailand

4. The minutes of the 62nd, the 63rd executive committee meetings and the 27th APHCA session were reviewed and approved by the delegates.
5. Statement of accounts: H. Wagner presented the status of the APHCA accounts for 2003 and the status of expenditures for 2004. The approved budget for 2003 was US\$ 100 598, while the expenditures amounted to US\$ 30 494. The financial situation of APHCA has improved as members pay their annual contributions and arrears. At present, only two countries have arrears of more than two years' contributions. The cash balance without interest as of 1 January 2004 was US\$ 291 031. The statement of accounts for the year 2003 was approved.
6. Report of activities: H. Wagner presented the activities conducted by the APHCA Secretariat and the RAP Livestock Section during 2003-04, irrespective of source of funding. Specific issues requiring more feedback by the delegates were addressed in details as the follows:
 - a. Global framework on the control of transboundary animal diseases (GF-TADs):

S. Morzaria presented the current status of two major activities related to GF-TADs in Asia. The first presentation focused on the sub-regional project on the control of TADs in the Greater Mekong Sub-region (GMS) countries involving Cambodia, Laos PDR, People's Republic of China, Thailand and Viet Nam. The sub-regional project was developed in consultation with the participating countries and has been submitted to the Asian Development Bank (ADB) for funding. The ADB has reviewed the project favourably and is now awaiting final clearance from its President. If funded, the project will be carried out in two phases, each of 2 years. The first phase funding of US\$ 2 million will comprise a grant of US\$ 1 million from ADB, US\$ 880 000 from the various TCPs committed to avian influenza support in the sub-region and

US\$ 120 000 contribution in kind from the participating countries. The project is designed to build technical capacity in various aspects of transboundary animal disease control in the GMS countries.

The second presentation was on the plans for South Asian countries for the control of transboundary diseases. Following three sub-regional consultations of the South Asian Association for Regional Co-operation (SAARC) member countries, an advanced draft proposal has been prepared to control FMD and Peste des Petits (PPR), the two priority diseases in the sub-region. The proposal identifies strengthening of institutions related to transboundary animal disease control in South Asia under the umbrella of SAARC to enhance regional co-operation. The key areas identified are establishment of a sub-regional support unit, sub-regional reference diagnostic laboratories and an epidemiology centre supported by a network of national disease information systems to improve transboundary animal disease control in the sub-region. The proposal will be submitted to the SAARC technical expert meeting scheduled for November 2004; and then it will be used as a basis to seek funding from various donors. The total funding required is over US\$ 20 000 000.

b. Food and feed safety:

C. Benigno reported on the Regional Workshop on Food and Feed Safety held in collaboration with OIE, Japan Livestock Technology Association (JLTA) and Department of Livestock Development (DLD) of Thailand. The workshop which was held between 19 and 22 July 2004 in Bangkok, Thailand was attended by 38 participants from 15 countries with resource persons from OIE, Germany and Thailand. The workshop reviewed the current situation of food and feed safety in member countries and agreed to set a direction for food and feed safety programmes in the region, particularly in the area of capacity building.

c. WTO's sanitary and phytosanitary (SPS) agreement and veterinary public health:

V. Songkitti reported on the above activities which included: i) the Fourth FAO-APHCA/OIE Regional Workshop on WTO's SPS Agreement organized in collaboration with JLTA, Free University of Berlin (FUB) and DLD at the Faculty of Veterinary Medicine, Chiang Mai University, Thailand (FVM-CMU), in July 2004; ii) Hands-on Training on BSE Diagnosis, BSE Risk Analysis Workshop and Consultation Meeting on BSE Public Awareness which were organized in Thailand in October 2003 in collaboration with JLTA, DLD and FUB; and iii) collaboration with the FVM-CMU's Regional Center for Veterinary Public Health and Food Safety. This center and the FUB are co-organizing Master of Science on Veterinary Public Health (M.Sc.-VPH) courses (with full scholarships) for graduated students in the Asia-Pacific region. APHCA countries have been encouraged to endorse their applicants

for the courses and high priorities will be given to nominations by the APHCA delegates.

The meeting agreed to continue APHCA's activities on the WTO's SPS agreement and the hands-on training on BSE diagnosis. Requests were made that more scholarships for the M.Sc.-VPH courses be provided to the APHCA countries.

d. Livestock waste management:

H. Wagner presented progress in the preparation of the Global Environmental Facility – Project Development Fund-B (GEF – PDF-B) project which includes China, Thailand and Viet Nam. During this week (last week of September 2004), the World Bank (WB) starts its pre-appraisal mission in Thailand and will subsequently visit Viet Nam and China where the final workshop will be held. The project will be submitted to WB in the beginning in December and later to the GEF Secretariat.

The delegate from India stressed the importance of the issue of wastes from large ruminants and requested that similar action be initiated in South Asia.

e. First report on the State of the World's AnGR:

H. Wagner briefed on the outcome of the Intergovernmental Technical Working Group on Animal Genetic Resources for Food and Agriculture (ITWG-AnGR) which took place earlier this year and on the progress in the country report preparation for the State of the World (SoW) report. The deadline for the country report submission is December 2004. Based on these country reports, the report on priority actions should be prepared by FAO. The draft SoW-AnGR should be considered by the FAO Commission on Genetic Resources for Food and Agriculture (CGRFA) in 2006 and adopted by a technical conference in 2007. Countries which have not yet done so are encouraged to finalize and submit their final reports. Countries should continue to support their national focal point and consider the establishment and support for a Regional Focal Point for Asia which has already successfully functioned under the project with support from the Japanese Government.

**APHCA special session on HPAI:
Monday, 27 September - afternoon**

Updates on AI situation:

1. C. Benigno gave an update on the situation of HPAI in APHCA member countries. Each country was requested to contribute additional specific findings.
2. FAO TCPs to control HPAI in Asia – an overview:
3. The Director-General of FAO has approved US\$ 5.6 million for immediate assistance to control the outbreak of HPAI. To date, five regional and six national

TCPs have been approved and are being implemented. A further TCP for Malaysia is under consideration.

4. Guiding principles and recommendations on the prevention, control and eradication of HPAI were presented by J. Lubroth.
5. Progress on TCP/RAS/3006 – AI diagnosis and surveillance network in Southeast Asia was presented by W. Kalpravidh.
6. Progress on TCP/RAS/3010 – post avian influenza rehabilitation in Cambodia, Indonesia, Lao PDR, Viet Nam and Thailand was presented by F. Dolberg.

**APHCA special session on HPAI (continued):
Tuesday, 28 September**

1. HPAI in ducks was presented by T. Songserm.
2. Traceability in broiler meat processing industry was presented by Y. Muhpayak.
3. The meeting split into two working groups for South Asia and Southeast Asia to discuss specific sub-regional issues.
4. Summary of findings and conclusions:

The session recognized the threat of HPAI to poultry production in the Asian region, for food security and the livelihood of millions of farmers and particularly small-scale farmers and the economy of a number of countries. As long as the virus is circulating, threat to human health remains.

The session recognized and appreciated the reaction by the Director-General of FAO to the crisis in providing US\$ 5.6 million emergency funds through TCP projects. So far, five regional and six national TCPs have been approved and one more national project (for Malaysia) is under consideration. Delegates noted the additional fundings which have been made available, directly or through trust-fund projects, to countries by various donors.

Recognizing the urgent need of some non-infected countries to upgrade their diagnostic and surveillance capacities to be able to detect and diagnose HPAI outbreaks, member countries requested FAO to consider using some of the not yet allocated funds for TCP projects to support these countries.

For South Asian countries, with specific emphasis to the GF-TADs proposal for SAARC and the TCP/RAS/3008, the session concluded:

GF-TADs – SAARC

A MoU, as the basis of collaboration between FAO and SAARC, has been agreed in principle and should be signed without further delay.

After having been briefed, the member countries fully supported this initiative and confirmed that they will bring the project proposal to the attention of their respective governments through relevant channels following the established SAARC procedures for submission of project proposals.

The project document has been sent to all participating countries. Comments are expected from countries by mid-October at the latest to be able to prepare the final document for consideration by the FAO–SAARC Technical Meeting planned for mid-November 2004.

TCPs for laboratory and diagnostic and surveillance network

General issues for both TCPs:

These TCPs have been highly appreciated and countries ensured their full support.

The TCPs, with a maximum funding of US\$ 400 000 for each project and a maximum duration of two years in response to an emergency, can only be considered as funds for a start-up. Countries accepted that immediate action is required to undertake necessary steps to gradually transfer the responsibility of the coordination of the networks (initiated by the TCPs) to the respective regional organizations SAARC and ASEAN, using the SEA-FMD programme as a possible model.

Countries recognized that, in addition to the regional networks for diagnostic and epidemiology, efforts will have to be made to establish national networks involving all important stakeholders including the respective public health institutions and private laboratories.

Countries fully recognized that HPAI is a compulsory notifiable disease. Notification is an obligation for all types of laboratories. Some governments are required to make changes to their legislations.

Countries identified the need for more clearly defined roles and functions of the regional centers for laboratory diagnostic and epidemiology which will be established under the TCPs.

There are many donor countries and organizations providing assistance to HPAI control in the broadest sense. The TCPs with support of countries need to link complementing/competing projects and donors to harmonize approaches, so as to avoid duplication and to increase efficiency.

TCP/RAS/3008

- a. The inception meeting for this regional TCP to be held preferably back-to-back with the FAO–SAARC Technical Meeting in mid-November (subject to the timely nomination of the regional coordinator by the government of India – to be followed up by the delegate from India).
- b. The session noted that India will take over the lead in the epidemiology area and the over-all coordination of the regional project while Pakistan will take the lead in the laboratory diagnostic area. Pakistan will make substantial improvements to its laboratory facilities. Both countries offered their support to their neighboring countries.

- c. All countries have, since the beginning of the AI outbreak, stepped up their vigilance and surveillance activities. As the countries – with the exception of Pakistan – are not affected by HPAI, the approach of surveillance will be somewhat different to the affected countries. Surveillance activities will have to be farming system specific and will focus on avoiding incursion or immediate detection of possible outbreaks. It will focus on migratory and wild birds as a major risk factor, areas of high poultry and human density, guaranteeing border control of live animal movement.
- d. Member countries recognized the limited number of trained epidemiologists in the sub-region and consider human resource development as a high priority.
- e. The absence of disease information systems was recognized.
- f. Countries identified as a priority the need for the development and testing of emergency preparedness plans (particularly important for non-affected countries).
- g. Countries also suggested to undertake an economic evaluation of surveillance plans. This information could contribute to improved policy/decision-making.
- h. Participants noted that not all countries have the laboratory capacity (equipment, proficiency, material supplies, etc.) for HPAI testing; and thus, further support is required.
- i. While the TCP will promote establishment of regional networks for laboratory diagnostic and epidemiology, countries should initiate and promote national networks which should include the private sector to feed in to the regional networks.

TCP/RAS/3006

This TCP, having its Inception Workshop in late July 2004 and the Regional Coordinator in place, is more advanced in its implementation. The TCP covers ten countries in the Southeast Asia sub-region with three different statuses: i) free countries, ii) countries which are affected by the virus and which are moving to eradication, and iii) countries where HPAI has become endemic.

- a. Countries are requested to ensure timely nominations of the respective national coordinators.
- b. The following needs have been identified:
 - a. Reagents and consumables to perform the necessary testing
 - b. The need for QA, SOPs and proficiency testing
 - c. Need for necessary equipment
 - d. Training with focus on specific techniques; and once trained, the continuity of these people in their positions
 - e. Safety for people working with HPAI: training equipment, PPE, SOPs
- c. A training workshop will be held in Ipoh, Malaysia on basic diagnostic techniques for HPAI. This training course will be jointly sponsored by JICA, Government of Malaysia and FAO-APHCA.

Other issues related to HPAI

Human to human transmission of HPAI:

The Secretary informed the meeting that the Ministry of Public Health of Thailand, Thai Center for Disease Control (CDC) and WHO will announce today the first human to human transmission of HPAI. The transmission occurred through prolonged and close contact. This seems to be a limited additional threat as, according to the information received, the virus has not undergone mutation or reassortment. The event clearly indicates that the HPAI crisis continues to demand full attention of countries.

Role of ducks:

It emerges, supported by the paper presented by Associate Prof Songserm, that ducks play an important role in the infection chain of HPAI and seem to be a reservoir for the virus. Ducks seem to be more tolerant to HPAI but multiply and shed the virus. Further research is urgently required.

Vaccination:

FAO has published *Recommendations on the Prevention, Control and Eradication of Highly Pathogenic Avian Influenza (HPAI) in Asia*, prepared in close collaboration with OIE. The disease/outbreak factors were reviewed and should be taken into account in designing and implementing control programmes. The paper explains how countries could adopt a strategy appropriate to their individual situation.

It has been shown that the use of vaccines does not only protect healthy birds from the disease but also reduces the load of virus excreted by infected birds; and thus, the likelihood of transmission of the virus to other birds and humans. The decision on whether to use vaccines has to be made by the individual country, based on its own situation. The factors which countries should consider in making their decision include the ability to detect and react to the disease as early as possible, supported by a good institutional framework and sound legislation and supporting veterinary services. Any vaccination strategy should be developed in consultation with all stakeholders, including the private sector. The types of poultry and production sectors to be vaccinated must be determined and clearly documented. Infected poultry and those in contact with the virus should not be vaccinated.

Vaccination should be carried out under the supervision of official veterinary services with quality vaccines produced according to the OIE standards. A surveillance strategy has to be put in place to monitor possible circulating virus as well as the response to vaccination. This may include non-vaccinated sentinel birds and the application of serological tests capable of differentiating infected from vaccinated animals (DIVA).

The OIE Terrestrial Animal Health Code states that a country may be considered free from HPAI based on the absence of the virus irrespective of whether vaccination has been carried out. Therefore, the use of vaccines does not imply automatic loss of export markets.

Collaboration:

Participants stressed the need for close collaboration and harmonization of procedures amongst international organizations (FAO, OIE and WHO).

Other business*

Classical swine fever:

The delegate from the Philippines proposed that a workshop/training on diagnosis of classical swine fever be conducted by APHCA. No objection was raised by the other delegates.

The Chairperson closed the meeting thanking all delegates, observers and resource persons for their contribution and support. He stressed the need for collaborative action under the umbrella of the regional organizations (i.e. ASEAN and SAARC) and the GF-TADs approach.

Conclusion and adoption of minutes of the 64th ex-com meeting and the 28th APHCA session:

Friday, 1 October - Chairperson - Dr J.Q. Molina (Philippines)

The minutes of the 64th ex-com meeting and the 28th APHCA session were adopted with some changes. The proposed budget for 2005 with the necessary amendments for the regional dairy initiative was approved.

The delegate from Indonesia offered to host the 29th APHCA session in Bali, during 26 – 29 September 2005. The delegate from Lao PDR proposed to host the 30th session in 2006 in Luang Prabang.

The meeting was closed at 11:30 hours.

Note: * As the Chairperson has been urgently called back by his Minister, the agenda item “other business” was advanced to give delegates the opportunity to raise issues for the attention of the Chairperson.

Summary statement of APHCA account
(TF AA 97 AA 89142 – 916700 - MTF/INT/005/MUL)

Funds received	Expressed in US\$
3051 Prior years contributions received (up to 31/12/03)	1 692 811
3052 Prior years interest earned ***	38 019
Total	1 730 830

Sums received from member countries during January 2004 - December 2004

3051 Contributions received in 2004	85 946
3052 Interests earned in 2004***	3 699
Total	89 645

Accumulated interests received since APHCA started:

	(38 019 + 3 699)
Total	41 718

*** N.B. Interests, although received into account, **cannot** be spent without approval of members. Therefore, the projects effective CASH BALANCE is calculated on the contributions received (WITHOUT INTERESTS) *minus* Expenditures.

Cash balance as of 1 January 2005

Prior years contributions up to end 2003 (without interests)	1 692 811
Year 2004 contributions (without interests)	85 946
Sub-Total	1 778 757
Prior years expenditures up to end 2003:	1 401 780(minus)
Prior years expenditures up to end 2004:	44 973(minus)
Cash balance : 1 January 2005	Total 332 004
Expenditures in 2004 (Jan04-Dec04) (for details, please see next page)	Total 44 973

APHCA Trust Fund
- Expenditures and balances between 01 January and 31 December 2004 -
(in Oracle)

(Expressed in US\$)

Type	Account	Due in 2004	Received (up to 31 Dec. 2003)	
Earnings	3051 TF contributions	84 104	64 322	
	3052 TF interests earned ^{1/}	-	3 486	
Expenditures	Account	APHCA approved budget	Expenditures (up to 31 Dec. 03)	Balance
	5011 Salaries professional ^{2/}	0	0	0
	5012 Salaries GS	9 531	0	9 531
	5013 Consultants	20 709	7 071	13 638
	5014 Contracts	5 292	0	5 292
	5020 Overtime	1 080	745	335
	5021 Travel ^{3/}	36 960	26 548	10 412
	5023 Training	13 926	4 481	9 445
	5024 Expendable procurement	6 080	3 754	2 326
	5025 Non-expendable procurement	4 320	0	4320
	5026 Hospitality	540	0	540
5028 GOE	2 160	2 374	-214	
Total		100 598	44 973	55 625

Note:

- ^{1/} Interests earned in 2004 and **cannot** be spent unless members approve it.
- ^{2/} No professional post for APHCA is filled using APHCA funds.
- ^{3/} Travel under the Oracle system includes all travel and not just travel by officials. This means that travel which was included under training/attendance at workshops, etc., in the old Finsys system has now been removed and placed under 5021 travel.

Approved APHCA Trust Fund budget for 2005^{1/}
- Expenditures and balances up to 05 September 2005 -
(in Oracle)

(Expressed in US\$)

Type	Account	Due in 2005	Received (up to 05 Sept. 2005)	
Earnings	3051 TF contributions	84 104	83 225	
	3052 TF interests earned	-	-	
Expenditures	Account	APHCA approved budget	Expenditures^{2/}	Balance
	5011 Salaries professional ^{3/}	0	0	0
	5012 Salaries GS	12 000	7 171	4 829
	5013 Consultants	25 000	704	24 296
	5014 Contracts	6 000	0	6 000
	5020 Overtime	2 000	466	1 534
	5021 Travel {include CP's travel (5 000) and Fellowships (10 000)}	25 000	5 429	19 571
	5023 Training	15 000	0	15 000
	5024 Expendable procurement	10 000	1 037	8 963
	5025 Non-expendable procurement	5 000	0	5 000
	5026 Hospitality	1 000	0	1 000
	5028 GOE	2 000	3 488	(1 488)
Total		103 000	18 295	84 705

Note:

- 1/ Approved by APHCA at its 28th Session held between 27 Sep and 1 Oct 2004 in Chiang-Mai, Thailand.
- 2/ The figures included in this column include also commitments.
- 3/ No professional post for APHCA is filled using APHCA funds.

Proposed APHCA Trust Fund budget for 2006
(includes estimated contributions to APHCA by FAO)

(Expressed in US\$)

Type	Account	Due in 2006		
		APHCA TF 9167	FAO's estimated contributions	Total
Earnings	3051 TF contributions	84 104		
	3052 TF interests earned	-		
Expenditures	5011 Salaries professional ^{1/}	0	96 600 ^{2/}	96 600
	5012 Salaries GS ^{3/}	13 800	23 000	36 800
	5013 Consultants	25 000	10 000	35 000
	5014 Contracts	6 000	14 000	20 000
	5020 Overtime	2 000	0	2 000
	5021 Travel	25 000	10 000	35 000
	5023 Training	15 000	2 000	17 000
	5024 Expendable procurement	10 000	1 000	11 000
	5025 Non-expendable procurement	5 000	5 000	10 000
	5026 Hospitality	1 000	1 000	2 000
	5028 GOE ^{4/}	4 000	5 000	9 000
	Total		106 800	167 600

Note:

- 1/ No professional post for APHCA is filled using APHCA funds.
2/ 15% increase applied on professional salaries.
3/ 15% increase applied on general service salaries.
4/ Proposed increase of GOE

Approved APHCA Trust Fund budget for 2006
(includes estimated contributions to APHCA by FAO)

(Expressed in US\$)

Type	Account	Due in 2006		
Earnings	3051 TF contributions	84 104		
	3052 TF interests earned	-		
Expenditures	Account	APHCA TF 9167	FAO's estimated contributions	Total
US\$ 25 000 Dairy – Economics	5011 Salaries professional ^{1/}	0	96 600 ^{2/}	96 600
	5012 Salaries GS ^{3/}	13 800	23 000	36 800
US\$ 30 000 WS Food and Feed Safety	5013 Consultants	25 000 +10 000	10 000	35 000
	5014 Contracts	6 000 +14 000	14 000	20 000
US\$ 20 000 WS Brucella Diagnosis	5020 Overtime	2 000	0	2 000
	5021 Travel	25 000 +5 000	10 000	35 000
US\$ 12 000 Authors Contract - Breeding Plans	5023 Training	15 000	2 000	17 000
	5024 Expendable procurement	10 000 -9 000	1 000	11 000
US\$ 10 000 Finalize Meat and Meat Products Publication	5025 Non-expendable procurement	5 000	5 000	10 000
	5026 Hospitality	1 000	1 000	2 000
US\$ 15 000 Consultant - Sub-Reg. Waste Management and Composting	5028 GOE ^{4/}	4 000	5 000	9 000
	Total	106 800 126 800	167 600	274 400

Note:

- ^{1/} No professional post for APHCA is filled using APHCA funds.
^{2/} 15% increase applied on professional salaries.
^{3/} 15% increase applied on general service salaries.
^{4/} Proposed increase of GOE.

Proposed APHCA Trust Fund budget for 2007
(includes estimated contributions to APHCA by FAO)

(Expressed in US\$)

Type	Account	Due in 2007		
		APHCA TF 9167	FAO's estimated contributions	Total
Earnings	3051 TF contributions	84 104		
	3052 TF interests earned	-		
Expenditures	5011 Salaries professional ^{1/}	0	96 600 ^{2/}	96 600
	5012 Salaries GS ^{3/}	13 800	23 000	36 800
	5013 Consultants	25 000	10 000	35 000
	5014 Contracts	6 000	14 000	20 000
	5020 Overtime	2 000	0	2 000
	5021 Travel	25 000	10 000	35 000
	5023 Training	15 000	2 000	17 000
	5024 Expendable procurement	10 000	1 000	11 000
	5025 Non-expendable procurement	5 000	5 000	10 000
	5026 Hospitality	1 000	1 000	2 000
	5028 GOE ^{4/}	4 000	5 000	9 000
	Total		106 800	167 600

Note:

- 1/ No professional post for APHCA is filled using APHCA funds.
 2/ 15% increase applied on professional salaries.
 3/ 15% increase applied on general service salaries.
 4/ Proposed increase of GOE

Status of contribution
(as at 3 September 2005)

(Expressed in US\$)

Member Governments	Outstanding 31/12/2004	Contribution due for 2005	Received up to 05/09/2005	Outstanding 05/09/2005
AUSTRALIA	12.22	10 724.00	10 716.00	20.22
BANGLADESH	39 845.00	6 502.00	18 047.00	28 300.00
BHUTAN	(1 912.00)	2 128.00	-	216.00
INDIA	13.14	10 724.00	10 724.18	12.96
INDONESIA	6 992.57	6 502.00	6 984.00	6 510.57
IRAN	18 046.94	6 502.00	13 004.00	11 544.94
LAOS	(484.92)	2 128.00	-	1 643.08
MALAYSIA	482.00	6 502.00	6984.00	0.00
MYANMAR	2 191.66	2 128.00	2 129.21	2 190.45
NEPAL	(1 970.00)	2 128.00	-	158.00
PAKISTAN	10.00	6 502.00	-	6 512.00
PAPUA NEW GUINEA	68.00	2 128.00	2 186.00	10.00
PHILIPPINES	5 169.18	6 502.00	5 954.00	5 716.72
SRI LANKA	45.00	6 502.00	6 496.06	50.94
THAILAND	-	6 502.00	-	6 502.00
TOTALS	68 508.79	84,104.00	83 227.91	69 387.88

Scale of contribution for 2006

(Expressed in US\$)

Country	Amount
AUSTRALIA	10 724
BANGLADESH	6 502
BHUTAN	2 128
INDIA	10 724
INDONESIA	6 502
IRAN	6 502
LAOS	2 128
MALAYSIA	6 502
MYANMAR	2 128
NEPAL	2 128
PAKISTAN	6 502
PAPUA NEW GUINEA	2 128
PHILIPPINES	6 502
SRI LANKA	6 502
THAILAND	6 502
TOTAL	84 104

Note: This scale of contributions has been effective since 2003.

Activities performed between October 2004 and September 2005

Introduction

This is a general overview of the activities in the livestock sector in the APHCA region 2004-05 irrespective to source of funding and the executing group (RAP Livestock Group, officers from AGAH, AGAP and AGAL). We appreciate the continued support by our colleagues from HQ.

The year was marked by the Tsunami and the continuous threat of HPAI and most of the human and financial resources were allocated to support countries in their fight against the disease. Only a few of the originally planned activities could be executed.

