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

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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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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 feedback by the delegates were addressed in detail as 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

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 convene 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.

¹The FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop (27-29 September 2006).
²As 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  29th APHCA business session
1245 – 1400  Lunch

**Afternoon**

1400 – 1600  29th APHCA business session – continued
1600 – 1630  Tea/coffee break
1630 – 1730  29th 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  ▪ 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

Bali, Indonesia, 26-29 September 2005
1030 – 1245  
- OIE’s Terrestrial Animal Health Code – new chapter on AI: compartmentalization, zoning and trade (Christianne Bruschke)
- 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)

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**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
- 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)
  - 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 Mexican dinner (hosted by Government of Indonesia)

Friday, 30 September 2005

Departure of guests
(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

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<th>Session</th>
<th>Date and Venue</th>
<th>Chairperson</th>
<th>Vice-Chairperson</th>
<th>Members of the Executive Committee</th>
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<tr>
<td><strong>First</strong></td>
<td>Bangkok, Thailand, 7-11 Jun 1976</td>
<td>Dr J.C. Madamba (Philippines)</td>
<td>Dr M.N. Menon (India)</td>
<td>Delegates from Malaysia, Sri Lanka and Thailand</td>
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<td><strong>Second</strong></td>
<td>Kuala Lumpur, Malaysia, 22-26 Aug 1977</td>
<td>Dr S. Thuraisingham (Malaysia)</td>
<td>Dr A. Bandaranayake (Sri Lanka)</td>
<td>Delegates from Australia, Nepal and Thailand</td>
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<td><strong>Third</strong></td>
<td>Bangkok, Thailand, 16-21 Jul 1978</td>
<td>Dr S. Thuraisingham (Malaysia)</td>
<td>Dr A. Bandaranayake (Sri Lanka)</td>
<td>Delegates from Australia, Philippines and Thailand</td>
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<td><strong>Fourth</strong></td>
<td>Manila, Philippines, 3-7 Sep 1979</td>
<td>Dr S.H. Escudero III (Philippines)</td>
<td>Dr Y. Prased (India)</td>
<td>Delegates from Bangladesh, Malaysia and Singapore</td>
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<td><strong>Fifth</strong></td>
<td>Bangkok, Thailand, 6-11 Oct 1980</td>
<td>Dr Tim Bhannasiri (Thailand)</td>
<td>Dato’ Dr Osman bin Din (Malaysia)</td>
<td>Delegates from India, Indonesia and Sri Lanka</td>
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<td><strong>Sixth</strong></td>
<td>Colombo, Sri Lanka, 10-15 Aug 1981</td>
<td>Dr S.B. Dhanapala (Sri Lanka)</td>
<td>Dr J.H. Hutasoit (Indonesia)</td>
<td>Delegates from Australia, India and Malaysia</td>
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<td><strong>Seventh</strong></td>
<td>Surabaya, Indonesia, 13-18 Dec 1982</td>
<td>Prof. Dr J.H. Hutasoit (Indonesia)</td>
<td>Dato’ Dr Osman bin Din (Malaysia)</td>
<td>Delegates from India, Philippines and Thailand</td>
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<td><strong>Eighth</strong></td>
<td>Bangkok, Thailand, 3-8 Oct 1983</td>
<td>Dato’ Dr Osman bin Din (Malaysia)</td>
<td>Dr O.N. Singh (India)</td>
<td>Delegates from Australia, Bangladesh and Papua New Guinea</td>
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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 Khumirirdpetch (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 Chaisrisongkram (Thailand)
Members of the Executive Committee:
Delegates from Nepal,
Philippines and Singapore

Nineteenth
Tehran, Iran, 20-24 Nov 1994
Chairperson:
Dr Wipit Chaisrisongkram (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. Abeyratre (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. Patwadham (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
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List of APHCA chairpersons by country
(as of year 2005)

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

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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 re-assortment. 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)

<table>
<thead>
<tr>
<th>Funds received</th>
<th>Expressed in US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>3051 Prior years contributions received (up to 31/12/03)</td>
<td>1 692 811</td>
</tr>
<tr>
<td>3052 Prior years interest earned ***</td>
<td>38 019</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1 730 830</strong></td>
</tr>
</tbody>
</table>

Sums received from member countries during January 2004 - December 2004

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3051 Contributions received in 2004</td>
<td>85 946</td>
</tr>
<tr>
<td>3052 Interests earned in 2004***</td>
<td>3 699</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>89 645</strong></td>
</tr>
</tbody>
</table>

Accumulated interests received since APHCA started:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(38 019 + 3 699)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41 718</strong></td>
</tr>
</tbody>
</table>

*** 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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior years contributions up to end 2003 (without interests)</td>
<td>1 692 811</td>
</tr>
<tr>
<td>Year 2004 contributions (without interests)</td>
<td>85 946</td>
</tr>
<tr>
<td></td>
<td><strong>Sub-Total 1 778 757</strong></td>
</tr>
<tr>
<td>Prior years expenditures up to end 2003:</td>
<td>1 401 780(minus)</td>
</tr>
<tr>
<td>Prior years expenditures up to end 2004:</td>
<td>44 973(minus)</td>
</tr>
<tr>
<td></td>
<td><strong>Cash balance : 1 January 2005 Total 332 004</strong></td>
</tr>
</tbody>
</table>

Expenditures in 2004 (Jan04-Dec04)
(for details, please see next page)
## APHCA Trust Fund
- Expenditures and balances between 01 January and 31 December 2004 -
  
  *(in Oracle)*

(Expressed in US$)

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

**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

- Expenditures and balances up to 05 September 2005

*(in Oracle)*

(Expressed in US$)

<table>
<thead>
<tr>
<th>Type</th>
<th>Account Description</th>
<th>Due in 2005</th>
<th>Received (up to 05 Sept. 2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3051 TF contributions</td>
<td>84 104</td>
<td>83 225</td>
</tr>
<tr>
<td></td>
<td>3052 TF interests earned</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Expenditures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5011 Salaries professional</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5012 Salaries GS</td>
<td>12 000</td>
<td>7 171</td>
</tr>
<tr>
<td></td>
<td>5013 Consultants</td>
<td>25 000</td>
<td>704</td>
</tr>
<tr>
<td></td>
<td>5014 Contracts</td>
<td>6 000</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5020 Overtime</td>
<td>2 000</td>
<td>466</td>
</tr>
<tr>
<td></td>
<td>5021 Travel</td>
<td>25 000</td>
<td>5 429</td>
</tr>
<tr>
<td></td>
<td>{include CP’s travel (5 000) and Fellowships (10 000)}</td>
<td></td>
<td>19 571</td>
</tr>
<tr>
<td></td>
<td>5023 Training</td>
<td>15 000</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5024 Expendable procurement</td>
<td>10 000</td>
<td>1 037</td>
</tr>
<tr>
<td></td>
<td>5025 Non-expendable procurement</td>
<td>5 000</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5026 Hospitality</td>
<td>1 000</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5028 GOE</td>
<td>2 000</td>
<td>3 488</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>103 000</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/ Approved by APHCA at its 28th Session held between 27 Sep and 1 Oct 2004 in Chiang-Mai, Thailand.</td>
</tr>
<tr>
<td>2/ The figures included in this column include also commitments.</td>
</tr>
<tr>
<td>3/ No professional post for APHCA is filled using APHCA funds.</td>
</tr>
</tbody>
</table>
## Proposed APHCA Trust Fund budget for 2006

