



**FAO WORKSHOP ON
SOCIAL AND ECONOMIC IMPACTS OF
AVIAN INFLUENZA CONTROL**

**8-9 December 2004
Siam City Hotel
Bangkok
Thailand**



EXECUTIVE SUMMARY	2
Background and objectives	2
A synthesis of findings	2
Social and Economic Topics for Further Attention	3
FAO's role in social and economic analysis for strategic planning	3
1. INTRODUCTION	4
Background	4
Workshop objectives.....	4
Participants.....	5
2. OUTCOME OF GROUP DISCUSSIONS.....	6
QUESTION 1: What might be the differential impact of alternative AI control strategies / policies (for example, on industrial, commercial and backyard producers; traders; retailers, etc.)?	6
QUESTION 2: How might alternative AI control strategies/ policies impact on smallholders? What information is needed to answer the question and what is currently available?	8
QUESTION 3: How should you decide who should pay for different elements of an AI control programme at the national and regional level?	10
QUESTION 4: What might be the economies of scale and other advantages of a regional AI control initiative? What would be the costs associated with creating and maintaining such an initiative?	11
Synthesis of group discussions	12
3. SOCIAL AND ECONOMIC TOPICS FOR FURTHER ATTENTION	13
Impact of proposed or ongoing Avian Influenza control programmes	13
Poultry sector structural change in response to AI control measures.....	13
Design for financing the control of Avian Influenza	13
Macroeconomic development and rural livelihoods impacts	13
FAO's role in social and economic analysis for strategic planning	13
ANNEXE 1. PRESENTATIONS	14
1) Cambodia	14
2) China.....	19
3) Indonesia.....	23
4) Philippines	26
5) Thailand.....	35
6) Vietnam.....	41
7) TCP/RAS/3010	44



EXECUTIVE SUMMARY

Background and objectives

The workshop objectives were to identify potential social and economic impacts of alternative Avian Influenza control programmes and suggest a role for FAO in contributing to social and economic evaluation. It also tried to identify topics for studies and strategic planning that require attention and funding by national governments and donors. Participants came from Cambodia, China, Indonesia, Thailand, Philippines, Vietnam as well as the FAO headquarters and regional offices. Public sector (livestock services), private sector (industrial to small scale) and civil society were represented.

A synthesis of findings

Approaches to control

AI is an emerging disease of animal origin. The need for a medium to long term view is recognised. Countries are taking a range of approaches to strategy – planned, opportunistic, or laissez faire. Elements of strategy can include: stamping out of outbreaks that occur; compensation / “support” / credit; surveillance / monitoring; import control; the use of vaccination; compartmentalisation.

Impacts

Social and economic impacts result from

- animal health concerns and measures
- human health concerns and measures
- loss of livelihood and structural change

Animal health measures affect

- costs of mortality, morbidity and production loss following infection
 - investigation, culling, compensation, training, vaccination
 - restocking, new biosecurity
 - cost of lost business/ trade
- institutional response and communication
- immediate vs. long term interventions/ solutions
- perceptions of farmers

Human health concerns seem to be driving many aspects of the response to Avian Influenza. Human health measures affect

- fatalities and the cost of their prevention
- poultry consumption and hence production
- perceptions regarding food safety and food security
- trade relations between trading nations

Livelihoods and structural change impacts could include the following:

- impact on livelihoods resulting from changed management systems to accommodate higher biosecurity
- community costs from e.g. rearrangement of markets
- organisation and costs of restocking
- new structure for the poultry sector with some former players excluded
- perception of personal insecurity/ uncertainty
- a change in availability of inexpensive and accessible animal protein

Cross-cutting Issues

- Control of AI, or any major TAD, goes beyond animal health, requiring co-ordination of many government ministries and non-government players. This is particularly true of a zoonotic disease.
- There is a lack of clarity about the roles of stakeholders in planning, implementing and financing long-term control and prevention measures, affected by



- the need for information sharing, trust and defined responsibilities
- lack of information needed to address strategic planning – this would include information on epidemiology (risk, diagnosis, etc), disease ecology (aetiology, source, spread) and economic impact (complete costs of containment and future control)
- lack of agreement regarding how and when to ask for technical assistance from institutions such as FAO
- In order to develop effective policies, the policy process could be expected to include
 - stakeholder involvement in defining policy and identification of roles (control, compensation, prevention)
 - analytical capacity for objective policy development
- Macroeconomic development may be affected by epizootic disease as a result of shocks to economic stability and growth. Changes in the poultry sector may affect the contribution of agriculture to GDP, the development of rural areas, food security, international trade, and foreign investment.

Social and Economic Topics for Further Attention

The topics listed here would be an important component of national and regional strategic planning for long term AI prevention and control. The information and analytical capacity developed during the execution of such studies would have a positive impact on strategic planning for other TADS.

Impact of proposed or ongoing Avian Influenza control programmes

This assessment would be carried out for the predominant control strategies (e.g eradication vs containment; compartmentalisation; preventive vaccination), to quantify economic variables and assess livelihoods impacts. It would compare impacts of alternative strategies, highlighting both the advantages and disadvantages of different control measures and the very high potential costs of having delayed or incomplete control measures. It would take into account possible externalities, and the implications of the need for long term finance.

Poultry sector structural change in response to AI control measures

This addresses the changes in structure and governance of market chains and differential impact on market participants following from policy changes to improve disease control at individual producer and sector level. It would balance the factors of epidemiologic risk and economic impact. It would consider exit strategies for those unable to cope with increased biosecurity requirements.

Design for financing the control of Avian Influenza

This area of work is intended to assist both public and private sector players to examine options for financing of AI control that are effective, efficient and equitable. Since national situations are very different, it would use specific examples to illustrate the principles of

- identifying stakeholders and their potential roles in financing AI control
- identifying and evaluating options for revenue generation
- using different methods and instruments to manage and access funds

Macroeconomic development and rural livelihoods impacts

Although a less immediate priority, this topic is important in the broad context of agricultural planning. Changes in the poultry sector brought about by AI and its control both affect and are affected by food security concerns, increasing urbanization, rising incomes, etc.

FAO's role in social and economic analysis for strategic planning

FAO could most effectively work by participating in comparative regional analysis using common methodologies, in order to provide a broad view of the economic implications of alternative approaches. This together with dialogue with national governments and regional co-ordination bodies would provide assistance in policy development. FAO's support will be of most value if it is backed by co-ordinated requests from affected and at-risk countries for assistance at the national and regional levels, and co-ordinated assistance from donors.



1. INTRODUCTION

Background

The Avian Influenza crisis of 2003-2004 has had wide ranging social and economic implications. A wave of outbreaks across South East and East Asia, for more than a year, has resulted in large scale loss of birds, high costs of outbreak control to public and private sectors, and indirect costs from lost markets and lost production value to producers, traders, the retail sector and sectors linked to livestock. It is evident that containment of the disease will be a long term challenge with social and economic implications that have not yet been examined. Studies carried out by FAO, the World Bank and others have suggested the scale of economic losses from the outbreak and attempts to contain it. Governments in affected and at-risk countries are formulating medium to long term control strategies. There does not appear to have been any comprehensive attempt to assess the economic and social impact of alternative strategies for different stakeholders within different poultry market chains. Neither does there appear to have been a serious consideration of mechanisms for financing long term control. A workshop was held at the Siam City Hotel, Bangkok, on 8 and 9 December 2004 to discuss these issues.

Workshop objectives

When designing and evaluating an effective strategy for Avian Influenza control, it is necessary to consider many objectives (technical, political, social, economic, environmental) and to take into account the needs of a number of stakeholders. This workshop focused on the social and economic factors and the ways in which they may affect different types of stakeholder.

The workshop had two main objectives:

- a) To identify potential social and economic impacts of alternative Avian Influenza control programmes and the appropriate methodologies for assessing impacts
- b) To identify potential for FAO to contribute to social and economic evaluation of proposed Avian Influenza control programmes

The workshop revealed gaps in knowledge of the impact of AI control strategies, and attempted to address these gaps by proposing topics for further attention by donors and national governments.



Participants

<u>Country / FAO</u>	<u>Participant</u>	<u>Job title / area of expertise</u>
Cambodia	Tum Sothyra	Co-ordinator for Cambodia for TAP/RAS/3010 “Emergency Regional Support for Post Avian Influenza Rehabilitation”
China	Shen Chaojian	China Epizootiology Centre
FAO HQ	Frands Dolberg	Co-ordinator, TCP/RAS/3010 “Emergency Regional Support for Post Avian Influenza Rehabilitation”
FAO HQ	Jan Slingenbergh	Animal Health, Disease ecology
FAO HQ	Anni McLeod	Livestock policy and information
FAO HQ	Archie Costales	Poor Livestock Policy Initiative
FAO RAP	Hans Wagner	Senior Animal Production and Health Officer
FAO RAP	David Hall	Livestock economics and policy
FAO RAP	Carolyn Benigno	Animal health
FAO RAP	Wantanee Kalpravidh	Co-ordinator of TCP/RAS/3006
FAO RAP	Subhash Morzaria	Animal Health Officer
Indonesia	Hartono	Indonesian Poultry Information Centre
Philippines	Gregorio San Diego	President, United Broiler Raisers Association (UBRA) – Philippines
Thailand	Arayan Trangarn	Senior Consultant for Betagro Group
Thailand	Kitti Supchukun	President, Thai Poultry Veterinarian Association
Thailand	Nipon Poapongsakorn	TDRI, Poultry economics
Thailand	Decha Prempracha	Planning and Analysis Officer, Department of Livestock Development
Vietnam	Tran Thanh Van	Head of Department of Pig & Poultry Husbandry, Thai Nguyen University of Agriculture & Forestry and Poultry farmer

The workshop was organised using an “open space” approach in which the format of a workshop can partly be directed by the participants rather than being completely pre-planned. On the first day, presentations were made to allow participants to share experiences of different countries (presentations are reproduced in Annexe 1). Working groups then formed to identify the main issues that had arisen and propose questions for discussion. On the second day, two groups addressed a total of four issues and their findings were discussed in plenary. Finally, a synthesis was made of the main findings of the workshops and agreed by all of those present.



2. OUTCOME OF GROUP DISCUSSIONS

QUESTION 1: What might be the differential impact of alternative AI control strategies / policies (for example, on industrial, commercial and backyard producers; traders; retailers, etc.)?

Strategies used

In preparation for this session, a plenary discussion revealed that most countries apply some version of OIE recommended stamping out policy to deal with outbreaks. All have some form of surveillance, although it is recognised that this is weak, and that paravets have not been fully integrated into the process. Indonesia and China have a policy of vaccination use but other countries do not.

Compensation, “support” and credit are all considered to be possible options but strategies for their use in AI control have not been fully developed or evaluated. Compartmentalisation or zoning are under consideration in Thailand and the Philippines, as ways of achieving progressive disease control while continuing to trade internationally. However there are questions about the roles of different actors and sources of finance.

Approaches to strategy

The group recognised that different approaches to AI control are taken by different countries, for example:

- Offensive (aggressive eradication strategy) or defensive (seal off part of the market)
- Planned or laissez faire
- Driven to a greater extent by either concern for human health or concern for markets, particularly export.

Even when a strategy is planned, there are different approaches to carrying it out and abilities to carrying it out. Human capacity building has been identified as a need by several countries. The organisation of the animal health service (e.g. how centralised is it?) affects the consistency and efficiency with which the strategy is implemented.

Policy makers face a balancing act between different objectives. For example:

- Concern for human health balanced against concern for livestock owners
- Concern for different elements of the sector – e.g. industrial, small commercial, backyard. Do attempts to assist one sector create unfavourable externalities for another?
- Short term (immediate containment of disease) vs. long term (sector development, rural development) objectives

There is a political economy to decision making e.g. if human health is a primary concern, countries may be more aggressive in their control strategy.

Possible impacts arising from different strategic choices

Wetland ducks may represent a major source of virus. To reduce risk to human health it might be necessary to alter the management system or even remove it. This will result in loss of livelihoods to duck owner. An effective compensation or support strategy needs to be planned and in place, and it may need to be quite comprehensive to help people find another form of livelihood.

If the industrial sector is strong, will it hijack the agenda? This may depend on representation of different stakeholders in the policy making process. Some large commercial companies have a policy to maintain good social relations with the communities in which they work. However, it is necessary to make an assessment of the relative costs and benefits to different sectors of strategies such as compartmentalisation.

In some cases (e.g. in Vietnam), local governments have taken steps to regulate market operation, such as higher biosecurity and strict regulation of movement from markets back to communes. The



intention of these new measures is to protect consumers and to prevent disease being taken from the market back to producers, The additional costs of these measures might eventually be borne by consumers, traders or producers. The impact will depend on the way in which the market chain is regulated.

If a country decides to use vaccination as a preventive measure, but without an aim to eradicate disease, it will need to evaluate the short term impact of damping down disease against possible long term impacts when vaccination is withdrawn. A clear “exit strategy” is needed and it should be linked to a risk assessment and an economic impact assessment.