1. Personnel

- 1.1 Hans-Gerhard Wagner,
Senior Animal Production and Health Officer and Secretary of APHCA
- 1.2 Carolyn Benigno,
Animal Health Officer
- 1.3 Animal Health/Policy Officer – vacant since end 2003 – has been re-advertised – candidate has been selected – Dr Bhavani Shankar dues to start in November 2005
- 1.4 Vishnu Songkitti – APHCA Liaison Officer
- 1.5 Chanrit Uawongkun – APHCA IT Clerk – contract conversion in March 2005
- 1.6 Wantanee Kalpravidh – Regional Coordinator TCP/RAS/3006 and RP
- 1.7 David Hall – Livestock Economist (9 months) – NTE September 2005
- 1.8 Subhash Morzaria – joined in February 2003 as a consultant until March 2004
- 1.9 Supporting staff: Tuanchai Laisakun (RP), and Nawarat Chalermmpao (LEAD – GEF, PDF-B)

2 Organized meetings, training courses, workshops and missions

- 2.1 The 64th executive committee meeting and the 28th session of APHCA together with workshop on small-scale dairying for improved food security and safety, incomes and rural employment – Chiang Mai, Thailand, 26 September – 1 October 2004
- 2.2 National workshop on economic impact of AI – Indonesia, 4 – 5 October 2004
- 2.3 National workshop on economic impact of AI – Thailand, 11 – 12 October 2004
- 2.4 Regional workshop on emergency support for post AI rehabilitation (under TCP/RAS/3010) – Ayuttaya, Thailand, 14 – 15 October 2004
- 2.5 Inception workshop – TCP/RAS/3007 – Diagnostic laboratory and surveillance network coordination for control and prevention of AI in East Asia – Beijing, November 2004

- 2.6 Social and economic impacts of AI control – Bangkok, Thailand, 8 – 9 December 2004
- 2.7 1st laboratory training course on HPAI – Kuala Lumpur/Ipoh, Malaysia, 12 – 14 December 2004
- 2.8 SAARC expert level meeting on GF-TADs – Katmandu, Nepal, 16 – 18 February 2005
- 2.9 2nd FAO/OIE regional meeting on AI control in Asia, Ho Chi Minh City, Viet Nam, 23 – 25 February 2005
- 2.10 1st meeting of the regional steering committee of the GF-TADs in Asia and the Pacific – Tokyo, Japan, 7 – 9 March 2005
- 2.11 FAO-APHCA/OIE/DLD regional training workshop on BSE diagnosis and surveillance – Bangkok, Thailand, 28 – 31 March 2005
- 2.12 1st Livestock waste management project implementation plan (PIP) preparation meeting – Thailand, 22 April 2005
- 2.13 2nd Livestock waste management project implementation plan (PIP) preparation meeting – Thailand, 27 April 2005
- 2.14 Workshop on GIS and HPAI for Thailand – Bangkok, Thailand, 8 – 12 May 2005
- 2.15 AI global strategy meeting – Bangkok, Thailand, 17 – 18 May 2005
- 2.16 Technical mission on livestock waste management in East Asia project – Viet Nam, China and Thailand, 22 May – 6 June 2005
- 2.17 Regional workshop on CSF control – Philippines, 22 – 24 June 2005
- 2.18 Regional training courses on epidemiology and data analysis for HPAI in South-east Asia – Bangkok, Thailand:
 - a. Basic – by CIRAD, 13 – 17 June 2005
 - b. Advanced – by RVC, 27 June – 1 July 2005
 - c. Advanced for regional hubs – by Massey University, 26 – 29 July 2005
- 2.19 Economics of HPAI control together with PPLPF – Bangkok, Thailand, 28 – 29 June 2005
- 2.20 Appraisal missions on livestock waste management in East Asia project – China, Viet Nam and Thailand, 1 – 15 July 2005
- 2.21 Regional wrap-up meeting on the appraisal missions on livestock waste management in East Asia project – Thailand, 15 July 2005
- 2.22 FAO/OIE/WHO consultation on AI and human health risk reduction measures in producing, marketing and living with animals in Asia – Kuala Lumpur, Malaysia, 4 – 6 July 2005
- 2.23 2nd laboratory training course on HPAI – Kuala Lumpur/Ipoh, Malaysia, 11 – 22 July 2005
- 2.24 5th OIE/FAO-APHCA regional workshop on WTO's SPS agreement – Chiang Mai, Thailand, 15 – 18 August 2005
- 2.25 EMPRES training for the Philippines – Philippines, 17 – 19 August 2005
- 2.26 Inception workshop – TCP/RAS/3008 – diagnostic laboratory and surveillance network coordination for control and prevention of AI in South Asia – New Delhi, India, 23 – 25 August 2005
- 2.27 Regional training course on epidemiology and data analysis for HPAI in East Asia, by CIRAD – Beijing, China, 19 – 23 September 2005
- 2.28 Workshop on GIS and HPAI for Thailand – Bangkok, Thailand, 8 – 12 May 2005

3 Other relevant meetings, congresses attended

- 3.1 1st ASEAN HPAI task force meeting – Singapore, 20 – 21 December 2004
- 3.2 Myanmar – Thailand – Malaysia (MTM) meeting on FMD control – Myanmar, 19 – 22 October 2004
- 3.3 SAHMBA workshop on animal disease information systems – Thailand, 11 – 13 January 2005
- 3.4 Upper Mekong working group meeting on FMD control – Myanmar, 25 – 29 January 2005
- 3.5 11th OIE SEAFMD Sub-commission meeting – Philippines, 28 February – 4 March 2005
- 3.6 ASEAN HPAI Task force ad-hoc meeting – Pattaya, Thailand, 30 – 31 May 2005
- 3.7 ASEAN Working group meeting on livestock – Pattaya, Thailand, 1 – 3 June 2005
- 3.8 OIE/FAO/WHO International workshop on animal disease surveillance and control (at World Veterinary Congress) – Minneapolis, USA, 16 – 21 July 2005
- 3.9 APEC Health task force symposium on AI and preparedness for human emergency – San Francisco, USA, 28 – 29 July 2005
- 3.10 2nd ASEAN HPAI task force meeting – Malaysia, 6 – 8 September 2005
- 3.11 SAHMBA follow-up workshop on animal disease information systems – Lao PDR, 14 – 16 September 2005

4. Initiated/assisted in and follow-up on projects

Newly Approved

- 4.1 OSRO/RAS401/JPN – The Japan/FAO joint emergency programme for the control of avian influenza in Cambodia, Indonesia, Lao PDR, and Viet Nam (US\$ 1.6 million)
- 4.2 TCP/PAK/3004 – Pakistan: Assistance in up scaling dairy development
- 4.3 GCP/MON/001/JPN – Mongolia: Increasing the supply of dairy products to urban centres by reducing the post harvest loss and restocking (US\$ 1.983 million)
- 4.4 GCP/RAS/206/ASB – Regional – Cambodia, PR China (Southern), Lao PDR, Thailand – Transboundary animal diseases control in the Greater Mekong sub-region (US\$ 1 million)
- 4.5 GCP/LAO/014/GER – Lao PDR: Building capacity at the grass-roots level to control AI (Euro 2.4 million)
- 4.6 GCP/CAM/XXX/GER – Cambodia: Building capacity at the grass-roots level to control AI (Euro 2.4 million)
- 4.7 OSRO/DRK/503/AUL: DPRK
- 4.8 OSRO/RAS/5XX/USA: Immediate assistance for strengthening community-based early warning and early reaction to AI outbreaks in Cambodia, Indonesia, Lao PDR, PR China and Viet Nam (US\$ 6.003 million)
- 4.9 Viet Nam projects WB – EU – NZ, Netherlands and US
- 4.10 TCP/DRK/3006(E) – Emergency assistance for the control and prevention of avian influenza in Korea DPR (not APHCA member) (US\$ 218 000)

On-going

- 4.11 TCP/BGD/2903 – Bangladesh: Training programme for the small-scale dairy sector (US\$ 364 000) – NTE 12/2005
- 4.12 TCP/DRK/2905 – Korea DPR (not APHCA member): Dairy goat improvement (US\$ 350 000) – NTE 10/2005
- 4.13 TCP/MYA/3001 – Myanmar: Small-scale dairy technology transfer and training (US\$ 356 000) – NTE 12/2005
- 4.14 NN –TF/ITA – Philippines: Environmental animal health to redress emerging insect-borne diseases constraints to small holders' livestock production
- 4.15 Emergency TCPs on avian influenza (totaling US\$ 4.8 million):
 - 1. TCP/INS/3001 – Emergency assistance for the control of avian influenza in Indonesia (US\$ 390 000)
 - 2. TCP/LAO/3001 – Emergency assistance for the control of avian influenza in Laos (US\$ 390 000)
 - 3. TCP/CMB/3002 – Emergency assistance for the control of avian influenza in Cambodia (not APHCA member) (US\$ 390 000)
 - 4. TCP/PAK/3002 – Emergency assistance for the control of avian influenza in Pakistan (US\$ 390 000)
 - 5. TCP/VIE/3003 – Emergency assistance for the control of avian influenza in Viet Nam (not APHCA member) (US\$ 390 000)
 - 6. TCP/CPR/3004 – Emergency assistance for the control of avian influenza in PR China (not APHCA member) (US\$ 390 000)
 - 7. TCP/RAS/3004 – Emergency regional coordination assistance for control of avian influenza in South-east Asia (US\$ 400 000)
 - 8. TCP/RAS/3006 – Diagnostic laboratory and surveillance network coordination for control and prevention of avian influenza in Southeast Asia (US\$ 400 000)
 - 9. TCP/RAS/3007 – Diagnostic laboratory and surveillance network coordination for control and prevention of avian influenza in East Asia (US\$ 400 000)
 - 10. TCP/RAS/3008(E) – Diagnostic laboratory and surveillance network coordination for control and prevention of avian influenza in South Asia (US\$ 400 000)
 - 11. TCP/RAS/3010 – Emergency regional support for post-avian influenza rehabilitation (US\$ 400 000)
 - 12. TCP/RAS/3014 – Strengthening avian influenza control through improved transboundary animal disease information management system in Asia
- 4.16 TCP on FMD in the Philippines (new phase)
- 4.17 Add on to UNDP/BGD/ 98 to develop livestock policy and strategy (US \$ 200 000)
- 4.18 Regional – CFC meat commodity diversification and upgrading of meat processing technologies in Asia-Pacific (US\$ 831 095 as grant and US\$ 100 000 as a loan). Beneficiary countries: Philippines, Bangladesh, Myanmar and Samoa
- 4.19 Regional – GEF – PDF-B livestock waste management (US\$ 700 000). Participating countries: Thailand, Viet Nam and PR China (to start in 2006)

Pipeline or under preparation

- 4.20 Bangladesh: Dairy cattle breeding and artificial insemination (draft with GoB for submission)
- 4.21 Philippines: Installing milk payment system
- 4.22 Myanmar: Dairy cattle breeding and Artificial insemination (GoM priority ranking)
- 4.23 Regional: Animal identification and traceability replaced by project for MTM region (draft is ready)
- 4.24 SAARC: South Asia GF-TADs for establishment of Regional Support Unit (proposal prepared and submitted to SAARC, meeting in February 2005)

5. APHCA information unit

- 5.1 Information is continuously and regularly updated and posted, e.g., influenza alert, activity reports, session reports, etc., and electronic publications from LAO-EU livestock project, etc.
- 5.2 Hard copies and CD-ROMs of FAO and APHCA documents/publications are distributed upon request.

6. Collaborative activities with international organizations and donor agencies

- 6.1 Collaboration with OIE, JICA, JLTA, AusAid in trainings, workshop and other capacity building activities;
- 6.2 ILRI in the area of livestock development issues including AnGR;
- 6.3 Contacts are being fostered with ADB, AusAID, CIDA and Governments of potential donor countries to seek funding supports for a number of activities related to the control of transboundary animal diseases in the Region.

7. Other works to be continued and planned up to end 2005/early 2006

- 7.1 SoW – AnGR regional consultation
- 7.2 OIE/FAO-APHCA advanced hands-on training on BSE diagnostic and surveillance to be organized at the National Institute of Animal Health (NIAH) of Japan in Tsukuba/Yokohama, Japan, between 30 November and 9 December 2005
- 7.3 PDF – Animal waste management finalization of project submission in December 2005

FAO/OIE/JICA regional workshop on classical swine fever control in Asia (in collaboration with the Bureau of Animal Industry, Philippines)
 22-24 June 2005, Manila, Philippines
Presented by Carolyn Benigno (Animal Health Officer, FAO/RAP)

Slide 1

FAO/OIE/JICA Regional Workshop on Classical Swine Fever Control in Asia
 (in collaboration with the Bureau of Animal Industry, Philippines)
 22-24 June 2005
 Manila, Philippines

Slide 4

Objectives

- To provide an opportunity to exchange information on current CSF status and control programs of respective countries
- To develop coordinated CSF control activities on a regional basis.

Slide 2

Background

- CSF identified as one of the priority diseases under GF-TAD of SEA, July, 2003
- Regional Workshop on Control of CSF in SEA with reference to CSF Diagnosis, Surveillance and Vaccine, 25-26 September 2003, Hanoi, Vietnam
- Philippines offered to host the Regional Workshop on CSF Control in Asia, 22-24 June 2005
 - Collaboration among FAO, OIE and JICA

Slide 5

Workshop Topics

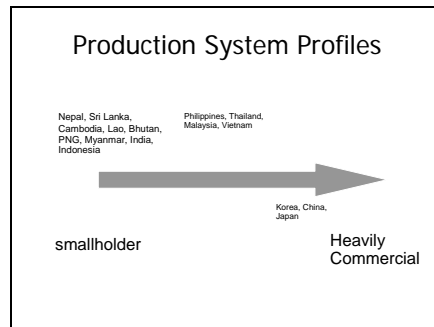
- Overview of CSF and Recent Developments in CSF Control and Vaccination
- GF-TAD
- CSF Activities in SEA
- Country Presentations
- Workshop Proper on three topics:
 - Areas for joint collaboration amongst countries and international organizations
 - Specific needs for each country with regards to CSF diagnosis and control
 - Conditions/Requirements of a sub-regional CSF laboratory network and center

Slide 3

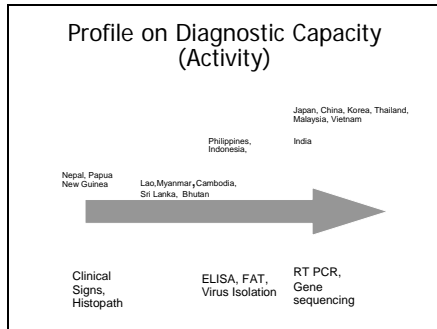
Regional Workshop on CSF Control in Asia

- FAO, OIE, JICA, Philippines Bureau of Animal Industry
- 19 Participants from:
 - South Asia: Bhutan, India, Nepal, Sri Lanka
 - Southeast Asia: Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Thailand, Vietnam, Papua New Guinea
 - East Asia: Korea, China
- Resource persons from: UK, Japan, OIE, JICA, FAO

Slide 6



Slide 7



Slide 11

- ### Recommendations
- Specific country needs :
 - Need to strengthen capacity in the area of laboratory diagnosis in terms of provision of equipment and manpower training.
 - Explore possible funding for operational needs such as provision of reagents, vaccines, fieldwork and validation of laboratory diagnosis.
 - Study the economic impact of CSF in the respective countries and assess the cost effectiveness of proposed CSF control measures.
 - Request governments to develop or formulate national policies with respect to CSF control and/or eradication
 - Any vaccination scheme will include the provision to differentiate vaccinal from field virus isolate.

Slide 8

- ### CSF Control Issues
- No defined CSF Control Policy/Animal Health Policy
 - Understanding of CSF Control
 - Case definition of CSF outbreak
 - Reporting of CSF outbreaks
 - Use of Vaccines
 - Vaccination strategy
 - Diagnostic Capacity

Slide 12

- ### Recommendations
- Factors listed as necessary requirements for a country to be designated as a center for CSF control and diagnosis:**
- Geography – a sub-regional laboratory center and epidemiology center will be selected from the national veterinary institutes. The centers must be strategically located within the region or subregion.
 - Laboratory center facilities - at par with international standards and manned by trained staff. The laboratory should be able to perform the full range of diagnostic test as specified in the OIE manual.
 - The host country must agree to their laboratory receiving samples from other countries.
 - The following institutes have been identified as meeting the above requirements:
 - National Institute of Animal Health, Thailand, (Southeast Asia)
 - National Veterinary Research and Quarantine Service, Republic of Korea (East Asia)
 - One of the Regional or the Central Disease Diagnostic Laboratory in India (South Asia).

Slide 9

- ### Recommendations
- Areas for joint collaboration amongst countries and international organizations:
 - Work for the establishment of a CSF surveillance network that would include harmonizing procedures on field surveillance, diagnosis, disease reporting, animal movement management and public awareness and education.
 - Conduct regional activities (with assistance from FAO, OIE, JICA and other international organizations) that would strengthen capacity of countries on CSF epidemiology and diagnosis. Wherever possible, these activities will be integrated with on-going activities with respect to FMD control/eradication programs.
 - Conduct specific research studies on CSF epidemiology, control and diagnosis, in coordination with other research agencies (international and national). Result of such research will be made public.

Slide 13

- ### Recommendations
- Sub-regional center on epidemiology must be equipped with a working secretariat that would coordinate field surveillance activities and manage field and laboratory data with transparency.
 - The following agencies have been identified as meeting the above requirements:
 - Bureau of Animal Industry, Philippines
 - Department of Veterinary Services, Malaysia
 - Host country of either the epidemiology center or the laboratory or both must be willing to provide initial resources in maintaining the center.

Slide 10

- ### Recommendations
- Request international organizations to **assist countries in drafting animal health policies on CSF and other transboundary animal diseases**
- Request international organizations to **coordinate the participation of the private sector in respective countries** so they could assist or even lead in the control/eradication of CSF.
- Invite contributions from government bodies, training centers and academic institutions** within countries that could assist in the delivery of animal health programs.

Slide 14

- ### Way Forward
- The recommendations will be presented to regional bodies like APHCA, ASEAN, SAARC, SPC, JICA Thailand and OIE Tokyo for endorsement by the Chief Veterinary Officers attending the said regional meetings.
 - If endorsed, work proposals/plans will be drafted for funding and implementation
- Thank you for your attention.....**

Feed and food safety: updates and plans for 2005-2006
Presented by Carolyn Benigno (Animal Health Officer, FAO/RAP)

Slide 1

**Feed And Food Safety: Updates
and Plans for 2005-2006**

29th Session of APHCA
26 – 29 September 2005
Bali, Indonesia

Slide 4

FFS in the Region

- Goal: To ensure that food supply is secure, wholesome (quality) and safe.
- Action: A FFS expert will be recruited to conduct a consultation workshop that would assess the areas of concern the region needs to focus on. Topic threads will be presented and gaps identified.

Slide 2

Review of Activities

- Survey on FFS Capacities
- FAO/OIE Regional FFS Workshop, 19-22 July 2004
- Recommendations on:
 - Capacity Building – risk assessment, equipped laboratories
 - Legislation – develop and implement FFS legislation
 - International Cooperation – use of international standards and extend assistance to build capacity
 - Networking – develop an FFS network, coordinated surveillance, identify national institutes as regional collaborating center of FFS

Slide 5

Second Regional FFS Workshop

- Objectives
 - To present and discuss issues connected to a part of the FFS topic thread where veterinarians have an important role to play
 - To assess the gaps that need to be addressed
 - To develop an FFS program on areas that need to be focused on.
- Requisites
 - An understanding of skills in veterinary science, epidemiology and communication

Slide 3

Workshop Review

- More exploratory and diagnostic
- Needs further details
- From the time of the workshop, several initiatives already put in place
 - Swiss assistance in Vietnam
 - FS in Lao and Cambodia
- Need to make an inventory of these activities and see where APHCA can come in

Slide 6

Topic Threads

- Understanding the overall framework in which food safety is managed and regulated at an international and domestic level
 - Food Safety Regulatory Framework (Global, National, Regional)
 - Risk Analysis and HACCP and how it is incorporated into the regulatory system

Slide 7

Topic Threads

- Understanding the epidemiological aspects of important pathogens or potential pathogens in food of animal origin and how risk mitigation applies
 - Animal food borne pathogens of international and national concern
 - Emerging food borne pathogens
- Introduction to newer diagnostic techniques
 - Detection of food borne pathogens

Slide 9

Workshop Costs

- | | |
|-------------------------------------|------------|
| ■ Trainer/Facilitator (6 days work) | USD 4500 |
| ■ 15 Participants | 22500 |
| ■ Supplies and Materials | 3000 |
| ■ Total cost | USD 30,000 |
- APHCA Session endorses this then we program this for early next year

Slide 8

Topic threads

- Learning from Models of national management programs for antibiotic resistance
- Examining potential public health threats posed by presence of natural toxins in food of animal origin
- Program development

Slide 10

Thank you.....

**APHCA activities on BSE, WTO's SPS agreement and
veterinary public health**

Presented by Vishnu Songkitti (Technical Assistant, FAO/RAP)

Slide 1

**APHCA activities on BSE,
WTO's SPS Agreement
and Veterinary Public Health**

V. Songkitti, FAO-APHCA

Slide 4

BSE (cont.)

The FAO-APHCA/OIE/Government of Japan Advanced Training on BSE Diagnosis and Surveillance will be organized at the National Institute of Animal Health of Japan in Tsukuba and Yokohama, between 30 November and 9 December 2005.

Participants will be invited from PR China, Rep. of Korea, Malaysia, Philippines, and Thailand (countries with lab and ongoing activities on BSE/TSEs).

Slide 2

BSE

The 3rd FAO-APHCA/OIE/DLD Hands-on Training Workshop on BSE Diagnosis and Surveillance was organized at the National Institute of Animal Health of the Thai Department of Livestock Development between 28 and 31 March 2005.

Participants were from Bangladesh, Bhutan, India, Iran, Nepal, Pakistan, Sri Lanka and Thailand.

Slide 5

BSE (cont.)

The main objective of this advanced training is to develop and strengthen the network on BSE diagnosis and surveillance, using the modified techniques applicable to this region.

Slide 3

BSE (cont.)

The hands-on training was focused on BSE diagnosis using Immunohistochemistry (IHC), ELISA and Western Blot techniques as well as lectures on the surveillance programmes in selected BSE-affected countries in Europe.

Slide 6

WTO's SPS Agreement

The 5th FAO-APHCA/OIE/DLD Regional Workshop on WTO's SPS Agreement was co-organized in collaboration with Free University of Berlin (FUB), and the Faculty of Veterinary Medicine, Chiang Mai University (FVM-CMU) at the FVM-CMU, between 15 and 19 August 2005.

16 participants plus 2 observers from 16 countries in the Region participated in the workshop.

Slide 7

WTO's SPS Agreement (cont.)

This workshop fulfill its objective to provide information and train technical government officials in this Region on **Risk Management** and some part to **Risk Communication** in the context of WTO's SPS Agreement, in conjunction with the OIE International Animal Health Codes and Manuals, the FAO Codex Alimentarius and HACCP.

Slide 10

VPH (cont.)

VPH-CAP will serve APHCA member countries in the focused areas of **emerging zoonoses and food-borne diseases**.

Module courses, workshops and short term trainings will be organized in collaboration with FAO-APHCA and OIE-Tokyo Office (where applicable) in the above areas.

Homepage: <http://www.rc-vph.org>

Slide 8

VPH

FAO-APHCA has collaborated (since 1997) with the Faculty of Veterinary Medicine, Chiang Mai University (FVM-CMU), OIE-Tokyo Office and the FUB in the areas of **Veterinary Public Health and Food Safety**.

Slide 11

VPH (cont.)

MSc-VPH courses for APHCA countries:
This is a Joint programme by CMU and FUB (2 years' course).

For the first course, 12 scholarships for students from APHCA countries were made available by the German Academic Exchange Service (DAAD) and the Thai Government. (Students will complete their study this year.)

14 students from APHCA countries have been recruited for the second course (2006-2007).

Slide 9

VPH (cont.)

The Veterinary Public Health Center for Asia and the Pacific (VPH-CAP) was established at the CMU in October 2003 with technical assistance from the FUB as well as technical collaborations from FAO-APHCA and OIE-Tokyo Office.

Slide 12

VPH (cont.)

FAO-APHCA will continue to collaborate with OIE-Tokyo Office, DLD, FVM-CMU and the other parties in organizing training courses and workshops on **WTO's SPS Agreements** and subjects related to **Veterinary Public Health** as per needs and requirements of the APHCA members.

Slide 13

Thank you.

Report on strategic priorities for action of AnGR
Presented by Hans-Gerhard Wagner
(Senior Animal Production and Health Officer, FAO/RAP)

Slide 1

**Report on Strategic Priorities for
Action of AnGR**

Prepared by FAO HQ
 Presented by Hans-Gerhard Wagner
 Senior Animal Production and Health Officer
 FAO RAP

Slide 4

Objectives of the RSPA

Objectives are

- to propose policies and strategies for the conservation and sustainable utilization of AnGR at national, regional and global levels;
- to assist countries in elaborating plans or programmes of priority action for sustainable use and conservation activities at the national level;
- to propose appropriate and feasible measures to make the Global Strategy for the Management of FAnGR more effective; and
- to focus on assisting countries in strengthening national capacities for management of animal genetic resources.