*(includes estimated contributions to APHCA by FAO)*

(Expressed in US$)

<table>
<thead>
<tr>
<th>Type</th>
<th>Account</th>
<th>Due in 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Earnings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3051 TF contributions</td>
<td></td>
<td>84 104</td>
</tr>
<tr>
<td>3052 TF interests earned</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td><strong>Expenditures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Account</td>
<td>APHCA TF 9167</td>
<td>FAO’s estimated contributions</td>
</tr>
<tr>
<td>5011 Salaries professional(^1)</td>
<td>0</td>
<td>96 600(^\frac{2}{3})</td>
</tr>
<tr>
<td>5012 Salaries GS(^2)</td>
<td>13 800</td>
<td>23 000</td>
</tr>
<tr>
<td>5013 Consultants</td>
<td>25 000</td>
<td>10 000</td>
</tr>
<tr>
<td>5014 Contracts</td>
<td>6 000</td>
<td>14 000</td>
</tr>
<tr>
<td>5020 Overtime</td>
<td>2 000</td>
<td>0</td>
</tr>
<tr>
<td>5021 Travel</td>
<td>25 000</td>
<td>10 000</td>
</tr>
<tr>
<td>5023 Training</td>
<td>15 000</td>
<td>2 000</td>
</tr>
<tr>
<td>5024 Expendable procurement</td>
<td>10 000</td>
<td>1 000</td>
</tr>
<tr>
<td>5025 Non-expendable procurement</td>
<td>5 000</td>
<td>5 000</td>
</tr>
<tr>
<td>5026 Hospitality</td>
<td>1 000</td>
<td>1 000</td>
</tr>
<tr>
<td>5028 GOE(^4)</td>
<td>4 000</td>
<td>5 000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>106 800</strong></td>
<td><strong>167 600</strong></td>
</tr>
</tbody>
</table>

**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$)

<table>
<thead>
<tr>
<th>Type</th>
<th>Account</th>
<th>Due in 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3051 TF contributions</td>
<td>84 104</td>
</tr>
<tr>
<td></td>
<td>3052 TF interests earned</td>
<td></td>
</tr>
<tr>
<td>Expenditures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US$ 25 000 Dairy – Economics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5011 Salaries professional$^1$</td>
<td>96 600</td>
</tr>
<tr>
<td></td>
<td>5012 Salaries GS$^2$</td>
<td>36 800</td>
</tr>
<tr>
<td></td>
<td>5013 Consultants</td>
<td>35 000</td>
</tr>
<tr>
<td></td>
<td>5014 Contracts</td>
<td>20 000</td>
</tr>
<tr>
<td></td>
<td>5020 Overtime</td>
<td>2 000</td>
</tr>
<tr>
<td></td>
<td>5021 Travel</td>
<td>35 000</td>
</tr>
<tr>
<td></td>
<td>5023 Training</td>
<td>17 000</td>
</tr>
<tr>
<td></td>
<td>5024 Expendable</td>
<td>11 000</td>
</tr>
<tr>
<td></td>
<td>procurement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5025 Non-expendable</td>
<td>10 000</td>
</tr>
<tr>
<td></td>
<td>procurement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5026 Hospitality</td>
<td>2 000</td>
</tr>
<tr>
<td></td>
<td>5028 GOE$^3$</td>
<td>9 000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>274 400</td>
</tr>
</tbody>
</table>

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$)

<table>
<thead>
<tr>
<th>Type</th>
<th>Account</th>
<th>Due in 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3051 TF contributions</td>
<td>84 104</td>
<td></td>
</tr>
<tr>
<td>3052 TF interests earned</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Expenditures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Account</td>
<td>APHCA TF 9167</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5011 Salaries professional</td>
<td>0</td>
<td>96 600 $^\frac{1}{2}$</td>
</tr>
<tr>
<td>5012 Salaries GS $^2$</td>
<td>13 800</td>
<td>23 000</td>
</tr>
<tr>
<td>5013 Consultants</td>
<td>25 000</td>
<td>10 000</td>
</tr>
<tr>
<td>5014 Contracts</td>
<td>6 000</td>
<td>14 000</td>
</tr>
<tr>
<td>5020 Overtime</td>
<td>2 000</td>
<td>0</td>
</tr>
<tr>
<td>5021 Travel</td>
<td>25 000</td>
<td>10 000</td>
</tr>
<tr>
<td>5023 Training</td>
<td>15 000</td>
<td>2 000</td>
</tr>
<tr>
<td>5024 Expendable procurement</td>
<td>10 000</td>
<td>1 000</td>
</tr>
<tr>
<td>5025 Non-expendable procurement</td>
<td>5 000</td>
<td>5 000</td>
</tr>
<tr>
<td>5026 Hospitality</td>
<td>1 000</td>
<td>1 000</td>
</tr>
<tr>
<td>5028 GOE $^4$</td>
<td>4 000</td>
<td>5 000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>106 800</strong></td>
<td><strong>167 600</strong></td>
</tr>
</tbody>
</table>

**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$)

<table>
<thead>
<tr>
<th>Member Governments</th>
<th>Outstanding 31/12/2004</th>
<th>Contribution due for 2005</th>
<th>Received up to 05/09/2005</th>
<th>Outstanding 05/09/2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRALIA</td>
<td>12.22</td>
<td>10 724.00</td>
<td>10 716.00</td>
<td>20.22</td>
</tr>
<tr>
<td>BANGLADESH</td>
<td>39 845.00</td>
<td>6 502.00</td>
<td>18 047.00</td>
<td>28 300.00</td>
</tr>
<tr>
<td>BHUTAN</td>
<td>(1 912.00)</td>
<td>2 128.00</td>
<td>-</td>
<td>216.00</td>
</tr>
<tr>
<td>INDIA</td>
<td>13.14</td>
<td>10 724.00</td>
<td>10 724.18</td>
<td>12.96</td>
</tr>
<tr>
<td>INDONESIA</td>
<td>6 992.57</td>
<td>6 502.00</td>
<td>6 984.00</td>
<td>6 510.57</td>
</tr>
<tr>
<td>IRAN</td>
<td>18 046.94</td>
<td>6 502.00</td>
<td>13 004.00</td>
<td>11 544.94</td>
</tr>
<tr>
<td>LAOS</td>
<td>(484.92)</td>
<td>2 128.00</td>
<td>-</td>
<td>1 643.08</td>
</tr>
<tr>
<td>MALAYSIA</td>
<td>482.00</td>
<td>6 502.00</td>
<td>6984.00</td>
<td>0.00</td>
</tr>
<tr>
<td>MYANMAR</td>
<td>2 191.66</td>
<td>2 128.00</td>
<td>2 129.21</td>
<td>2 190.45</td>
</tr>
<tr>
<td>NEPAL</td>
<td>(1 970.00)</td>
<td>2 128.00</td>
<td>-</td>
<td>158.00</td>
</tr>
<tr>
<td>PAKISTAN</td>
<td>10.00</td>
<td>6 502.00</td>
<td>-</td>
<td>6 512.00</td>
</tr>
<tr>
<td>PAPUA NEW GUINEA</td>
<td>68.00</td>
<td>2 128.00</td>
<td>2 186.00</td>
<td>10.00</td>
</tr>
<tr>
<td>PHILIPPINES</td>
<td>5 169.18</td>
<td>6 502.00</td>
<td>5 954.00</td>
<td>5 716.72</td>
</tr>
<tr>
<td>SRI LANKA</td>
<td>45.00</td>
<td>6 502.00</td>
<td>6 496.06</td>
<td>50.94</td>
</tr>
<tr>
<td>THAILAND</td>
<td>-</td>
<td>6 502.00</td>
<td>-</td>
<td>6 502.00</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>68 508.79</strong></td>
<td><strong>84,104.00</strong></td>
<td><strong>83 227.91</strong></td>
<td><strong>69 387.88</strong></td>
</tr>
</tbody>
</table>
## Scale of contribution for 2006