Part of policy and strategy making should be to analyse the impact on different stakeholders. This will require both impact assessment and risk assessment. Since complete information is never available, sensitivity or scenario analysis will be needed to explore alternative possibilities. One example – the true nature of risk to humans is not known. A very draconian approach to control might result in technical success but harsh consequences to producers.

Policy formation and analysis

All stakeholders need to be represented but there needs to be a systematic representation

What should be FAO’s role? It cannot be prescriptive, it should advise and help to present a balanced argument. FAO has a comparative advantage, through working with many countries, in being able to present a comparative regional perspective that may assist in drawing broad lessons on disease control policy.



QUESTION 2: How might alternative AI control strategies/ policies impact on smallholders? What information is needed to answer the question and what is currently available?

For the purposes of this discussion, “smallholders” included both backyard, scavenging systems and small-scale commercially-oriented systems.

Country experiences

Thailand started with stamping out, then moved to wanting eradication

- The private sector, particularly the exporters, has adapted to better biosecurity. Exporters found it easier than small commercial producers to adapt and survive
- Smallholders had more difficulty developing good biosecurity, found it harder to adapt and to restock and continue production
- Backyard producers had very little idea as to what to do, how to react, and what the options might be for control
- The control of domesticated/ extensive production of ducks has proved a difficult challenge. The ducks may be an important reservoir of disease, but farmers were very strongly opposed to eradicating this sector. The general opinion is that there needs to be government support for backyard producers, not eradication of this sector
- Fighting cocks and game birds have also needed special consideration

Philippines

- If strict control measures were introduced and enforced, the greatest impact would be on backyard producers, particularly scavenging chickens – the petty cash of farmers
- Any control strategy would need to consider linkage with pig sector as well

Cambodia

- Forced restructuring and imposing biosecurity are not realistic options in Cambodia
- It is better to consider assisting smallholders to improve production systems. e.g. from Bangladesh – landless women farmers; microfinance, farmers associations, training
- Suggestions and guidelines may work better than policy (law) changes
- Government programs for suggestion may take the form of model farms, demonstration farms

Lao PDR (based on study financed by FAO, since there was no Lao participant at the workshop)

- Important issues seem to be: community participation in solutions, access to information, coming together to identify problem farms and helping overcome disease so community is better off

China

- Stamping out and compartmentalization policies
- Smallholders have almost no information on AI prevention and control
- Government programs for stamping out are aggressive
- Compensation is not paid in a timely manner and this raises the question of how to rebuild poultry farms after eradication

Impact

Clearly, there are benefits from eliminating outbreaks of AI. Disease impacts on the livelihoods of producers. The smallholder sector is diversified, but poultry represent short term cash flow for most smallholders while larger livestock are sold for larger purchases/ medium term needs. It also affects the availability of inexpensive protein, native chicken (changes preference for meat), therefore AI control is beneficial to consumers.

However, long term prevention and control impose costs on the smallholder sector. It is technically difficult and expensive for smallholders to develop robust biosecurity options. Smallholders have found it difficult to adjust where strict control programs have been initiated (e.g. in Thailand). If strict



control measures were implemented as a preventive measure (e.g. in The Philippines), the greatest impact would be felt in the smallholder sector. Measures proposing eradication of certain types of poultry or poultry management systems would remove an important source of immediate revenue. Imposing strict biosecurity would not be realistic for some countries (e.g. Cambodia) where there are limited structural options and resources for establishing biosecurity

There was a general consensus in the group that smallholders lack information to make decisions. Their options for change are not clear. This may be affecting decisions about restocking and the use of different elements of AI control. For example, in Indonesia, smallholders do not appear to be clear about the impact or long term cost of applying vaccination.

Engagement of the smallholder sector in policy decisions has been little to none. Smallholders have little voice/ impact in policy making and decisions about the poultry sector but are very much affected in terms of daily income.

Information

Information that is currently available:

- Production numbers, income, costs, etc. are probably the best information we have
- Where these data are not available, they are relatively easily acquired by questionnaire
- Income change and impact are less readily available, but probably could be acquired (e.g. FAO has financed studies in some countries)
- Number and distribution of vaccinations is usually available within the animal health system
- For impact assessment, information can be used from a range of sources that already exist e.g. household surveys, in-depth studies.

Information that is needed but not available:

- The real constraint to be addressed is information for farmers to have options for changing production systems; farmers need to understand the benefits of disease control in order to engage and participate in control programs (this was seen in the past with Newcastle disease control)
- What are the real costs for implementing change, for example:
 - cost to farmers to move from free range to confinement
 - cost to different stakeholders of implementing a compartmentalisation strategy
 - costs to the poultry sector of a very aggressive stamping out policy, particularly if compensation is late or limited
 - costs (financial, biodiversity) if structural change resulted from the disease control policy
 - time frame for change
 - direct cost of biosecurity to different players
 - impact on elements of the sector other than producers (e.g. feed providers) of changes in management systems for AI control
- Community engagement in solutions – there are examples that need to be quantified
- Impact of compensation by government on local efforts to restock/rebuild
- Impact of reduced nutrition on households
- Other livestock.
- Potential and costs of low-cost options for smallholders to improve biosecurity and control outbreaks.

Publicising information

- Information is a sensitive issue. Countries (and producers) do not want an unnecessary media scare that drastically reduces the consumption of chicken



QUESTION 3: How should you decide who should pay for different elements of an AI control programme at the national and regional level?

Characteristics of AI

AI is a newly seen (or newly recognised) disease, and a possibly lethal zoonosis. It causes overwhelming economic damage to the poultry sector (particularly because of trade loss, also bird mortality). It has occurred primarily in countries without a clear policy for control of emerging disease and without a clear policy for “who should pay”.

Stakeholders who might contribute to financing control

- Federal, Provincial, District governments
- Producers, from smallholders to the intensive producers with top market share
- Exporters
- Consumers
- Input suppliers – Feed, animal health, equipment, shipping
- Lobbying groups, Farmers Associations
- Marketing agents
- Processing sector

Methods

A number of methods exist for raising revenue directly to pay for animal health control. These include: Check off programs; Co-operative fees; Association membership fees; Per unit tax (per unit output, per unit input, number of birds, etc.).

The ability to earmark revenue to address particular problems depends partly on who handles the money. If, for example, it is deposited in an industry account or trust fund it may be more clearly directed to poultry sector concerns. If it becomes part of general taxation then it is harder to assess the proportion of revenue that has been used for particular activities.

Needs for funding

Fund may be needed to provide information to poultry keepers, to run emergency programs, as insurance against loss of birds and livelihoods, to assist in carrying out or mitigating the effects of structural change.

Instruments for determining who should pay

Designing a financing process should combine negotiation between all of the most affected stakeholders with objective analysis of information about the livestock sector. Perhaps, to date, the balance has swung more strongly towards negotiation than analysis, but not enough stakeholders have been included in decisions.

Where analysis does occur, it might include the questions of paying for and delivery of a public good, or the question of externalities. It could also take into account the impacts of licensing (revenues generated that are tagged for, among other things, disease control) and of passing on costs in increased prices for poultry products. Early containment of the problem reduces costs and disruption of markets.

In the regional context, there is a need to bring regional stakeholders together to come to agreement on control costs, but how to do this? Clearly, ASEAN and other regional organisations have a role. Some of the questions include cost of security in domestic markets and cost of protection of domestic markets compared to costs of participating in a regional exercise. Funds are also limited although ASEAN now has an animal health trust fund



QUESTION 4: What might be the economies of scale and other advantages of a regional AI control initiative? What would be the costs associated with creating and maintaining such an initiative?

For a regional effort to have benefits, a formal regional agreement is needed, including the ASEAN plus 3 countries.

Many of the points made here could be equally relevant to a single country with a decentralised administration of animal health services.

Areas where there is advantage in regional collaboration

- Common policies and regulations on animal movements, quarantine, common communication strategies – towards a Common Agriculture Policy? (otherwise there may be a tendency in the event of an outbreak to move animals in the direction of areas with less stringent regulations)
- A common disease information system and exchange of information. This is already in progress – FAO, OIE, ASEAN, WHO, AUSVET – Plus 3 needs to be included
- Uniform adequate capacity in disease surveillance and diagnosis
- Common methodologies on risk analysis, impact assessment, diagnostic standards, vaccines – without common procedures you end up with data that cannot be compared
- Focus on emerging diseases and their relation to maintaining the livestock (food) production systems)
- There are more likely to be economies of scale if other diseases are included in the effort

Costs

- Establishment and maintenance of a regional body (parallel to ASEAN sectoral work on livestock)
- Development of the human institutional capacity to contribute to regional schemes
- Compliance with regional standards – good lab tests may be expensive; there is potential disruption of animal movements and markets;
- Lags in harmonising operating procedures, lobbying costs

Issues

- There are countries that can afford regional participation and countries that cannot (because of local capacity) contribute to a regional exercise
- Different countries have different stakes in the control strategies
- There are structural issues that go beyond animal health (emerging diseases, sustainable production systems, public health, and comparative advantage in resources).
- Regional policies in communicating outbreaks are affected by concerns about e.g. effects on markets if the information is announced.



Synthesis of group discussions

In the final discussion, participants again confirmed that AI is an emerging disease of animal origin requiring a medium to long term approach to control. Countries are taking a range of approaches to strategy.

Impacts

It was noted that social and economic impacts have been identified resulting from

- animal health concerns and measures
- human health concerns and measures
- loss of livelihood and structural change

Economic analysis of AI control to date has mostly been limited to assessing the impact of the outbreak rather than the impacts of a long term response. China plans to conduct an economic evaluation of its control strategy but the participants were not aware of any such plans in other countries.

Cross cutting issues

A number of cross cutting issues were identified, such as

- the need for co-ordination of many government ministries and non government players.
- the need for clarity about the roles of stakeholders in planning, implementing and financing long term control and prevention measures, and in particular the need for information sharing, trust and defined responsibilities
- the limitations of data available for strategic planning (this does not mean that planning is impossible, but it does emphasize the need for scenario and sensitivity analysis)
- the importance of synthesis between epidemiology/disease ecology and economic estimations and modelling
- the need for stakeholder involvement and improved analytical capacity in the policy process
- the wider impact of AI and poultry sector changes on rural development



3. SOCIAL AND ECONOMIC TOPICS FOR FURTHER ATTENTION

The topics listed here would be an important component of national and regional strategic planning for long term AI prevention and control. The information and analytical capacity developed during the execution of such studies would have a positive impact on strategic planning for other TADS.

Impact of proposed or ongoing Avian Influenza control programmes

This assessment would be carried out for the predominant control strategies (e.g. eradication vs. containment; compartmentalisation; preventive vaccination), to quantify economic variables and assess livelihoods impacts. It would compare impacts of alternative strategies, highlighting both the advantages and disadvantages of different control measures and the very high potential costs of having delayed or incomplete control measures. It would take into account possible externalities, and the implications of the need for long term finance.

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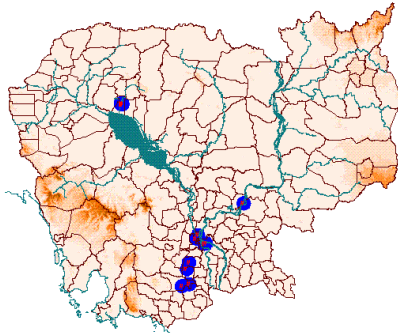
ANNEXE 1. PRESENTATIONS