Slide 2

Intention for producing the RSPA

The Inter-governmental Technical Working Group in 2000 approved the concept of *Priorities Action Report*

- to respond to the rapid erosion of Animal Genetic Resources and to promote better use of these resources;
- to enable early identification of the most urgent actions and initiate their implementation and formally adopted, before the First Report SoW-AnGR will be completed.

The Commission in 2002 accepted the process for preparing the first Report SoW-AnGR on the basis of Country Reports, which should be also used to develop the report on *Strategic Priorities for Action*.

Slide 5

Producing the RSPA

April-October 2004: Synthesis of priorities identified in 133 Country Reports and in the contributions from two non-governmental organizations submitted to FAO by June 2004

November 2004: First draft presented to the Tenth Regular Session of the CGRFA

January-May 2005: Compilation of an updated version based on 141 country reports

June 2005: Internal and external review

21 June-24 July: Revision based on criticism

2-4 August: Revision in the regional facilitator meeting

Slide 3

Content of the RSPA

as endorsed by the Commission (part of the outline of the SoW-AnGR)

The RSPA will include

- a description of the problems, including a summary of relevant conclusions from the analysis of Country Reports;
- identification of gaps and assessment of factors limiting the optimum utilization, development and conservation of AnGR; and
- the need for follow-up action, including financial and technical assistance, policy development and awareness raising and education

Slide 6

Finalising the RSPA – next steps

August 2005: Translation into French, Spanish, Russian?

September-December 2005: Regional consultations

January 2006: Final revision

End February 2006: RSPA will become part of the First Report SoW-AnGR

16 May 2006: National Coordinator workshop

17-19 May: ITWG#4 in Rome: review of the SoW report

November 2006: CGRFA # 10

Slide 7

Result of review – structure of the revised RSPA

- Preface (RSPA, Global Strategy)
- An Introduction to Animal Genetic Resources
 - *Farm Animal Genetic Diversity*
 - *Roles and values of Animal Genetic Resources*
 - *Driving Forces in the Livestock Sector – future challenges and issues*
 - *Assessment of major needs*

Slide 9

Result of review – structure of the revised RSPA

1. *Improving the understanding of the status and characteristics of animal genetic resources to enable their sustainable use, development and conservation (5 SP*)*
2. *Enhancing the use and development of animal genetic resources in all relevant production systems as part of efforts to achieve food security and alleviate poverty (4 SP)*
3. *Conserving animal genetic resources to ensure their availability for future use and development in all production systems (5 SP)*
4. *Enhancing institutional development and capacity building to achieve the successful implementation of national programmes for animal genetic resources (9 SP)*

*SP= Strategic Priorities

Slide 8

Result of review - Structure of the revised RSPA

- Inventory and characterization
 - *Introduction*
 - *Assessment*
 - *Main area, Strategic Priorities and list of actions*
(these subchapter are repeated in each of the four chapters)
- State of Utilization
- State of Conservation
- Institutions and Capacity Building

Slide 10

Result of review - Structure of the revised RSPA

- 4 Main Areas for Strategic Priorities (SP)
- 23 Strategic Priorities,
- 15 at national level, 8 at international level
- 110 Actions (1-9 per SP)

Slide 11

Follow-up

- **Regional Consultations – electronic conference**
 - China - Yang Yongdie
 - Malaysia – Adrien Raymond
 - Cambodia Dr. Suon Sotheoun
 - Indonesia Dr. Nusantara
 - Lao Dr. Bounthong Bouahom
 - Myanmar Dr. Than Daing
 - Philippines Dr. Paul Limson
 - Thailand Dr. V. Khumnirpetch
- **International Technical Conference**
Switzerland – Interlaken September 2007

Global strategy for the control of avian influenza in Asia
... tackling the disease at source ...
 Presented by Juan Lubroth (AGAH Senior Officer, FAO/ROME)

Slide 1

APHCA 29th Session

Global Strategy for the Control of Avian Influenza in Asia

... Tackling the Disease at Source ...

Bali, Indonesia – September 2005

Slide 4

Emerging pattern

<p><u>Livestock Production systems</u></p> <ul style="list-style-type: none"> - Production trends - Waterfowl production - Trade pattern - Market chain 	<p><u>Virus eco-epidemiology systems</u></p> <ul style="list-style-type: none"> - Pathogen virulence - Virus evolution - Population - Reservoir
---	---

Pandemic threat

Human health risk

- Pathogen virulence
- Increased exposure
- Cultural practices

Slide 2

COORDINATION WITH OIE AND WHO

- **Emergency Expert Consultation on the Control of Avian Influenza**
- Rome, 3-4 February 2004
- **Regional Meetings on Avian Influenza in Animals in Asia**
- Bangkok, Thailand, 26-28 February 2004
- Ho Chi Minh City, 23-25 February 2005
- **Coordination Meeting between WHO, OIE and FAO**
- Venice, September 2004
- **OIE/FAO, WHO International Scientific Conference on AI**
- Paris, 7-8 April 2005

Slide 5

Imminent Pandemic ?

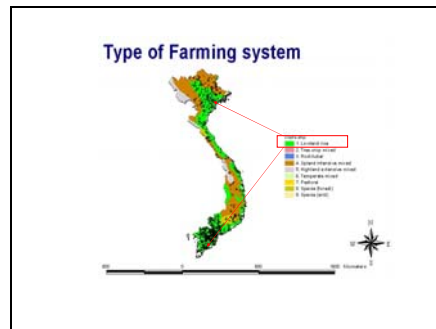
- Wall Street Journal - 2 August 2005
- **"Experts Say World Isn't Ready To Defend itself Against Flu"** by David Brown
- The FAO and OIE focus is on diminishing the risk of a pandemic by tackling the disease at source
- Poultry; Asia
- **GF-TADs** – The Global Framework for the Progressive Control of Transboundary Animal Diseases

Slide 3

COORDINATION WITH OIE AND WHO

- **Establishment of the OIE/FAO Avian Influenza Network ("OFFLU")**
- Secretariat at IZS, Padua, ITALY
- **Consultative Workshop:**
- **Review on Draft Global Strategy for the Control of HPAI**
- Bangkok on 17-18 May 2005
- **FAO/WHO/OIE Regional Meeting on Human/Veterinary Interface**
- Kuala Lumpur, 4-6 July 2005

Slide 6



Slide 7

Conclusions of 2004/2005 Activities

- Asia versus Europe/N America
- Country and Regional specific epidemiological analysis
- HPAI Country situation assessments
- Definition of country specific strategies for HPAI control
 - *Concept Notes*

Slide 11

Why a global strategy?

- **HPAI has emerged and spread rapidly as consequence of globalized markets**
- **HPAI is zoonotic and transboundary in nature**
 - Protecting human health is an international responsibility
 - WHO: “ 7 million people could die of the pandemic”

Slide 8

Results of 2004/2005 Activities

- Socio Economic impact assessments
- Compensation studies
- Market chain studies
- Policies / Poultry Sector Restructuring
- Wildlife field studies
- Vaccine pilot studies
- With OIE and WHO ... human/animal interface

Slide 12

Avian Influenza : A human disease

Country/ Territory	Total cases	Deaths
Cambodia	4	4
Indonesia	2	3
Thailand	17	12
Vietnam	91	41
TOTAL	115	59

WHO - 22 September 2005

Slide 9

A Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza

Slide 13

Why a global strategy?

- **HPAI threatens regional and international trade**
 - \$1.2 billion in Thailand (4th largest poultry exporting country in the world)
 - \$200 million in Vietnam
 - \$170 million in Indonesia
 - Total estimated to be \$10-15 billion in Asia
- **HPAI control beyond the scope and resources of a single country or region**

Slide 10

Why a global strategy?

- **HPAI is highly infectious and labile disease**
 - The emergence of the current H5N1 Z genotype can be attributed to this phenomenon
- **HPAI results from low pathogenic avian influenza (LPAI), which is present in wild birds in many parts of the world. All countries in the world are at risk of being infected unexpectedly**

Slide 14

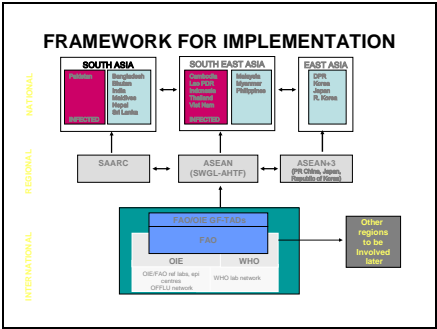
- **Endemicity**
- H5N1 avian influenza viruses are now established in several countries of Asia, persisting in farmed and wild waterfowl, particularly ducks, and in the multiple avian species found in live bird markets
- The role of ducks as a reservoir of infection, causing persistence and spread of avian influenza is well recognised.
 - ... **Total eradication will be very difficult**

Slide 15

A Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza

- Asia as a priority
- National
- Regional
- International Levels
- Networking
- Information exchange and concerted action

Slide 19



Slide 16

The global strategy in perspective

- All countries in the world are at risk of being infected
- HPAI has emerged and spreads rapidly as consequence of globalised markets
- HPAI is zoonotic and transboundary in nature
 - Protecting human health is an international responsibility
 - WHO: " 7 million people could die of the pandemic"

Slide 20

OBJECTIVES

Country level

- Develop strategies for each affected country
 - Stakeholders
 - Vaccination and Logistics
 - Surveillance Techniques
- Prevent introduction of HPAI in non-infected at risk countries
 - Awareness and reporting
 - Early Detection
- Improve epidemiological information
 - Source
 - Disease infection and transmission dynamics
 - On the farming systems
 - At the Market place
- Prepare contingency and emergency preparedness plans
- Develop economic and policy frameworks for reform

Slide 17

The global strategy in perspective

- Livelihoods of poor farmers threatened
 - 80% population live in rural areas
 - Large numbers depend on poultry (136-210 million)
 - At risk countries have dense populations.
 - Rapid spread in India or Bangladesh of HPAI could devastating and present an even increased risk to the rest of the world

Slide 21

OBJECTIVES

Country level

- Improve long-term capacity
 - Diagnosis
 - Epidemiology
 - Disease surveillance
 - Disease reporting
 - Disease information systems
 - Emergency preparedness plans
 - Economic and policy analysis

Slide 18

What are the major constraints?

- Inexperience
 - Magnitude and logistics
- Inadequate depth in veterinary services
 - Insufficient expertise in epidemiology, diagnosis, emergency response
 - Inadequate disease information systems
- Endemic nature of the disease
 - Poor understanding of the source
 - Lack of information on infection and transmission dynamics
 - Difficult to detect sub-clinical infection (farmed ducks, waterfowl)
- Poor production biosecurity
- Lack of data on disease impacts
- Need for long term regional coordination
- INADEQUATE RESOURCES

Slide 22

Regional Level

- Institutionalized and inter-sectoral coordination
- Programme management
- Regional capacity building in diagnosis, surveillance and epidemiology, policy and socio-economic impact assessment
- Public awareness
- Research and development

Slide 23

Regional Level

- **Standardization**
 - diagnosis
 - surveillance and monitoring protocols
 - disease reporting
 - emergency preparedness planning
- **Disease information sharing**
- **Regulatory frameworks for the management of animal movement**
- **Adherence to OIE guidelines to facilitate regional trade**

Slide 27

Capacity building

- **Development of a strong, sustainable human resource base**
- **Veterinary Services (and Public Health Services)**
- **Skills in disease management**
- **Diagnosis and active surveillance**
- **Vaccine delivery**
- **Epidemiology and disease monitoring**
- **Village-based animal health worker training**
- **Socio Economic analysis**
- **Policy development and risk analysis**

Slide 24

International Level

- **Strengthen partnership among international organizations (FAO, OIE and WHO)**
- **Analytical support and coordination of the subregional networks**
- **Develop the Global Early Warning System (GLEWS) that incorporates other factors than disease presence**
- **Provision of backstopping to support subregional networks - FAO HQ, OIE/FAO epidemiology collaborating centres, Reference Laboratories and OFFLU**

Slide 28

OUTPUTS

- **HPAI spread in humans and poultry will be contained**
- **HPAI incidence in poultry will be progressively reduced**
- **Progressive HPAI eradication in compartments and zones**
- **Prevention of establishment of HPAI in non-infected countries (improved capacity for TADs and emerging diseases)**
- **Emergency preparedness plans for all countries in Asia**

Slide 25

International Level

- **Coordinating research needs and evaluation in improved tools for HPAI control**
- **Provide a global vision for HPAI control (e.g. EMPRES' GREP, EU FMD, CSF Americas)**
- **Mobilize and allocate resources for HPAI control and prevention through active donor liaison and advocacy**

Slide 29

IMPACTS

- **Global pandemic of HPAI averted**
- **Livelihoods of over 500 million poor smallholder farmers in Asia safeguarded**
- **Improved market opportunities for poultry producers at all economic levels**

Slide 26

Policy & Regulatory issues

- **Implementation of biosecurity measures**
- **Animal movement (national, transboundary)**
- **Reporting the disease**
- **Sharing information**
- **Slaughtering and safe disposal of carcasses**
- **Compensation issues**
- **Restructuring and readjustment of the poultry industry**
- **Compartmentalization and zoning**
- **Control of certain risky traditional practices**

Slide 30

MAJOR PARTNERS

- **Participating countries**
 - Infected and non-infected countries in Asia
- **Regional Organizations (ASEAN, ASEAN+3, and SAARC)**
- **International Organizations (FAO, OIE and WHO)**
- **Private Sector**
- **Donors**
- **National Agriculture Research and Extension Systems**
- **NGOs**

Slide 31

Global Framework for the Progressive Control of Transboundary Animal Diseases

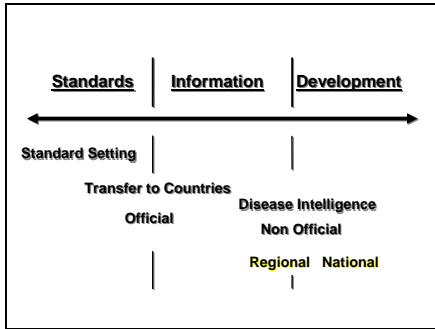
GF-TADs

Slide 35

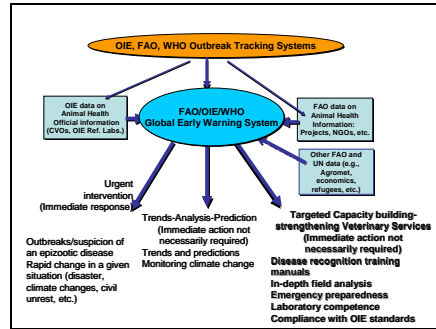
Concepts and key epidemiological aspects of GF-TADs

- Disease and *Infection* at the SOURCE
- Upstream investigation
- Epidemiology ~ Laboratory Networks
- Knowledge on animal production, land usage, marketing schemes, movement patterns ... an integrated approach.
- **GL**obal **E**arly **W**arning **S**ystem **FAO-OIE-WHO**

Slide 32



Slide 36



Slide 33

GOAL of GF-TADs = Vision Development Objective

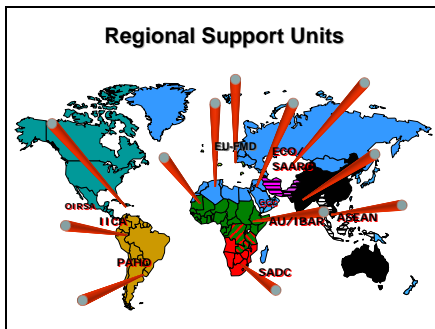
- To improve the protein food security, alleviate poverty, and improve the incomes of developing countries
- Safeguard the world livestock industry (of developed as well as developing countries) from repeated shocks of infectious disease epidemics
- Promoting safe and globalised trade in livestock and animal products

Slide 37

Indicator diseases

- NENA - FMD, rinderpest, HPAI, PPR, sheepox
- Tropical Africa
FMD, rinderpest, CBPP, PPR, ASF, RVF, Newcastle disease
- SADC
FMD, CBPP, ASF, and Newcastle disease
- Eastern Asia – FMD, HPAI and CSF
- South Asia
FMD, HP Avian Influenza, rinderpest, PPR, and Newcastle disease
- Central Asia - HPAI, FMD, rinderpest, and PPR
- South America – FMD, HPAI, BSE, NWSW, and CSF
- Central America & Caribbean - FMD-free region; CSF
- South-Eastern Europe - FMD and CSF
- Others of concern – brucellosis, rabies ...

Slide 34



Slide 38

Inform and Communicate

www.fao.org
www.oie.int

Update on HPAI situation in Asia
Presented by Carolyn Benigno (Animal Health Officer, FAO/RAP)

Slide 1

**Update on HPAI
situation in Asia**

FAO Regional Office for Asia and the Pacific

Slide 4

Country Situation

Cambodia

- No reports of HPAI outbreaks
- Three main markets in Phnom Penh still under surveillance (Chbar Ampeov, O'Russey, Central Market)
- Human cases reported in April 2005

Lao PDR

- No reports of HPAI outbreaks

Slide 2

Country Situation

Outbreaks reported in Vietnam, Thailand and Indonesia. Vietnam

- *First wave: December 2003 to March 30, 2004*
 - 43.9 M chickens, water fowls destroyed, died, 14.76 M quails destroyed in 57 provinces
- *Second outbreak from April to November 2004*
 - 84000 birds destroyed in 17 provinces
- *The third wave from December 2004 to date*
 - 470,000 chicken, more than 825,000 ducks, and 551,000 quails were destroyed in 36 provinces
 - Vaccination commenced September 2005, expected cost USD 35M

Slide 5

Country Situation

Philippines

- July 2005 – H5 virus infection was suspected in ducks in a province north of Manila. No mortalities, ducks were apparently healthy.
- Chickens were negative to HI test.
- Poultry and ducks were culled.
- Tissue samples were sent to AAHL and found negative for virus isolation.

Slide 3

Country Situation

Thailand

- Second Nationwide Active surveillance Campaign conducted in July 2005
- Supanburi, Kamphang Pet, Saraburi

Indonesia

- Reported in 21 out of 30 Indonesian provinces
- New cases in four provinces (Jambi, South Sulawesi, East Kalimantan, North Sumatra)
- Reported human deaths in July, September

Slide 6

Country Situation

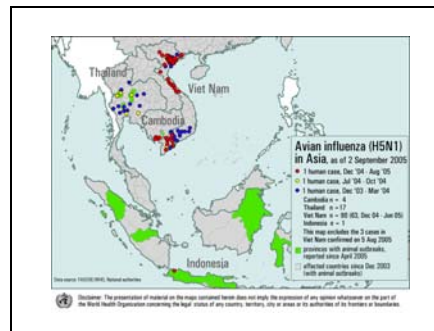
Outbreaks reported in DPRK, Russia, China, Mongolia, Japan (low path. strain) and Kazakhstan.

Slide 7

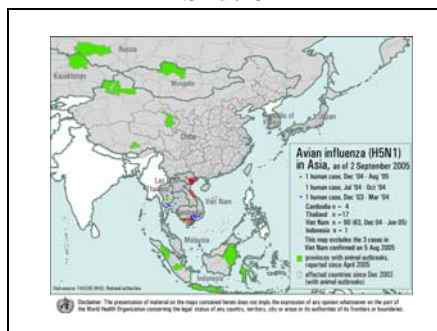
**Human Cases
(as of 22 Sept 2005)**

- Vietnam – 90 (63 fatality Dec 04 – Jun 05)
- Thailand - 17
- Cambodia – 4
- Indonesia - 4

Slide 9



Slide 8



Slide 10

Up close and official
for an update

Update: sub-regional networks on disease surveillance and diagnosis in Asia

*Presented by Wantanee Kalpravidh
(Regional Coordinator TCP/RAS/3006, FAO/RAP)*

Slide 1

Update: sub-regional networks on disease surveillance and diagnosis in Asia

Wantanee Kalpravidh
Mohinder Oberoi
Fusheng Guo
Regional Coordinators
AI Surveillance and Diagnostic Laboratory Networks in Asia

Slide 4

Sub-regional TCPs for Networking

- TCP/RAS/3006 (10)
- TCP/RAS/3007 (4)
- TCP/RAS/3008 (8)
- July 2004 – Thailand
- October 2004 – China
- August 2005 - India

@ “Guiding Principles on Surveillance and Laboratory Diagnosis”
- developed by during expert consultation meeting in July 2004
- adopted as the minimal requirements – by all sub-regions

@ Identifying gaps for surveillance and laboratory capacities
@ Building capacities based on the gaps

Slide 2

Areas for Regional Collaboration

- Laboratory diagnosis
- Surveillance and Epidemiology analysis
- Control of AI
- Preparedness for non-affected countries
- Establishment of linkage with public health: preparedness for pandemic human influenza
- Socio-economic assessment
- Rehabilitation and Restructuring of poultry production system
- Research

Slide 5

Additional Recommendations from the East and South Asia Launching Meetings

- **East Asia:**
- **South Asia:**
- Ideal Capability for a national Laboratory
 - Maintenance of a virus bank (stock of virus antigen)
 - Genetic sequence database for virus isolates
 - Sharing virus with leading laboratory (Harbin Veterinary Research Institute) and Reference Laboratory
- Additional focus on:
 - H5 and H7
 - Preparedness for emergency response
 - Awareness to public/stakeholders to achieve surveillance
 - Migratory birds

Slide 3

FAO Regional TCPs

TCP/RAS/3006	Diagnostic laboratory and surveillance network coordination for control and prevention of AI in SE Asia
TCP/RAS/3007	Diagnostic laboratory and surveillance network coordination for control and prevention of AI in East Asia
TCP/RAS/3008	Diagnostic laboratory and surveillance network coordination for control and prevention of AI in South Asia
TCP/RAS/3004	Emergency regional coordination assistance for control of AI in SE Asia
TCP/RAS/3010	Emergency regional support for post-avian influenza rehabilitation
TCP/RAS/3014	Strengthening AI control through improved transboundary animal disease information management system in Asia

Slide 6

Scheme of collaboration for Sub-regional Networking in Asia

- Experts:
- Training and Workshop
- Facilitate regional networking
- Facilitate regional collaboration

Slide 7

Experts

- **Experts:**
 - Epidemiology Consortium:
 - CIRAD, RVC, Massey University
 - Free University, Belgium, etc.
 - Laboratory Consultancy:
 - Australian Animal Health Laboratory
 - To provide following services:
 - Organize training/workshop to improve the knowledge
 - Harmonize the methodology
- **Publications and Reports:**
 - Studies: Epidemiology of AI: Country and Regional Status

Slide 11

Partnerships

- **Country:** affected and non-affected countries
- **Regional Organization:** ASEAN, ASEAN+3, SAARC
- **International Donors and Organizations:**
 - Japan, Australia, France, Germany, Canada, USA, Netherlands, etc.
 - FAO, OIE and WHO
 - ADB, World Bank
 - Etc.

Slide 8

Training and Workshops

- **Epidemiology:**
 - FAO training courses on
 - Basic epidemiology and data analysis: June and September 2005
 - Advanced epidemiology and data analysis: June and September 2005
 - for countries in SE Asia, E Asia and S Asia
 - Advanced Epidemiological Techniques for Regional Hubs in Asia: July 2005
- **Laboratory:**
 - 2 JICA/FAO/DVS training courses in Malaysia: December 2004 and July 2005
 - FAO regional workshop on laboratory networking: to be organized before the end of 2005
- **Preparedness for non-affected countries in Asia: to be organized in October 18-21**
 - Mostly participated by:
 - 8 countries in South Asia and
 - 4 countries in Southeast Asia

Slide 12

- Countries in the region have made good progress in managing the epidemic. With support of the international community, they have significantly improved their capacity for early disease detection and rapid response.
 - ... **But still not sufficient**
 - ... It is necessary to continue with the 3Cs and support to where it is needed.