(Expressed in US$)

<table>
<thead>
<tr>
<th>Country</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRALIA</td>
<td>10,724</td>
</tr>
<tr>
<td>BANGLADESH</td>
<td>6,502</td>
</tr>
<tr>
<td>BHUTAN</td>
<td>2,128</td>
</tr>
<tr>
<td>INDIA</td>
<td>10,724</td>
</tr>
<tr>
<td>INDONESIA</td>
<td>6,502</td>
</tr>
<tr>
<td>IRAN</td>
<td>6,502</td>
</tr>
<tr>
<td>LAOS</td>
<td>2,128</td>
</tr>
<tr>
<td>MALAYSIA</td>
<td>6,502</td>
</tr>
<tr>
<td>MYANMAR</td>
<td>2,128</td>
</tr>
<tr>
<td>NEPAL</td>
<td>2,128</td>
</tr>
<tr>
<td>PAKISTAN</td>
<td>6,502</td>
</tr>
<tr>
<td>PAPUA NEW GUINEA</td>
<td>2,128</td>
</tr>
<tr>
<td>PHILIPPINES</td>
<td>6,502</td>
</tr>
<tr>
<td>SRI LANKA</td>
<td>6,502</td>
</tr>
<tr>
<td>THAILAND</td>
<td>6,502</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>84,104</strong></td>
</tr>
</tbody>
</table>

**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 due 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 Chalermpao (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/BDG/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


4.14 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/BDG/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 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 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 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 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 6

Production System Profiles

- Nepal, Sri Lanka, Cambodia, Lao PDR, Thailand, Vietnam, Philippines, Indonesia
- Smallholder
- Heavily Commercial

Bali, Indonesia, 26-29 September 2005
Slide 7
Profile on Diagnostic Capacity (Activity)

- RT-PCR
- Gene sequencing
- ELISA
- FAT
- Virus isolation
- Clinical signs
- Histopathology
- Neutralization
- New Caledonia
- Laos, Myanmar
- Brunei, Thailand
- Japan, China, Korea, Thailand, Malaysia, Vietnam
- Indonesia
- Philippines
- India
- South Korea, Laos, Myanmar, Cambodia, Vietnam, Philippines, Indonesia, Lao, Myanmar, Cambodia, Sri Lanka, Bhutan, Nepal
- Papua New Guinea
- Bhutan
- Nepal
- Cambodia
- Vietnam
- Thailand
- Malaysia
- Sri Lanka
- Philippines
- Indonesia
- Laos
- Myanmar
- Cambodia
- India

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 diagnostic vaccines, fieldwork and validation of laboratory diagnostics.
  - Study the economic impact of CSF in the respective countries and examine the cost effectiveness of proposed CSF control and/or eradication measures.
  - Request governments to develop or formulate national policies with respect to CSF control and/or eradication.
  - Any recommendations 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:

- Geographical – a sub-regional laboratory center and epidemiology center will be selected from the national veterinary institutes. The center 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 handle the full range of diagnostic tests 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 interested organizations:
  - Work for the development of a regional surveillance network that includes disease monitoring, early warning, and rapid response systems.
  - Conduct regional activities (with assistance from FAO, OIE, JICA and other international organizations) that would strengthen capacity of countries on CSF epidemiology and control. Efforts towards the development of a regional CSF management strategy and guidelines for the implementation of CSF control programs are recommended.
  - 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 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 on FFS

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 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 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 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.

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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)

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**Slide 1**

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

V. Songkitti, FAO-APHCA

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**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.

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**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.

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**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).

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**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.

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**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.
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.

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.

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.

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.aphca-vph.org

VPH-CAP 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.

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 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 3

Content of the RSPA

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;
➢ the need for follow-up action, including financial and technical assistance, policy development and awareness raising and education.

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 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 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
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
- 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 Yongle
  - Malaysia – Adrian Raymond
  - Cambodia Dr. Suon Sotheun
  - Indonesia Dr. Nusantara
  - Laos Dr. Bounloun Boukham
  - Myanmar Dr. Than Daing
  - Philippines Dr. Paul Limson
  - Thailand Dr. V. Khunnayapath

- 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 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 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 HPA
    - Bangkok on 17-18 May 2005
- FAO/WHO/OIE Regional Meeting on Human/Veterinary Interface
  - Kuala Lumpur, 4-6 July 2005

Slide 4
Emerging pattern
- Livestock Production systems
  - Production trends
  - Waterfowl production
  - Trade pattern
  - Market chain

Virus eco-epidemiology
- Pathogen virulence
  - Virus evolution
  - Population
  - Reservoir

Human health risk
- Pathogen virulence
- Increased exposure
- Cultural practices

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 6
Type of Farming system

The FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop 51
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

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"

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

Why a global strategy?

- HPAI threatens regional and international trade
  - $1.2 billion in Thailand (4th largest poultry exporting country in the world)
  - $250 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

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

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

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
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

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: "17 million people could die of the pandemic"

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

What are the major constraints?
- Inexperience
  - Magnitude and logistics
- Inadequate depth in veterinary services
  - Inefficient 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
- Poor production biosecurity
- Lack of data on disease impacts
- Need for long term regional coordination
  - INADEQUATE RESOURCES

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
- Improve information on disease infection and transmission dynamics
  - On the farming systems
  - At the marketplace
  - Prevention and emergency preparedness plans
  - Develop economic and policy frameworks for action

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
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

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

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

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

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

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

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.
- GLobal Early Warning System FAO-OIE-WHO

**Slide 32**

<table>
<thead>
<tr>
<th>Standards</th>
<th>Information</th>
<th>Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Setting</td>
<td>Disease Intelligence</td>
<td>Non Official Regional National</td>
</tr>
<tr>
<td>Transfer to Countries</td>
<td>Non Official</td>
<td></td>
</tr>
</tbody>
</table>

**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 36**

**OIE, FAO, WHO Outbreak Tracking Systems**

FAO data on Animal Health Information: Projects, NGOs, etc.

Other FAO and UN data (e.g., Agromet, economics, refugees, etc.)