1) Cambodia

<p style="text-align: center;">ECONOMICS OF AVIAN INFLUENZA CONTROL WITHIN CAMBODIAN POULTRY SECTOR: findings from a study financed by FAO TCP/RAS/3010</p> <p style="text-align: center;">TUM Sothyra National Consultant</p>	<h3 style="text-align: center;">Trend of Poultry Population Changes</h3> <table border="1"> <caption>Approximate data for Poultry Population Changes</caption> <thead> <tr> <th>Year</th> <th>Population</th> </tr> </thead> <tbody> <tr><td>1985</td><td>2,000,000</td></tr> <tr><td>1986</td><td>3,000,000</td></tr> <tr><td>1987</td><td>4,000,000</td></tr> <tr><td>1988</td><td>5,000,000</td></tr> <tr><td>1989</td><td>9,000,000</td></tr> <tr><td>1990</td><td>8,500,000</td></tr> <tr><td>1991</td><td>8,000,000</td></tr> <tr><td>1992</td><td>9,000,000</td></tr> <tr><td>1993</td><td>10,000,000</td></tr> <tr><td>1994</td><td>10,500,000</td></tr> <tr><td>1995</td><td>10,000,000</td></tr> <tr><td>1996</td><td>10,000,000</td></tr> <tr><td>1997</td><td>11,000,000</td></tr> <tr><td>1998</td><td>11,500,000</td></tr> <tr><td>1999</td><td>12,000,000</td></tr> <tr><td>2000</td><td>13,000,000</td></tr> <tr><td>2001</td><td>15,000,000</td></tr> <tr><td>2002</td><td>16,000,000</td></tr> <tr><td>2003</td><td>17,000,000</td></tr> </tbody> </table>	Year	Population	1985	2,000,000	1986	3,000,000	1987	4,000,000	1988	5,000,000	1989	9,000,000	1990	8,500,000	1991	8,000,000	1992	9,000,000	1993	10,000,000	1994	10,500,000	1995	10,000,000	1996	10,000,000	1997	11,000,000	1998	11,500,000	1999	12,000,000	2000	13,000,000	2001	15,000,000	2002	16,000,000	2003	17,000,000	
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<h3 style="text-align: center;">Poultry production</h3> <table border="1"> <thead> <tr> <th></th> <th></th> <th>Breed</th> <th>Farms</th> <th>Poultry</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Backyard</td> <td>Chickens</td> <td>Local</td> <td rowspan="2">1,900,000</td> <td>11,000,000</td> </tr> <tr> <td>Ducks</td> <td>Local</td> <td>2,000,000</td> </tr> <tr> <td rowspan="4">Commercial chicken</td> <td>Broilers</td> <td>Import</td> <td>108 (68)</td> <td>380,000</td> </tr> <tr> <td>Layers</td> <td>Import</td> <td>74 (9)</td> <td>400,000</td> </tr> <tr> <td>Produce layer</td> <td>Import</td> <td>57 (57)</td> <td>-</td> </tr> <tr> <td>Parent stocks</td> <td>Import</td> <td>1</td> <td>-</td> </tr> <tr> <td rowspan="3">Commercial ducks</td> <td>Broilers</td> <td>Import</td> <td rowspan="2">950</td> <td rowspan="2">850,000</td> </tr> <tr> <td>Layers</td> <td>Local</td> </tr> <tr> <td>Hatcheries</td> <td>Local</td> <td><50</td> <td>-</td> </tr> </tbody> </table>			Breed	Farms	Poultry	Backyard	Chickens	Local	1,900,000	11,000,000	Ducks	Local	2,000,000	Commercial chicken	Broilers	Import	108 (68)	380,000	Layers	Import	74 (9)	400,000	Produce layer	Import	57 (57)	-	Parent stocks	Import	1	-	Commercial ducks	Broilers	Import	950	850,000	Layers	Local	Hatcheries	Local	<50	-	<h3 style="text-align: center;">Poultry products</h3> <ul style="list-style-type: none"> • Local chickens • Local ducks • Broilers <ul style="list-style-type: none"> – Chicken – Duck • Eggs <ul style="list-style-type: none"> – Chicken – Duck (embryonated eggs)
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<h3 style="text-align: center;">THE PATTERN OF POULTRY MOVEMENT</h3> <pre> graph TD Provinces[PROVINCES] <--> Traders[TRADERS] Farms[FARMS] <--> Traders Traders --> Markets[MARKETS] Traders --> Slaughterhouses[SLAUGHTERHOUSES] Farms -- Broilers --> Slaughterhouses Slaughterhouses --> Markets Slaughterhouses --> Restaurants[RESTAURANTS] Markets --> Households[HOUSEHOLDS] Restaurants --> Households </pre>	<h3 style="text-align: center;">Avian Influenza Epidemic</h3> <ul style="list-style-type: none"> • There were 13 outbreaks • Dead 18,818 <ul style="list-style-type: none"> – Chicken 6,959 – Ducks 931 – Goose 20 – Turkey 70 – Guinea fowl 65 – Wild bird 88 – Culling 6,125 																																									

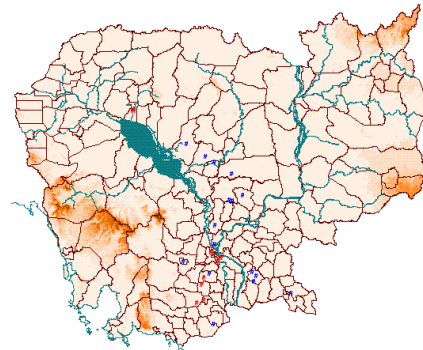


Outbreak locations



7

Sampling areas



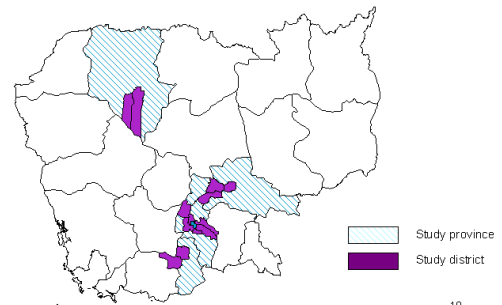
8

Socio-economics

- Interview
 - 100 smallholders
 - 16 broiler farms
 - 17 layer farms
 - 31 duck farms
 - 22 middlemen
 - 22 market retailers
 - 10 service providers
 - In 5 provinces and cities, Phnom Penh, Kandal, Takeo, Kg. Cham, and Siem Reap
- Data analysis

9

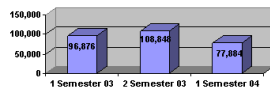
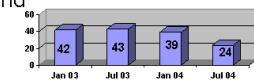
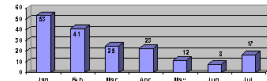
Study sites



10

Smallholders

- 100 smallholders
- 86 raise chicken
- 14 raise chicken and ducks
- Mortality
- Poultry population
- Incomes



11

Broilers

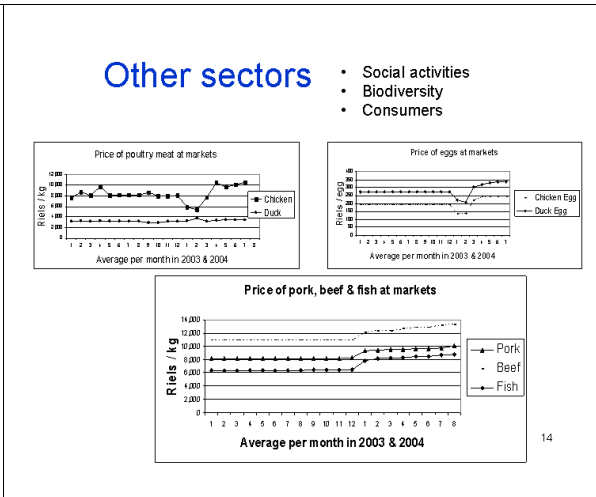
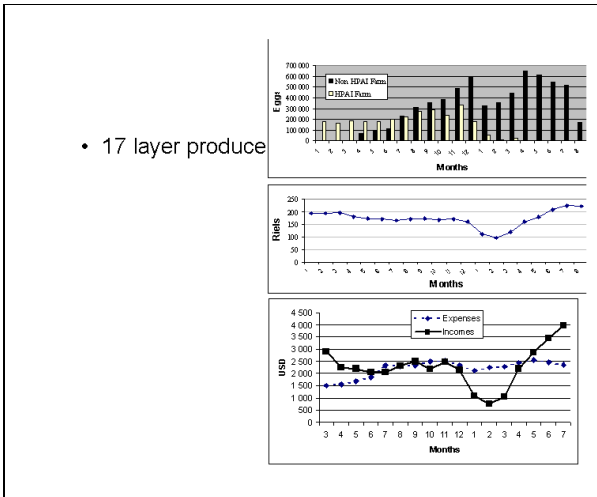
- 12 private

	Before	After
Expenses	1353	658
Incomes	1609	497
Profits	256	-161
- 16 broiler producers
 - 4 integrate

	Before	After
Expenses	37	56
Incomes	175	218
Profits	142	162
 - 4 duck broilers

	Before	After
Expenses	340	342
Incomes	439	303
Profits	99	-41

12

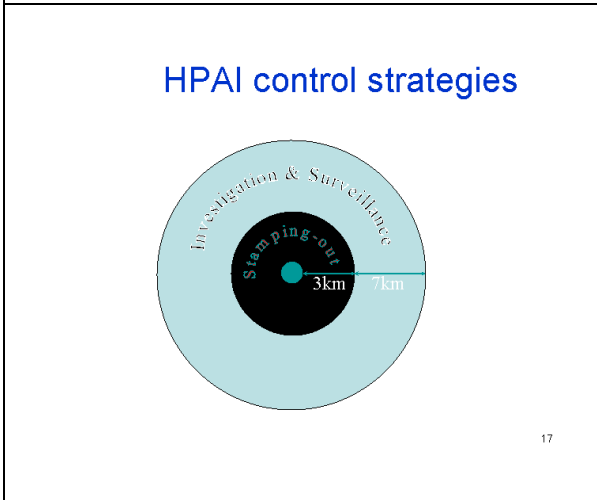


Summary

- Smallholders = 4,000,000
- Broilers = 255,000
- Layers = 100,000
- Integrated = less affected
- Consumers = increased expenses

Support need

Descriptions	Smallholders		Commercial	
	During	After	During	After
Money/ compensation	8%	3%	29%	0%
Credit low interest rate	1%	7%	0%	5%
Credit in animals	5%	11%	-	-
Technical information & training	10%	34%	8%	25%
Prevention of HPAI	17%	5%	14%	10%
Veterinary products	21%	17%	14%	15%
Animal Feed	1%	1%	0%	0%
Support the market of poultry	0%	1%	29%	15%
Ban import of poultry from abroad	-	-	0%	5%
Transparent law enforcement	-	-	0%	10%
No idea	22%	14%	14%	15%
Total	100%	100%	100%	100%



- ### HPAI control strategies
- Inter-ministerial committee
 - Temporary ban importation from abroad
 - Establish technical task forces
 - Surveillance and diagnosis
 - Communication and mass media
 - Control and eradication
 - Culling in suspected farms
 - Control movement within outbreak areas
 - Public awareness



GOVERNMENT POLICY = NO COMPENSATION!!!

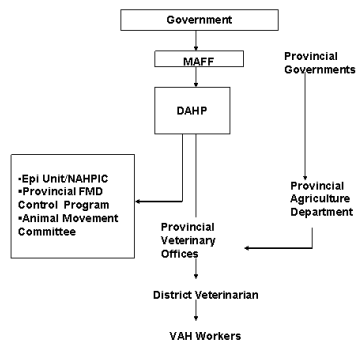
19

Lesson learned

- Strengthen veterinary administration, animal disease control and food sanitary
- Develop the contingency plan for animal disease control including:
 - Enable legislation development and implementation
 - Disease emergency response, communication, reporting and public awareness
 - Improve disease diagnostic, investigation and monitoring capability
 - Animal quarantine and movement management
 - Animal disease research capability

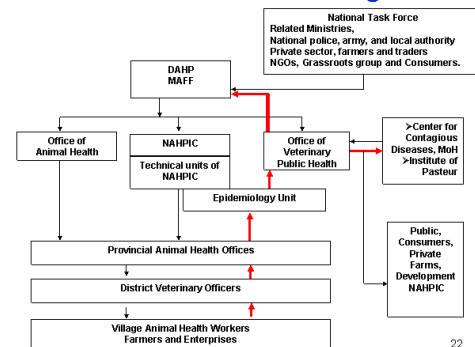
20

Information Flow



21

Coordination / Linkage



22

Strategies for long term control

- Strengthen state vet services
 - Policy
 - Surveillance and diagnosis
 - GIS to aid the control of HPAI
- Improve biosecurity
- Private sector integration
- Encourage investment in breeding farms
- Encourage establishment of
 - poultry associations
 - farmer associations

23

Legislation Power for AI Control

- Proclaim control/eradication zone?
- Enforcement power?
- Declare state emergency?
- Enforce on establishment road and check point?
- Authority for quarantine and premise management
- Authority on inspection of animals and its products;
- Animal movement management system?
- Compensation policy?
- Ban, destruction and disposal authority?

24



<h3 style="text-align: center;">Surveillance and Diagnosis</h3> <ul style="list-style-type: none"> • Develop a center to provide technical support for disease diagnosis, research and surveillance that will increase knowledge of HPAI distribution and prevalence, and improve planning capability • While substantial efforts have been made in HPAI control, it is recognized that an effective national control campaign must be preceded by better epidemiological and economic knowledge of HPAI in Cambodia <p style="text-align: right;">25</p>	<h3 style="text-align: center;">Biosecurity practices</h3> <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2">Cambodia</th> <th colspan="2">FAO</th> </tr> <tr> <th>Categories</th> <th>Description</th> <th>Categories</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-</td> <td>-</td> <td>Sector 1</td> <td>Industrial integrated system with high level biosecurity and birds/products marketed commercially</td> </tr> <tr> <td>Large commercial</td> <td>Farms with poultry greater than 10,000</td> <td>Sector 2</td> <td>Commercial poultry production system with moderate to high biosecurity and birds/products usually marketed commercially</td> </tr> <tr> <td>Medium commercial</td> <td>Farms with poultry from 2001- 10,000</td> <td rowspan="2">Sector 3</td> <td rowspan="2">Commercial poultry production system with low to minimal biosecurity and birds/products usually entering live bird markets</td> </tr> <tr> <td>Small commercial</td> <td>Farms with poultry from 500-2000</td> </tr> <tr> <td>Backyard</td> <td>Farms with poultry less than 50</td> <td>Sector 4</td> <td>Village or backyard production with minimal biosecurity and birds/products consumed locally</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • General biosecurity rule • Smallholders <p style="text-align: right;">26</p>	Cambodia		FAO		Categories	Description	Categories	Description	-	-	Sector 1	Industrial integrated system with high level biosecurity and birds/products marketed commercially	Large commercial	Farms with poultry greater than 10,000	Sector 2	Commercial poultry production system with moderate to high biosecurity and birds/products usually marketed commercially	Medium commercial	Farms with poultry from 2001- 10,000	Sector 3	Commercial poultry production system with low to minimal biosecurity and birds/products usually entering live bird markets	Small commercial	Farms with poultry from 500-2000	Backyard	Farms with poultry less than 50	Sector 4	Village or backyard production with minimal biosecurity and birds/products consumed locally																												
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<h3 style="text-align: center;">Private Sector Integration</h3> <ul style="list-style-type: none"> • To facilitate developments in the livestock sector that support animal disease control and integrate the private sector into national and regional animal health systems. • To develop a partnership between governments and the private sector to ensure a coordinated approach to animal disease control. <p style="text-align: right;">27</p>	<h3 style="text-align: center;">Encouragement</h3> <ul style="list-style-type: none"> • Investment in breeding farms to reduce the importation of DOC • Establishment of farmer associations • Establishment of poultry associations <p style="text-align: right;">28</p>																																																						
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2) China

Economics of HPAI prevention strategies within the Chinese poultry sector

Shen Chaojian
China Epizootiology Centre

1. Overview of poultry and its products

The poultry industry has been developed rapidly in recent years in China. Breeding size and gross output have reached a new level, and poultry products supply has met demand. Industrialization is accelerating, a group of corporations integrating feed production, breeding, manufacture and sale have been established.