Slide 9

Facilitation of Regional and International Networking

- **Information sharing**
- **Sharing of regional experts**
- **Sharing samples with International Reference Laboratories**
- **Collaboration with other TCPs and/or certain Research Agencies:**
 - Production, Ecology and Spread of AI
 - Socio-economic Impact Analysis of AI Control Measures
- **Collaboration with OIE and other UN organizations such as WHO, UNDP mainly for the purpose of preparedness for pandemic human influenza**

Slide 13

Challenges to be met

- Countries' capacities may be strengthened but such capacities may not be maintained
 - Staff
 - Budget
- Information system: not existing, or existing but not working
- Sharing virus samples:
 - Approval
 - Logistics
- Preparedness for emergency response in non-affected should be considered as important as control of AI in affected countries

Slide 10

Facilitation of regional collaboration

- **Participation the Meetings of Regional Organizations:**
 - ASEAN
 - SAARC
 - ASEAN +3 (to be planned)
- **Sponsoring certain countries to participate in such regional meetings**
- **Communication, coordination and collaboration with the Regional Organizations**


Slide 14

Thank you

Eradicating animal influenza viruses at their source

*Presented by Christianne J.M. Bruschke
(OIE Scientific and Technical Department, Paris, France)*

Slide 1



Dr. Christianne J.M. Bruschke,
Dr. A. Schudel
OIE Scientific and Technical Department,
Paris, France

**Eradicating Animal
Influenza Viruses at their
Source**

The FAO-ACPHA/OIE regional avian influenza
economic assessment workshop
26-29 September 2005 Bali

Slide 4

A Realistic Goal

- Stepwise and phased disease control program for each country
- Short, medium and long term frame
- Progressively shift the majority of infected countries to "freedom from infection in defined compartments"
- Ensure that free countries remain free

Slide 2

Outline of the Presentation

- Why eradication at the source?
- OIE International Standards
- Zoning and compartmentalisation
- OFFLU

Slide 5

Critical issues for Avian Influenza control

- Early warning, detection and response
- Standards for
 - disease/infection detection
 - disease/infection prevention
 - animal movements and trade
 - animal and virus destruction
 - production and use of vaccination
- Collaboration of OIE, FAO and WHO

Slide 3

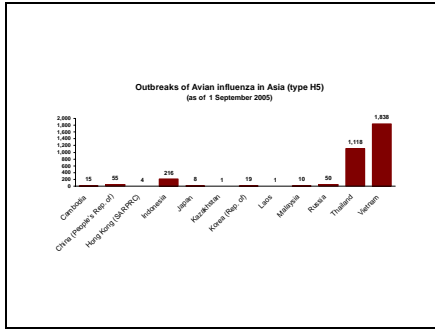
Control of High Pathogenic AI at the animal source

- Virus reservoir provides risk for pandemic
- Elimination of the virus at the source of eminent importance
- Animal health issues must have highest priority in combating the AI crisis

Slide 6

The OIE early warning system

Slide 7



Slide 11

- Update chapter 2.7.12 on Avian Influenza
- Update Chapter, taking most recent scientific findings into consideration (2004)
 - Development of specific risk-based recommendations for most important commodities being traded
 - Differentiate restrictions between HPAI and LPAI to encourage transparent reporting

Slide 8

- OIE International Standards for Avian Influenza
- Terrestrial Animal Health Code - mammals, birds and bees
 - Chapter 2.7.12
 - Appendix 3.8.9
 - Manual of Diagnostic Tests and Vaccines for Terrestrial Animals
 - Available at www.oie.int

Slide 12

- Recent events:
- Expert ad hoc group on pathogenesis and transmission (November 2004)
 - Expert ad hoc group on epidemiology and surveillance (November 2004)
 - Terrestrial Animal Health Standards Commission (January 2005)

Slide 9

- Why standards necessary
- international public good
 - safety of international trade
 - fewer disease outbreaks
 - harmonisation of national legislation and control measures
 - fewer unjustified restrictions
 - fairer trade
 - benefits to developing countries

Slide 13

- Avian Influenza (Ch. 2.7.12)
- Definition
 - Poultry
 - HPAI free
 - NAI free, free establishment
 - Commodity trading recommendations
 - Compartmentalization
 - Surveillance (with and without vaccination)
 - Clinical
 - Virological
 - Serological

Slide 10

- Terrestrial Animal Health Code
- To avoid introduction of pathogens without using unjustified sanitary barriers
 - Gives trading recommendations to the Chief Veterinary Officers of the OIE Member Countries
 - Provides guidelines for disease surveillance

Slide 14

Notifiable avian influenza (NAI): is defined as an **infection of poultry** caused by any influenza A virus of the H5 or H7 subtypes or by any AI virus with an intravenous pathogenicity index (IVPI) greater than 1.2 or ...

Slide 15

NAI viruses can be divided into **highly pathogenic notifiable avian influenza (HPNAI)** and **low pathogenic notifiable avian influenza (LPNAI)**

Slide 19

Poultry is defined as ‘all birds reared or kept in captivity for the production of meat or eggs for consumption, for the production of other commercial products, for restocking supplies of game, or for breeding these categories of birds’.

Slide 16

HPNAI viruses have an IVPI in 6-week-old chickens greater than 1.2 or, cause at least 75% mortality in 4 to 8 week old chickens infected intravenously.

Slide 20

NAI status (Ch. 2.7.12)

- The NAI status of a country, zone or compartment
 - HPAI free
 - HPAI infected
 - NAI free zone or compartment
- Guidelines for trade of poultry and poultry products

Slide 17

H5 and H7 viruses which do not have an IVPI of greater than 1.2 or cause less than 75% mortality in an intravenous lethality test should be sequenced to determine HPNAI isolates.

Slide 21

Guidelines for Surveillance (app. 3.8.9)

- Defines principles and provides a guide for Disease Surveillance
- To seek recognition for a declared free NAI status
 - Maintenance or following outbreak
 - With or without vaccination
 - Application can be made for a country, zone or compartment

Slide 18

LPNAI are all influenza A viruses of H5 and H7 subtype that are not HPNAI viruses.

Slide 22

Surveillance Strategies

- Random surveillance
 - Statistically based surveys
 - Serological testing followed by virological methods for confirmation
- Targeted surveillance
 - Aimed at high risk groups
 - Serological and virological methods concurrently

Slide 23

Surveillance Strategies

- Detection of clinical signs of NAI at the flock level
 - Important for HPNAI
- Strategies
 - Clinical followed by serological surveillance or
 - Serological followed by clinical surveillance

Slide 27

Vaccines

- Existing standard
 - based on traditional inactivated vaccine
 - use of subtypes homologous to the outbreak, but normally low pathogenicity subtypes
- new DIVA strategies can reduce mass culling
- recombinant vaccines have a place

Slide 24

Surveillance: Vaccinated flocks

- Strategy dependent on the type of vaccine used
 - Inactivated whole AIV
 - DIVA: Hemagglutinin expression-based vaccines
- Sentinel birds
 - Unvaccinated, permanently identifiable

Slide 28

Animal Welfare

- Animal welfare is included in the strategic plan of OIE
- Animal welfare concerns
 - Guidelines on killing for disease control
 - Guidelines on slaughter, including religious
 - Guidelines on land transport

Slide 25

OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals

- The *Manual* is a companion volume of the *Code*.
- The purpose is to facilitate international trade in animals and animal products by describing internationally agreed upon laboratory methods for diagnosis and requirements for the production and control of vaccines.

Slide 29

Zoning and Compartmentalisation (Ch 1.3.5)

- To establish and maintain a subpopulation with a different health status within the national borders
- Zoning: separation by natural or artificial geographical barriers
- Compartmentalisation: separation via a biosecurity management system

Slide 26

Diagnostic Techniques

- Identification of the Agent
- Assessment of pathogenicity
- Serology
- Developing techniques
- new interpretation and definition of notifiable AI

Slide 30

Zoning and Compartmentalisation Benefits

- Allows a stepwise approach to disease control in a country
- May encourage the efficient use of resources
- May allow safe trade in certain commodities due to functional separation

Slide 31

Principles for definition of a zone or compartment

- Establishment by the veterinary administration
- The animals belonging to the subpopulation should be clearly recognisable
- The measures necessary to preserve distinct health status must be defined and appropriate to the disease

Slide 35

Factors for the evaluation of the zone or compartment

- Definition
- Epidemiologic separation from potential sources of infection (physical or biosecurity)
- Standard operating procedures in place
- Permanent supervision and assessment by Veterinary Services
- Surveillance for the agent / disease
- Diagnostic capabilities
- Notification and emergency response

Slide 32

Sequence of steps in definition of zone or compartment

- Exporting country
 - defines the zone or compartment
 - Identifies animals and has a valid traceability in place
 - Defines the standard operating procedures (eg biosecurity manual)
 - Provides the information to the importing country

Slide 36

OIE/FAO Network for Avian Influenza (2005)

OFFLU

Slide 33

Sequence of steps in definition of zone or compartment

- Importing country determines whether it accepts the zone or compartment
 - Evaluates the Vet Services of the exporting country
 - Makes risk assessment
 - Takes own health status into account
 - Takes OIE standards into account

Slide 37

OIE/FAO Network for Avian influenza

OFFLU

- To offer veterinary expertise to Member Countries to assist in the control of AI
- To develop research on avian influenza (AI)
- To collaborate with the WHO Influenza Network on issues relating to the animal-human interface

Slide 34

Sequence of steps in definition of zone or compartment

- Importing country
 - Rejects
 - Requests further information
 - Recognises
- Formal agreement between both parties

Slide 38

Structure OFFLU

- Steering Committee
- Secretariat:
 - Dr I. Capua, OIE reference laboratory Padova
- Scientific Committee:
 - experts with international repute with proven lab expertise and/or field experience
- Team of Scientific Collaborators
 - Scientists having first hand experience, national and regional expertise in lab work, epidemiology or field control

Slide 39

Scientific Collaborators

- Invited to participate from as wide a field as possible
- Terms of Reference
 - Liaise with Sc.C. to advise in management, control and eradication of AI
 - Promote the collection of strains for identification
 - Assist in training for lab diagnosis and field surveillance
 - Promote linkages between diagnostic labs in poor countries with industrialized countries

Slide 41

GF-TADs

- Depends commitment of collaborators
- Financial resources
- Ambitious program

Slide 40

OFFLU: main priorities

- Exchange of virus isolates and sequence data among reference and diagnostic labs
- Exchange of Scientific information
- Communication with member countries and international organisations
- Provide advice and expertise to infected countries
- Monitor vaccine trials

Slide 42




**Strategic vaccination for avian influenza in Asia
- the Hong Kong experience -**
*Presented by Howard Wong (Senior Veterinary Officer,
Food and Environmental Hygiene Department, HONG KONG SAR)*

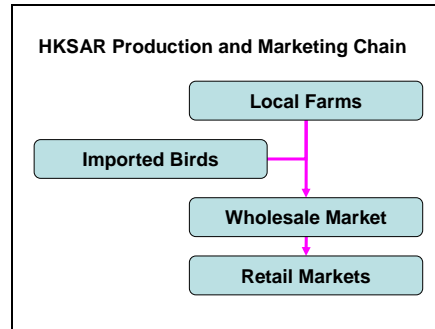
Slide 1

**Strategic Vaccination for Avian Influenza in Asia
The Hong Kong Experience**

Dr. Howard Wong
Senior Veterinary Officer
Food and Environmental Hygiene Department, HONG KONG SAR



Slide 4



Slide 2

Topics Covered

- Hong Kong Outbreaks
- Control methods
- Vaccine Trial
- Outbreak Vaccination
- Current Vaccine Programme
- Vaccination Costs
- Vaccination concerns

Slide 5

- **Hong Kong Outbreaks**
- Control methods
- Vaccine Trial
- Outbreak Vaccination
- Current Vaccine Programme
- Vaccination Costs
- Vaccination Concerns

Slide 3

Local Chicken Industry

- Slow-growing 'Shek-kee' "yellow chickens" (market age 70-100 days old)
- Family-run, concentrated locations (up to 20 farms per km²)
- 146 active farms with a capacity of 3.7 million
- Market: 50% Local / 50% from Mainland China

Slide 6

H5N1 outbreaks in Hong Kong

- **1997** – Total poultry depopulation; 18 human cases with 6 deaths
- **May 2001** - retail markets only, not farms
- **Feb-Mar 2002** – Retail markets and 22 local chicken farms
- **Dec 2002** – 2 waterfowl parks, wild birds, retail markets + 5 chicken farms

Slide 7

- Hong Kong Outbreaks
- **Control methods**
- Vaccine Trial
- Outbreak Vaccination
- Current Vaccine Programme
- Vaccination Costs
- Vaccination Concerns

Slide 11

- Evaluation of vaccination control option**
- Large scale field vaccination trial at Pak Sha
 - Experimental laboratory challenge results in Hong Kong
 - Challenge in WHO Reference Lab

Slide 8

- H5N1 Control – Local Farms**
Stamping Out
- Stamping out is the preferred method
 - Used in Hong Kong in 1997, 2001, 2002
 - Success depends on preventing incursion of H5N1 virus into Hong Kong

Slide 12

- Vaccine Trial**
- 22 farms selected for programme
 - Mandatory participation
 - Programme began in April 2002
 - Over 1.6 million chickens vaccinated

Slide 9

H5N1 Control – Local Farms

The failure, in Hong Kong, to eradicate Highly Pathogenic Avian Influenza, and the constant risk of introduction of virus meant that vaccination had to be considered as an additional method for control of H5N1

Slide 13

- Vaccine Trial**
- Used commercial killed H5N2 oil emulsion vaccine (A/CK/Mexico/232/94) given by farmers
 - Chickens were vaccinated at 8 days old and again four weeks later

Slide 10

- Hong Kong Outbreaks
- Control methods
- **Vaccine Trial**
- Outbreak Vaccination
- Current Vaccine Programme
- Vaccination Costs
- Vaccination Concerns

Slide 14

- Vaccine Trial – Local Farms**
- 30 tagged sentinels left unvaccinated
 - 30 tagged vaccinates and 30 sentinels monitored concurrently

Slide 15

Testing and monitoring

- Vaccinates – HI test 4 weeks after 1st, 2nd vaccine and 5 days pre-sale
- Sentinels tested at the same time

Slide 19

Laboratory challenge

- Both groups were at 71 days of age from field vaccinated farm
- Vaccinated chickens had titres ranging from 1:32 to 1:256 (GMT 119.4)
- Unvaccinated sentinels has no measurable titres
- An H5N1 virus (Z genotype) isolated from a retail market in April 2002 was used as the challenge

Slide 16

Testing and monitoring

- All dead birds had necropsy & avian influenza virology
- Prior to sale, 60 birds/batch tested for H5 virus by NASBA or RRT-PCR

Slide 20

Laboratory challenge

- All unvaccinated chickens died within 3 days
- All vaccinated chickens survived and attained a geometric mean titer of 238.9 on day 10
- Overall virus excretion was >10 fold less in cloaca, and >10,000 fold less in pharynx in vaccinated birds
- Significant protection against Hong Kong H5N1 HPAI virus (Chi-square = 20, p = 0.0000)

Slide 17

Testing and monitoring

- About 1.6 million chickens in 248 batches were vaccinated and marketed from Pak Sha farms
- No H5N1 virus or HPAI was detected on vaccinated farms
- 202 dead chickens from 67 batches that had some mortality were cultured and yielded no H5N1 virus

Slide 21

Summary results – Hong Kong

Group	No. Dead / Total (mean time to death)	Antibody At day 10 (GMT)	Virus in cloaca (mean Log ₁₀ day 2)	Virus in throat (mean Log ₁₀ day 2)
Sentinel	10/10 (2.3 days)	n.a.	7/10 (10 ^{2.03})	10/10 (10 ^{4.25})
Vaccinate (GMT = 119.4)	0/10	238.9	0/10	0/10

Slide 18

Laboratory challenge

- 10 Vaccinated and 10 unvaccinated
- Challenge dose - 15,000 egg infectious doses (EID) via eye, nose and mouth
- Cloacal and throat swabs daily
- Virus titrated in chicken embryos

Slide 22

Laboratory challenge – Robert Webster, Memphis

- WHO Avian Influenza Ref. Laboratory
- One or two doses of same vaccine
- Challenge virus: H5N1 virus from Index farm in February 2002 (10 or 100 CLD₅₀)
- Similar protection and reduction in virus excretion in different breed of birds

Slide 23

- Hong Kong Outbreaks
- Control methods
- Vaccine Trial
- **Outbreak Vaccination**
- Current Vaccine Programme
- Vaccination Costs
- Vaccination Concerns

Slide 27

- Hong Kong Outbreaks
- Control methods
- Vaccine Trial
- Outbreak Vaccination
- **Current Vaccine Programme**
- Vaccination Costs
- Vaccination Concerns

Slide 24

- Outbreak Vaccination**
- Outbreaks - 2 waterfowl parks, wild birds, and retail markets in Dec. 2002
 - Extended vaccination to "risk" areas
 - 53 farms (starting 23 Dec. 2002)
 - Good flock serology response
 - No H5N1 outbreaks in these farms

Slide 28

- Current Vaccine Programme**
- Universal AI vaccination program started in June 2003
 - Killed H5N2 AI vaccine used
 - Broilers receive 2 injections at 8-10 days and 38-40 days of age
 - Imported birds also vaccinated

Slide 25

- Farm outbreaks January 2003**
- 5 unvaccinated farms, 3 locations
 - 2 quarantine and immediate stamping out
 - 3 quarantine, affected sheds killed, others vaccinated, strict biosecurity & monitoring of this and surrounding farms
 - On two farms vaccinated birds resisted proven challenge and shut down infection by 13-18 days post-vaccination

Slide 29

- Current Vaccine Programme**
- Antibody responses are monitored
 - If poor antibody response levels in a flock occur in blood test at four weeks after 2nd injection, a 3rd injection must be given

Slide 26

- Conclusions**
- H5N2 vaccinated chickens were protected against H5N1 challenge
 - They excrete significantly less H5N1 virus. (Titres of 1:16 result in 99.99% less viral excretion)
 - The H5N2 vaccine produces suitable flock antibody responses against H5
 - In field outbreaks the vaccine was able to protect chickens and shut down virus excretion

Slide 30

- Current Vaccine Programme - Surveillance**
- For early detection of the presence of virus each batch has 60 sentinel chickens
 - An integral part of a stamping out or vaccination programme

Slide 31

Current Vaccine Programme - Surveillance along the production and marketing chain

<p>Along the chain</p> <ul style="list-style-type: none"> •Local chicken farms •Imported chickens •Wholesale markets •Retail markets •Local pigeon farms 	<p>Outside the chain</p> <ul style="list-style-type: none"> •Recreational bird parks •Wild birds •Pet birds •Pigs
--	--

Slide 35

Stamping Out Costs

Year	Compensation US\$	No. of Birds Slaughtered
1997	13.4 million	1.5 million
2001	12.6 million (+1 million operation)	1.4 million
2002	3.2 million (+2 million operation)	900,000

- Governmental expenditure on surveillance :
Approx US\$ 3 million / year for 2 million birds

Slide 32

AI Surveillance – a summary

2004	Total	Results
Local farms	13,399	H5: 0
Wholesale	8,213	H5: 0
Retail	15,752	H5: 0
Wild Birds	7,433	H5: 3
Parks	4,738	H5: 0
Pet Birds	5,322	H5: 0
Pigs (2000-05)	9,000	H5: 0

Slide 36

- Hong Kong Outbreaks
- Control methods
- Vaccine Trial
- Outbreak Vaccination
- Current Vaccine Programme
- Vaccination Costs
- **Vaccination Concerns**

Slide 33

- Hong Kong Outbreaks
- Control methods
- Vaccine Trial
- Outbreak Vaccination
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- **Vaccination Costs**
- Vaccination Concerns

Slide 37

Vaccination Concerns

- Accelerate antigenic drift and mutation necessitating frequent change of the vaccine
- Continued virus shedding in vaccinated chickens
- Emerging strains escaping detection
- Undermining the push for improved biosecurity

Slide 34

Vaccination Programme Costs

- Vaccine paid for fully by farmers
- US\$400,000 / year

Vaccine	Cost / Bird ¢ US
ND + IB	0.6
ILT	1
ND	0.8
IBD	1
Marek's	1.8
AI	4

Slide 38

Drift and mutation

- In contrast to human alum-based inactivated vaccines, oil-based adjuvant poultry vaccine provides broader protection despite variation of up to 10.9% in HA amino acid sequence (Swayne et al 1999, 2000)
- 1.3 billion doses of vaccines have been used in Mexico since 1995, SEPRL, USDA found no evidence of any acceleration of drift. The same vaccine remained protective

Slide 39

Continued virus shedding

- Unvaccinated birds replicate AI viruses to high levels if infected and shed large quantities of virus which will infect more birds and increase the risk of exposure to humans
- Each replication cycle increases the number of mutations and the potential for antigenic change

Slide 41

Emerging viruses

- Field infection with the current or new viruses can be detected with the 60 tagged sentinels kept with each batch of chickens
- Continued swabbing of dead poultry or faeces at retail and wholesale markets and live poultry on farm can detect virus incursions
- All H5 viruses isolated and any influenza virus associated with increased mortality will be characterised genetically and by pathogenicity testing to identify emerging viruses

Slide 40

Continued virus shedding

- Vaccination greatly reduces virus replication rendering field infection self limiting
- Human exposure is reduced
- In Verona, Italy, 71 unvaccinated flocks became infected with H7N1 virus between Nov 2000 and May 2002 while only 3 vaccinated flocks showed serological evidence of exposure to infection

Slide 42

Take home message

- Stamping out is essential in controlling infected flocks
- Vaccination is an essential control tool in an endemic area
- It is vital to conduct surveillance after any stamping out to ensure that post culling re-introduced poultry are not re-infected
- Not vaccinating due to cost concerns may be a false economy

Slide 43


Thank you

Response antibody of Pekin ducks in field vaccine trial of avian influenza in Indonesia - a preliminary study

Presented by A. Wiyono, R Indriani, NLPI Dharmayanti, R Damayanti, RMA Adjid
 (Research Institute for Veterinary Science (RIVS), Agencies for Agricultural Research and Development (AARD), Department of Agriculture Bogor, Indonesia)

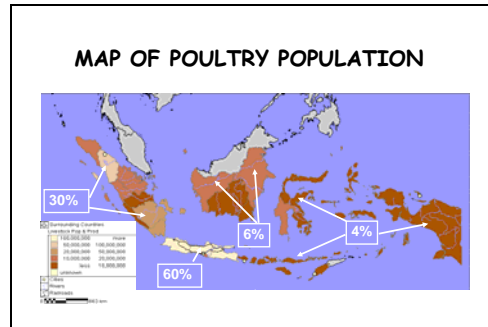
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**RESPONSE ANTIBODY OF PEKIN DUCKS
 IN FIELD VACCINE TRIAL OF
 AVIAN INFLUENZA IN INDONESIA :
 A PRELIMINARY STUDY**



A. Wiyono, R Indriani, NLPI Dharmayanti, R Damayanti, RMA Adjid
 Research Institute for Veterinary Science (RIVS)
 Agencies for Agricultural Research and Development (AARD)
 Department of Agriculture Bogor, Indonesia

Slide 4



Slide 2

OUTLINE

- Introduction
- Methodology
- Result
- Discussion
- Future studies
- Acknowledgement

Slide 5

**POULTRY POPULATION
 IN INDONESIA IN 2003**

- Layer: 80 – 85 million
- Broiler: 1,2 billion
- Native chicken: 295 million
- Other poultry: 45 million
- Breeder:
 - DOC for layer: 1,8 – 2 million per week
 - DOC for broiler: 18 – 20 million per week

Slide 3

INTRODUCTION

Slide 6

HPAI IN THE WORLD BEFORE 2003

1959	Scotland H5N1	1992	Australia H7N3
1961	South Africa H5N3	1994	Australia H7N3
1963	England H7N3	1994-1995	Mexico H5N2
1966	Canada H5N9	1995-2001	Pakistan H7N3
1975	Australia H7N7	1997	Australia H7N4
1979	England H7N7	1997	Italia H5N2
1983-84	USA H5N2	1997-2002	Hong Kong H5N1
1983	Ireland H5N8	1999-2000	Italia H7N1
1985	Australia H7N7	2003	The Netherlands, Belgium, Germany H7N7
1991	England H5N1		

Slide 7

**AI IN INDONESIA
BEFORE AUGUST 2003**

- Viruses of LPAI H4N2 and H4N6 sub-types were isolated from wild birds (Ronohardjo *et al.*, 1983; 1985)
 - Ducks
 - Pelicans
 - Gooses

Slide 11

GROSS-PATHOLOGICAL FEATURES

- Wattle and comb : petechiae, cyanosis
- Subcutan feet : petechiae
- Tight & chest muscle : hemorrhages
- Trachea : hyperemi
- Proventriculus : oedema, petechiae
- Epicard & myocard : petechiae
- Lung : congestion, hemorrhages
- Liver : very fragile, necrosis, hemorrhages
- Spleen : swollen
- Ovarium : hemorrhages, congestion, necrosis

Slide 8

**DIAGNOSIS OF
HPAI OUTBREAKS
IN INDONESIA**

Slide 12

HISTOPATHOLOGICAL FEATURES

- Brain : Encephalitis (lymphocyte infiltration, vasculitis, gliosis, myelin degeneration)
- Skeletal muscle : hemorrhages
- Epicard & myocard : hemorrhages
- Trachea : tracheitis, hemorrhages
- Lung : interstitial pneumonia, hemorrhages, congestion
- Proventriculus : proventriculitis
- Liver : hepatitis with necrosis & hemorrhages
- Spleen : congestion
- Kidney : congestion, nephritis, vasculitis
- Ovary : hemorrhages, fibrosis, necrosis
- Wattle & feet : edema, hemorrhages

Slide 9

CLINICAL SIGNS

- Very high mortality rate (almost 100%)
- Wattle and comb : swollen and cyanotic
- Seromucous nasal discharges and hypersalivation
- Feet : petechiae
- Diarre
- Depression
- Softened egg shell

Slide 13

**9 STRATEGIES FOR CONTROLLING
THE OUTBREAKS**

1. Bio-security
2. Vaccination
3. Selective Depopulation in infected areas
4. Restriction on traffic of poultry and poultry product
5. Surveillance and tracing back
6. Restocking
7. Stamping-out in new infected areas
8. Public awareness
9. Monitoring and evaluation

Slide 10

PATHOLOGICAL EXAMINATION

Slide 14

**CONSIDERATIONS ON
CHOOSING THE STRATEGY**

1. Outbreaks have been widely spread
2. Indonesian poultry situation : native chickens widely spread

Slide 15

**FAO/OIE/WHO RECOMENDATION
(5 February 2004 in Rome)**

- In order to control the spread of AI outbreaks in heavily infected countries, mass vaccination can be campaigned in those countries in targeted period of time as an emergency action.
- The condition is that the vaccine should comply with OIE quality standard followed by surveillances of antigenic changes and vaccine effectiveness.