Trends-Analysis-Prediction (Immediate action not necessarily required)

Monitoring climate change

Targeted Capacity building-strengthening Veterinary Services (Immediate action not necessarily required)

Disease recognition training manuals

In-depth field analysis

Emergency preparedness

Laboratory competence

Compliance with OIE standards

**Slide 37**

**Indicator diseases**

- NENA - FMD, rinderpest, HPAI, PPR, sheep pox
- 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, NAVISW, and CSF
- Central America & Caribbean - FMD-free region; CSF
- South-Eastern Europe - FMD and CSF
- Others of concern – brucellosis, rabies ...

**Slide 38**

**Regional Support Units**

**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 2**

**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 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 4**

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 wave: April to November 2004
  - 84,000 birds destroyed in 17 provinces
  - The third wave from December 2004 to date
  - 470,000 chickens, 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 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

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 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 3
FAO Regional TCPs

TCP/RAS/3003 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/3011 Strengthening AI control through improved transboundary animal disease information management system 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 5
Additional Recommendations from the East and South Asia Launching Meetings

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

Slide 6
Scheme of collaboration for Sub-regional Networking in Asia

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

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.

Training and Workshops

- Epidemiology:
  - FAO training courses on
    - Basic epidemiology and data analysis: June and September 2005
    - Advanced epidemiology and data analysis: December 2005
  - Advanced Epidemiological Techniques for Regional Hubs in Asia: July 2005

- Laboratory:
  - 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:

- Most: participated by:
  - 8 countries in South Asia
  - 4 countries in Southeast Asia

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

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

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.
Eradicating Animal Influenza Viruses at their Source

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

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

Slide 1

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 4

Outline of the Presentation

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

Slide 2

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 5

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 3

The OIE early warning system

Slide 6
Outbreaks of Avian influenza in Asia (type H5) (as of 1 September 2005)

- Cambodia
- China (People's Rep. of)
- Hong Kong (SAR PRC)
- Indonesia
- Japan
- Kazakhstan
- Korea (Rep. of)
- Laos
- Malaysia
- Russia
- Thailand
- Vietnam

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

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

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)

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

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

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

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'.

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.

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

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.

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

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

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
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

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

Surveillance: Vaccinated flocks

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

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

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.

Diagnostic Techniques

- Identification of the Agent
- Assessment of pathogenicity
- Serology
- Developing techniques

Zoning and Compartmentalisation

- 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

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
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

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

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

- 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

Sequence of steps in definition of zone or compartment

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

OIE/FAO Network for Avian Influenza (2005)
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

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 of 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 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 41
GF-TADs
- Depends commitment of collaborators
- Financial resources
- Ambitious program

Slide 42
World Organisation for Animal Health
created in 1924 in Paris
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 2

Topics Covered
- 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 4

HKSAR Production and Marketing Chain
- Local Farms
- Imported Birds
- Wholesale Market
- Retail Markets

Slide 5

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

Slide 6

HSN1 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

The FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop 67
• Hong Kong Outbreaks
• Control methods
  • Vaccine Trial
  • Outbreak Vaccination
• Current Vaccine Programme
• Vaccination Costs
• Vaccination Concerns

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

HPAI 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

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

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 HPAI

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

Vaccine Trial – Local Farms
• 30 tagged sentinels left unvaccinated
• 30 tagged vaccinates and 30 sentinels monitored concurrently
Testing and monitoring

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

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

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

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 >100 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)

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

Summary results – Hong Kong

<table>
<thead>
<tr>
<th>Group</th>
<th>No. Dead / Total (mean time to death)</th>
<th>Antibody</th>
<th>Virus in cloaca (mean Log10 day 2)</th>
<th>Virus in throat (mean Log10 day 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentinel</td>
<td>10/10 (2.3 days)</td>
<td>n.a.</td>
<td>7/10 (10^2.3)</td>
<td>10/10 (10^4.3)</td>
</tr>
<tr>
<td>Vaccinate (GMT = 119.4)</td>
<td>0/10</td>
<td>238.9</td>
<td>0/10</td>
<td>0/10</td>
</tr>
</tbody>
</table>

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 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 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 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 27

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

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

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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 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
Along the chain
- Local chicken farms
- Imported chickens
- Wholesale markets
- Retail markets
- Local pigeon farms

Outside the chain
- Recreational bird parks
- Wild birds
- Pet birds
- Pigs

Current Vaccine Programme - Surveillance along the production and marketing chain

<table>
<thead>
<tr>
<th>Year</th>
<th>Compensation US$</th>
<th>No. of Birds Slaughtered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>13.4 million</td>
<td>1.5 million</td>
</tr>
<tr>
<td>2001</td>
<td>12.6 million (+1 million operation)</td>
<td>1.4 million</td>
</tr>
<tr>
<td>2002</td>
<td>3.2 million (+2 million operation)</td>
<td>900,000</td>
</tr>
</tbody>
</table>

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

AI Surveillance – a summary

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

Vaccination Programme Costs
- Vaccine paid for fully by farmers
- US$400,000 / year

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Cost / Bird US</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND + IB</td>
<td>0.6</td>
</tr>
<tr>
<td>ILT</td>
<td>1</td>
</tr>
<tr>
<td>ND</td>
<td>0.8</td>
</tr>
<tr>
<td>IBU</td>
<td>1</td>
</tr>
<tr>
<td>Marek's</td>
<td>1.8</td>
</tr>
<tr>
<td>AI</td>
<td>4</td>
</tr>
</tbody>
</table>

Stamping Out Costs

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

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

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
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

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

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

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

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)
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
  - Geese

GROSS-PATHOLOGICAL FEATURES

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

DIAGNOSIS OF HPAI OUTBREAKS IN INDONESIA

- Dewlap
- 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

CLINICAL SIGNS

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

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 products
5. Surveillance and tracing back
6. Restocking
7. Stamping-out in new infected areas
8. Public awareness
9. Monitoring and evaluation

CONSIDERATIONS ON CHOOSING THE STRATEGY

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

CONCLUDING REMARKS

SUMMARY OF ANTIBODY TITRE

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.

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

CONCERNS RELATED TO HPAI OUTBREAKS
- Poultry industry
- Public health aspects
- Food safety
- Food security
- Small-holders farmers’ live
- Regional and global issues

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 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


Slide 3

Poultry Population in Asia


Slide 4

Poultry Population in Indonesia


Slide 5

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


Slide 6

Poultry production system in Indonesia

- Based on type of business activity and level of biosecurity
- Presidential Decree No. 20/1990

Characteristics of each category of Indonesian poultry production system

**Sector 1: Breeders GPS**

- No. of breeding farms: 11
- FF production capacity/year: 9 – 10
- Population (2003): 315,000 – 330,000
- Location of GPS Breeders: West Java: 9, East Java: 1
- DOC PS distribution areas (15 provinces):
  - West Java: 9
  - East Java: 1

**Sector 1: Breeders PS**

- No. of breeding farms: 73
- FF production capacity/year: 1.055 billion
- Population (2003): 10 million
- Location of PS breeding farms: 15 provinces
- DOC PS distribution areas:
  - West Java: 9
  - East Java: 1

**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

**Sector 4: Backyard poultry (Local chicken and ducks)**

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

**HISTORY OF AI**

- 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

**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

---

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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

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Map of Bird Flu in Indonesia August 2003