In 2002, national poultry for slaughter was 8328.94 million, including 5245.73 million broilers. Poultry for slaughter from premises which had an annual inventory over 10000 broilers each was 1545.18 million, comprising 18.6% of the total for slaughter. By the end of 2002, the national poultry inventory was 4799.85 million, including 3923.60 million chickens, 661.25 million ducks, 215 million geese. Egg poultry inventory was 2374.58 million, including 655.99 million from egg poultry premises which had over 2000 Egg poultry inventory each, comprising 27.6% of the total. It was obvious that although China's total poultry output had reached a higher level, the intensive farming is not very popular.

Now, Chinese national poultry egg production takes the first place in the world, occupying 1/3 of the world total, and poultry meat takes the second place in the world. In 2002, poultry meat production was 13.53 million tons, comprising 19.9% of the animal meat, including 9.48 million ton chicken meat, 2.12 million ton duck meat, 1.93 geese meat million ton. In 2003, Chinese national poultry egg production was 26.07 million tons, 5.8 % higher than that of in 2002.

The breeding levels vary in different regions in china. In general, in the central and eastern part of China, breeding industries are more developed. The main intensive poultry breeding farms are distributed in East China and Central-South China, such as Jiangsu, Shandong, Henan, Hebei, Sichuan, Guangdong. In these six provinces, poultry inventory contains 57.3% of the total in the country.

2 . HPAI Occurrence and Control in China

From January to February in 2004, HPAI occurred gradually in 16 provinces in China, in June, HPAI reoccurred in Anhui province, infecting 144.9 thousand poultry, mainly chicken and ducks. About 9 million Poultry were slaughtered, including 4.7 million chicken, 2 million ducks, 0.18 million geese, and 2.12 million other birds (mainly pigeons and quails).

The infections mainly occurred on the small scale premises with poor sanitary condition: of all the 50 infected spots, small scale premises (breeding poultry less than 5000) or extensive breeding premises were 37, occupying 74% of the total. The infected spots had a close relation with water systems, and staying places and immigrant routes of immigrant birds.(see figure 1)

According to the "Contingency Plan of Highly Pathogenic Avian Influenza" in China, a combination of culling and vaccination measures should be taken to control a HPAI outbreak. For a given outbreak, all poultry within the area of 3 kilometers radius should be slaughtered, and all the poultry within zone at risk of 5 kilometers radius should be vaccinated.



Figure 1: the relation of infected area and staying places of immigrant birds

In addition, the follow compulsory measures should be applied: (1) destruction and safe disposal; (2) cleaning and disinfection; (3) movement control; (4) closing markets; (5) tracing; (6) disease surveillance and report. To prevent the disease reoccurring, large-scale surveillances were conducted all over the country. Up to now, no new outbreak of HPAI occured, and no human HPAI case has been found.

3 . The losses caused by HPAI and the influence on other animal product prices.

figure 2: System of HPAI direct economic loss evaluation index



The losses caused by HPAI include economic loss and non-economic loss. Economic loss is the loss that can be calculated directly by money; non-economic loss is the loss that can



not be calculated directly by money and only can be estimated indirectly by other conversion techniques. Economic losses include direct and indirect components; non-economic losses also include direct and indirect elements. Therefore, the HPAI losses evaluation index system includes economic loss evaluation system and non-economic loss evaluation system. Here, we only evaluate approximately the direct economic loss caused by HPAI at national level (see figure 2: HPAI direct economic loss evaluation index system)

We evaluated the direct economic loss of our country caused by 49 HPAI infected spots reported from January to March in 2004. The evaluation period is from February to April 2004. Cursory evaluation shows that the direct economic loss exceeds 180 billion yuan.

During HPAI outbreaks, the consumption of poultry and poultry products was significantly reduced for fear of possible infection of human with HPAI, the consumers turned to other animal products for consumption, resulting in reduction of poultry product price and small increase of other animal products price. Because of movement control of all live poultry, repopulation with poultry could not be conducted in most areas, and there was a short supply of poultry products for a short period of time just after the disease eradication, resulting in price rising of poultry products, it was estimated that the egg price was increasing by about 30%.

4 . Long-term control strategy and financial support

The overall level of our livestock breeding is low, the ratio of extensive breeding and small-scale premises is comparatively high, the conditions of breeding and disease-prevention are poor and behind, the strategy adopted is culling and vaccination, which includes four parts : stamping out the diseased poultry, timely compensation, more attention paid for rebuilding; vaccination in high-risk regions and to the risky poultry; strengthening the HPAI surveillance, improving the ability of early warning ;strengthening movement control of the poultry and its products. Stamping out means slaughtering the diseased flock and all the poultry within the area of 3 kilometers radius. The vaccination includes compulsory vaccination of all the poultry within buffer zone 5 kilometers and vaccination of high-risk poultry flock, such as breeding poultry, egg poultry and the former epidemic regions. The surveillance means HPAI detection around the water poultry, wild birds, flocks of pigs and high-risk chickens all over country through the established disease detection and report network. Strengthening movement control of poultry and its product means strengthening quarantine in places of origin ,movement and market control, strictly preventing infected, diseased poultry and contaminated product from entering into circulating field.

To ensure the implementation of HPAI prevention and control strategy, government provides financial support in 4 aspects: vaccination expenses, i.e. to buy Vaccine; emergent fund and material storing, including compensation of slaughtering , disinfection, disposal etc. Surveillance expenses, including sampling, purchasing diagnostic reagent and operating of lab etc. Investment on movement control, including basal establishment construction of producing-area quarantine, operating of road quarantine stations etc. All the investment is brought into financial budget of government.

5 . Research work about the economic evaluation on the techniques and measures of HPAI prevention and control.

Now, the subject of "Economic Evaluation on the Techniques and Measures in HPAI Prevention and Control", which is one of the national planned subjects and funded by the Ministry of the Science and Technology. It is being undertaken by China Epizootiology Centre. The expected aim of the subject is to establish the methods and techniques of the economic analysis and evaluation on the integrative HPAI prevention and control measures, based on the HPAI epidemiological characters, including three aspects: the economic analysis on the implementing plans of strategy, techniques and measures of the HPAI prevention and control; the economic evaluation on the implementing effect of strategy, techniques and measures of the prevention and control; optimization of the strategy of the prevention and control.



(1) economic evaluation on the implementation effect of various techniques and measures in different strategies. Analyze the relations between disease losses and various inputs in the three strategies of vaccination, strict stamping-out, vaccination and stamping-out, evaluate the three strategies.

(2) Framework of the economic analysis and evaluation on the techniques and measures of prevention and control by different economic level. The study is mainly focused about the framework of the economic analysis and evaluation on the techniques and measures of HPAI prevention and control at three level: primary producer(farm), region and country. Establishing decision-making support model of disease prevention and control; establishing effect evaluation model of HPAI prevention and control; establishing economic evaluation model on the HPAI eradication course; establishing the spatial analysis technique model of timing tracing control effect.

(3) Evaluation methods and techniques on the direct and indirect economic loss in different levels, including: primary producer(farm), related industries(for example, plantation, merchants, feeds producer, slaughterhouse), the stockbreeding and country. Establishing the method system, index system and models of the evaluation on the HPAI economic loss, and establishing the forecast simulation model of economic loss of animal disease.



3) Indonesia

Social and Economic Aspects of Long Term Control of AI in Indonesia

by

drh. Hartono

Indonesian Poultry Information Center

Presented for: International Workshop on Post Avian Influenza Recovery

Food and Agriculture Organization of The United Nations

Bangkok, Thailand, 8-9 December 2004

Preface

The AI outbreak in Indonesia was first reported in July 2003 unofficially in northern Sumatra but it was not confirmed by the local government. In Java island the first report was in August 2004 in the southern part of Sukabumi area, West Java and then in Legok Area 40 km in the southern part of Jakarta, and also in Pekalongan area Central Java. In September 2003 major outbreaks attacked more farms in Legok area. From that day the disease spread very fast around the area. In the three weeks following, more than 100 reports of outbreaks came from 5 provinces in Java island.

Disease spread very fast at that time because of the tradition of Indonesian people to consume old layer chickens and parent stock breeders especially at Hari Raya Idul Fitri. This may have caused AI to spread from Lampung southern Sumatra island to Bali island.

The peak of the disease attack was at the end of December 2003, when there was a report from 14 provinces that had symptoms and pathology anatomy suggesting AI. An official announcement was made by the government on 25 January 2004. 15 million Layer birds, 2 million Parent Stock birds and 86.000 broiler birds were reported dead or culled out in this period from July 2003 to 25 January 2004.

The First National Seminar on AI was held in 18 December 2003 promoted by PINSAR Unggas Nasional (Indonesian Poultry Information Center) in cooperation with TROBOS Magazine, presented by Prof. Dr. Charles Ranga Tabbu, Dr. Lies Parede Hernomoadi and Dr. M.B.M. Malole. The Seminar tried to tell all farmers in Indonesia that the disease outbreak in poultry was AI, positive for HPAI and all farmers must pay alert one attention. The seminar also tried to convince government to accept that HPAI was present, and to send samples to reference laboratory and then to take action to help the poultry industry.

After the government announcement in January, all media (press) reported every hour every day for two weeks about AI in Indonesia and made comparisons with the AI outbreaks in Vietnam and Thailand. This caused public alarm, consumption of poultry products especially chicken meat dropped to 20 % of the normal amount (normal amount is about 3 million birds per day). Over supply and psychology of farmers (policy to sell and cut losses) pushed the price down to 1.200 Rupiah per kg live bird for broilers in some areas, compared to a more usual level of 7.600 Rupiah. The industry lost about 7.7 trilyun Rupiah (statement from the government, equal to US \$ 855 million), in lost sales etc.

At the end of December 2003, the first local vaccine was introduced by PT. Vaksindo Satwa Nusantara cooperation with Veterinary Drug Laboratory Assay (BPMSOH), and some illegal imported vaccine from China was used. A biosecurity program was introduced to create very tight control of farms in Indonesia. In provinces that not yet experienced an outbreak some prevention procedures were introduced such as rejecting all poultry products from infected provinces.

By the time the official announcement was made by the government, new cases of AI had already dropped to sporadic outbreaks and the number of mortalities already dropped too.

After 9 weeks hard work from all stake-holders in poultry sector and government, in the first week of April the demand for poultry products especially chicken meat recovered to 80 % of July 2003 demand. The disease was already under control, only sporadic cases were reported until September 2004.



In May and June 2004 broiler live bird price was very good, almost 10.000 Rupiah per kg. This condition pushed breeders who already recovered, to increase production of broiler day old chicks and this condition encouraged one integrator / breeder to import hatching egg from a neighboring country that had over supply of DOC / H.E.. Demand had still not yet recovered to 100%, but supply was back to normal, the live bird price in August till now (even in Hari Raya Idul Fitri) dropped again and the farmers lost much income.

In table eggs the impact of consumption drop on prices was not significant, the only impact was on the psychology of the farmer who did not bargain with buyers. The real impact was when Malaysia announced an AI outbreak, table eggs from Malaysia imported illegally through some areas came to Sumatra island, West Borneo and Western Java, and the price started going down.

The two months of October and November 2004 are the changing season from dry to rainy season. Traditionally outbreaks of some diseases of poultry like Newcastle disease (ND), Coccidiosis etc, will occur at this time. This season some cases of AI occurred, more than 10 cases were reported in layer and breeder farms, but the mortality rate not too high and all field technical and Veterinarian called it LPAI (Low Pathogen Avian Influenza). All cases reported were from vaccinated birds.