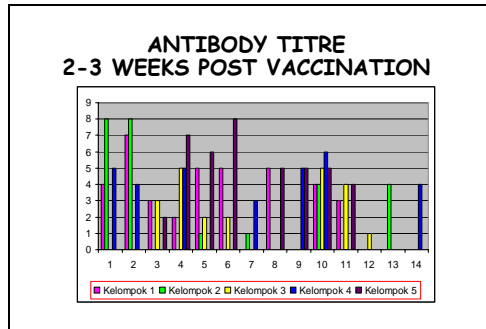
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RESULTS

Slide 16

METHODOLOGIES

Slide 20

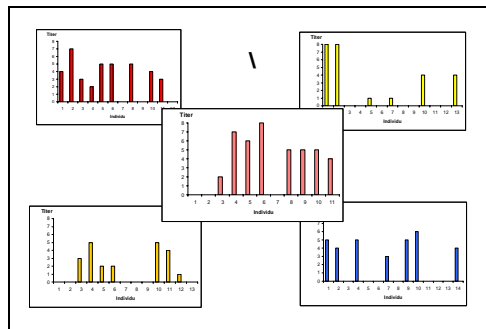


Slide 17

EXPERIMENTAL DESIGN

- Location of study : District of Cianjur (West Java)
- The sentinel :
 - Breed of duck : Pekin Duck from Malaysia as a breeding farm
 - 5 months old of farmed ducks
 - Total population : 700
 - Five (5) groups of ducks (5 pen)
- Vaccination program :
 - Vaccine : locally-produced H5N1 HPAI Vaccine
 - First vaccination : 29 July 2005
 - Dose : 1 dose of vaccine
 - Second vaccination as booster will be done based on antibody titre
- Monitoring of vaccination :
 - Serology : Haemagglutination Inhibition test
 - Virus shedding : RT-PCR

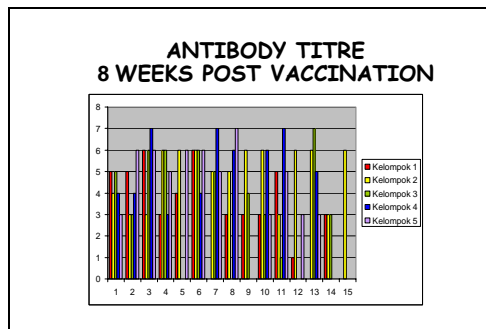
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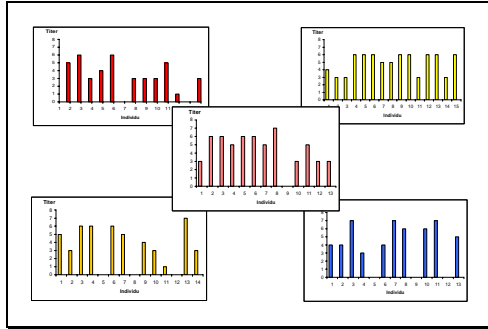
Slide 18



Slide 22



Slide 23



Slide 27

CONCLUDING REMARKS

- The preliminary study shows that :
- The Pekin ducks were all negative antibody prior to vaccination
 - Locally-produced H5N1 AI vaccine is able to induce antibody titre in Pekin Ducks, i.e. in 2-3 weeks the mean of antibody was 2.5 Log₂
 - After 8 weeks the mean of antibody was 4.1 Log₂. However, among ducks the titre was still varied (high coefficient variation)
 - The virus shedding was not detected at 2-3 weeks PV
 - The flock is still under surveillance

Slide 24

SUMMARY OF ANTIBODY TITRE

Date of Collection	Flock	Total samples	Antibody Titre to HPAI virus (Log ₂)							Mean	SD	% CV
			0	1	2	3	4	5	6			
29 Jul (Pre-vax)	1	10	10									
	2	11	11									
	3	10	10									
	4	10	10									
	5	5	5									
	Sub total	51	51									
16 Aug (0.3 weeks Post-vax)	1	12	3	1	2	2	3	1	3.1 log ₂	2.1	67.74	
	2	13	7	2		2		2	2.0 log ₂	2.8	145.00	
	3	13	6	1	2	1	2		1.6 log ₂	1.8	112.50	
	4	14	7		1	2	3	1	2.2 log ₂	2.3	104.54	
	5	11	3	1		1	3	1	3.0 log ₂	2.7	79.95	
	Sub total	63	26	3	4	4	8	11	2.5 log₂	2.5	100.00	
25 Sept (8 weeks Post-vax)	1	14	2		5	1	3	2	3.7 log ₂	2.0	54.05	
	2	15			4	1	2	8	4.3 log ₂	1.2	24.69	
	3	14	3	1	3	1	2	3	3.5 log ₂	2.3	65.71	
	4	13	3		1	3	1	2	3	4.0 log ₂	2.5	62.50
	5	13	1		4	3	4	1	4.4 log ₂	1.8	68.90	
	Sub total	69	9	1	17	6	11	19	4.1 log₂	2.1	51.21	

Slide 28

FUTURE STUDIES

- The Pekin ducks will be given second vaccination (as a booster) and will be further monitored.
- Another study on field vaccine trial is just started in surrounding area in local ducks which are usually "moving" due to Padi rice harvesting season
 - The sentinel will be 2 flocks in the field and 2 flocks in the laboratory consisting of 1 vaccinated and 1 un-vaccinated respectively.
 - The ducks flocks will be accompanied by sentinel chicken flocks

Slide 25

DISCUSSION

Slide 29

ACKNOWLEDGMENT

- Livestock Services of District of Cianjur
- Pekin Duck Farm in District of Cianjur, West Java
- The Food and Agriculture Organisation (FAO)
- Directorate General of Livestock Services

Slide 26

CONCERNS RELATED TO HPAI OUTBREAKS

- Poultry industry
- Public health aspects
- Food safety
- Food security
- Small-holders farmers' live
- Regional and global issues

Slide 30


THANK YOU

Vaccination strategy for controlling HPAI in Indonesia
Presented by Agus Wiyono (Department of Livestock Services, Indonesia)

Slide 1

VACCINATION STRATEGY FOR CONTROLLING HPAI IN INDONESIA

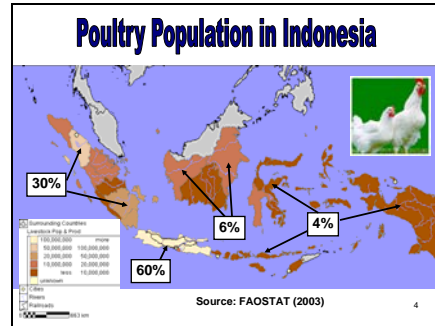
The 65th Executive Committee Meeting/
 The 29th Session of APHCA
 And
 The FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop



MINISTRY OF AGRICULTURE
 DIRECTORATE GENERAL OF LIVESTOCK SERVICES

Bali, 26-29 September 2005

Slide 4



Slide 2

Overview

- Poultry system and population
- History of HPAI in Indonesia
- Policy on control and eradication of AI
- Current situation of HPAI
- Problems in the implementation of Vaccination strategy
- Surveillance and monitoring
- Long Term Vaccination Strategy

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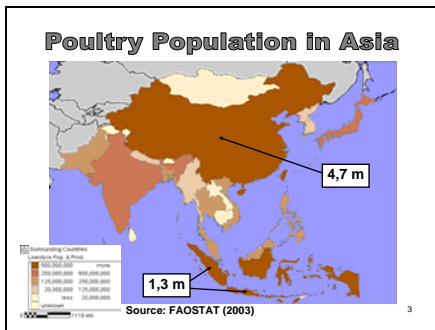
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PROFILE POULTRY INDUSTRY IN INDONESIA

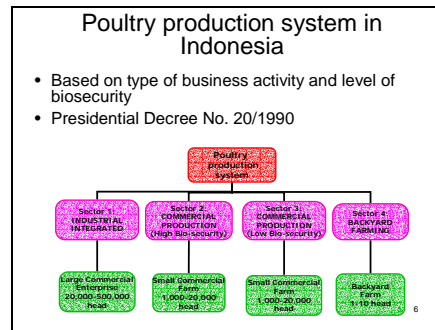
- Total investment : US\$ 35 billion
- Money circulation : US\$ 30 billion per year
- Manpower involved : 10 million people
- Feed production : 7.5 million MT per year
- DOC broiler production : 1,000 million per year
- Breeding chicken population : 20 million
- Layer population : 85 million

Source : Indonesian Association of Poultry Companies (2004)⁵

Slide 3



Slide 6



Slide 7

Characteristic of each category of Indonesian poultry production system

Characteristics	System			
	Integrated	Nucleus-Plum		Backyard
		High	Low	
Type of production	Integrated	Nucleus-Plum	Independent	Backyard
Bio-security	High	Moderate to high	Low	Low
Selling products	Export/urban	Urban/rural	Urban/rural	Rural/urban
Dependency on input market	High	High	High	Low
Dependency on road transp.	High	High	High	Very low
Location	Close to big cities	Close to big cities	Small town & rural	Rural
Housing system	Indoor	Indoor	Half open	Open
Type of shed	Closed	Closed/open	Closed/open	Open
Contact to other chickens	No	No	Yes	Yes
Contact to ducks	No	No	Yes	Yes
Contact to wild bird	No	No	Yes	Yes
Veterinary services	Independent	Pay the service	Pay the service	Government
Source of drugs and vaccine	Market	Market/Nucleus	Market/Gov.	Government
Source of tech. information	Nucleus	Input agent/shop	Input agent/shop	Government

Slide 11

Sector 4: Backyard poultry (Local chicken and ducks)

- 295 million local chicken
- 45 million ducks/muscovy ducks
- 30 million households raising local chicken/ducks

Slide 8

Sector 1: Breeders GPS

GPS	Broilers	Layers
1. No. of breeding farms	11	4
2. PS production capacity (million/year)	9 – 10	1 – 1,5
3. Population (2003)	313.000	33.000
4. Location of GPS Breeders	West Java: 8 East Java: 3	West Java: 4 East Java: 1
5. DOC PS distribution areas (15 provinces)	N. Sumatera, Riau, S. Sumatera, Lampung, Banten, W. Java, C. Java, Yogyakarta, E. Java, Bali, W. Kalimantan, S. Kalimantan, E. Kalimantan, S. Sulawesi and N. Sulawesi	

Source: Directorate of Livestock Breeding, DGLS (2004)

Slide 12

HISTORY OF AI

Slide 9

Sector 1: Breeders PS

PS	Broilers	Layers
1. No. of breeding farms	73	22
2. FS production capacity	1,025 billion	71 million
3. Population (2003)	10 million	1,1 million
4. Location of PS breeding farms	15 provinces	4 provinces
5. DOC PS distribution areas	Throughout Indonesia	

Source: Directorate of Livestock Breeding, DGLS (2004)

Slide 13

- INITIAL OUTBREAK**
- August 2003
 - Two districts in Java (Pekalongan, Tangerang)
 - Layers, broilers, quails, native chicken, ducks
 - High morbidity, high mortality (up to 90%)
 - Spread rapidly mainly due to intra trade
 - Lab. Finding (H5N1), Officially declared 25 January 2004

Slide 10

- Sector 2 and 3: Medium and small scale companies**
- 2,289 commercial poultry companies
 - 25 thousand workers
 - 1,2 billion broilers
 - 80 – 85 million layers

Slide 14

- MODE OF SPREAD**
- MOVEMENT OF SICK OR 'CARRIER' BIRDS (farmers sell their chicken in order to reduce loss)
 - INSUFFICIENT BIOSECURITY IN SECTOR 3 AND 4
 - NO RESTRICTION OF MOVEMENT PRIOR TO OFFICIAL DECLARATION

Slide 15

FACTORS INFLUENCING SPREAD OF DISEASE

- ❑ Movement of poultry, poultry products As well as farm waste, including doc Boxes, hatching egg boxes from infected farms
- ❑ Movement of human and vehicles from infected farms
- ❑ Migration of wild birds or through domestic/pet birds, or water fowl
- ❑ Illegal import of vaccines and biologics

15

Slide 19

POLICY ON AI CONTROL AND ERADICATION

19

Slide 16



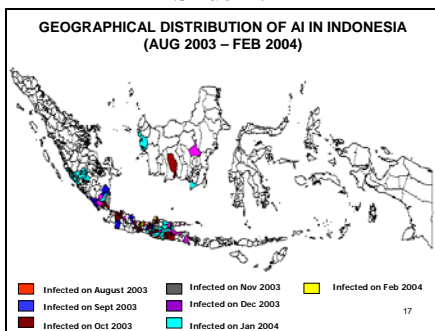
Slide 20

EFFORTS TO CONTROL AI (9 Strategies)

1. Improvement of bio-security
2. Vaccination in infected and suspected areas
3. Depopulation (selective culling) and compensation
4. Control movement of live poultry, poultry products and farm waste
5. Surveillance and tracing back
6. Restocking
7. Stamping out in newly infected areas
8. Public awareness
9. Monitoring and evaluation

20

Slide 17



Slide 21

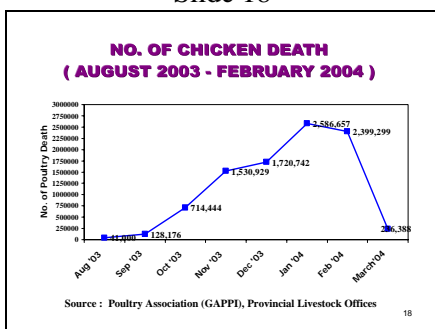
AI Control Policy

Virus Pathogenicity	Flock Case Index	Spread to the Poultry Industry	Density of Poultry Population	Policy
HPAI/LPAI	Backyard	No	High/Low	Stamping-out
HPAI/LPAI	Backyard	Yes	Low	Stamping-out
HPAI/LPAI	Backyard	Yes	High	Vaccination
HPAI/LPAI	Industry	No	High/Low	Stamping-out
HPAI/LPAI	Industry	Yes	Low	Stamping-out
HPAI/LPAI	Industry	Yes	High	Vaccination

Source: Ilaria Capua and Stefano Marangon (2003)

21

Slide 18



Slide 22

Vaccination

Slide 23

HPAI Control Strategy

- Strategy :
 - VACCINATION
 - DEPOPULATION (selective culling)
- MASS VACCINATION campaign to all poultry population within 6 months & followed by regular vaccination
- DEPOPULATION to all infected farms through elimination of healthy poultry which are in-contact with infected poultry

23

Slide 27

Stamping Out

II. COST OF REQUIREMENTS (IDR 5 trillion)

- a. Commercial chicken (broiler, layer, etc.)
780 million x IDR 5,000 = IDR 3.9 trillion
- b. Local poultry (chicken, duck, muscovy, etc)
222.000.000 x IDR 5,000 = IDR 1.1 trillion

27

Slide 24

POLICY....

Consideration to choose the strategy

- The outbreak has been widely spread into several provinces (the whole Java Island infected)
- 60% of the poultry industry located in Java Island (including GP breeders and feed mills)
- Difficult to control the outbreak due to the delay in the official announcement
- Structure of poultry industry, where small farms of native chicken and other indigenous poultry are scattered around the poultry commercial farms

24

Slide 28

Vaccination

Total Population at Risk:

- Local Chicken : 177 million
- Duck/Muscovy : 27 million
- Household Chicken : 18 million
- Layer (Sector 3) : 30.6 million

Total : 252.6 million

28

Slide 25

Economic Consideration for using Vaccination Strategy

Cost Estimation (Java Island)

25

Slide 29

Vaccination

1. Vaccine and Operational Cost (2 times)
252.6 million x IDR 350 = IDR 176.82 billion
2. Monitoring and Surveillance
IDR 1.76 billion
3. Public Awareness and Biosecurity
IDR 2.5 billion
4. Animal Movement Control
IDR 1.5 billion
5. Depopulation
15 million x IDR 15,000 = IDR 225 billion

TOTAL : IDR 407.58 billion

29

Slide 26

Stamping Out

I. COMPENSATION (IDR 16.14 trillion)

- a. Commercial chicken (broiler, layer, etc.)
780 million x IDR 15,000 = IDR 11.7 trillion
- b. Local poultry (chicken, duck, muscovy, etc)
222 million x IDR 20,000 = IDR 4.44 trillion

26

Slide 30

Cost Comparison between Vaccination and Stamping Out Strategy

Stamping Out	Vaccination
IDR 21.14 trillion	IDR 407.58 billion
Equal to	Equal to
US\$ 2.11 billion	US\$ 40.75 million

30

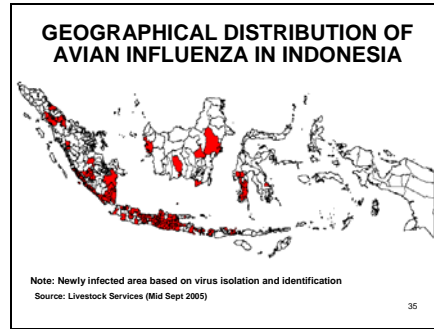
Slide 31

'Master Seed' used

- A/Chicken/Legok/Banten/2003 (HPAI)**
 - Vaksiflu AI (Vaksindo) – H5N1
 - Medivac AI (Medion) – H5N1
- A/Chicken/Indonesia/2003 (HPAI)**
 - Inactivated AI VAC (Qilu) – H5N1
- A/Chicken/Mexico/232/94 (LPAI)**
 - Nobilis Influenza H5 (Intervet) – H5N2
 - Optimune AI KV (Biomune) – H5N2
 - AI Killed Virus Vaccine (Avimex) – H5N2
 - Volvac AI (Bohringer) – H5N2
- A/Turkey/Wisconsin/68 (LPAI)**
 - Gallimune Flu (Merial) – H5N9

31

Slide 35



Slide 32

AI Vaccine

Vaccine Name	Master Seed	Sector 1	Sector 2	Sector 3	Sector 4
Vaksiflu AI	H5N1	-	+	+	+
Afluvet	H5N1 (?)	-	+	+	+
Medivac AI	H5N1	-	+	+	+
Inactivated AI Vac	H5N1 (?)	+	+	-	-
Optimune AIV	H5N2	+	+	-	-
Volvac AI	H5N2	+	+	-	-
AI Vaccine	H5N2	+	+	-	-
Nobilis® Influenza H5	H5N2	+	+	-	-
Gallimune Flu	H5N9	+	+	-	-

32

Slide 36

AI INFECTED AREA

Total : 22 provinces (139 Districts)

- Java**
 - Banten (2)
 - West Java (12)
 - East Java (25)
 - Jakarta (3)
 - Central Java (27)
 - Yogyakarta (5)
- Bali (8)**
- Sumatera**
 - Lampung (9)
 - Bengkulu (2)
 - South Sumatera (10)
 - West Sumatera (5)
 - Bangka Belitung (1)
 - Jambi (2)
- Kalimantan**
 - West Kalimantan (2)
 - South Kalimantan (1)
 - Central Kalimantan (2)
 - East Kalimantan (1)
- Nusa Tenggara**
 - West Nusa Tenggara (9)
 - East Nusa Tenggara (1)
- Sulawesi**
 - South Sulawesi (12)
 - Southeast Sulawesi (1)

36

Slide 33

Mass Vaccination Campaign

- Vaccination subjected only to backyard and small-scale farmers of any species (layer, broiler, indigenous chicken, duck, quail etc.)
- Vaccination is given free of charge
- 300 million doses of AI vaccines locally produced has been provided using Indonesian Emergency Fund for controlling AI 2004
- Various level of vaccination coverage in different areas (65-85%)

33

Slide 37

Last reported death cases (Jun – Aug 2005)

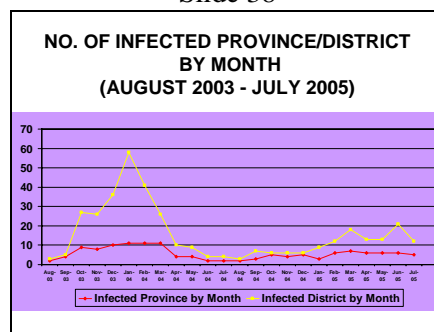
- DKI Jakarta (June)
 - North Jakarta
- Central Java (July)
 - Banyumas
- Yogyakarta (June)
 - Kulon Progo
 - Sleman
 - Bantul
- West Java (Last August)
 - Bandung

37

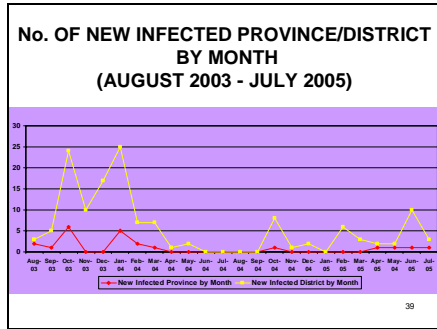
Slide 34

Current situation of HPAI

Slide 38



Slide 39

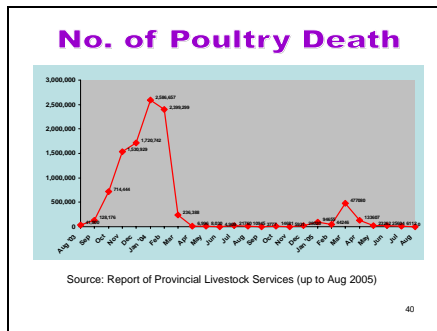


Slide 43

DEPOPULATION PROBLEMS

- Low participation of farmer and industry in the prevention of sick birds trade
- Depopulation procedure not completely follow the animal welfare procedure

Slide 40



Slide 44

Vaccines Problems

- Distribution of illegal vaccine from China (including vaccine from subtype H9)
- Local vaccine using field strain (Highly Pathogenic H5N1)
- There are 6 imported vaccines with 3 different master seed (1 LP H5N1 strain China, 1 LP H5N2 strain Mexico & 1 LP H5N9 strain USA)
- Vaccines available only for chicken and limited study on other poultry/birds

Slide 41

PROBLEMS in the implementation of VACCINATION strategy

Slide 45

Mass Vaccination Problems

1. Existence of Veterinary authority in the province/district (autonomy era)
2. Low vaccination coverage due to the large area, small scale farm, extensive farming system (no housing) and *time consuming* (catching chicken)
3. Various species infected (native chicken, commercial chicken, duck, quail, pigeon etc)
4. Limited equipment (automatic syringe, refrigerator, ice box, PPE etc)
5. Low operational cost

Slide 42

VACCINATION PROBLEMS

- Difficulty in the control of distribution of illegal vaccine, resulted the difficulty in post vaccination monitoring
- Limited capacity to produce local vaccine, need to import a vaccine with a good quality (met with the OIE standard)

Slide 46

Mass vaccination problems (cont..)