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Geographical Distribution of AI in Indonesia (AUG 2003 – FEB 2004)

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No. of Chicken Death (August 2003 - February 2004)

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Policy on AI Control and Eradication

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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

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AI Control Policy

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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

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**Stamping Out**

II. **COST OF REQUIREMENTS (IDR 5 trillion)**

- Commercial chicken (broiler, layer, etc.):
  
  780 million x IDR 5,000 = IDR 3.9 trillion

- Local poultry (chicken, duck, muscovy, etc.):
  
  222,000,000 x IDR 5,000 = IDR 1.1 trillion

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**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

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**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

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**Economic Consideration for using Vaccination Strategy**

**Cost Estimation (Java Island)**

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**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

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**Stamping Out**

I. **COMPENSATION (IDR 16.14 trillion)**

- Commercial chicken (broiler, layer, etc.):
  
  780 million x IDR 15,000 = IDR 11.7 trillion

- Local poultry (chicken, duck, muscovy, etc.):
  
  222 million x IDR 20,000 = IDR 4.44 trillion

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**Cost Comparison between Vaccination and Stamping Out Strategy**

<table>
<thead>
<tr>
<th>Stamping Out</th>
<th>Vaccination</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDR 21.14 trillion</td>
<td>IDR 407.58 billion</td>
</tr>
<tr>
<td>US$ 2.11 billion (Equal to)</td>
<td>US$ 40.75 million (Equal to)</td>
</tr>
</tbody>
</table>
'Master Seed' used

1. A/Chicken/Legok/Banten/2003 (HPAI)
   - Vaksiflu AI (Vaksindo) – H5N1
   - Medivac AI (Medion) – H5N1

2. A/Chicken/Indonesia/2003 (HPAI)
   - Inactivated AI VAC (Qilu) – H5N1

3. A/Chicken/Mexico/232/94 (LPAI)
   - Nobilis Influenza H5 (Intervet) – H5N2
   - Optimune AI KV (Biomune) – H5N2
   - AI Killed Virus Vaccine (Avimex) – H5N2
   - Volvac AI (Boehringer) – H5N2

4. A/Turkey/Wisconsin/68 (LPAI)
   - Gallimune Flu (Merial) – H5N9

GEOGRAPHICAL DISTRIBUTION OF AVIAN INFLUENZA IN INDONESIA

Note: Newly infected area based on virus isolation and identification
Source: Livestock Services (Mid Sept 2005)

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%)

Current situation of HPAI

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No. OF NEW INFECTED PROVINCE/DISTRICT BY MONTH (AUGUST 2003 - JULY 2005)

**Slide 40**

No. of Poultry Death

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PROBLEMS in the implementation of VACCINATION strategy

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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 (meets with the OIE standard)

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DEPOPULATION PROBLEMS

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

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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 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

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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
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


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


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


MONITORING ANTIBODY TITER POST VACCINATION

<table>
<thead>
<tr>
<th>No.</th>
<th>Vaccines</th>
<th>No. of sample with antibody titer (Log 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vaccine A</td>
<td>2 10 28 47 55 122 206 222 137 70 25 8 4 35</td>
</tr>
<tr>
<td>2</td>
<td>Vaccine B</td>
<td>2 10 28 47 55 122 206 222 137 70 25 8 4 35</td>
</tr>
<tr>
<td>3</td>
<td>Vaccine C</td>
<td>2 10 28 47 55 122 206 222 137 70 25 8 4 35</td>
</tr>
<tr>
<td>4</td>
<td>Vaccine D</td>
<td>2 10 28 47 55 122 206 222 137 70 25 8 4 35</td>
</tr>
<tr>
<td>5</td>
<td>Vaccine E</td>
<td>2 10 28 47 55 122 206 222 137 70 25 8 4 35</td>
</tr>
<tr>
<td>6</td>
<td>Vaccine F</td>
<td>2 10 28 47 55 122 206 222 137 70 25 8 4 35</td>
</tr>
<tr>
<td>7</td>
<td>Vaccine G</td>
<td>2 10 28 47 55 122 206 222 137 70 25 8 4 35</td>
</tr>
</tbody>
</table>

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

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

Source: Vaccines producers based on government laboratory result (2004-2005)
Surveillance as a support for vaccination strategy
- Development of surveillance system for DIVA principle (or using sentinel birds)
- Surveillance program must be decided prior to the implementation of the vaccination program.
- Need to define the ‘EXIT STRATEGY’

Vaccination should be followed with post vaccination monitoring to ensure the efficacy, correct application and study on virus circulation in the farm environment
- Vaccine must follow the OIE standard (good efficacy in the experimental and field condition) and the vaccination strategy should be consistent with the FAO guidelines
- Distribution system and Vaccination campaign should be organised and monitored by the government.

Thank you ...
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 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 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 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 5
Table 1: Poultry population 1996 – 2005 (million)
<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Chicken</th>
<th>Ducks, muscovy ducks, geese</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>151,040</td>
<td>112,880</td>
<td>38,160</td>
</tr>
<tr>
<td>1998</td>
<td>167,890</td>
<td>126,360</td>
<td>41,530</td>
</tr>
<tr>
<td>2000</td>
<td>198,050</td>
<td>147,060</td>
<td>51,000</td>
</tr>
<tr>
<td>2002</td>
<td>233,290</td>
<td>159,450</td>
<td>73,840</td>
</tr>
<tr>
<td>2003</td>
<td>261,000</td>
<td>192,000</td>
<td>68,000</td>
</tr>
<tr>
<td>2004</td>
<td>215,000</td>
<td>155,000</td>
<td>60,000</td>
</tr>
<tr>
<td>2005</td>
<td>218,000</td>
<td>161,000</td>
<td>57,000</td>
</tr>
</tbody>
</table>

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.
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.

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

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.

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-operation.

Factors contributing disease spread: Production and Ecology
- Wetland, Duck and Rice Production

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

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

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
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.

Vaccine use

<table>
<thead>
<tr>
<th>Content</th>
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</thead>
<tbody>
<tr>
<td>H5N2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H5N1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H5N2 China</td>
<td>(Harbin) China</td>
<td></td>
</tr>
<tr>
<td>H5N1 Chicken</td>
<td>Deck or chicken</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(producer)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccine</td>
<td>Inactivated H5N1 Strain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inactivated H5N2 Strain</td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>Milk white emulsion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Milk white emulsion</td>
<td></td>
</tr>
<tr>
<td>Use for</td>
<td>2 – 5 weeks old</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 – 5 weeks old</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 weeks</td>
<td></td>
</tr>
</tbody>
</table>

Vaccination

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

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.

2. The pre-vaccination preparation

- 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 ~USD30,2 million, of which ~94% will be borne by the Government).
- Vaccine volume estimated: 2005 Æ 240 million doses; 2006 Æ 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.

The FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop
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.

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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.

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III. Vaccination programme

<table>
<thead>
<tr>
<th>Period</th>
<th>Times</th>
<th>No. Province</th>
<th>Province</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period III</td>
<td>10 – 30/11/2005</td>
<td>54</td>
<td>Others province</td>
</tr>
</tbody>
</table>

Slide 26

Thank you for your attention
CPF compartmentalization (broiler integration)

Presented by Boonpeng Santiwattanatam (Charoen Pokphand (CP), Thailand)

Control Measures

Using biosecurity system.
Epidemiology of the disease
Controlling the disease 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.