In native chickens the mortality rate was very high, especially those rearing naturally (backyard farming) and close to the intensive farming around West Java and Banten province. More than 50 cases / farms were reported. In Layer (table eggs) farming where birds were already vaccinated, in some cases there appeared to be a delay in laying, production fluctuation, low peak production, thinner egg shells, higher secondary infection. In Breeder farming there appeared to be immunosuppression, low peak production, lower hatchability, lower saleable chicks, and lower quality of DOC. In final stock of broiler farming there were cases of Runting and Stunting Syndrome, higher mortality rate than usual in the first week and higher respiratory disorder than usual in the second week. All problems had an impact on cost of production, which is approximately higher 10 % than usual.

Problem

In Indonesia we have chosen vaccination and selective stamping out to control AI, but we still have some problems. No vaccine can give 100% protection and without side effect in production, we have 6 kind of vaccine from difference source. Farmers do not know the best time to apply vaccination and feel confused.

In well managed farming, HPAI is already controlled by using vaccination and tight biosecurity, but LPAI cases are still reported.

We did not have routine monitoring, only some farms have done routine monitoring of vaccination results.

In Indonesia there is lack of a laboratory which can be used for monitoring vaccination and identification. Also there is a lack of technicians and veterinarians especially outside Java Island. So for some areas confirmation needs time.

Farmers feel shame if their birds are infected by AI, they try to keep the information to themselves. Farmers also feel scared that if government knows they have AI, they must stamp out their birds and have no pay, so they try to sell the birds as soon as they can in order to save their capital.

Farmers lack information. They have been given different results of antibody levels in blood tests even from the same bird from 2 different laboratories. They are also confused about vaccination procedures and whether vaccine is protective.

Most of the native chickens and other birds like quail especially in backyard farming never get vaccination. Some difficulty in applying and costing means that farmers did not give vaccination.

Some illegal products from neighboring countries (that already have confirmed AI outbreaks) have been imported illegally.

Systems selling live bird in live bird markets like Pulo Gadung area, where birds come from everywhere from Lampung to East Java. Not more than 20 % of all chicken meat is processed in modern slaughter houses.



Suggestion

Geographically Indonesia has many islands, not all of them have been attacked by AI. It is possible to have isolation and control per island. It is necessary to confirm which islands are still clean and which are already infected and to revise information periodically. Every island that has AI cases should monitor the result of vaccination and should have laboratory and enough technicians or veterinarians. And every island or province should have an early warning system and as soon as possible make quarantine when an outbreak is suspected.

Some islands or provinces should have more laboratory and more veterinarians for monitoring. A quality monitoring should apply.

Government should reserve some funds to convince farmers to report cases of AI, they should stamp out infected birds, and government should pay for this.

We must tell the farmer that having their birds infected by AI is not a shame and a cause of trouble, this can happen to every farmer.

All native chickens / bird, game bird should vaccinated.

All vaccine that farmers use must be standardize by OIE or authorize by the livestock department. Routine evaluation of quality vaccine must apply.

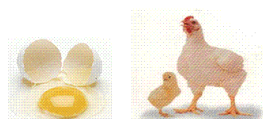
We must make routine monitoring of vaccination results.

All illegal poultry product must stop being imported.

4) Philippines

Broiler & Layer Industry - Directions?

by
 Gregorio A. San Diego, Jr.
 Chairman
 National Federation of Egg Producers of the Philippines
 Chairman
 United Broiler Raisers' Association (UBRA)



OVERVIEW OF THE INDUSTRIES

THE MAJOR CONTRIBUTORS TO AGRICULTURE

Percent share to total value (Current prices)

Crop / Commodity	2001	2002	2003
Palay	18.05	18.58	17.75
Hogs	14.28	13.81	13.94
Chicken Meat	12.13	10.64	11.11
Commercial Fishery	6.18	6.33	6.31
Municipal Fishery	5.86	6.09	6.12
Aquaculture	6.28	5.65	5.60
Coconut	4.14	5.74	5.80
Corn	5.23	4.55	4.90
Banana	4.20	4.56	4.52
Sugarcane	3.27	3.76	3.39
Chicken Eggs	2.58	2.65	2.59
Mango	2.51	2.44	2.20
Cattle	2.30	2.22	2.15

Source: BAS

VALUE OF LIVESTOCK & POULTRY PRODUCTION

(billion pesos, current prices)*

Livestock / Poultry	2001	2002	2003
Hog	83.4	86.6	92.7
Cattle	13.4	13.9	14.3
Carabo	5.3	5.8	6
Goat	4	4.2	4.5
Dairy	0.1	0.2	0.2
TOTAL Livestock	106.3	110.6	117.7
Chicken	70.8	66.7	73.8
Duck	3.1	3	2.9
Chicken Egg	15.1	16.6	17.2
Duck Egg	2.4	2.4	2.5
Total Poultry	91.4	88.8	96.5
GRAND TOTAL	197.7	199.4	214.2

Source: BAS

32% of Total Value of Agriculture

Poultry Performance

January – December 2003

Poultry	% Growth in Volume	
	2001 - 2002	2002 - 2003
Chicken	6.82	1.28
Chicken Eggs	5.72	4.46
Duck	1.10	(0.39)
Duck Eggs	(0.54)	0.78

Source: BAS

The Layer Industry contributed P17.2 billion to the Philippine economy last year. It is less popular than its controversial and bigger sibling, the Broiler Industry (P73.8 billion contribution). But it is more consistent in terms of growth (4-5% /year) and prices, although we have some wild swings the past 3 years



I. POPULATION

A. LAYERS

- at any given time there are about 23 million layers in production

B. BROILER

- about 100 million broilers are grown every cycle

C. NATIVE CHICKEN

?

D. OTHER POULTRY

II. PRODUCTION AND SUPPLY

A. DOMESTIC

1. Layers

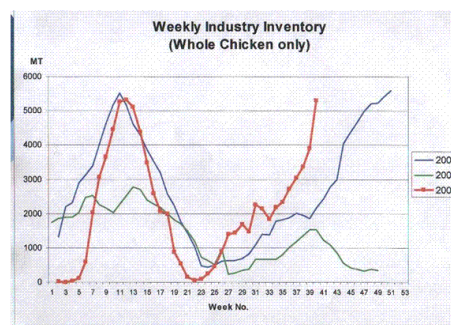
- around 17 million eggs a day or 6.2 billion eggs this year.

2. Broilers

Broiler Production in the Phils., No. of Heads

	2002	2003	2004 Proj.
Q1	102,031,063	114,571,389	126,050,305
Q2	109,151,511	113,759,649	137,262,660
Q3	116,347,105	121,384,880	135,549,022
Q4	125,306,009	123,390,703	141,398,225
TOTAL	452,835,688	473,106,621	540,260,212

Source: BAS/BAI/Task Force



B. IMPORTS

1. Eggs

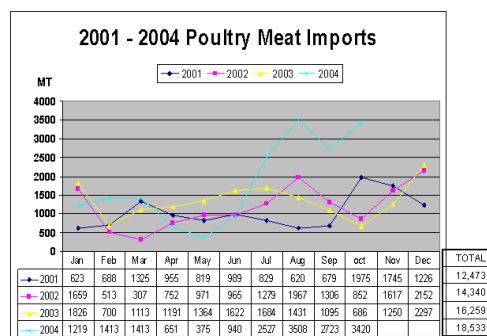
- 4.75 million egg equivalent as of July 2004

2. Broilers

- 22,968,000 MAV allocation for 2004

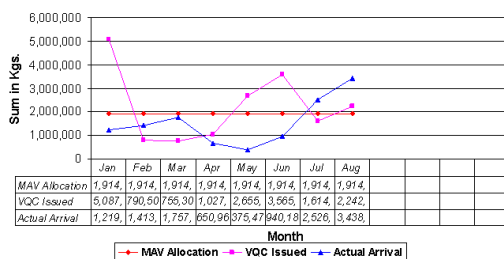
- 8,582,228 actual arrival as of July 2004

- additional 5 million kgs out-quota approved





Comparative Distribution of Imported Chicken vis-à-vis MAV and VQC Issued CT 2004



III. DEMAND

A. DOMESTIC MARKET

1. Eggs

- No scientific or actual study on egg consumption. The government and industry use an accepted 52 eggs per capita consumption, one of the lowest in the region.

2. Broilers

- Like eggs, an estimated 8.25 kgs per capita consumption is being used

B. EXPORT MARKET

1. Eggs

- Although there are inquiries now, it's hard to sell fresh eggs because the region is basically a brown egg market
- Another constraint is our high production cost
- Processed egg can be a solution

2. Broilers

a. P.S. DOC

- Avian Influenza is a plus factor for us as far as exports are concerned. 100,192 P.S. DOC exported as of August 27, 2004

b. Dressed Chicken

- From a negligible 7,000 kgs. last year, we have exported 463,010.85 kgs. as of Sept. 1, 2004

DAY OLD CHICKS EXPORT 2004

MONTHS	Total # of Heads Issued for Export	Actual # of Heads Exported
JANUARY	10,465	10,465
FEBRUARY	0	0
MARCH	0	0
APRIL	27,025	0
MAY	8,625	8,625
JUNE	0	0
JULY	17,986	0
AUGUST	39,566	39,566
SEPTEMBER	56,912	41,400
OCTOBER	44,160	
NOVEMBER	51,700	
DECEMBER	14,950	

TOTAL 271,389
100,056
2004-8 ARD BAI

IV. TRADE

A. EGGS

- Trading is done mostly thru middle men although there is an increasing number of producers (the bigger ones) who now sell directly to supermarkets, food chains and institutions.

- The wet market is still the bigger market but (we are now seeing a shift from wet market to convenient stores and supermarkets)



B. BROILERS

- Around 70% of local production still goes to the wet market with the rest divided among food chains, supermarkets, hotel and restaurants.

V. CONCERNS

A. LAYERS

a. Very Low Per Capita Consumption

- Philippines - 52
- Thailand - 148
- Malaysia - 326
- Japan - 300+
- US - 280+

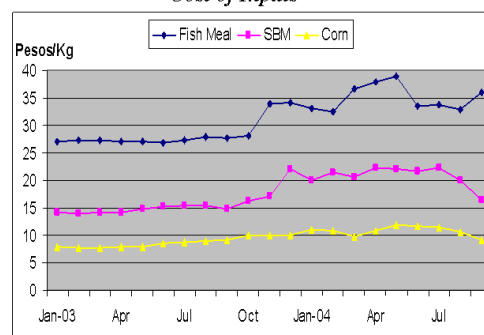
b. High Cost of Production

COST INPUTS :

BASE ON STRAIGHT COMPUTATION AT 75% PRODUCTION

	COST	PERCENTAGE
1. INHERENT COST	0.69	22.00
2. FEED NUTRITION	2.36	75.40
3. MEDICATION	0.027	0.86
4. LABOR	0.038	1.21
5. P.L.&W.	0.012	0.38
TOTAL COST	P 3.13	

Cost of Inputs



FISH MEAL PRICES SOYBEAN MEAL PRICES CORN PRICES

MONTHS	FISH MEAL PRICES			SOYBEAN MEAL PRICES			CORN PRICES		
	2003	2004	%Growth	2003	2004	%Growth	2003	2004	%Growth
JAN	27.10	33.10	22%	14.20	19.90	40%	8.00	11.10	39%
FEB	27.30	32.80	19%	13.90	21.42	54%	7.60	10.77	38%
MAR	27.30	36.75	35%	14.10	20.66	47%	7.70	9.85	28%
APR	27.10	38.00	40%	14.20	22.30	57%	7.90	10.82	37%
MAY	27.10	38.90	44%	14.70	22.10	58%	8.00	11.86	48%
JUN	26.80	33.50	25%	15.20	21.58	42%	8.60	11.70	36%
JUL	27.30	33.75	24%	15.50	22.25	44%	8.80	11.45	30%
AUG	27.90	33.00	18%	15.50	19.90	28%	8.90	10.59	19%
SEP	27.70	36.66	30%	14.18	16.50	11%	9.10	9.20	1%

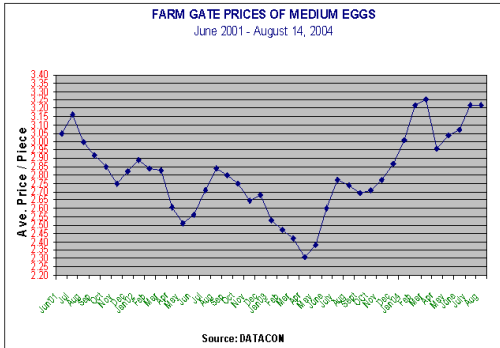
Cost of feed per bag (50 kgs) = P742.00			
Cost of feed per kg. = P 14.84			
Per bird consumption/day = 115 gms (ave)			
Production Percentage ave. of	Ave	Above Ave	High
Layr birds in 80 weeks	70%	75%	80%
Cost of feed consumed	2.44	2.28	2.13
Labor, Water, Electricity, Medication, etc.	0.50	0.15	0.15
Direct Cost	2.98	2.43	2.28
Depreciate/Deflation of birds @80 wks	0.31	0.29	0.27
Depreciation of building			
	Growing	0.10	0.09
	Laying	0.13	0.12
Breakeven w/b cost of money	3.13	2.94	2.76
Cost of Money @18% interest p.a.			
	Bird	0.05	0.05
	Growing	0.05	0.05
	Laying	0.08	0.08
Breakeven production cost of ave. egg	3.21	3.12	2.94