6. Vaccine storage capacity in the province/district is very limited
7. Limited number of vaccinator (resources and capacity)
8. Vaccination recording is not well implemented
9. Post vaccination monitoring is not intensively implemented

Slide 47

Monitoring and Surveillance

Slide 51

Suggestion for AI Vaccination in the Native Chicken

- Post vaccination monitoring should be conducted 4 weeks after the first vaccination
- Vaccination should be administered intramuscular
- Good vaccine handling including storage
- Handling/restrain of animal should be done carefully

Source: Waluyo B. Priyono dan Tri B. Usman, Balai Besar Veteriner (2004)₅₁

Slide 48

SURVEILLANCE PROGRAM

- Surveillance is implemented by 7 regional laboratories throughout the country in cooperation with Provincial/District Livestock Services
- Scope of surveillance :
 - Early detection of infection
 - Zoning (free, susceptible and infected)
 - Sub-typing identification
 - Detection of infection in other species (pigs, wild birds)
 - Demonstrate free status based on farm (compartment)

48

Slide 52

Vaccination results in broiler chicken

- Maternal antibody fall significantly and Disappeared after 3 weeks
- Vaccination on chicken at 4 days old is not effective because up to 35 days old the antibody is not developed

Source: Waluyo B. Priyono dan Tri B. Usman, Balai Besar Veteriner (2004)₅₂

Slide 49

Serological Monitoring Results

- Post vaccination antibody titer is protective
- *Booster* can increase antibody titer in the commercial farms with a good biosecurity
- DOC have a maternal antibody that last for 6-25 days depend on the breeder

Source : RIVS/Balitvet (2004)

49

Slide 53

Suggestion for Vaccination on Broiler Chicken

- Do not need to vaccinate broiler chicken
- To prevent the disease in broiler, need to improve the maternal antibody

Source: Waluyo B. Priyono dan Tri B. Usman, Balai Besar Veteriner (2004)₅₃

Slide 50

MONITORING ANTIBODY TITER POST VACCINATION

No	Vaccines	No. of sample with antibody titer (Log 2)										
		2 ⁰	2 ¹	2 ²	2 ³	2 ⁴	2 ⁵	2 ⁶	2 ⁷	2 ⁸	2 ⁹	2 ¹⁰
1.	Vaccine A	1	2	19	105	144	158	307	387	265	47	
2.	Vaccine B			2	14	51	92	99	70			
3.	Vaccine C	35	4	9	32	34	57	87	96	83	65	37
4.	Vaccine D	11	4	8	25	70	137	222	206	122	70	47
5.	Vaccine E				3	10	14	9	5	3		
6.	Vaccine F		4	5	30	39	37	34	24	19	10	1
7.	Vaccine G		4	203	73	166	224	339	445	554	533	

Source: Vaccines producers based on government laboratory result (2004-2005)
50

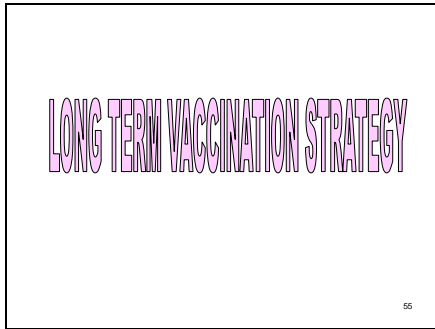
Slide 54

Recommendation for AI Vaccination

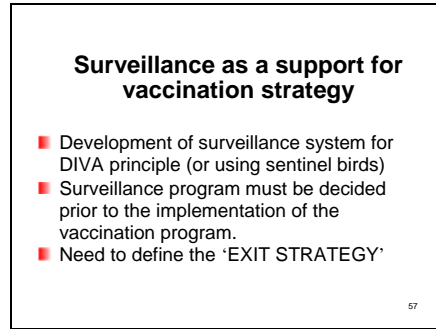
- The use of AI Vaccine H5N1 (local isolate) can be continued for AI control program but the protective antibody titer level in the population should be maintained.
- Need more study to reveal more information on vaccination coverage in every poultry production system
- Need to enhance the post vaccination monitoring to know the exact results of vaccination program
- Need to consider the use of LP strain for local vaccine production

54

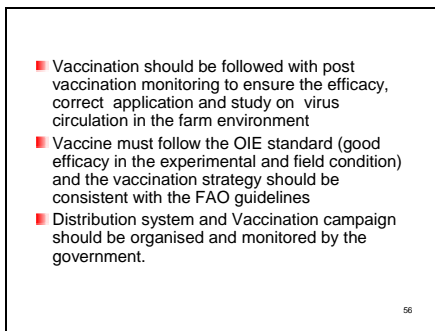
Slide 55



Slide 57



Slide 56



Slide 58



Vaccination programme in Viet Nam

Presented by Van Dang Ky

(Vice-chief, Epidemiology Division, Department of Animal Health, Viet Nam)

Slide 1

*The Regional Avian Influenza Economic
Assessment Workshop
Bali, Indonesia,
26 – 29 September 2005*

VACCINATION PROGRAMME IN VIETNAM

Dr. Van Dang Ky
Vice-chief, Epidemiology Division
Department of Animal Health

Slide 4

I. Introduction

- Apart from other agricultural sector, poultry production is an important component.
- Prior to the avian influenza epidemic,
- The total domestic poultry population in Vietnam reached 261 million, of which 192 million were chicken and 68.8 million were ducks and geese (DAH, 2004).

Slide 2

Contents

- I. Introduction
- II. Current Highly Pathogenic Avian Influenza (HPAI) Situation
- III. Vaccination programme
 1. *Reasons for embarkation of vaccination in Vietnam*
 2. *The pre-vaccination preparation*
 - + *Basic principles in using HPAI vaccine:*
 - + *Vaccination preparation:*
 3. *Implementation*

Slide 5

Table 1: Poultry population 1996 – 2005 (million)

Year	Total	Chicken	Ducks, muscovy ducks, geese
1996	151.410	112.890	38.620
1998	167.890	126.360	41.530
2000	198.050	147.050	51.000
2002	233.290	159.450	73.840
2003	261.000	192.000	68.000
2004	215.000	155.000	60.000
2005	218.000	161.000	57.000

Slide 3

I. Introduction

- Livestock diseases continue to have a major impact on the livelihoods of the rural population in Vietnam.
- which makes up over 80 % of the country total population.
- Nearly 18 % of the country's GDP is derived from agriculture, and 19 % of that is from livestock.

Slide 6

- The end of December 2003, outbreaks of Highly Pathogenic Avian Influenza (HPAI) occurred in many provinces of Vietnam. Identified as infected with subtype H5N1, millions of poultry have been destroyed in order to control the epidemic. The disease spread rapidly with outbreaks occurring at the same time in different regions.

Slide 7

II. Current Highly Pathogenic Avian Influenza (HPAI) situation

From mid-April to August 2005

- HPAI outbreaks have been confirmed in 8 provinces and cities and 11.314 birds have died or been culled.
- This epidemic episode was characterized with outbreaks occurring mostly at small household farms; no large farm has been affected.
- Disease occurrence tends to associate with areas where duck populations are significant.

Slide 11

Measures available for control of HPAI

- Range of measures are available
- Each of these measures should be considered by veterinary and public health authorities and the appropriate combination of measures adopted.
- All of these measures reduce but don't always eliminate risks

Slide 8

Avian flu epidemic in humans

- From 16/12/2005 -16/8/2005, 63 cases of human infection with avian flu were reported in 23 provinces and municipalities, of which 20 were fatal.
- Since the first case of influenza A on human reported in Vietnam.
- Totally, 90 infected cases were reported of which 40 cases were fatal.

Slide 12

**Medium - Long Term:
Enhancement of biosecurity and
Elimination of certain industry/management practices**

- Not feasible to all sectors
- Importance of education
- Investment in biosecurity pays dividends

Slide 9

Major HPAI control measures employed before vaccination

- Early warning by closely surveillance and monitoring at village/farm level;
- Control of animal movement and control of slaughter and disposal of carcasses/wastes;
- Public awareness and enhancing biosecurity of farms;
- Emergency response to disease outbreaks: rapid destruction of infected poultry and poultry at high risk;
- Disinfection at infected and high risk areas;
- Monitoring live bird markets and slaughterhouses;
- Reducing duck population; and
- Strengthening international co-operations.

Slide 13

**Medium - Long Term:
Movement management**

- Includes import and border controls
When trading poultry and poultry products, it is necessary to follow the OIE international standards.
- Live bird market controls
- Control of recreational activities such as cock-fighting

Slide 10

**Factors contributing disease spread:
Production and Ecology**

Wetland, Duck and Rice Production

Slide 14

**Medium - Long Term:
Diagnosis and Surveillance**

- Target risk-based surveillance
- Networking at the level of
National
Regional
International
- Sharing information and virus isolates to early detect the infection and changes

Timely and transparent reporting

Slide 15

III. Vaccination programme

- 1. *Reasons for embarkation on vaccination in Vietnam*

Despite several strictly disease control measures have been applied in Vietnam, HPAI outbreaks have been repeatedly occurred in many parts of Vietnam. There are field and laboratory evidence that a number of vaccines could provide excellent protection against clinical disease in chickens. Vaccination strategy has been applied successfully in some countries for control and prevention of H5N1 influenza. It seems that vaccination has been the only choice for the current HPAI status in Vietnam.

Slide 19

Vaccine use

Content	H5N2	H5N1
H5N2	China	(Harbin) China
H5N1	Chicken	Duck or chicken
Country (producer)	Inactivated (H5 subtype, N28 Strain	Inactivated (H5N1) Subtype, Re – 15Strain
Composition	Inactivated avian Influenza virus A/England/N28/1973 (H5N2) in mineral oil adjuvant	Inactivated avian Influenza virus A/Harbin/Re – 1/2003(H5N1) in mineral oil adjuvant
(Harbin) China	Milk white emulsion	Milk white emulsion
Use for	2 – 5 weeks old	2 – 5 weeks old
Chicken	4 weeks	6 weeks

Slide 16

Vaccination

- Vaccination should be combined with other measures, such as improved biosecurity
- This can be difficult to achieve in the smallholder sector

Slide 20

III. Vaccination programme

2. *The pre-vaccination preparation (Cont.)*

- Developing and approving the National HPAI Vaccination Plan 2005-2006 where targeted poultry populations identified (Red River and Mekong River Deltas), and costs estimated (VND480 billion ~USD 30.2 million, of which ~94% will be borne by the Government).
- Vaccine volume estimated: 2005 → 240 million doses; 2006 → 370 million doses of both H5N2 and H5N1.
- Cost of vaccines: VND300/dose (~USD0.019) for H5N2/H5N1 Harbin and 700VND/dose (~USD0.044) for H5N2 Intervet
- Approving the Budgeting and Logistics Plan, ensuring that funds be released and vaccines be imported and delivered promptly.

Slide 17

Basic principles in using HPAI vaccine:

- Meet all the guidance from OIE
- Providing enough vaccines which meet OIE' standard
- Applying all disease control measures comprehensively
- Vaccination is only apply for non-infected poultry population
- Carrying out ring vaccination for new outbreaks.

Slide 21

Estimated budget for vaccination campaign in Vietnam (2005 - 2006) Unit: billion VND

No	Contents	Expenses
1	Vaccine cost	280
2	Payment for vaccinator	72
3	Equipment	57
4	Training	10
5	Public awareness	0.4
6	Surveillance	24
7	Vaccine for emergency use	2
8	Others	34.6

Slide 18

III. Vaccination programme

2. *The pre-vaccination preparation*

- Establishing the National Steering Committee for HPAI Vaccination, as well as committees at provincial level;
- Testing different types of bird flu vaccines on a limited scale in early 2004 to select proper vaccines → Decision made on **inactivated H5N1 and H5N2 from Harbin (China) and H5N2 Intervet (the Netherlands)**.
- Carrying out pilot vaccinations for the northern Nam Dinh and southern Tien Giang Provinces in August 2005.
- Carrying out laboratory surveys to assess pre-vaccination status.
- Developing the Vaccination Strategy Plan and decision on targeted vaccination nationwide made in late August 2005 (**vacc. are compulsory in 47 provinces/cities**).

Slide 22

III. Vaccination programme

2. *The pre-vaccination preparation (Cont.)*

- Agreement on specific roles of stakeholders involved in the work of HPAI vaccination.
- The Ministry of Financial directed provinces on financing mechanism to release funds for activities involved in HPAI vaccination where it states that **vaccinators will be paid VND100 (~USD0.006) per bird vaccinated**.
- Carrying out public awareness campaigns.
- Maintaining open and transparent HPAI reporting system.
- Inviting several international experts from FAO, China to provide consultancy on HPAI vaccines and vaccination as well as on vaccination surveillance.

Slide 23

III. Vaccination programme

3. Implementation

- Appointing a company to import vaccines from two sources: Harbin (China) and Intervet (the Netherlands).
- Issuing regulations on HPAI vaccination to guide provinces on setting up Vaccination Teams, recruiting vaccinators. **Members of the Teams include District Vet staff, Representatives of Communal People's Committee, Commune Animal Health Workers (AHW) and private vets.**
- Training vaccinators on HPAI vaccination, usage of equipment with field demonstration and exercises.
- Requesting provinces to carry out pilot vaccinations at village level before commencing the mass campaigns within their perspective provinces.

Slide 25

III. Vaccination programme

Period	Times	No Province	Province
Period I	1/8/2005 - 25/8/2005	2	Tien Giang, Nam Dinh
Period II	9/2005 – 10/2005	18	Risk provinces
Period III	10 – 30/11/2005	34	Others province

Slide 24

III. Vaccination programme

3. Implementation (cont.)

- As of 22 Sept. 2005, HPAI vaccinations are undertaking in 20 provinces.
- Almost 100 million doses of vaccines has been imported and distributed to provinces.
- Order for other 260 million doses was placed, to be arrived in middle of October 2005.
- A national conference to regularly monitoring HPAI vaccination progress to be held the end of September 05.

Slide 26

***Thank you for
your attention***

CPF compartmentalization (broiler integration)
Presented by Boonpeng Santiwattanatam (Charoen Pokphand (CP), Thailand)

Slide 1

**CPF COMPARTMENTALIZATION
 (Broiler Integration)**

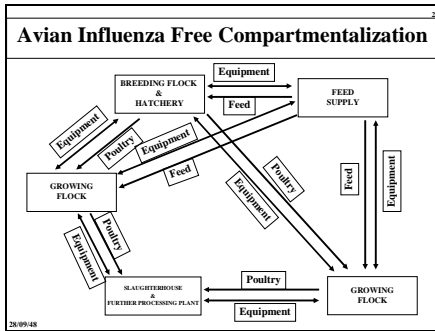
Boonpeng Santiwattanatam

Slide 4

Control Measures

Using biosecurity system.
 Epidemiology of the disease
 Controlling the diseases by considering relevant factors such as feedmill, live birds, humans, slaughterhouse, further processing plant, equipments and transportation.
 Environmental factors
 Controlling the production environment starting from raw materials to finished products.
 Surveillance
 Scheduling surveillance programs, periodic monitoring of AI virus.
 Setting up identification and traceability procedures including product recall.

Slide 2



Slide 5

Feedmill

Control of Raw Material
 Raw material inspection
 Control of raw material transportation and storage

Process Control
 Heat Treatment process (80 °C/1 min)
 Closed processing system
 Effective pest control program

Control of feed transportation
 Silo trucks are clean and disinfection inside, outside and sealed

Slide 3

Application of Quality Assurance Management

- ❖ Biosecurity management (Follow OIE Requirement on disease prevention and controlling system)
- ❖ Good Manufacturing Practice (GMP) According to CODEX standard and EU directives on Hygiene and sanitation.
- ❖ Hazard Analysis and Critical Control Point (HACCP) According to CODEX standard in food safety.
- ❖ Quality assurance system (ISO 9000) to assure product quality and safety for consumer.
- ❖ Documentation, recording and auditing system are supervised and control by CPF compartment committee
- ❖ Farm standard by DLD.
- ❖ Consultation and supervision by Thai Competent Authority (Department of Livestock Development (DLD), Ministry of Agriculture and Cooperatives)

Slide 6

Breeder Farm

Farm management and day old chick control
 Evaporative cooling system housing
 Separate poultry area from personnel quarters
 Disinfection truck and personnel before entering the farm
 Lab testing by DLD.
 Movement Control by DLD.
 Farm standard by DLD.

Slide 7

Hatchery (1/2)

One way system and segregate areas

- High risk area
- Low risk area

Hatching eggs receiving

- Hatching eggs come from AI free breeder farms
- Disinfection all eggs before hatching.
- Truck disinfecting before entering hatchery
- Cleaning and disinfecting equipment/packaging
- Hygiene and sanitation (GMP)

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Slide 11

Broiler Farm (3/3)

Control of broiler transportation to slaughterhouse

- Truck inspection and disinfection
- Hygiene and sanitation of live bird catching team (shower and disinfection before entering poultry areas)
- Poultry inspection report at farm under control by DLD
- DLD. movement document
- AI lab result by DLD (For catching live bird)

28/09/08

Slide 8

Hatchery (2/2)

Control of day old chick and transportation to broiler farms

- Inspection of chick health status and traceability
- AI free lab. result
- Movement document and transportation control by Government (DLD)
- Trucks are cleaned and disinfection inside and outside before unloading day old chick

28/09/08

Slide 12

Slaughterhouse

Live Birds receiving

- Ante mortem inspection report
- AI-lab result, Poultry inspection report at farm, Movement document.
- Trucks and plastic crates cleaning and disinfection before leaving factory

Slaughtering control

- Post mortem inspection
- Sampling for AI testing

28/09/08

Slide 9

Broiler Farm (1/3)

Type of poultry house

- Closed house and environmental control with evaporative cooling system
- Separate poultry area from personnel quarters

Day old chick and feed receiving

- AI. Lab result from breeder farms
- DLD. movement document
- Chick health status inspection
- Personal hygiene
- Trucks are inspect and disinfection before entering farm

28/09/08

Slide 13

Further Processing

Chicken meat receiving

- Meat transfer procedure
- Raw meat inspection

Cooked Meat Product (Finish Product)

- Core temperature control profile at least 70 °c, 1 min
- Processing control (Core Temp. ≥ 80 °c) (CCP)
- Product release procedure

28/09/08

Slide 10

Broiler Farm (2/3)

Restrict to visit farms

- Disinfecting before entering to farm area (living area)
- All personnel and visitors must shower and disinfection before entering the poultry growing area
- All vehicles must be disinfected before entering the poultry area (growing area)
- All equipments and personal belonging must be disinfected before entering poultry area
- Pest and rodent control program

28/09/08

Slide 14

Economic Impact (1/3)

Overall Economic Impact (Before & After AI Outbreak)

	2003 (Before)	2004 (After)	
Total Production (Mil.Ton)	1.35	0.92	↓ 32%
Local Consumption (Mil.Ton)	0.805	0.701	↓ 13%
Export Volume (Mil.Ton)	0.545	0.219	↓ 60%
Export Value (Mil.Baht)	46,7000	23,700	

SOURCE : THAI BROILER PROCESSING EXPORTERS ASSOCIATION

28/09/08

Slide 15

Economic Impact (2/3)
Impact to Thai Chicken Industry 2004

	Lost : Mil. Baht
Breeder Farm	4,420
Feedmill	12,430
Farm	27,950
Slaughterhouse	28,400
Export	23,700
Total	96,900

Government compensation for 40 million birds = 5,000 million Baht

SOURCE : THAI BROILER PROCESSING EXPORTERS ASSOCIATION

Slide 18

Compartmentalization&Economic Impact (2/3)

Additional Cost for Compartment

Surveillance (including buffer zone)	Cost/Year (Baht/farm)	No. of Farm	CPF 3 Compartment (Baht/year)
Broiler Farm	296,000	40*	11,840,000
Breeder Farm	164,000	15	2,460,000
Add. Cost for AI Control	41,500	55	2,282,500
Total			16,582,500
No. of Broilers (6 crops)			50,000,000
Estimate Cost / Bird (Baht)			0.37

SOURCE : THAI BROILER PROCESSING EXPORTERS ASSOCIATION

*Average 12-15 Houses per farm, No. of Bird 12 / M²

Slide 16

Economic Impact (3/3)

Economic Impact to Chicken Market (2004)

Domestic Market

- Consumer Panic
- No chicken menu in restaurant
- No chicken menu in school
- Many chicken restaurants were closed
- Per capita consumption reduce from 14 kg to 8 kg

Export Market

- Thai fresh meat was banned, but cooked product still exported
- Export volume decrease 60% (540,000 tons to 210,000 tons)

Slide 19

Compartmentalization&Economic Impact (3/3)

Thailand can export fresh chicken meat

- Fresh Meat > 300,000 tons > 20,000 Mil.Baht
- Domestic Market : Consumption Increase
- Per capita Consumption increase from 12 kg. to 14 kg.
- Productivity : Increase
- Live chicken weight increase from 2.2 kg. to 2.5 kg.

Slide 17

Compartmentalization&Economic Impact (1/3)

Investment Cost Table Unit : Baht

	Company Farm	Contract Farm
Farm Construction	74,148,000 (12 Houses)	1,859,575
Average Cost / House	6,179,000	1,859,575
Additional for Control AI / Farm	74,000	41,500

SOURCE : THAI BROILER PROCESSING EXPORTERS ASSOCIATION

Slide 20

Thank You

Estimating economic impact of zoning in Malaysia

*Presented by Haji Abdul Kadir Osman
(Department of Veterinary Services, Malaysia)*

Slide 1

Department of Veterinary Services
Malaysia

29th Session of APHCA & The Regional Avian
Influenza Economic Assessment Workshop

Bali, Indonesia
26 – 29 September 2005
<http://www.jphpk.gov.my>



Slide 4

**1. PRE-OUTBREAK
CONTROL MEASURES**

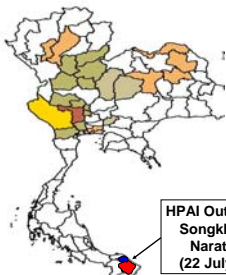
Slide 2

**Estimating Economic Impact of
Zoning in Malaysia**

*Dato' Dr. Haji Abdul Kadir Osman
Department Of Veterinary Services of Malaysia*

Slide 5

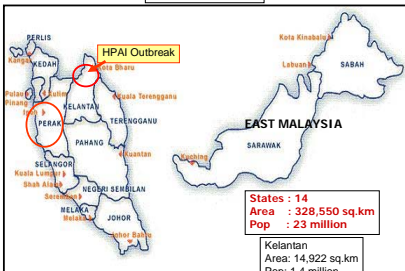
Spread of HPAI Virus - H5N1 in Thailand



HPAI Outbreak in
Songkhla and
Narathiwat
(22 July 2004)

Slide 3

MALAYSIA



States : 14
Area : 328,550 sq.km
Pop : 23 million

Kelantan
Area: 14,922 sq.km
Pop: 1.4 million

Slide 6

BACKGROUND

- Kelantan was at risk of HPAI when Thailand was still infected.
- In Mid-July 2004: HPAI occurred in Ayutthaya, Pathum Thani, Narathiwat and Songkhla in Southern Thailand.
- State was put on alert with increased surveillance activities covering the entire state.
- Early detection of disease is vital for control and eradication of disease.

Slide 7

**HPAI CONTROL MEASURES
IN KELANTAN**

- Establishment of State HPAI Control Operation Committee
- Setting up of *Rapid Action Team*
- Activate surveillance activities
- Strengthen border entry point checks
- Prevention of smuggling
- Monitoring of migratory birds

Slide 11

Prevention of Smuggling

- 11 teams – 33 staffs
- 24-hour operation
- Interdepartmental and Interagency Cooperation
 - Custom Department (Prevention)
 - Smuggling Prevention Unit
 - Police
 - Dept. of Agriculture
 - Dept. of Health
 - Army

Slide 8

CLINICAL SURVEILLANCE OF HPAI

Slide 12

Control of Entry Points

- Stringent checking at entry points
 - Rantau Panjang
 - Pengkalan Kubor
 - Bukit Bunga

Slide 9

Surveillance of Farms in Kelantan

Type of Farm	Number
Broilers	785
Layers	3
Breeders	1
Broiler ducks	8
Layer ducks	25
Village chickens/ quail	153
Total	975

Slide 13

**Confiscation & Destruction
(January – September 2004)**

Type	Quantity
Live poultry	3,000
Live village chicken	44
Frozen poultry meat	12,921 kg
Birds	2,101
DOC	23,000
Eggs	150,000
Muscovy ducks	6
Cattle / Buffaloes	16

Slide 10

Surveillance of Premises in Kelantan

Premise	Number
Public market	27
Pet Shop	71
Processing centers	158
Others	112
Total	1,343

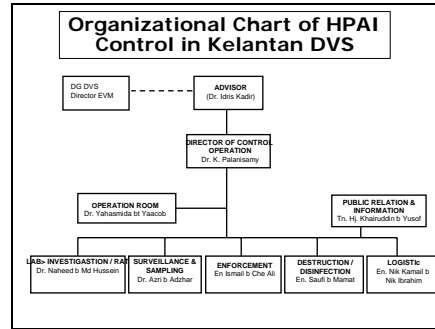
Slide 14

**2. Outbreak of HPAI in Kelantan,
Malaysia**

Slide 15

Chronology of HPAI in Malaysia	
Date	Event
17 .8. 2004	First Outbreak
22 .9. 2004	Last Outbreak (9 th outbreak)
19.11.2004	Last detection of HPAI virus
22.11.2004	Completion of last culling and disinfection
5.1.2005	Country declared free by Honorable Minister of Agriculture & Agro-Based Industry of Malaysia

Slide 19



Slide 16

HPAI Outbreaks in Kelantan						
Outbreak number	Date of occurrence	District	Number of premises	Number of cases	Number of deaths	Remarks (Type of birds involved)
1	17 .8. 04	Tumpat	1	48	48	All village chicken
2	5 .9. 04	Tumpat	1	30	30	20 quails & 10 village chicken
3	11 .9. 04	Pasir Mas	1	2	2	All village chicken
4	11 .9. 04	Tumpat	1	6	6	All village chicken
5	11 .9. 04	Kota Bharu	1	6	6	3 village chicken & 3 ducks
6	14 .9. 04	Bachok	1	5	0	All village chicken
7	14 .9. 04	Tumpat	1	1	1	Duck
8	22 .9. 04	Pasir Mas	1	2	2	All village chicken
9	22 .9. 04	Tanah Merah	1	6	6	All village chicken
A*	12 .9. 04	Kota Bharu	1	0	0	Virus detected from quail
B*	19 .9. 04	Kota Bharu	1	0	0	Virus detected from village chicken
C*	19 .9. 04	Tumpat	1	0	0	Virus detected from village chicken
Total		4 districts	12 houses	106	101	

Outbreaks and HPAI viruses were detected only in the state of Kelantan
* Detection of virus HPAI Sub-type H5N1

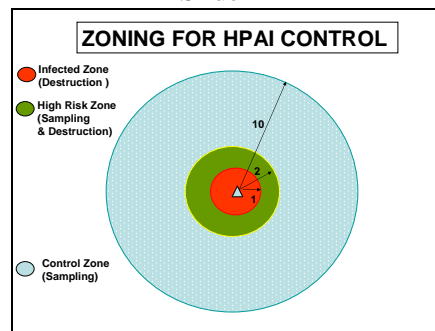
Slide 20

- Action Taken**
1. Infected Foci Determined
 2. Established 1 km radius Infected zone (IZ)
 3. **Immediate quarantine of IZ**
 4. Data Gathering of all poultry and birds within IZ
 5. Formation of Destruction teams and Stamping Out Activities

Slide 17

- Detection of HPAI Virus**
- Detected through surveillance activities of Kelantan DVS
 - Surveillance team investigated a report of two village chicken dead in Kampung Pasir Pekan, Tumpat, Kelantan.
 - Samples of pooled organ & allantoic fluid were submitted to VRI, Ipoh, Perak.
 - **17 Ogos 2004:** VRI confirmed that it was HPAI virus pathogenic H5N1.