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

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.

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 controlled 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)
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)

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

Economic Impact (1/3)
Overall Economic Impact (Before & After AI Outbreak)

<table>
<thead>
<tr>
<th></th>
<th>2003 (Before)</th>
<th>2004 (After)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Production (Mil.Ton)</td>
<td>1.35</td>
<td>0.92</td>
<td>-12%</td>
</tr>
<tr>
<td>Local Consumption (Mil.Ton)</td>
<td>0.805</td>
<td>0.701</td>
<td>-12%</td>
</tr>
<tr>
<td>Export Volume (Mil.Ton)</td>
<td>0.545</td>
<td>0.219</td>
<td>-60%</td>
</tr>
<tr>
<td>Export Value (Mil.Baht)</td>
<td>46,700</td>
<td>23,700</td>
<td>-50%</td>
</tr>
</tbody>
</table>

Source: THAI BROILER PROCESSING EXPORTERS ASSOCIATION
Slide 15

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

<table>
<thead>
<tr>
<th></th>
<th>Lost : Mil. Baht</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breeder Farm</td>
<td>4,420</td>
</tr>
<tr>
<td>Feedmill Farm</td>
<td>12,430</td>
</tr>
<tr>
<td>Farm</td>
<td>27,950</td>
</tr>
<tr>
<td>Slaughterhouse</td>
<td>28,400</td>
</tr>
<tr>
<td>Export</td>
<td>23,700</td>
</tr>
<tr>
<td>Total</td>
<td>96,900</td>
</tr>
</tbody>
</table>

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

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Economic Impact (2/3)
Economic Impact to Chicken Market (2004)

- Domestic Market
  - Consumer Panic
  - No chicken menu in restaurant
  - Per capita consumption reduce from 14 kg to 8 kg
  - 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 excepted
  - Export volume decrease 60% (540,000 tons to 210,000 tons)

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Compartmentalization&Economic Impact (1/4)
Investment Cost Table

<table>
<thead>
<tr>
<th>Investment Cost Table</th>
<th>Unit : Baht</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Farm</td>
<td></td>
</tr>
<tr>
<td>Farm Construction</td>
<td>74,140,000</td>
</tr>
<tr>
<td>Average Cost / House</td>
<td>8,179,000</td>
</tr>
<tr>
<td>Additional for Control AI / Farm</td>
<td>74,000</td>
</tr>
<tr>
<td>Contract Farm</td>
<td></td>
</tr>
<tr>
<td>Company Farm</td>
<td>1,859,575</td>
</tr>
<tr>
<td>Contract Farm</td>
<td>1,859,575</td>
</tr>
</tbody>
</table>

Slide 18

Compartmentalization&Economic Impact (2/3)
Additional Cost for Compartment

<table>
<thead>
<tr>
<th>Surveillance (including buffer zone)</th>
<th>Cost/Year (Baht/Farm)</th>
<th>No. of Farms</th>
<th>CPF 3 Compartment (Baht/Farm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breeder Farm</td>
<td>296,000</td>
<td>15</td>
<td>11,845,000</td>
</tr>
<tr>
<td>Breeder Farm</td>
<td>104,000</td>
<td>15</td>
<td>2,080,000</td>
</tr>
<tr>
<td>Feed mill</td>
<td>65,000</td>
<td>15</td>
<td>2,025,000</td>
</tr>
<tr>
<td>Total</td>
<td>466,000</td>
<td>15</td>
<td>16,952,000</td>
</tr>
<tr>
<td>No. of Broilers (6 crops)</td>
<td>76,850,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimate Cost / Bird (Baht)</td>
<td>5.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Slide 19

Compartmentalization&Economic Impact (3/4)

- Domestic Market:
  - Consumption Increase
  - Per capita Consumption increase from 12 kg to 14 kg.
  - Live chicken weight increase from 2.2 kg to 2.5 kg.

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

28th Session of APHCA & The Regional Avian Influenza Economic Assessment Workshop

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

Slide 2
Estimating Economic Impact of Zoning in Malaysia

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

Slide 3
MALAYSIA

Spread of HPAI Virus - H5N1 in Thailand

HPAI Outbreak in Songkhla and Narathiwat (22 July 2004)

Slide 4
1. PRE-OUTBREAK CONTROL MEASURES

Slide 5

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 8**

**CLINICAL SURVEILLANCE OF HPAI**

**Slide 9**

**Surveillance of Farms in Kelantan**

<table>
<thead>
<tr>
<th>Type of Farm</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broilers</td>
<td>785</td>
</tr>
<tr>
<td>Layers</td>
<td>3</td>
</tr>
<tr>
<td>Breeders</td>
<td>1</td>
</tr>
<tr>
<td>Broiler ducks</td>
<td>8</td>
</tr>
<tr>
<td>Layer ducks</td>
<td>25</td>
</tr>
<tr>
<td>Village chickens/ quail</td>
<td>153</td>
</tr>
<tr>
<td>Total</td>
<td>975</td>
</tr>
</tbody>
</table>

**Slide 10**

**Surveillance of Premises in Kelantan**

<table>
<thead>
<tr>
<th>Premise</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public market</td>
<td>27</td>
</tr>
<tr>
<td>Pet Shop</td>
<td>71</td>
</tr>
<tr>
<td>Processing centers</td>
<td>158</td>
</tr>
<tr>
<td>Others</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td>1,343</td>
</tr>
</tbody>
</table>

**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 12**

**Control of Entry Points**

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

**Slide 13**

**Confiscation & Destruction**

(January - September 2004)

<table>
<thead>
<tr>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live poultry</td>
<td>3,000</td>
</tr>
<tr>
<td>Live village chicken</td>
<td>6</td>
</tr>
<tr>
<td>Frozen poultry meat</td>
<td>12,921 kg</td>
</tr>
<tr>
<td>Birds</td>
<td>2,101</td>
</tr>
<tr>
<td>DOC</td>
<td>22,000</td>
</tr>
<tr>
<td>Eggs</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Muscovy ducks</td>
<td>6</td>
</tr>
<tr>
<td>Cattle / Buffaloes</td>
<td>16</td>
</tr>
</tbody>
</table>

**Slide 14**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.8.2004</td>
<td>First Outbreak</td>
</tr>
<tr>
<td>22.8.2004</td>
<td>Last Outbreak (8th outbreak)</td>
</tr>
<tr>
<td>19.11.2004</td>
<td>Last detection of HPAI virus</td>
</tr>
<tr>
<td>22.11.2004</td>
<td>Completion of last culling and disinfection</td>
</tr>
<tr>
<td>5.1.2005</td>
<td>Country declared free by Honorable Minister of Agriculture &amp; Agro-Based Industry of Malaysia</td>
</tr>
</tbody>
</table>

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.