Farm Gate Price of ave. size egg (wholesale) = P3.15/pc
 Yellow Corn = P11.00/kg - Payment terms: COD
 Soya Bean Meal(hi-Pro) = P20.00/kg Payment terms: 15 - 30 days
 Coco oil = P33.50/kg Payment terms: 15 days
 Amino Acids: Price increased by 150%

Batangas Egg Producers Association (BEPA)
 Tel. No. (043)737-3809



c. Distorted Market



b. Higher Cost of Production

COST OF PRODUCTION – LIVE BROILER
Average Weight – 1.80 Kgs / FCR - 2.0

	per head	per kilo
DOC	P 16.00	P 8.89
FEED	P 71.49	P 39.71
VACCINE, MEDICATION and DISINFECTANT	P 4.00	P 2.22
SALARIES	P 3.75	P 2.08
ELECTRICITY	P 1.37	P 0.76
BROODING (LPG)	P 1.61	P 0.89
FARM RENTAL	P 3.50	P 1.94
REPAIR & MAINTENANCE	P 1.25	P 0.69
HAULING EXPENSE	P 0.25	P 0.14
PERMITS/LICENSE	P 0.12	P 0.07
MISCELLANEOUS	P 0.50	P 0.28
NO PROVISION FOR MANAGERIAL EXPENSE	-	-
TOTAL	P 103.84	P 57.67
@95% RECOVERY:	P 109.30/HD	P 60.70/KILO

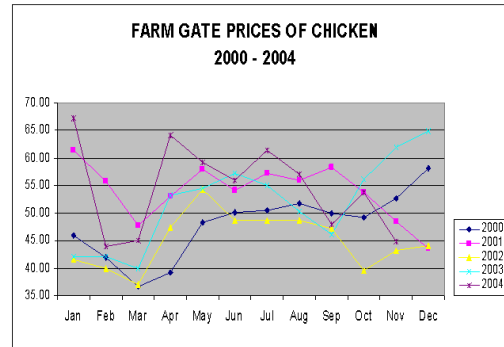
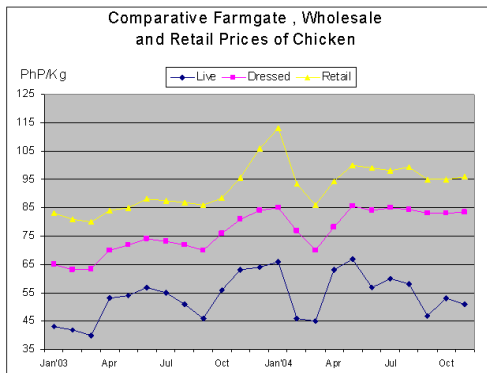
- DOC COST OF PRODUCTION = P 16.00
- COST OF CORN = P 11.50
- COST OF SOYA = P 22.15 /KG
- COST OF COCO OIL = P 41.00 / KG
- FEED COST:
 - Booster - P 1,040.00 / bag
 - Starter - 990.00 / bag
 - Finisher - 985.00 / bag

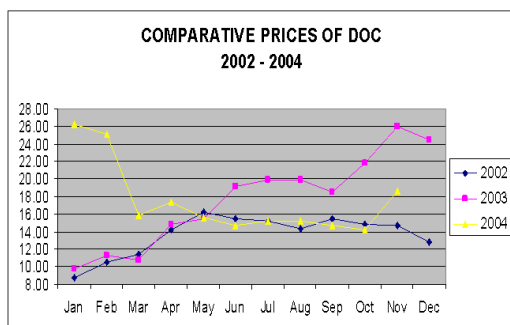
b. Distorted Market

PRICE MOVEMENT OF CHICKEN

Year	AVERAGE PRICE (PESO)			Increase Price from Farm Gate to Retail
	Farm Gate	Wholesale	Retail	
2000	47.85	71.37	82.28	P 34.43
2001	54.03	78.45	90.11	P 36.08
2002	44.87	69.78	84.52	P 39.65
2003	51.96	72.01	87.9	P 35.94
Jan-Feb 2004	55.56	81.64	99.38	P 43.82

Source: Datakom





COMMON CONCERNS:

- a. Low Family Income
 - shrinking purchasing power
 - food has given way to other household expenses
- b. Government Policies
 - Zoning regulations
 - Infrastructures?
 - High Tariff on raw materials
 - Low Tariff on finished goods
 - Access to cheap credit

VI. WHAT IS BEING DONE?

A. LAYERS

- a. Intensified Promotion of Consumption
- b. Construction of Egg Processing Plant
- c. Partnership with GMA Kapuso Foundation
- d. Tri-Media Advertisement
- e. A Master Plan has been crafted for the Layer Industry
- f. Planning to sell egg by the kilo

**PROPOSAL FOR SELLING EGGS IN KILOS
FARM GATE PRICE PER KILO**

EGG SIZE		Price per pc	No. of Pcs. in 1 kilo	Price Per Kilo
Ave. Weight / egg				
JUMBO	(70 gms up)	4.08	15	61.20
XL	(65-69 gms)	3.83	16	61.20
LARGE	(60-64 gms)	3.60	17	61.20
MEDIUM	(55-59 gms)	3.40	18	61.20
SMALL	(50-54 gms)	3.22	19	61.20

MARKET PRICE PER KILO

Estimated Farm gate price	Traders Margin	Retailers Margin	Suggested Market Price in Kilo
P 61.20	4.50	4.50	P 70.20

Note: Price based in actual farm gate price as of June 09, 2004

- It's easy to monitor the price of egg on the market and will give a fair return to producers, traders, retailers and will benefit the consumers in terms of affordability
- It will emphasize egg's value for money
- Consumers will not be cheated

- g. A study was conducted by the Food and Nutrition Research Institute on effect of egg consumption on the lipid profile of Filipinos
- h. Improvement on efficiency
- i. Industry self-regulation



B. BROILERS

- a. Improvement in Efficiency
- b. Backward Integration
- c. Forward Integration for UBRA
- d. A Master Plan has been crafted for the Broiler Industry
- e. Taking advantage of Export opportunities
- f. Industry self-regulation

VII. PROSPECTS

A. LAYERS

- 1) With a per capita consumption at rock bottom, there is no where to go but up.
- 2) Egg processing plant will make egg exportable.

B. BROILERS

- 1) Export demand for dressed broilers as well as P.S. DOC will definitely increase.

EXPORT POULTRY 2004
January – November 19
Assorted Chicken Meat products

MONTHS		WEIGHTS / KLS
JANUARY	2004	8,136
FEBRUARY	2004	6,816
MARCH	2004	28,360.20
APRIL	2004	8,414
MAY	2004	147
JUNE	2004	30,239.75
JULY	2004	149,301
AUGUST	2004	219,585
SEPTEMBER	2004	300,998
OCTOBER	2004	198,518
NOVEMBER	2004	298,395

- 2) Efficiency will make broilers more affordable to Filipino consumers
- 3) 82 million Filipinos is a big market for chicken products
- 4) Direct linkage between producers and retailers has been established

**Avian Influenza
Preparedness and Response
Plan**

By
DR. JOSE Q. MOLINA, DVM, MVS
BAI - DIRECTOR



<p>Avian Influenza Preparedness Plan</p> <p>E.O. No. 280 series of 2004</p> <ul style="list-style-type: none"> • Defines the powers, functions, responsibilities of government agencies in response to AI or Bird Flu virus • To ensure that the Philippines remains BirdFlu-Free country • To respond immediately in case of outbreak 	<p>Avian Influenza Preparedness Plan</p> <p>Secretary of Health Crisis manager for AI pandemic influenza</p> <p>Secretary of Agriculture Co-manager for matters pertaining or primarily affecting poultry, birds, other fowls and other animals, including their by-products</p>
<p>Avian Influenza Preparedness Plan</p> <p>The Department of Agriculture organized the Avian Flu Task Force under the National Advisory Committee on Animal Disease Control and Emergency (NAC-ADCE) with the Bureau of Animal Industry as lead agency</p>	<p>Avian Influenza Preparedness Plan</p> <p>The Bureau of Animal Industry as lead agency of DA Avian Flu Task Force has created BAI Bird Flu Prevention Task Force composed of the following teams:</p> <ul style="list-style-type: none"> • Surveillance Team • Laboratory Diagnosis Team • Data Base / GIS Application Team • Poultry / Bird Movement Control Team • Vaccination Evaluation Team • Public Information Campaign
<p>Priority Places to be considered where migratory birds harbor and other significant places where poultry population is high</p> <ul style="list-style-type: none"> • Zamboanga del Norte • Zamboanga del Sur • Zamboanga City • Sibugay province • Palawan near Quezon • Pampanga – Candaba • Ilocos Norte – Pagodpod • Cagayan – Aparri • Cebu – Olango Island • Negros Occidental – Himalayan • Isabela – Magat Dam, Ramon • CARAGA – Lake Mainit, Agusan del Sur • Agusan del Norte • Surigao del Norte • Surigao del Sur • Panay Island – Roxas and Capi • Sorsogon – Bulan and Matnog • General Santos City • Mindoro Oriental – Naijan • Cotabato – Kabacan, Ligwasan Marsh 	<p>Four Stages - Preparedness and Response Plan for Avian Influenza</p> <p>STAGE 1 : AVIAN INFLUENZA-FREE PHILIPPINES</p> <ul style="list-style-type: none"> • Strategies / Activities <ul style="list-style-type: none"> > Sustain ban on importation of all domestic and wild birds and their products > Surveillance of domestic fowl <ul style="list-style-type: none"> • Monitoring • Laboratory diagnosis • Upgrading of PAHC and Regional DA laboratories > Surveillance of wild birds <ul style="list-style-type: none"> • Monitoring • Laboratory diagnosis > Surveillance of humans <ul style="list-style-type: none"> • Case investigation • Laboratory diagnosis



Four Stages - Preparedness and Response Plan for Avian Influenza

STAGE 1 : AVIAN INFLUENZA-FREE PHILIPPINES

• **Strategies / Activities**

- Mobilization of Regional Veterinarians and Local Government Units
- Vaccination
 - Response Teams – provinces, cities, municipalities and health workers
 - Poultry workers / handlers
- Strict implementation of Wildlife Law
- Strengthening coastal monitoring of smuggling of fowl
- Sustained vigilance of local health officials and the community

Four Stages - Preparedness and Response Plan for Avian Influenza

STAGE 1 : AVIAN INFLUENZA-FREE PHILIPPINES

• **Strategies / Activities**

- Public information
 - ◆ Allaying fear
 - ◆ Encouraging public support for surveillance
 - ◆ Tri-media, website, hotlines, call centers, community announcements
- Price monitoring of meat products
- Preparedness from the National to the Local Level

5) Thailand

Separate presentations were made from the private sector and public sector perspective.

<p style="text-align: center;">Bangkok Post www.bangkokpost.com</p> <p style="text-align: center;">COVER – UPS ARE NOT A SOLUTION</p> <p>The government is facing a crisis of confidence as a result of its handling of the bird flu fiasco. <i>27 January 2004</i></p> <p style="text-align: center;">PM APPEALS FOR CALM AMID MOUNTING FEAR</p> <p>Prime Minister Thaksin Shinawatra yesterday appealed for calm, saying there is no reason to panic because bird flu is not transmitted from one person to another. <i>27 January 2004</i></p>	<p style="text-align: center;">Bangkok Post www.bangkokpost.com</p> <p style="text-align: center;">CABINET APPROVES B 2.99 bn BAILOUT</p> <p>The cabinet yesterday approved a financial aid package worth 2.99 billion baht for farmers affected by the outbreak of bird flu, which according to figures available on Jan 25, has resulted in a cull of up to 10 million birds. <i>28 January 2004</i></p> <p style="text-align: center;">PM : WE ALMOST BLEW IT</p> <p>Prime Minister Thaksin Shinawatra has admitted for the first time that his government could have done better in containing the spread of bird flu. <i>29 January 2004</i></p>																
<p style="text-align: center;">GOVERNMENT'S CAMPAIGN FEBRUARY 7, 2004</p> 	<p style="text-align: center;">BETAGRO'S CAMPAIGN</p> 																
<p style="text-align: center;"> Corporate Profile Betagro Group</p>  <ul style="list-style-type: none">  Founded 1967  Revenue 24,500 MB (Year 2003)  14,500 Employees (As of July 2004) <ul style="list-style-type: none">  Staff 2,400  Labours 12,100 	<p style="text-align: center;"> Betagro Network</p>  <table border="1"> <thead> <tr> <th></th> <th style="text-align: right;">Total</th> </tr> </thead> <tbody> <tr> <td> Branch Offices</td> <td style="text-align: right;">24</td> </tr> <tr> <td> Pharmaceutical & Chemical</td> <td style="text-align: right;">1</td> </tr> <tr> <td> Swine Farm</td> <td style="text-align: right;">12</td> </tr> <tr> <td> Chicken Farm</td> <td style="text-align: right;">14</td> </tr> <tr> <td> Feed Mill</td> <td style="text-align: right;">6</td> </tr> <tr> <td> Processing Plant</td> <td style="text-align: right;">5</td> </tr> <tr> <td> Hatchery</td> <td style="text-align: right;">3</td> </tr> </tbody> </table>		Total	 Branch Offices	24	 Pharmaceutical & Chemical	1	 Swine Farm	12	 Chicken Farm	14	 Feed Mill	6	 Processing Plant	5	 Hatchery	3
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Betagro Science Center