Slide 21



Slide 18

- Immediate Measures To Prevent Spread of Disease to Other States**
- **Establishment of Action and Disease Control Operational Committees in DVS Kelantan**
 - **Immediate Investigation for gathering latest information**
 - **Quarantine of Infected Zone**
 - **Ban on movement of poultry, birds and poultry products**
 - **Gazetting of Laws**
 - **Heighten disease surveillance**
 - **Destruction of poultry and birds in Infected Zone**
 - **Disease Outbreak Committee meeting chaired by the State Secretary**

Slide 22

INTER AGENCY COOPERATION

Slide 23

3. Economic Impact

Slide 27

Results of Virological Surveillance of HPAI in Malaysia (Jan 2004 – June 2005)		
State	Sample Tested	Result
Perlis	69	All Negative
Kedah	3358	All Negative
Penang	141	All Negative
Perak	303	All Negative
Selangor	1769	All Negative
Negeri Sembilan	1585	All Negative
Malacca	1435	All Negative
Johore	372	All Negative
Pahang	416	All Negative
Trengganu	468	All Negative
Kelantan	21461	All Negative except 9 outbreaks, 3 virus isolation in August 2004
Sabah	5458	All Negative
Sarawak	8232	All Negative
Total	44,428	All Negative

Slide 24

- A. Cost of Surveillance and Monitoring Before Outbreak**
- B. Cost of Eradication in Kelantan**
- C. Direct Loss to the Livestock Industry**
- D. Indirect Loss**

Slide 28

Cost of Collecting Samples			
Nitrite Disposable Glove	RM0.67/pc	RM0.67 X280 workers x 24 times	RM 4502.00 (USD 1184.00)
Swabs	RM0.20/pc	RM 0.20 x 44,428 samples	RM 8,885.00 (USD 2338.00)
Disinfection Gel	RM3.64/bottle	RM3.64 X 280 workers	RM 1,020.00 (USD 268.00)
Disinfection	RM4.00/liter	RM4.00 x 3,567 farms	RM 14,268.00 (USD 3,754.00)
Cost of Laboratory Testing of Samples			
Lab Tests (NASBA, RT-PCR, Egg inoculation)	RM 40.00/test	RM 40.00 X 44,248 Samples	RM 2,100,000.00 (USD 525,000.00)
Total Cost of Surveillance and Monitoring			USD 532,544.00

Slide 25

Number of Commercial Poultry Farms in Malaysia (2003)	
State	No. of Poultry Farms
Perlis	7
Kedah	257
Penang	263
Perak	350
Selangor	151
Negeri Sembilan	314
Malacca	103
Johore	805
Pahang	203
Trengganu	128
Kelantan	557
Sabah	38
Sarawak	391
Total	3,567

Slide 29

B. Cost of Eradication

Slide 26

A. Cost of Surveillance and Monitoring Before Outbreak

Slide 30

Disposable Apron	RM23.00/pc/day	RM23.00 X 80 workers X 30 days	RM 55,200.00 (USD 13,800.00)
Disposable HEPA Mask	RM3.00/pc/day	RM3.00 X 80 workers X 30 days	RM 7,200.00 (USD 1,800.00)
Nitrite Disposable Glove	RM0.67/pc	RM0.67 X 80 workers X 30 days	RM 1,608.00 (USD 402.00)
Disinfection Gel	RM3.64/day/worker	RM3.64 X 80 workers X 30 days	RM 8,736.00 (USD 2,184.00)
Technical officer	RM 5.00/hr	RM5.00 X 10 hr X 20 officer X 30 days	RM 30,000.00 (USD 7,500.00)
Worker - Casual worker	RM2.81/hr	RM2.81 X 10 hr X 60 worker X 30 days	RM 50,580.00 (USD 12,645.00)
Lab Cost	RM 100.00/test	30days X RM100/test X 70 Sample	RM 210,000.00 (USD 52,500.00)
Total Cost :			RM 365,324.00 (USD 90,831.00)

Slide 31

Maintenance Cost for Roadblocks			
Location	No. of Staff	No. of vehicles	Cost/Month (USD)
Kelantan	57	6	35,328
Perak	5	1	3,223
Negeri Sembilan	12	4	4,236
Melaka	15	4	2,187
Johore	24	4	5,078
Total	113	19	50,055

Slide 35

Total Cost of Control of HPAI in Malaysia	
Activities	Cost Incurred (USD)
1 Surveillance & Monitoring Before Outbreak	60,044.00
2 Eradication in Kelantan (sampling, culling, disinfection, roadblocks)	532,544.00
3 Compensation	60,000.00
Total	733,430

Slide 32

• Cost of Compensation USD 60,000
Number of poultry and birds destroyed 19/08/04 – 07/10/04
Poultry and birds - 17,024
Eggs - 4,367

Slide 36

C. Direct Loss to the Livestock Industry

Slide 33

Compensation Rate according to Type of Commercial Poultry and Age of the Birds				
Age (week)	Broiler	Layer	Breeder	
			Broiler	GP Broiler
D.O.C	0.70	0.85	5.00	56.00
1	0.90	0.90	5.40	56.70
2	1.20	1.05	5.70	57.40
3	1.80	1.20	6.00	58.10
4	2.70	1.40	6.40	58.80
6	5.10	1.90	7.30	60.50
19		6.90	16.30	75.20
20		7.40	17.50	76.60
21			18.50	77.80
27			24.20	84.30
>28			25.10	85.30

Slide 37

Losses to Livestock Industry in Malaysia worth USD 2.5 million per day dated 23 August 2004

Peternak Ayam Rugi RM10 Juta Sehari Akibat Kebimbangan Selisma Selangor
 Bernama, 23 Ogos 2004

PETALING JAYA, 23 Ogos (Bernama) – Persekutuan Peternak Malaysia (FLFAM) mendakwa industri itu kerugian RM10 juta sehari kerana sekatan import ayam daging dan telur ayam oleh Singapura dan kebimbangan pembeli berkaitan kes selisma burung yang dikesan di Tumpat, Kelantan.

Presidennya, Lee Ah Fatt berkata sehubungan itu persatuan memohon kepada kerajaan supaya membuat satu plan tindakan bagi langkah yang perlu diambil oleh peternak ayam, jika virus itu dikesan semula.

"Kita juga mahu kerajaan supaya membantu para peternak yang terjejas dari aspek bantuan kewangan seperti membenarkan pihak kita agar tidak membayar kadar faedah bank daripada pinjaman dibuat untuk ternakan ayam," katanya kepada pemberita di sini, hari ini.

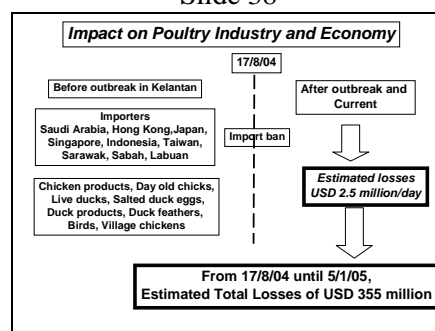
Beliau berkata ramai peternak ayam mengalami kerugian akibat sekatan kemasukan ayam daging dan telur ayam ke Singapura.

Source: BERNAMA

Slide 34

Compensation Rate of Various Birds		
No.	Type of Birds	Rate (RM/bird)
1	Geese	10.00
2	Broiler Duck	6.00
3	Other duck	10.00
4	Color chicken	10.00
5	Ostrich	300.00
6	Partridge	5.00
7	Village chicken	9.50
8	Chicken egg	0.20
9	Duck egg	0.25

Slide 38



Slide 39

D. Indirect Loss

Slide 43

**Estimated Total Economic Losses
USD 355,733,430**

Slide 40

Others

- Loss of livelihood for farmers, workers & families, also entrepreneurs in poultry industry
- Psychological effect on farmers, workers & families
- Outstanding bank loans
- Farm loss burden
- Poultry related industries also affected

Slide 44

Control Measures for Avian Influenza Free Status

Slide 41

Effect to Tourism Industry

Slide 45

1. Preventive Measures

- Import restriction of poultry and poultry products (PPP) from HPAI affected countries
- Strengthening Border control to prevent illegal entry of PPP
- Road blocks and check points at strategic locations in the states bordering Thailand
- Inspection of all imported PPP at port of entries
- Quarantine of all imported birds
- Destruction of all birds, PPP found entering the country illegally
- Discouraging farm establishment nearby bird sanctuaries
- Discouraging integration or multi-species farm enterprise (e.g.. Pig, poultry and duck)

Slide 42

REDUCTION IN NUMBER OF TOURISTS

YEAR	NUMBER OF TOURISTS	AVERAGE NUMBER OF TOURISTS
2001	12,775,073	13,033,541 PRE OUTBREAK
2002	13,292,010	
2003	3,875,788	DURING OUTBREAK
2004	6,507,891	5,191,839
REDUCTION IN NUMBER OF TOURISTS		7,841,702 (61.2 %)

(Source : Immigration Department)

Slide 46

2. Emergency Preparedness Measures

- Maintaining the state of alert of the HPAI emergency response mechanism
- Maintaining the HPAI Rapid Action Teams
- Maintaining HPAI committees
- Updating emergency response protocols
- Maintaining and stocking equipments, chemical, attires and materials required for emergency response
- Maintaining laboratory capability and capacity

Slide 47

3. Surveillance and Early Warning

- Continuous surveillance Monitoring HPAI situation in neighboring countries
- Continuously reminding farmers on the importance of reporting of any abnormal mortality
- Investigation of any suspect cases

Slide 51

Zoning For Resuming Trade with Singapore

Slide 48

4. Legislative and Enforcement

- Gazetting and enforcing laws related to HPAI control and eradication
- Implementing inter-state movement control of PPP via permit and health certification system
- Licensing poultry farm establishments by incorporating biosecurity measures

Slide 52

Conditions For Establishing and Maintaining Disease Free Zone (DFZ)

Define the DFZ and Establish Buffer Zones e.g

1. Johore, Malacca, Selangor and Negeri Sembilan
The Buffer zone is the belt of northern Malaysian states, including Perlis, Kedah, Kelantan, Trengganu and northern parts of Pahang and Perak
2. Perak DFZs
The buffer zone is the same as above and includes the rest of Perak outside the two DFZs in the state

Slide 49

5. Continuous Education and Public Awareness on HPAI

- Leaflets on HPAI and its prevention
- Meeting with farmers' associations
- Implementing GAHP which cover biosecurity

Slide 53

Lessons Learned

Slide 50

6. International Collaboration

- Participation in regional initiatives such as ASEAN HPAI Taskforce
- Participation in regional and international training and capacity building conducted by OIE, FAO and WHO
- Participation in international seminars, forum and workshop on HPAI control

Slide 54

1. **Experienced, Knowledgeable and Efficient Crisis Manager**
2. **Well prepared and trained Surveillance, Culling and Investigation teams.**
3. **Well planned Sampling activities**
4. **Records must be up-to-date**

Slide 55

1. **Good Communication Facilities**
2. **All agencies should be prepared to respond rapidly**
3. **Intra-departmental and Intra-agency cooperation is a must.**
4. **Public Awareness on HPAI**
5. **Reasonable Compensation scheme**

Slide 56



Surveillance of avian influenza in mixed farming system and in live bird markets in Bali

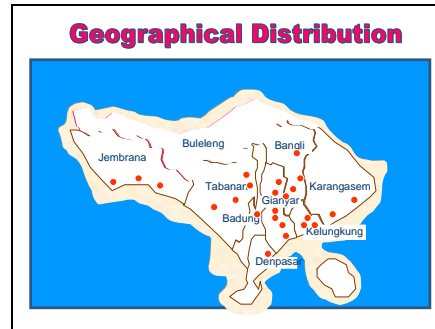
*Presented by Anak Agung Gde Putra and Ketut Santhia
(Disease Investigation Centre, Region VI, Denpasar, Indonesia)*

Slide 1

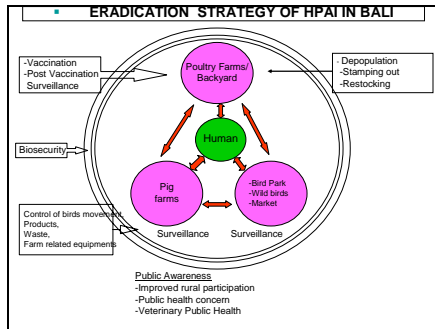
Surveillance of Avian Influenza in Mixed Farming System and in Live Bird Markets in Bali

Anak Agung Gde Putra and Ketut Santhia
Disease Investigation Centre, Region VI Denpasar

Slide 4



Slide 2



Slide 5

Table 2
Number of birds at high risk during the outbreak of HPAI (H5N1) in Bali, by district (October 2003 and March 2004)

District	Population in each District	Birds at high risk	Proportion (%)
Denpasar	94,069	10,600	11.3
Badung	774,914	15,688	2.0
Gianyar	1,127,814	187,105	16.2
Klungkung	992,895	192,543	20.9
Bangli	1,982,649	1,778,136	89.7
Karangasem	1,461,488	518,750	35.5
Buleleng	1,009,409	1,625	0.2
Jembrana	1,381,488	521,283	37.7
Tabanan	3,282,597	1,355,284	41.9
Total:	12,037,323	4,581,104	38.0

Slide 3

Table 1
Geographical distribution of avian influenza (H5N1) in Bali

District	Sub-district			Village (Flock)		
	Total	Affected	%	Total	Affected	%
Denpasar	3	2	66.6	43	2	4.7
Badung	6	2	33.3	61	2	3.3
Gianyar	7	4	57.1	69	8	11.6
Klungkung	4	3	75.0	59	9	15.3
Bangli	4	4	100.0	69	27	39.1
Karangasem	8	2	25.0	71	6	8.5
Buleleng	9	2	22.2	146	2	1.4
Jembrana	4	4	100.0	57	15	29.4
Tabanan	10	4	40.0	117	9	7.7
Total:	55	27	47.3	686	80	11.7

Slide 6

Table 3
The mortality rate of HPAI (H5N1) infection in 80 infected villages (flocks)

District	Population at risk	Bird deaths	Mortality Rate (%)
Denpasar	10,600	162	1.5
Badung	15,688	3,000	19.1
Gianyar	187,105	8,424	4.5
Klungkung	192,543	23,122	12.0
Bangli	1,778,136	78,365	4.4
Karangasem	518,750	158,850	30.2
Buleleng	1,625	100	6.2
Jembrana	521,283	11,836	2.3
Tabanan	1,355,284	656,285	48.4
Total:	4,581,104	938,144	20.5

Slide 7

Year / Month	Number of new cases	Number of Susceptible birds	Attack rates (%)
Before Vaccination Program 2003			
August	0		0.0
September	0		0.0
October	4,200	1,347,364	0.3
November	113,300	1,234,064	9.2
December	89,916	1,144,148	7.9
January 2004	219,879	5,031,892	4.4
February	493,946	4,812,013	10.3
March	12,688	4,322,067	0.3

Slide 11

Table 6
Investigation of avian influenza virus in two pig farms in Denpasar in April 2005

Farm	District	Population	Number of specimens	Laboratory Result
1	Denpasar	50	10 nose swabs	Negative avian influenza
2	Denpasar	50	10 nose swabs	Negative avian influenza
		100	20	

Slide 8

Year / Month	Number of new cases	Number of Susceptible birds	Attack rates (%)
After vaccination Program 2004			
April	0		0.0
May	0		0.0
June	0		0.0
July	10	1,177,220	0.0008
August	0		0.0
September	2	118,812	0.002
October	1	15,208	0.007
November	0		0.0
December	0		0.0

Slide 12

Table 7
Number of birds vaccinated in the Province of Bali in 2004

District	Population in Each District	Number of vaccine	Proportion (%)
Denpasar	94,069	100,000	106.4
Badung	774,914	660,000	77.4
Gianyar	1,127,814	980,000	87.5
Klungkung	992,895	892,500	89.9
Bangli	1,982,649	1,086,000	54.7
Karangasem	1,461,488	1,040,000	71.2
Buleleng	1,009,409	150,000	14.9
Jembrana	1,381,488	610,000	44.2
Tabanan	3,282,597	2,940,000	89.6
Total:	12,037,323	8,658,500	72.0

Slide 9

Year / Month	Number of new cases	Number of susceptible birds	Attack rates (%)
2005			
January	0		0.0
February	2	64,504	0.003
March	0		0.0
April	0		0.0
May	0		0.0
June	0		0.0
July	1	2,440	0.04
August	1	997	0.1

Slide 13

Table 8
Prevalence of avian Influenza (H5N1) at traditional live bird markets in Bali in August 2005

District	Traditional Market	Species of bird	Number of samples examined	Positive H5N1 virus	Positive H5N1 antibody
Denpasar	Sanglah	Kampung chicken	10	0	2
		Broiler	10	0	3
Badung	Badung	Layer	5	0	5
		Duck	5	0	2
Kumbasari	Kumbasari	Kampung chicken	5	0	4
		Broiler	5	0	2
Tabanan	Dauh Pala	Kampung chicken	10	0	4
		Broiler	10	0	3
Karang asem	Seraya	Kampung chicken	10	0	7
		Broiler	3	0	3
		Layer	5	0	5
		Duck	2	0	0
Buleleng	Seririt	Muscovy	1	0	0
		Kampung chicken	5	1	4
Anyar	Anyar	Layer	5	0	4
		Broiler	5	0	2
Total:		Duck	5	1	1
			101	2	52

Slide 10

Table 5
Susceptibility of various birds species to HPAI (H5N1) infection

Species	Number of birds	Number of death	Mortality rates (%)
Layer	2,619,083	855,340	32.7
Kampung chicken	4,042,339	4,341	0.1
Broiler	4,346,002	42,804	1.0
Bangkok chicken	50	15	30.0
Farmed duck	974,160	35,502	3.6
Muscovy duck	42	36	25.7
Goose	1,352	0	0.0
Turkey	538	0	0.0
Quail	10,358	4,000	38.6
Pigeon	76,071	6	7.9
Pescapud dove	7	1	7
Total:	12,099,954	942,009	7.8

Slide 14

Table 9
Investigation of avian Influenza (H5N1) that contaminated bird cages and drinking water at traditional live bird markets in Bali in August 2005

District	Traditional Market	Number of swab samples taken from bird cages	Positive H5N1 virus	Number of swab samples taken from drinking water	Positive H5N1 virus
Denpasar	Sanglah	2	0		
Badung	Badung	2	0		
		Kumbasari	2	0	
Tabanan	Dauh Pala	2	0		
Karang asem	Seraya	7	0	8	0
Buleleng	Seririt	2	0	2	0
		Anyar	2	0	2
Total:		19	0	12	0

Benefits and costs of reducing risks in wet markets
- Marikina city wet market case study -
Presented by Carolyn Benigno (Animal Health Officer, FAO/RAP)

Slide 1

Benefits and Costs of Reducing Risks in Wet Markets

Marikina City Wet Market Case Study

By
 Carolyn C. Benigno
 with acknowledgement to
 Imelda J. Santos, DVM
 Ramonito D. Viliran, M.D.
 Marikina City

Slide 4

Healthy Markets

Emphasis on :

- describing the marketplace
- identifying high-risk areas and practices in the market place
- identifying the members of the market community

Slide 2

Outline of the Change Process

- FAO/OIE/WHO Consultation meeting
- Wet Market Operations
- Feedback
- Conclusions

Slide 5

Healthy Markets

Emphasis on:

- Engaging champions and drawing up a prioritized list of possible changes to fit the local situation
- Exploring various possible sources of finance: engaging the interest of politicians and local government
- Identifying changes that may be relatively simple and likely to show positive impact and start with these

Slide 3

Background

- FAO/OIE/WHO Consultation on Avian Influenza and Human Health: Risk Reduction Measures in Producing, Marketing and Living with Animals in Asia, 3-5 July 2005, Kuala Lumpur, Malaysia.

Recommendation:

- National, provincial and local authorities should consider the appropriateness of the healthy settings approach and of other approaches in efforts to reduce the risks to human health associated with the wet markets of Asia.

Slide 6

State of Marikina City Market

- Total chaos
- Sidewalk vendors, hawkers
- Mixed selling of goods
- Unsanitary

Slide 7

Identifying the members of the market community

- Vision: To make Marikina Public Market as the best, modern, well-managed trading center with high standard of service nationwide

Mission: To provide **consumers and vendors** best quality of service focusing on cleanliness, security, discipline and orderliness

Slide 11

Operational Cost (USD)

	2004	2005	2006
Personnel	98,314	98,314	112,914
MOE	8,272	29,454	26,174
Capital outlay	1,818	764	163,680
Total	108,404	128,532	302,768

Slide 8

Engaging champions and drawing up a prioritized list of possible changes to fit the local situation

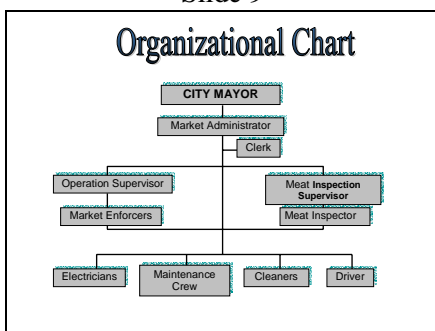
- Change agent – Local Chief Executive

Slide 12

Market Income (USD)

	Total Income	from Meat	Chicken
1998	462,977		
1999	475,948		
2000	505,369		
2001	362,464		
2002	408,856		
2003	443,865		
2004	465,972	54,283	32,574

Slide 9



Slide 13

Sources of Income

- Stall Rentals
- Fixed Stall Penalties
- Weights and Measures
- Weights and Measures Penalties
- Market I.D.
- Market/meat certificate
- Meat inspection fees

Slide 10

Exploring various possible sources of finance; engaging the interest of politicians and local government

- 1993 – requested funds from Department of Finance
- Improved, rebuilt the market, completed by 1995
- Cost of USD 1.3 M
- Land area of 9,219 square meters

Slide 14

Identifying changes that may be relatively simple and likely to show positive impact

- Divided into a market zone and outside a market zone
- Market zone - dry goods section and wet section
- Outside market zone – flea market stalls
- Wet section – fish, meat, chicken section, processed products, offals sections

Slide 15

Identifying changes that may be relatively simple and likely to show positive impact

- No slaughtering of chickens and other animals
- Contracted a dressing plant within the city to slaughter the chickens
- Sources its meat supply from neighboring municipalities

Slide 19

Ordinances Enforced

- Selling of "hot meat"
- Injection of water and coloring meat
- Weights and measures
- Garbage Disposal
- Dress Code
- Market ID cards for vendors

Violations come with fines and confiscation of equipment, revocation of business permit

Slide 16

Changes

- Market Personnel – 45
 - Market enforcer – 17
 - Meat Inspectors – 7
 - Office staff – 4
 - Market Cleaner 12
 - Maintenance Crew – 5

Slide 20

Feedback from Stall owners

Earnings per day – USD 10 /day net or 300/month

Stall rental - 39/month

All stalls are always rented, no vacant stall at any one time.

Slide 17

Identifying changes that may be relatively simple and likely to show positive impact

- Operations
 - 24 hrs operational
 - Flushing operation – 3x a week
 - Garbage collection – every 2-3 hrs.
 - Insecticide spraying – 2x a month
 - Weights monitoring – once a week

Slide 21

Award(s)

- October 2004
 - City of Marikina – awarded as one of the Healthiest Cities in Asia by the World Health Organization
 - " for its promotion of healthy diet through urban planning..."