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

ZONING FOR HPAI CONTROL

Infected Zone
- Destruction

High Risk Zone
- Sampling & Destruction

Control Zone
- Sampling

INTER AGENCY COOPERATION
3. Economic Impact

Results of Virological Surveillance of HPAI in Malaysia (Jan 2004 – June 2005)

<table>
<thead>
<tr>
<th>State</th>
<th>Result</th>
<th>Sample Tested</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarawak</td>
<td>All Negative</td>
<td>8232</td>
<td>All Negative</td>
</tr>
<tr>
<td>Sabah</td>
<td>All Negative</td>
<td>5458</td>
<td>All Negative</td>
</tr>
<tr>
<td>Kelantan</td>
<td>All Negative</td>
<td>21461</td>
<td>All Negative</td>
</tr>
<tr>
<td>Trengganu</td>
<td>All Negative</td>
<td>468</td>
<td>All Negative</td>
</tr>
<tr>
<td>Pahang</td>
<td>All Negative</td>
<td>416</td>
<td>All Negative</td>
</tr>
<tr>
<td>Johore</td>
<td>All Negative</td>
<td>372</td>
<td>All Negative</td>
</tr>
<tr>
<td>Malacca</td>
<td>All Negative</td>
<td>1435</td>
<td>All Negative</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>All Negative</td>
<td>1585</td>
<td>All Negative</td>
</tr>
<tr>
<td>Selangor</td>
<td>All Negative</td>
<td>1769</td>
<td>All Negative</td>
</tr>
<tr>
<td>Perak</td>
<td>All Negative</td>
<td>303</td>
<td>All Negative</td>
</tr>
<tr>
<td>Penang</td>
<td>All Negative</td>
<td>141</td>
<td>All Negative</td>
</tr>
<tr>
<td>Kedah</td>
<td>All Negative</td>
<td>3358</td>
<td>All Negative</td>
</tr>
<tr>
<td>Perlis</td>
<td>All Negative</td>
<td>69</td>
<td>All Negative</td>
</tr>
</tbody>
</table>

A. Cost of Surveillance and Monitoring Before Outbreak

B. Cost of Eradication in Kelantan

C. Direct Loss to the Livestock Industry

D. Indirect Loss

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disinfection Gel</td>
<td>RM 8,885.60</td>
<td>USD 2,339.00</td>
</tr>
<tr>
<td>Swabs</td>
<td>RM 450.20</td>
<td>USD 118.40</td>
</tr>
<tr>
<td>Disposable Glove</td>
<td>RM 14,268.00</td>
<td>USD 3,754.00</td>
</tr>
<tr>
<td>Lab Tests (NASBA, RT-PCR, Egg Inoculation)</td>
<td>RM 2,100,000.00</td>
<td>USD 525,000.00</td>
</tr>
</tbody>
</table>

Total Cost of Surveillance and Monitoring: USD 532,544.00

B. Cost of Eradication

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable Apron</td>
<td>RM 55,200.00</td>
<td>USD 13,800.00</td>
</tr>
<tr>
<td>Disposable HEPA Mask</td>
<td>RM 7,200.00</td>
<td>USD 1,800.00</td>
</tr>
<tr>
<td>Nitrite Disposable Glove</td>
<td>RM 1,608.00</td>
<td>USD 402.00</td>
</tr>
<tr>
<td>Disinfection Gel</td>
<td>RM 8,736.00</td>
<td>USD 2,184.00</td>
</tr>
<tr>
<td>NASBA, RT-PCR, Egg Inoculation</td>
<td>RM 100.00 X 70 samples</td>
<td>USD 2,100.00</td>
</tr>
<tr>
<td>Lab Cost</td>
<td>RM 210,900.00</td>
<td>USD 52,645.00</td>
</tr>
</tbody>
</table>

Total Cost: USD 532,544.00
**Maintenance Cost for Roadblocks**

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of Staff</th>
<th>No. of Vehicles</th>
<th>Cost/Month (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kelantan</td>
<td>57</td>
<td>6</td>
<td>35,328</td>
</tr>
<tr>
<td>Perak</td>
<td>5</td>
<td>1</td>
<td>3,223</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>12</td>
<td>4</td>
<td>4,296</td>
</tr>
<tr>
<td>Melaka</td>
<td>15</td>
<td>4</td>
<td>2,187</td>
</tr>
<tr>
<td>Johore</td>
<td>24</td>
<td>4</td>
<td>5,078</td>
</tr>
<tr>
<td>Total</td>
<td>113</td>
<td>19</td>
<td><strong>50,055</strong></td>
</tr>
</tbody>
</table>

**Total Cost of Control of HPAI in Malaysia**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Cost Incurred (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Surveillance &amp; Monitoring before Outbreak</td>
<td>60,044.00</td>
</tr>
<tr>
<td>2. Eradication in Kelantan (sampling, culling, disinfection, roadblocks)</td>
<td>532,546.00</td>
</tr>
<tr>
<td>3. Compensation</td>
<td>60,000.00</td>
</tr>
<tr>
<td>Total</td>
<td>733,430</td>
</tr>
</tbody>
</table>

**Cost of Compensation USD 60,000**

Number of poultry and birds destroyed

- **Poultry and birds** - 17,024
- **Eggs** - 4,367

**Compensation Rate according to Type of Commercial Poultry and Age of the Birds**

|-------------|---------|-------|---------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
| 0.25        | Duck egg|       |         | 0.20    | Chicken egg|       |         | 0.00    | Village chicken| 9.50  | Patridge| 5.00  | Ostrich| 30.00  | Color chicken| 10.00  | Other duck| 6.00  | Broiler Duck| 10.00  | Geese| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Broiler| 10.00  |        | Broiler Pro
The FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop

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D. Indirect Loss

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 41

Effect to Tourism Industry

Slide 42

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NUMBER OF TOURISTS</th>
<th>REDUCTION IN NUMBER OF TOURISTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>12,779,875</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>13,282,810</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>3,875,798</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>6,937,581</td>
<td></td>
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</tbody>
</table>

Source: Immigration Department

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Estimated Total Economic Losses
USD 355,733,430

Slide 44

Control Measures for Avian Influenza Free Status

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 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

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REDUCTION IN NUMBER OF TOURISTS

YEAR          AVERAGE NUMBER OF TOURISTS
2001          13,835,561
2002          13,935,561
2003          13,835,561
2004          13,935,561

Source: Immigration Department
3. Surveillance and Early Warning
- Continuous surveillance monitoring HPAI situation in neighboring countries
- Continuously reminding farmers on the importance of reporting any abnormal mortality
- Investigation of any suspect cases

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

5. Continuous Education and Public Awareness on HPAI
- Leaflets on HPAI and its prevention
- Meeting with farmers’ associations
- Implementing GAHP which cover biosecurity

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

Zoning For Resuming Trade with Singapore

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

Lessons Learned

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

Thank You for Your Kind Attention
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, Indonesia

Slide 2

ERADICATION STRATEGY OF HPAI IN BALI

Control of bird movement, Products, Waste, Farm related equipments

Public Awareness
- Improved rural participation
- Public health concern
- Veterinary Public Health

Biosecurity
- Vaccination
- Post Vaccination Surveillance
- Depopulation
- Stamping out
- Restocking