2936 square meter of space

FACILITIES

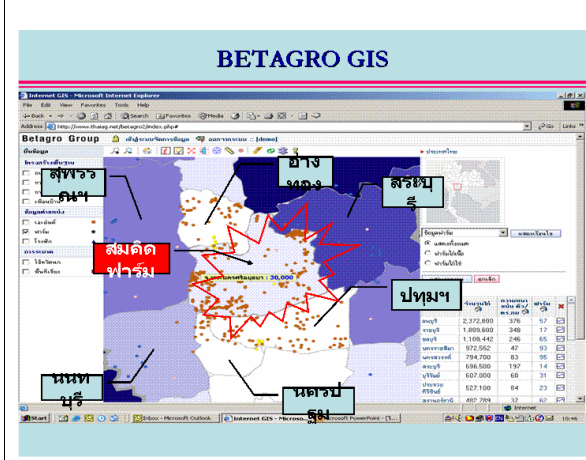
- Floor 1** LAB (Pathology, Bacteria, Virus, Mycotoxin)
- Floor 2** Residual Test FOOD SAFETY LAB, Chemical
- Floor 3 - 4** R&D (Veterinary Medicine & Feeds), Meat Quality Lab

Seminar on "Bird Flu Impact : A Shift of Thai Chicken Industry"

Tuesday, September 21, 2004
At Meeting Room 10th Floor, Betagro Tower, Bangkok

Assured Betagro Chicken Program ABC Program

- ⊗ Assured Betagro Chicken Program (ABCP)
- ⊗ Based on UK Assured Chicken Program
- ⊗ Will satisfy the highest audit requirements for food safety and animal welfare



NATIONAL BIRD FLU HEALTH ALERT

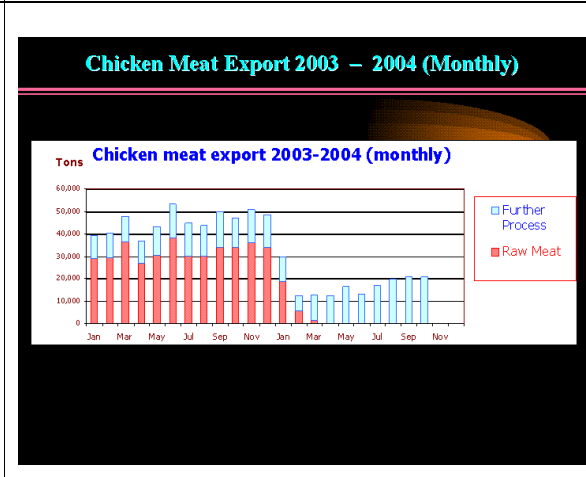
A nationwide health watch has been declared following the second confirmed case of human bird flu, a 32 year old woman in Kamphaeng Phet, since the disease re-emerged in July.

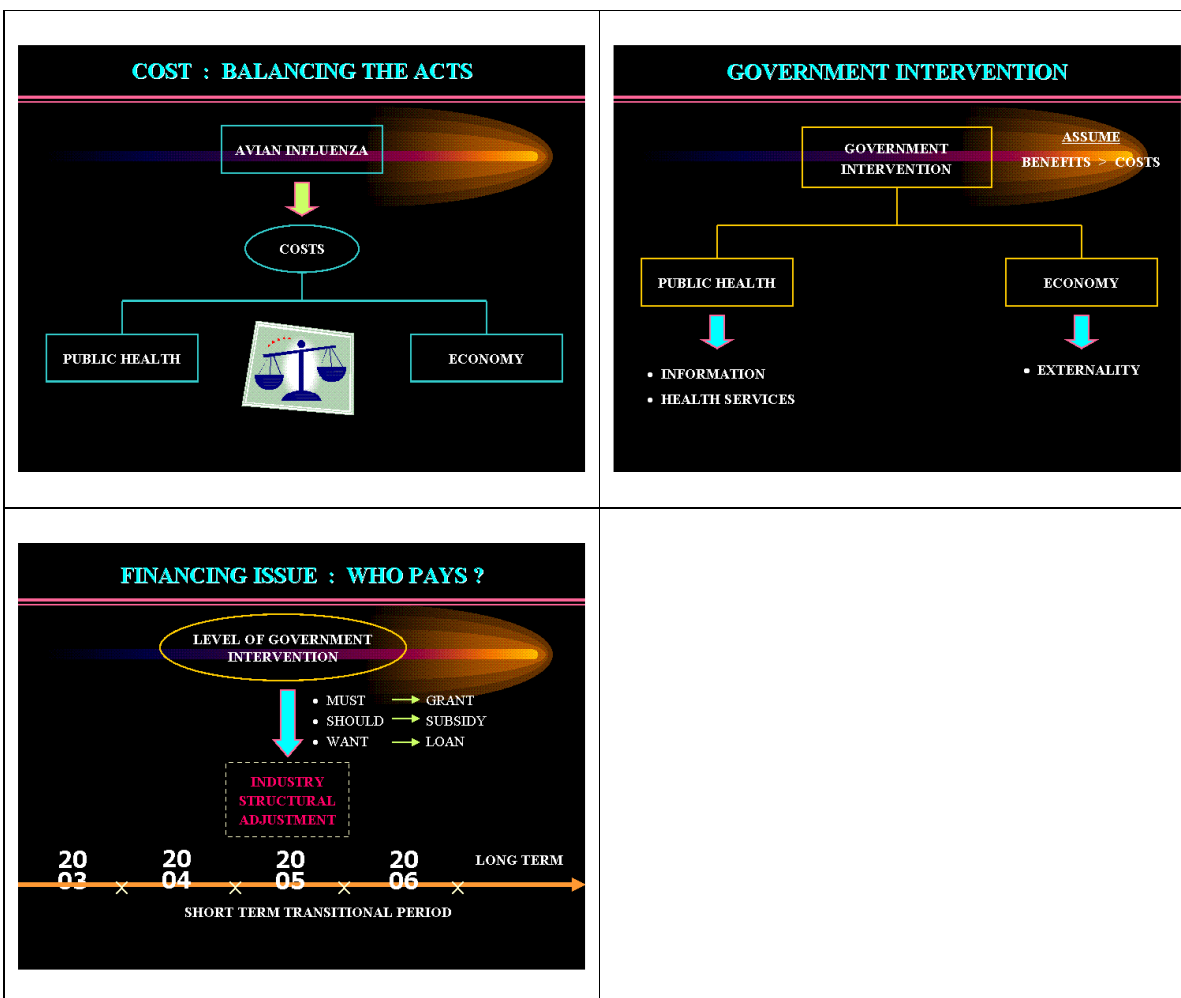
28 September 2004

PM DEMANDS END TO OUTBREAK IN ONE MONTH

Prime Minister Thaksin Shinawatra yesterday declared war on bird flu with a one-month deadline for authorities to wipe out the epidemic.

30 September 2004










 <h2>Cost of Avian Influenza Control: DLD Perspectives</h2> <hr/> <p>Department of Livestock Development</p>	 <h3>AI Control measures:</h3> <hr/> <ul style="list-style-type: none"> ○ Stamping out ○ Cleaning & disinfection ○ Surveillance ○ Movement control ○ Campaign to increase awareness and reduce panic ○ Other measures: <ul style="list-style-type: none"> ● Improvement of biosecurity ● Restructuring of poultry production
 <h3>Cost of AI Control measures:</h3> <hr/> <ul style="list-style-type: none"> ○ Stamping out ○ Compensation scheme ○ Compensation cost + value of poultry (US\$) <ul style="list-style-type: none"> ● Broiler - 0.5 + 0.6 = 1.1 ● Laying hens - 1.0 + 2.5 = 3.5 ● Native chicken - 1.0 + 1.2 = 2.2 ● Meat-typed duck - 0.5 + 0.6 = 1.1 ● Laying duck - 1.0 + 2.5 = 3.5 ● Poultry at age of less than 21 days will be given only the compensation cost not its value 	 <h3>Cost of AI Control measures:</h3> <hr/> <ul style="list-style-type: none"> ○ Stamping out ○ Total poultry culled: 60,634,000 ○ From 407, 338 farmers <ul style="list-style-type: none"> ● Native chicken ● Laying hens ● Broiler ● Quail ● Laying duck ● Meat-typed duck ● Geese ○ Total expected compensation: US\$ 47,845,864 ○ Total paid: US\$ 46,505,902 (97.2%)
 <h3>Cost of AI Control measures:</h3> <hr/> <ul style="list-style-type: none"> ○ Cleaning & disinfection ○ Surveillance ○ Movement control ○ Improvement of public awareness ○ First wave – US\$ 12.5 m ○ Second wave – US\$ 26 m 	 <h3>Cost of AI Control measures:</h3> <hr/> <ul style="list-style-type: none"> ○ Other measures: <ul style="list-style-type: none"> ● Improvement of biosecurity ● Restructuring the poultry production: <ul style="list-style-type: none"> ○ Responsible by private sector ○ Indirect compensation: <ul style="list-style-type: none"> ● 2%-interest loan ● First wave – US\$ 25 m (only to farmers) ● Second wave – US\$ 375 m (include industries) ● 3 Government Banks ● 13 Commercial Banks




 <p>Cost of AI Control measures:</p> <hr/> <p>o From other sources:</p> <ul style="list-style-type: none">● Provincial level – Governor● Research – Research funding agencies● Campaign to increase awareness and reduce panic – Department of Public Relation● Reduction of public health risk – Ministry of Public Health● Others – Office of Prime Minister	
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6) Vietnam

<p style="text-align: center;">COSTS OF BIOSECURITY ON A VIETNAMESE FARM</p> <p style="text-align: center;">Case: Tran Thanh Van, owner poultry farm in Thai Nguyen province</p>	<ul style="list-style-type: none"> • This paper describes how a private poultry farm (family enterprise established in 1993), located in Thai Nguyen province (north of Hanoi, Vietnam), was indirectly affected by the Highly Pathogenic Avian Influenza (HPAI) during 1st semester 2004. • This semi-industrial farm includes open buildings over a land of 800 m2. The total number of poultry present in the farm before the epidemic was 3,200 poultry including:
<ul style="list-style-type: none"> • Chicken: 500 Kabir hens and Sasso cocks (parent stock), 1,100 broilers (Kabir-Sasso cross-bred) and 300 hens and cocks (parent stock, dual popose type, imported from Egypt). • Ducks: 1,300 Khaki Campbell.  <p style="text-align: center; color: green;">Luong phuong hens x Sasso cocks</p>	 <p style="text-align: center; color: green;">Luong Phuong Hens x Rhoderi cocks</p> <p style="text-align: center; color: green;">Egypt pullet</p>
<p style="text-align: center; color: green;">Khakicampbell duck (imported from Thai land)</p> 	<ul style="list-style-type: none"> • The farm has two incubators (one for chicken, one for ducks) with a total capacity of 20,000 eggs. • Broilers are sold for middle man and directly to consumers, day-old-chicks and ducklings are sold to small scale poultry farms and households in middle land and mountainous provinces. • The monthly profit of the poultry enterprise is around 600 USD.

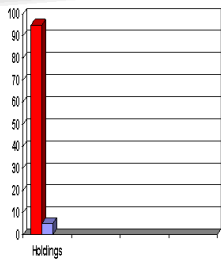


<p>2. Description of AI epidemic</p> <ul style="list-style-type: none"> • First official AI outbreak reports in the mass media started beginning of January 2004. • Price of poultry products (eggs and meat) dropped (eg: egg price for consumption are from 900 VND drop to 500 VND/ egg, chicken price are from 15,500 VND/kg live weight drop to 8,000 VND). Prices of day-old chicks and ducklings dropped from 4000VND to 1500 VND, but this situation took only nearly a month 	<p>On first days in February 2004 the selling of poultry products and poultry feed was officially forbidden by a central government decision.</p> <ul style="list-style-type: none"> • This had a big impact on the farm economics: • Selling of poultry and poultry products was forbidden • But at the same time no compensation there were no compensation payments from the provincial authorities as there were no AI outbreaks at the farm and in close surroundings • Poultry could not be given as a present to friends or neighbors due to the fear of spreading the disease
<ul style="list-style-type: none"> • As selling was forbidden we tried to minimize the economic losses on the farm and to protect the farm against AI. Measures taken were: • Spraying of disinfectants every three days • Cover open poultry houses with plastic • Good quality feed • Vitamins and garlic mix to drinking water for chicken and duck to get better disease resistance. • Processing of chicken meat and egg at home. We processed chicken meat to dry meat powder, salted eggs then storing them for home consumption later and boiled egg to mix with paddy rice as feed supplying for layer ducks. • Forced mounting hen and layer duck to stop laying eggs. 	<ul style="list-style-type: none"> • Due to the AI outbreaks, we were forced to keep broilers until 4 months of age. 2,5 months after the outbreak we were able to sell poultry at the same price as before the outbreak. • The economic losses were about 30 million VND equivalent to around 2000 USD.
<p>2. Information about neighboring poultry farms in the commune:</p> <ul style="list-style-type: none"> • Several semi-industrial farms with 7,000 to 10,000 broilers • Were not infected by AI • Had to keep broilers till over 3 months of age and live weight of 4- 5 kg or killed healthy chicken on their own initiative as economically not bearable • Economic losses per farm: 300- 400 million vnd (20,000 to 26,0000 USD) 	<p>3. Compensation payments:</p> <ul style="list-style-type: none"> • The government promised to pay 5000 VND (0.3 USD) per culled bird. But the amount was very low and was one of the cause of the break down of many poultry farms.