Slide 18

Identifying changes that may be relatively simple and likely to show positive impact

- Services offered
 - Public address system
 - Weighing Center
 - Consumer net & consumer welfare desk
 - Police community precinct
 - Comparative Monitoring Borad
 - Healthy Market Bulletin
 - Porter services
 - People's covered walk
 - Clean Food Laboratory
 - Public toilets
 - Water pipe system

Slide 22

Conclusions on improving wet markets

- Makes good economic sense for the locality
- Sustains/improves the income of small entrepreneurs
- Needs a champion to educate the public
- Discipline thru public education
- Consistent implementation of local ordinances
- Packaging the B/C analysis and IRR for other cities to appreciate and implement a healthy market approach

Approaches to costing and budgeting for compensation in avian influenza
Presented by David Hall (FAO Consultant)

Slide 1

Approaches to Costing and Budgeting for Compensation in Avian Influenza

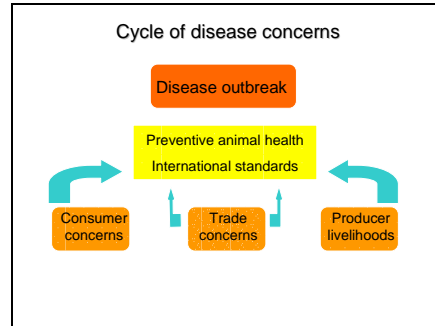
29th APHCA Session
 Bali, Indonesia

September 26-29, 2005

David Hall, FAO Consultant
 davidhallfao@yahoo.com

29th APHCA SESSION, BALI, Sept 26-29 2005
 Avian Influenza Economic Assessment Workshop

Slide 4



Slide 2

Outline

- Background
- Who is compensating
- Compensation program costing
- Scenario analysis

Slide 5

Rising demand, rising concerns

- Rising demand → changes in trade
- consumer concerns for food safety
 - zoonotic disease – Nipah virus, HPAI in Asia
- higher prevalence of animal disease outbreaks:
 - high economic costs, market disruptions
 - price volatility
 - barriers to trade
 - increased trans-boundary risks

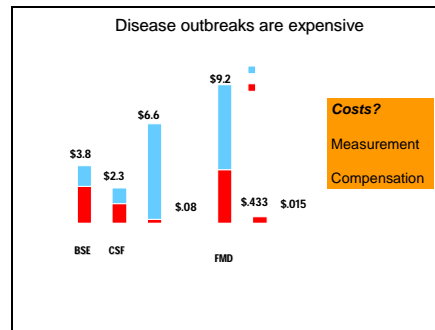
Slide 3

Part I:

General comments,

Country examples

Slide 6



Slide 7

HPAI has heavy economic impact

- **Livelihoods**
 - impacts small & medium scale producers most, large scale producers (with high biosecurity) least
 - 200+ million birds died or destroyed
- **Trade**
 - Billions of dollars in trade affected
- **Control**
 - emergency response, containment, prevention, restocking

Slide 11

HPAI Compensation Programs*

<i>Compensation</i>	<i>No compensation</i>
China/Hong Kong SAR	
Indonesia	Cambodia
Thailand	Lao PDR
Vietnam	

* (not a complete list) Government compensation programs for HPAI; note that many private sector contractors compensate

Slide 8

Why compensate? (Benefits)

- **Protect human health**
 - part of a larger HPAI control program
- **Protect animal health**
 - encourage reporting, reduce disease spread
- **Maintain livelihoods**
 - help vulnerable producers over shocks
 - indirectly support input/output flow
- **Sustain trade**
 - Local and international markets

Slide 12

HPAI Compensation Programs

Thailand

- c. USD 133 Mil, 410,000 farmers, 61Mil birds
- Thailand = 75% market value normally
- cabinet special approval for 100% in first outbreak
- Primarily small and medium farms
- Specialty compensation (native, quail, etc.)

Lao PDR

- Lao PDR government – has drawn up compensation plans but not yet available
- details unknown

Slide 9

Drawbacks (cons)

- **High non-sustainable cost**
 - how to pay sudden unexpected compensation
 - questions of equitability; who benefits
- **Administration**
 - how to verify – moral hazard issue
 - federal vs. provincial
- **Economic impact on other markets**
 - fish, beef, pork markets may be affected
- **Maintains virus entry points to prdn chain**
 - keeping low bio-secure farms in business

Slide 13

Compensation - Indonesia

Indonesia

- Smallholders with layers < 10,000 and broilers < 15,000 per cycle or >= 50 native chickens or ducks, >= 500 quail
- 1st phase: USD 400,000 – 1068 farmers, 15 districts, 8 prov.
- 2nd phase: USD 500,000 – 1756 farmers, 14 districts, 4 prov.
- Two credit schemes available
- surveyed farmers expressed need for more funds

From Bahri and Supriatna, yesterday's presentation:

- Java compensation greater now than last year
- Production value (not compensation) is:
 - USD 1.18 Mil (IDR15,000 per commercial broilers, layers, etc)
 - USD 448,000 (IDR20,000 per local chicken, ducks, etc)

Slide 10

Only part of the plan

- **Part of a control program**
 - stamping out
 - eradication of flocks
 - +/- vaccination
 - compartmentalization
- **Part of a social program**
 - recovery
 - restructuring
 - shift to alternatives

Slide 14

Compensation - Indonesia

Simmons; Ball, 2005

- 272 households
- broilers and layers
- 90% owned farms
- 6% layer farms received govt. compensation

Slide 15

Compensation - Vietnam

VIETNAM – Dolberg, Feb 2005

- little compensation implemented and almost none for small holders (57% of the birds culled)
- larger farms appeared to receive “fairer treatment”
- even for larger farms, compensation amounted to 18% of market value
- costs of total losses
 - USD 200 Mil, of which 13.2 for compensation

Slide 19

**Part II:
Costs and Budgeting**

Slide 16

Compensation – Vietnam update

VIETNAM – Govt. of Vietnam, Sept 2005

- Central Govt. released USD 19Mil for HPAI control
- equivalent amount from local governments
- total USD 38Mil
- *“A large part of these budgets was used to compensate for farmers who had their poultry died or culled during the epidemics”*

Slide 20

Compensation - what to consider

- **Who benefits**
 - Identification, verification
- **Cost elements**
 - Cash costs, debt servicing, administration, etc.
- **Implementation (nature of program)**
 - Cash transfer
 - Soft loan (interest free)
 - In-kind transfer to producers
 - Alternative livelihood training and relocation

Slide 17

Compensation – Dolberg, 2004

- farmers surveyed in Cambodia, Indonesia, Lao PDR, Thailand, and Vietnam
- Only 10-20% of value of birds covered (Govt. estimates)

All but Thailand:

- farmers prefer soft credit and vet services
- compensation ranked 4th or 5th over other options (better veterinary services, credit, etc.)

My conclusions:

- 1) low levels of compensation neither valued nor effective
- 2) focus program funds on high compensation for worst off
 - Poultry in sector 2, 3
 - Source of protein in sector 4

Slide 21

Compensation – eligibility

- **Profile of recipients**
 - Scale of production
 - All producers or just most vulnerable
 - Moral questions as well as economic
 - Contract growers may be serviced by contractor
 - Buy out clause
- **Valuation**
 - Market value (pre-crisis prices)
 - Birds, loss of production, secondary products
 - Exceptional cases (fighting cocks, fancy breeds, etc.)
- **Identification and verification**
 - Avoid paying false claims (moral hazard)
 - Spot checks, production records (feed bills, etc)
 - Videotape, other documentation

Slide 18

Compensation program recommendations

- **Targeting**
 - Be realistic
 - not everyone will benefit
 - budget expectations
 - Aim for > 75% of market price
 - Work with private sector
- **Time horizon**
 - Short term vs. longer term
 - Recovery of local vs. international markets
- **A temporary instrument**
 - A response to a crisis situation
 - Part of a larger plan

Slide 22

Compensation – costs

- **Producer compensation**
 - Birds
 - Lost production
 - Lost secondary markets
- **Administration**
 - Accounting, distribution, records
 - Identification and verification
- **Loan servicing costs**
- **Education and awareness**
 - Advertising, restructuring
 - Policy options

Slide 23

Scenario analysis

Why do a scenario analysis

- Program planning requires thinking!!
- Examining options for preparedness
- An instrument for lobbying
 - government, donors, lenders

Inputs

- Data
 - Often best estimates
 - Results highly sensitive to data

Epidemiologic linkages

- **Outputs**
 - Range of options, range of costs, variables of most impact
 - Instrument for planning and lobbying

Slide 27

Scenario analysis

	<i>Mild</i>	<i>Moderate</i>	<i>Severe</i>
Birds	2,250	45,000	675,000
Production	2,250	90,000	2,700,000
Admin	23	450	6,750
Education	2,500	7,500	37,500
Restructuring	-	100,000	750,000
Sub-total	7,023	242,950	4,169,250
Loan servicing	-	12,148	416,925
TOTAL	\$ 7,023	\$ 255,098	\$ 4,586,175

Slide 24

Scenario analysis

- **Assumptions**
 - Broiler farms, sectors 3 & 4
 - Typical farm has 150 birds
 - Average market price per bird = \$1.00
 - 8-10 weeks per cycle
 - Administration = 1% market cost
- **Three scenarios**
 - Mild outbreak – minimal losses
 - Moderate outbreak
 - Severe epidemic – devastating losses

Slide 28

Scenario analysis – uncertainty

	<i>Mild</i>	<i>Moderate</i>	<i>Severe</i>
Farms	20	200	1500
Districts	1	3	15
Birds per farm	150	150	150
Lost cycles	1 (+/- 10%)	2 (+/- 12.5%)	4 (+/- 12.5%)
Price per bird	1 (+/- 20%)	1 (+/- 20%)	1 (+/- 20%)
Administration costs	1%	1%	1%
Loan servicing	n.a.	5%	10%
Restructuring/ farm	n.a.	500	500

Slide 25

Scenario analysis

	<i>Mild</i>	<i>Moderate</i>	<i>Severe</i>
Farms	20	200	1500
Districts	1	3	15
Cull nearby	Voluntary	Enforced	Enforced
Lost prodn. cycles	1	2	4
Loan servicing	No	Small	Large
Restructuring	No	Yes	Yes

Slide 29

Scenario analysis – all outcomes

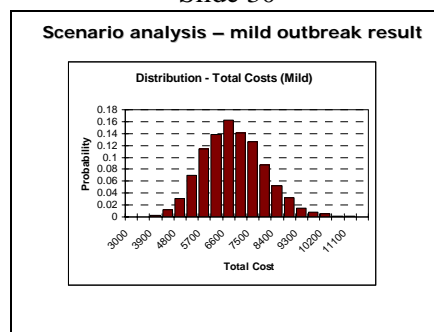
Simulated total	<i>Mild</i>	<i>Moderate</i>	<i>Severe</i>
Mean	\$ 7,033	\$ 255,860	\$ 4,640,922
Min	3,802	165,711	2,356,377
Max	11,426	399,512	8,312,661

Slide 26

Scenario analysis

	<i>Mild</i>	<i>Moderate</i>	<i>Severe</i>
Farms	20	200	1500
Districts	1	3	15
Birds per farm	150	150	150
Lost cycles	1	2	4
Price per bird	\$1	\$1	\$1
Administration costs	1%	1%	1%
Loan servicing	n.a.	5%	10%
Restructuring/ farm	n.a.	\$500	\$500

Slide 30



Slide 31

Scenario analysis – all outcomes

Sensitivity analysis:

- Price uncertainty
 - more impact in the mild scenario
- Lost cycles
 - more impact in moderate & severe scenarios

Policy implications:

e.g. considering restructuring vs. price supports

If expect a moderate outbreak, better to address restructuring/ alternate livelihoods

Slide 33

Further questions

- **Socially optimal solutions**
 - Minimizing costs (an appropriate question?)
 - Targeting recipients
- **Financing**
 - Most efficient timing of program
 - Collection of funding source
- **Impact**
 - On other sectors (fish, beef, pork)
 - Household nutrition

Slide 32

Budgeting

Cash reserves:

- Emergency fund
- Requires law/ cabinet order

National/ Regional banks:

Loans, restructuring plans
Not NGOs, donor community

“Check off” program:

Pooled reserves
 e.g. ¼-1% market value of product collected at sale
 birds, feed and housing sales, vaccine sales
 encourage sector 1 participation

- reducing overall risk improves profit expectation

Slide 34

Thank you!

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Speech of APHCA's chairperson
Opening address by Dr Muhammad Afzal
APHCA Ex-Chairperson (2004 – 2005)

Honorable Chief Guest, Mr. Artha, Assistant to the Governor of Bali
Mr Mathur Riady, Director-General, Directorate General of Livestock Services,
Indonesia
Mr Juan Lubroth, FAO Representative,
Mr Yoshiyuki Oketani, OIE Representative,
Participants and guests
Ladies and gentlemen

In my capacity as the APHCA Chairperson, I wish to extend the warmest welcome to all delegates and guests to the session and the workshop of the Animal Production and Health Commission for Asia Pacific - APHCA. I would like to welcome the Chief Guest – the Honorable Governor of Bali, Representative of FAO, APHCA colleagues and all guests who are here today. We are very happy to have you with us and we are looking forward to your inputs and contributions to the session and the workshop in our four days to come.

Dear APHCA colleagues and friends

As a normal practice, APHCA session and workshop are held every year in a different APHCA member countries and the most recent ones took place in Chiang Mai, Thailand, in September last year. This year, the Government of Indonesia has kindly accepted to host these meeting and workshop and we are grateful to the generosity given.

We are glad that APHCA, through its good and bad days, has been re-vitalized and will step into its third decade next year. We have noticed that the functions and the financial status of the Commission have improved tremendously and we thank to the APHCA Secretariat and all the members who contribute to this.

Distinguished scientists

The theme of the workshop for this year has been aptly selected as concern about the economic and public health issues pertaining to the Asian Avian Influenza crisis. We have with us this time esteemed academia and scientists who work in specialized technical areas relevant to the Avian Influenza. Beside our regular APHCA business session – which cover a wide range of animal production and health issues – this following 4 days will be a good opportunity for us to update ourselves and discuss on the future work plan to cope with the disease and its impacts in a concrete manner. Thus, we look forward to your contributions to the fruitful session and workshop. I may put a remark that this is for the first time in its history that the APHCA workshop forum is opened to over local 40 scientists and academia who are most welcomed to join us.

Dear colleagues

In conclusion, on behalf of APHCA, I would like to thank all the collaborators who have helped organize this event particularly FAO Animal Production and Health Division in Rome and the OIE who collaborate with us in organizing the workshop. Special thanks to the Government of Indonesia for hosting these events and for the organizational supports we have received.

Ladies and gentlemen, thank you.

Welcome speech

*Opening address by Mr Mathur Riady
Director-General of Livestock Service of Indonesia*

The Honorable Assistant Secretary Governor of Bali Province, Mr I Wayan Subagi Artha
Dr Afzal, APHCA Chairperson
Dr Juan Lubroth, FAO
Dr Oketani, OIE Regional Representative Tokyo
Distinguished Delegates and Observers
Ladies and Gentlemen:

Good Morning,
Assalamu'alaikum Wr. Wb.

On behalf of the Directorate General of Livestock Services, I would like to warmly welcome all of you to Indonesia, especially to Denpasar, Bali, the island of God. I would take this opportunity to express my sincere appreciation to the Honorable Assistant Secretary Governor of Bali Province to attend and officially open the 29th Session of Animal Production and Health Commission for Asia Pacific (APHCA) and the FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop Today.

The Organizing Committee also wishes to thank the Food and Agriculture Organization (FAO) for the support on having Indonesia a chance to host such an important meeting of APHCA and avian influenza regional workshop. My appreciation is also extended to Regional Representative OIE Tokyo for the support in the implementation of this Meeting. Last but not least, I would like to thank the local organizing committee and others which I can not mention one by one for their support to the Meeting as well.

Distinguished Ladies and Gentlemen

THE 29th APHCA Session is conducted in Indonesia based on decision made during the 28th APHCA Session held in Pakistan in 2003. The 29th APHCA Session is attended by 14 out of 15 member countries of APHCA, 6 international organizations and 4 observer countries. As we are aware, the establishment of FAO-APHCA is to develop livestock as an integral part of agriculture which mainly focused on small farmers and I believe that the objective is still relevant to the current condition considering to the livestock development in the Asia region. However, the outbreak of animal diseases often hampers its development since limited knowledge and resources of farmers and governments as well to overcome the situation. It is therefore, the existence of FAO-APHCA becomes more important to support and promote livestock development in the region and to assist in the problem solving.

Ladies and Gentlemen,

As you might understand, the Asian region is now facing problem with the spread of avian influenza throughout the region. Indonesia, as you are aware, is facing the crucial moment in the last few months with the findings of avian influenza virus in human. Many efforts to control avian influenza have been implemented by the government with many problems and difficulties. The disease also causes a huge economic losses to the country. It is therefore, the Avian Influenza Regional Economic Assessment jointly organized by FAO-APHCA and OIE would be a valuable forum and opportunity to share experiences, ideas and help each other to overcome the problems arise related with avian influenza. As this workshop is very valuable for Indonesia as the host country, we invite observers from institutions related with control on avian influenza to gain better understanding on avian influenza control programme, I do hope the discussion in the workshop held tomorrow and the day after tomorrow would be a way to discuss better control of the disease in particular to prevent disease spread and avoid further economic losses.

Once again I wish to extend a warm and cordial welcome to all distinguished delegates, observers and participants who are attending the 29th APHCA Session and the FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop. During your stay, I wish you will have an enjoyable and fruitful time as Bali has many wonderful places of interest.

Finally, on behalf of the host country, I wish to apologize for any inconvenience that we may overlook during preparation and implementation of the Meeting.

Thank you.

Wassalamualaikum Wr. Wb.

Denpasar, 26 September 2005

Mathur Riady
Director General of Livestock Services
Ministry of Agriculture, Indonesia.

Opening speech

Opening address by Juan Lubroth

Senior Officer and Head of the Emergency Prevention System (EMPRES), FAO/Rome

Dear APHCA delegates, Chief Guest – the Honourable I Wayan Subagi Artha, Assistant to the Governor of Bali, participants from the region, including the World Organization for Animal Health (OIE), Japan International Cooperation Agency (JICA), International Livestock Research Institute (ILRI) and my FAO colleagues from the Regional Office in Bangkok and Headquarters.

Welcome all to APHCA's 29th Session. I echo previous speakers in thanking the government of Indonesia for hosting the meeting and to Bali for the hospitality shown to us.

The avian influenza crisis makes a forum such as this ever more relevant. Transboundary animal diseases by their very nature require regional and international cooperation. Since the avian influenza crisis came to international attention, the world is correct in its concern. It is clear that this is not only an Asian problem, and as has been said since the beginning, no poultry producing country is safe from the ravages of avian influenza. We have never experienced highly pathogenic avian influenza on such a wide geographical scale affecting all poultry production systems and even witnessed the decimation of wildlife.

FAO has been coordinating and managing over 20 country and regional projects with the able assistance of donor countries and agencies (Australia, China, France Japan, USA, World Bank, and Asian Development Bank) and in the next few weeks we hope to obtain considerable more funding to the countries and the region from Germany, Finland, Switzerland, USA, and the European Union. In the past 18 month or so we have held some 120 workshops and sensitised or trained over 3700 people – veterinarians, microbiologists, inspectors, community leaders, producers, and breeders; undertaken several studies in the Region on socio-economic factors on avian influenza control, market chain analysis, human-animal health interface, and some incipient work on wildlife surveillance. Yet, you will agree, more is required. Fear that migratory birds can introduce the virus to distant lands stimulated the Director General of FAO to make additional funding available for prevention and early detection measures throughout southern Europe, Middle East and Africa.

Since the last APHCA session in Chiang Mai, Thailand, some important developments have occurred. In December 2004, the Director General established the Emergency Centre for Transboundary Animal Diseases at FAO, following the EMPRES precepts of early warning and detection, early reaction, enabling research and coordination under the overall guidance of the Chief of FAO's animal health service, whom has been named Chief Veterinary Officer of FAO. This new nomenclature places the service on par with the existing structures of national veterinary administration and establishes another strong link with the Director General of the OIE.

The FAO position to the international community is that avian influenza is - currently - a animal health problem of poultry production (duck, chicken, quail) and in order to avert a possible human pandemic, resources must be injected to eliminate the risk by controlling the disease at the source. To date, the commitment by governments to curb the disease is mixed, some countries have taken extraordinary and innovative measures to eliminate the virus from the poultry production sector, and others have not. Contingency planning and prevention in countries at risk is also mixed although we have had over 20 months warning. This FAO position has been echoed by the OIE and in certain circles of the WHO.

We have no indication today that swine are playing a role in the maintenance or spread of avian influenza, and concern that indiscriminate culling could occur makes little epidemiological sense. Monitoring of swine could be part of the active surveillance carried out by a veterinary service, but it cannot detract from early reporting and response of disease in poultry. There are five more confirmed human infections in Indonesia as of yesterday and a dozen more suspected. It is not tolerable that humans be the indicator species – focus on poultry must be heightened.

The Global Framework for the Progressive Control of Transboundary Animal Diseases, GF-TADs, initiative by FAO and OIE has been fully endorsed by ASEAN and similar sub-Regional groups in the Americas – PAHO, IICA, OIRSA, the Standing Veterinary Committee of Mercosur, and accepted in principle by SAARC. Regional steering committees have been established for Asia and the Americas, and in October in Europe. Steering committees for GF-TADs for Africa and Middle East are programmed for the following months. A call for donors will likely be held in the first semester of 2006, and formation of the Regional Support Units around the world, the Global Early Warning System between FAO, OIE and WHO, the research programme, and the Global Secretariat.

However, the GF-TADs principles are already being applied to avian influenza projects, and for a classical swine fever, foot-and-mouth disease, and avian influenza for the Greater Mekong through support received from Asian Development Bank, and hopefully another project for contagious bovine pleuropneumonia and foot-and-mouth disease in the Southern African Development Community through funding by the European Commission.

I would like to close with a petition to the APHCA delegates that communication and recommendations include the concept *Prevention* should be considered an *Emergency* to establish contingency and emergency preparedness.

Thank you for your kind attention.

Opening speech

*Opening address by Dr Yoshiyuki Oketani
OIE Deputy Regional Representative for Asia and the Pacific*

Honorable main guest, Mr I Wayan Subagi Artha, Assistant Governor,
Mr Mathur Riady, Director General,
Dr Afzal, Chairperson of APHCA,
Dr Juan Lubroth from FAO HQ in Rome,

Distinguished participants,
Ladies and gentlemen,

First of all, I would like to thank Indonesian Government authorities for their generosity to host this important meeting, for their efforts made in preparing for this meeting.

I would also like to welcome all the participants who are here to attend this meeting.

Delivering animal health activities through appropriate policies and mechanisms becomes a public good because economic and social benefits from these activities contribute to poverty reduction the regional and global market access and food safety are now clearly demonstrated. This is the main job of national veterinary services of the countries in the region, through working in close cooperation with producers, industry and private veterinary practitioners.

The OIE and the FAO jointly decided last year to focus their efforts on control of transboundary animal diseases and to create new synergies for that purpose.

The Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs) is a facilitating mechanism which combines the work such as official information of animal diseases, setting up of technical standards, guidelines and mechanisms to strengthen capacity of national veterinary services with the work such as field projects for implementation of disease control measures.

The ultimate aim of the GF-TADs Programme is to improve protein food security, reduce poverty, safeguard the world livestock industry from repeated shocks of disease epidemics and promote safe trade.

The First Meeting of the Regional Steering Committee for Asia and the Pacific was hosted by the OIE Regional Representation for Asia and the Pacific (OIE Tokyo) in Tokyo, Japan last March and the Steering Committee identified important roles of those of the Steering Committee as well as the Permanent Secretariat of the GF-TADs Regional Steering Committee for Asia and the Pacific.

The Tokyo meeting was attended by the selected Chief Veterinary Officers from national governments of the member countries in the region and representatives from international,

regional and donor organisations including OIE, FAO, WHO, World Bank, ASEAN, JICA, etc.

At the Tokyo meeting, discussions were made on the roles, duties and responsibilities of the relevant organisations in the region, which included the Permanent Secretariat of the Regional Steering Committee, Regional Specialised Organisations such as ASEAN and SAARC and Sub-Regional Support Units, Sub-Regional Epidemiological Centers and Sub-Regional Laboratory Networks/Leading Laboratories to be designated in South-East Asia (ASEAN countries), South Asia (SAARC countries) and East Asia, etc.

Highly pathogenic Avian Influenza is one of the priority transboundary animal diseases both in South East Asia (ASEAN countries) and in South Asia (SAARC countries).

Under such a condition, this meeting is quite important for further discussions of HPAI control in this region.

On this occasion, I do hope this important 29th Session of APHCA and OIE/FAO-APHCA Regional Avian Influenza Economic Assessment Workshop is successful and fruitful to further strengthen HPAI control measures and to obtain the eventual eradication of the disease in this region.

Thank you for your attention

Opening speech
Opening address by Dewa Beratha
Bali Governor, Indonesia

Om Swastiastu,
Honorable the Minister of Agriculture of the Republic of Indonesia,
Chairman, distinguished guests, ladies and gentlemen

Let us thank God Almighty, Ida Sang Hyang Widi Wasa since with His blessing we can gather this morning to attend the Animal Production and Health Commission for Asia and the Pacific (APHCA).

In this opportunity, let me welcome you all to Bali island. I hope the suasana in Bali could give you all the inspirations and pleasures so that the meeting will produce outputs for the improvement of livestock sector in the Asia Pasific region.

Distinguished guests,

On behalf of the people of Bali as well as the government of Bali, I would like to thank the Organizing Committee and participants who have chosen Bali for the venue of this important meeting. The meeting is very relevant with one priority program of the government of Bali which is to improve agriculture sector in general and in particular, livestock sub-sector.

More than that, issue raised in this meeting is in line with the need of Bali as a world tourist destination. Bali needs supply of qualified meat in order to fulfill the needs of Balinese as well as tourists.

In relation with livestock sub-sector, tourism is also very susceptible with the issue of animal disease spread. The findings of avian influenza cases in a number of province in Indonesia have implicated to tourism as well. Bali as a tourist destination area has been implemented some anticipation measures, among other temporarily stop entry of animals from Java island. This measure is considered necessary since tourism is closely related with animal disease issue in particular to zoonotic disease. If this happens, it will impact to tourism which in turn will be resulting to a negative image and subsequently decreasing the income of Bali.

Ladies and gentlemen,

I would like to conclude my speech with hope that this international meeting could produce support to the improvement of animal productivity in Indonesia, in particular in Bali island.

Thank you, Om Shanti, Shanti, Shanti, Om.