Public Awareness
- Public health concern
- Veterinary Public Health

Slide 3

Table 1

Geographical distribution of avian influenza (H5N1) in Bali

<table>
<thead>
<tr>
<th>District</th>
<th>Population at risk</th>
<th>Birds at high risk</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denpasar</td>
<td>10,600</td>
<td>264</td>
<td>2.5</td>
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<tr>
<td>Tabanan</td>
<td>521,283</td>
<td>1,381,488</td>
<td>22.2</td>
</tr>
<tr>
<td>Jembrana</td>
<td>162</td>
<td>1,009,409</td>
<td>57.1</td>
</tr>
<tr>
<td>Buleleng</td>
<td>518,750</td>
<td>1,461,488</td>
<td>25.0</td>
</tr>
<tr>
<td>Karangasem</td>
<td>1,778,136</td>
<td>1,982,649</td>
<td>10.7</td>
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<tr>
<td>Bangli</td>
<td>192,543</td>
<td>992,895</td>
<td>75.0</td>
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<tr>
<td>Klungkung</td>
<td>187,105</td>
<td>1,127,814</td>
<td>57.1</td>
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<tr>
<td>Gianyar</td>
<td>15,688</td>
<td>774,914</td>
<td>50.0</td>
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<tr>
<td>Badung</td>
<td>10,600</td>
<td>94,069</td>
<td>6.6</td>
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<tr>
<td>Total</td>
<td>16,947,385</td>
<td>3,282,597</td>
<td>19.4</td>
</tr>
</tbody>
</table>

Slide 4

Geographical Distribution

Slide 5

Table 2

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

<table>
<thead>
<tr>
<th>District</th>
<th>Population at risk</th>
<th>Birds at high risk</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denpasar</td>
<td>92,962</td>
<td>26,000</td>
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<td>Tabanan</td>
<td>716,878</td>
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<td>2.1</td>
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<tr>
<td>Jembrana</td>
<td>1,727,878</td>
<td>18,715</td>
<td>10.9</td>
</tr>
<tr>
<td>Buleleng</td>
<td>661,903</td>
<td>163,642</td>
<td>25.0</td>
</tr>
<tr>
<td>Karangasem</td>
<td>1,360,000</td>
<td>1,118,129</td>
<td>83.7</td>
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<tr>
<td>Bangli</td>
<td>1,397,000</td>
<td>947,914</td>
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<td>Klungkung</td>
<td>1,006,863</td>
<td>1,448</td>
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<td>Gianyar</td>
<td>1,381,488</td>
<td>621,266</td>
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<tr>
<td>Badung</td>
<td>8,600</td>
<td>7,094,297</td>
<td>81.6</td>
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<td>Total</td>
<td>41,941,904</td>
<td>4,581,104</td>
<td>10.9</td>
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</tbody>
</table>

Slide 6

Table 3

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

<table>
<thead>
<tr>
<th>District</th>
<th>Population at risk</th>
<th>Bird deaths</th>
<th>Mortality Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denpasar</td>
<td>10,600</td>
<td>72</td>
<td>1.1</td>
</tr>
<tr>
<td>Tabanan</td>
<td>521,283</td>
<td>11,836</td>
<td>2.3</td>
</tr>
<tr>
<td>Jembrana</td>
<td>1,625</td>
<td>22</td>
<td>1.4</td>
</tr>
<tr>
<td>Buleleng</td>
<td>518,750</td>
<td>158,850</td>
<td>30.2</td>
</tr>
<tr>
<td>Karangasem</td>
<td>1,778,136</td>
<td>1,778,136</td>
<td>100.0</td>
</tr>
<tr>
<td>Bangli</td>
<td>192,543</td>
<td>23,122</td>
<td>12.0</td>
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<tr>
<td>Klungkung</td>
<td>187,105</td>
<td>8,424</td>
<td>4.5</td>
</tr>
<tr>
<td>Gianyar</td>
<td>15,688</td>
<td>3,000</td>
<td>19.1</td>
</tr>
<tr>
<td>Badung</td>
<td>10,600</td>
<td>162</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td>16,947,385</td>
<td>4,581,104</td>
<td>26.8</td>
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</table>
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 2

Outline of the Change Process
- FAO/OIE/WHO Consultation meeting
- Wet Market Operations
- Feedback
- Conclusions

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 other approaches in efforts to reduce the risk to human health associated with the wet markets of Asia.

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 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 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)

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>98,314</td>
<td>98,314</td>
<td>112,914</td>
</tr>
<tr>
<td>MOE</td>
<td>8,272</td>
<td>29,454</td>
<td>26,174</td>
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<tr>
<td>Capital outlay</td>
<td>1,818</td>
<td>764</td>
<td>163,680</td>
</tr>
<tr>
<td>Total</td>
<td>108,404</td>
<td>128,532</td>
<td>302,768</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Total Income</th>
<th>from Meat</th>
<th>Chicken</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>462,977</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>475,948</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>505,369</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>562,464</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>408,856</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>443,865</td>
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</tr>
<tr>
<td>2004</td>
<td>465,972</td>
<td>54,283</td>
</tr>
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</table>

Slide 9

Organizational Chart

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

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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 Board
  - 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 2

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

Slide 3

Part I:
General comments,
Country examples

Slide 4

Cycle of disease concerns

Disease outbreak
Preventive animal health
International standards
Consumer concerns
Trade concerns
Producer livelihoods

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 6

Disease outbreaks are expensive

Costs?
Measurement
Compensation

The FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop 107
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*

<table>
<thead>
<tr>
<th>Compensation</th>
<th>No compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>China/Hong Kong SAR</td>
<td>Cambodia</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Thailand</td>
</tr>
<tr>
<td>Thailand</td>
<td>Lao PDR</td>
</tr>
<tr>
<td>Vietnam</td>
<td></td>
</tr>
</tbody>
</table>

* (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 income/output flow
- Sustain trade
  - Local and international markets

Slide 12

HPAI Compensation Programs

- **Thailand**
  - c. USD 133 Ml, 410,000 farmers, 61M1 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 – 1088 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 Babri and Supriatna, yesterday’s presentation:_
  - Java compensation greater now than last year
  - Production value (not compensation) is:
    - USD 1.18 Ml (IDR5,015,000 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; Bali, 2005**
  - 272 households
  - broilers and layers
  - 90% owned farms
  - 6% layer farms
  - received govt. compensation
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 MI, of which 13.2 for compensation

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”

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

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

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

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
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

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

Scenario analysis – uncertainty

Mild Moderate Severe
Farms 20 200 1500
Districts 1 3 15
Lost cycles 1 2 4
Loan servicing No Small Large
Restructuring/ farm n.a. 5% 10%

Scenario analysis – all outcomes

Simulated total
Mean $7,023 $255,098 $4,586,175
Min 3,812 165,711 2,390,377
Max 11,436 399,512 6,312,661

Scenario analysis – mild outbreak result

Distribution - Total Costs (Mild)

Scenario analysis

Mild Moderate Severe
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

The FAO-APHCA/OIE Regional Avian Influenza Economic Assessment Workshop
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**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 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., ½-1% market value of product collected at sale
  - birds, feed and housing sales, vaccine sales
  - encourage sector 1 participation
  - reducing overall risk improves profit expectation

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**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

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Bali, Indonesia, 25-29 September 2005
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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.

Bali, Indonesia, 25-29 September 2005
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 - an 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
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.

Bali, Indonesia, 25-29 September 2005