<p>4. Other information about losses</p> <ul style="list-style-type: none"> • As in most province of Vietnam, poultry products are fresh products, such as live births, fresh carcass, fresh eggs. Due to AI outbreaks the selling of any fresh poultry product was forbidden. Due to economic losses and fear of further losses, many poultry farmers gave up chicken raising and changed to other livestock such as pigs or to another sector. • Veterinary officials are controlling the selling and transportation of poultry and poultry products and no new outbreaks have been registered. Nevertheless, the poultry population increases only slowly due to fears of new outbreaks, difficulties to sell poultry products and the fear of AI transmission to human beings. 	<p>Opened Poultry house to be covered surrounding by nylon</p> 
<p>5. Measures on farm to prevent further outbreaks</p> <ul style="list-style-type: none"> • Staff training on hygiene and biosecurity in order to reduce infection risk due to clothes, shoes, hands.. • Limited access to poultry flocks: Fencing around the farm. Visitors and vehicles should be kept away from the poultry houses and pastures • Have pressure washers, brushes, hoses, water and an approved disinfectant available. Make sure they are used by visitors to clean vehicles, equipment and boots. • Avoid wild birds and animals being attracted onto the site and entering buildings and stores. Maintain buildings to ensure that wild birds do not nest or roost in them. Keep wild birds, dogs, cats, rodents or other livestock out of poultry buildings and feed stores, of course only during the day by often making noise and maintain security guard all day. 	<p>5. Measures on farm to prevent further outbreaks (continue)</p> <ul style="list-style-type: none"> • Weekly disinfection around the poultry farm, curtains and corridors. • Damaged eggs and dead birds to be destroyed and properly disinfected. • After selling of birds at the end of a production cycle, thoroughly clean the building and all equipment, including ducting, drains and fans. Remove all surplus feed and litter. Disinfect thoroughly litter before to store it for a month and then using as fertilize. Boiled surplus feed for pigs and dogs
<p>When Buying New Parent Stock</p> <ul style="list-style-type: none"> • Health status of birds must be known. We bye healthy DOC with sub animal health department's certificate. • Incoming stock must be kept properly isolated from the rest of the flock. • Ensure buildings are in good maintenance and effectively prevent vermin from getting in and spreading any diseases. 	



7) TCP/RAS/3010

<p style="text-align: center;">Rehabilitation of poultry production in Cambodia, Indonesia, Lao PDR and Vietnam with Avian Influenza</p> <p style="text-align: center;">TCP/RAS/3010 (E)</p> <p style="text-align: center;">Frands Dolberg Regional Coordinator</p>	<p style="text-align: center;">Objectives</p> <ul style="list-style-type: none"> ■ To assist the countries to prepare for a post-avian influenza rehabilitation programme. ■ Specific objectives: <ul style="list-style-type: none"> – analysis of the <i>socio-economic impact</i> of the AI epidemic on <i>the major production systems and livelihoods of producers and ancillary workers</i> <p style="font-size: small;">12/30/2004 2</p>																								
<p style="text-align: center;">Expected outputs</p> <ol style="list-style-type: none"> 1. A socio-economic impact assessment by <i>major poultry production systems and by country</i> <ol style="list-style-type: none"> 1. <i>identification of the most affected and vulnerable groups</i> 2. Identification of and recommendations for appropriate interventions for both <ol style="list-style-type: none"> 1. <i>the short-term recovery</i> 2. <i>longer-term rehabilitation.</i> <p style="font-size: small;">12/30/2004 3</p>	<p style="text-align: center;">Status of studies and reports</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Country</th> <th style="text-align: left;">Study</th> <th style="text-align: left;">National w. shop</th> <th style="text-align: left;">Study report</th> </tr> </thead> <tbody> <tr> <td>Cambodia</td> <td>Complete</td> <td>Complete</td> <td>Complete</td> </tr> <tr> <td>Indonesia</td> <td>Complete</td> <td>Complete</td> <td>Under preparation</td> </tr> <tr> <td>Lao PDR</td> <td>Complete</td> <td>Complete</td> <td>Final draft in the mail</td> </tr> <tr> <td>Thailand</td> <td>On-going</td> <td>Complete</td> <td>Study ongoing</td> </tr> <tr> <td>Vietnam</td> <td>Complete</td> <td>Complete</td> <td>Final draft in the mail</td> </tr> </tbody> </table> <p style="font-size: small;">12/30/2004 4</p>	Country	Study	National w. shop	Study report	Cambodia	Complete	Complete	Complete	Indonesia	Complete	Complete	Under preparation	Lao PDR	Complete	Complete	Final draft in the mail	Thailand	On-going	Complete	Study ongoing	Vietnam	Complete	Complete	Final draft in the mail
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<p style="text-align: center;">Many households have poultry – few are commercial</p>  <p style="font-size: small;">12/30/2004 5</p>	<p style="text-align: center;">Progress summary</p> <ul style="list-style-type: none"> ■ In brief: <ul style="list-style-type: none"> – A.I. is endemic - in the short to medium term. ■ The strategy will not be “Post-Avian”, but “With-Avian Influenza”. ■ This leads to a a longer and broader view – details by Slingenbergh. <p style="font-size: small;">12/30/2004 6</p>																								



Some results from Vietnam

- **Labor:** Poultry production not very labor intensive activity,
 - the national level projections of survey results give 13,500 units of jobs lost.
- **Credit:** After AI, the capacity to secure new loans directly proportional to farm size and about half of the pre AI period,
 - with the informal sector providing a much higher disbursement than normal.
- **Compensation** has been insufficient: 5,000D per bird against 30,000D of average value, it did not cater for differences of species and of production (broilers and layers) and in some provinces was delivered with huge delays.

12/30/2004

7

Some results from Vietnam

- **Coping:** The most active have been the commercial farms which opted for different activities among which pig raising and rice farming stand out. Several households used up their savings or sold off their labor, but only in rare cases sold their assets.
- **Restocking** is proceeding slowly, bigger farms have repopulated to not even half of their capacity, complete restocking ranges between 23% of backyard farms to 5% of industrial ones.
- **Awareness:** is quite widespread, and disposal of carcasses mostly done as requested by the veterinary services
 - But several farms spared part of their flocks from culling and consumed or sold it.

12/30/2004

8

Estimated lack of profit in Cambodia

(Source: VSF Cambodia Study)

Type of "poultry enterprise"	Sample Size	Number of Poultry	Profit per month in 2003 (USD)	Profit per month in 2004 (USD)	Lack of Profit during 1st semester 2004 (USD)
Small-scale Chickens	83	40 Flock's size	3	2.1	5.4
Commercial Broiler Chickens	12	2,700 Per cycle	221	-195	2,496
Commercial Broiler Chickens (integrated)	4	2,850 Per cycle	63	49	84
Commercial Broiler Ducks	4	600 Per cycle	98	-41	834
Middleman	21	5,000 Per month	1157	568	3,534
Market Retailer	18	1,500 Per month	629	439	1,140

9

Recommendations of Regional Workshop

- **Basic Premises**

12/30/2004

10

Recommendations of Regional Workshop

- **ENDEMIC: THE AVIAN INFLUENZA H5N1 IS ENDEMIC IN THE SHORT TO MEDIUM TERM**
- **POLICIES FOR ALL SECTORS, BUT GOVERNMENT RESOURCES (money) FOR SECTORS 3 AND 4**
 - Policies will comprise all sectors and be drafted in close collaboration with all stakeholders, i.e. the private sector, producer organisations etc.
 - However, government money, investments in human resources etc into rehabilitation of the poultry sector should be allocated to the small enterprises with no backing from large companies or the government extension service and the smallholders, residing mainly in rural areas.

12/30/2004

11

Recommendations of Regional Workshop

- **HUMAN HEALTH: COORDINATION WITH HUMAN HEALTH FIRMLY ESTABLISHED**
 - Generation of relevant information and strategies to contain the Avian Influenza will be faster with a firmly established collaboration with the human health authorities. Such collaboration must therefore be firmly established at all administrative levels within the countries and internationally.

12/30/2004

12



<p style="text-align: center;">Recommendations of Regional Workshop</p> <p>■ Methodology:</p> <ul style="list-style-type: none"> - The following recommendations were arrived at by asking the National Coordinators and Consultants to set them by priority <p style="font-size: small;">12/30/2004 13</p>	<p style="text-align: center;">Recommendations of Regional Workshop</p> <p>■ CAPACITY BUILDING</p> <ul style="list-style-type: none"> - Analytical capability should be built - Reliable data: Creation of databases that contain reliable data - Knowledge and field experience: Trainees and trainers should be selected according to criteria that ensure they have appropriate technical knowledge and field experience - Paravets' curriculum should be harmonized. - Cooperation in the Region: Increased cooperation between the countries in the region. The countries that have the capacity for analysis and expertise on Avian Influenza should provide assistance to the countries with less capacity. <p style="font-size: small;">12/30/2004 14</p>
<p style="text-align: center;">Recommendations of Regional Workshop</p> <p>■ PUBLIC AWARENESS</p> <ul style="list-style-type: none"> - Strong and unfulfilled need for public awareness about Avian Influenza. - Role for regulations, laws and standards, but they suffer from incomplete outreach or circumvention. - A properly informed public will be able to make its own choices on actions to follow in their own best interest. - Data show a much reduced need for stamping out of poultry when information on Avian Influenza was provided fast to veterinary workers and poultry owners, demonstrating a clear economic advantage. ■ The need for awareness and information is at all levels from decision-maker, administrator, veterinary officers, paravets and poultry keepers, small and large. The workshop saw a special need for: <ul style="list-style-type: none"> - Development of government media management plans - Timely, short, concise and targeted information - Pre-testing of information before it is used on a large scale. <p style="font-size: small;">12/30/2004 15</p>	<p style="text-align: center;">Recommendations of Regional Workshop</p> <p>■ DECENTRALIZATION</p> <ul style="list-style-type: none"> - Decentralisation promoted in all the participating countries on the assumption that it is 'a good thing' that will add flexibility to implementation and greater attention to local needs and priorities. However, Avian Influenza has demonstrated that containment and eradication of diseases call for standardisation and guidelines that cut across national or administrative boundaries. ■ The workshop identified a need: <ul style="list-style-type: none"> - To prepare harmonized and formalized national guidelines for the process of containing and eradicating Avian Influenza to be used by all provinces and districts etc. - To mobilize village smallholders into community farmer associations to prepare them for a participatory involvement in formulation of service requirements and implementation. - To match the suggested interventions with resources. <p style="font-size: small;">12/30/2004 16</p>
<p style="text-align: center;">Recommendations of Regional Workshop</p> <p>■ SPECIAL SUPPORT FOR SECTOR 4 – SMALL HOLDERS.</p> <ul style="list-style-type: none"> - Improving Animal Health Services at village level needs to include support from Animal Health Workers (paravets), including reporting systems and access to information and training. Government extension staff cannot bring the appropriate support in all villages. - Improving the general farmers' awareness through appropriate and translated simple biosecurity guidelines on A.I. - Use of credit or microfinance as a tool for rehabilitation and as an alternative to direct compensation for countries that can not afford to compensate. - Development of farmer groups and associations will help to strength the farmers activities and the dissemination of information <p style="font-size: small;">12/30/2004 17</p>	<p style="text-align: center;">Recommendations of Regional Workshop</p> <p>■ BIOSECURITY</p> <ul style="list-style-type: none"> - The most important means to improve biosecurity will be: <ul style="list-style-type: none"> ■ Improvement of understanding of what Biosecurity is to all stakeholders in a straightforward language. ■ Public awareness. Biosecurity issues should be included in the public awareness campaigns. - Concrete steps to follow are: <ul style="list-style-type: none"> ■ Reduction of movement in and out ■ Redesign of housing (sector 3) and fencing (especially in high risks area and when possible or at least at night (sector 4). ■ Separation between animal species and between animals and humans should be encouraged. ■ Correct disposal of sick and dead animals and infected materials and cleaning and disinfection. ■ Review of the whole marketing system for identification of spots of contamination. ■ To advise that children should not handle sick poultry. <p style="font-size: small;">12/30/2004 18</p>