RAP 2001/25

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

Manila, Philippines, 24-26 September 2001

Food and Agriculture Organization of the United Nations
Regional Office for Asia and the Pacific

THE FIFTEEN APHCA MEMBER COUNTRIES

Australia	**Myanmar**
Bangladesh	**Nepal**
Bhutan	**Pakistan**
India	**Papua New Guinea**
Indonesia	**Philippines**
Iran	**Sri Lanka**
Laos	**Thailand**
Malaysia	

REPORT OF THE

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

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Table of contents

Minutes of the 60th Executive Committee Meeting and the 25th Session.....1

Timetable and Agenda (APHCA: 01/1).....13

Records of past APHCA Sessions (APHCA: 01/2).....17

Minutes of the 59th Executive Committee Meeting and (APHCA: 01/3).....21
the 24th Session (Dhaka, Bangladesh, 6-9 November 2000)

Financial Statements (APHCA: 01/4).....27

Secretary's Report.....37

Works Performed/Achieved during November 2000 – (APHCA: 01/5).....41
September 2001 and Works to be Continued and Planned
for Year 2002, Including Workshop Recommendations

Proposed Long-Term Activities (APHCA: 01/6)

A) HOPE-A (Draft Proposals : Bhutan).....47

B) HOPE-A.....63

C) SA-FMD.....71

D) ANGRASIA.....73

E) State of the World's Animal Genetic Resources.....81

Miscellaneous Papers (APHCA: 01/7)

A) Area-Wide Integration (AWI) of Crop-Livestock Activities
(*Oral Presentation was made it by H. Steinfeld.,*
Chief Livestock Information, Sector Analysis and Policy
Branch, Animal Production and Health Division FAO, Rome)

B) IT Communication (APHCA Homepage).....85

C) Small-scale Meat Processing House Model.....89

Provisional Agenda for the 61st Executive Committee (APHCA: 01/8).....91
Meeting and the 26th Session

Proposes of the Associated Workshops (APHCA: 01/9)

A) Dealing with and Managing Disease Emergency.....93

B) Disaster Risk Management Strategies for Animal Health.....99

C) FMD in the Philippines 109

D) The Zoonotic Paramyxoviruses 115

E) Overview of Nipah Virus Infection.....123
in Peninsular Malaysia

F) Buffalo Development in Asia 127

G) Buffalo Recording and the Possible Role of APHCA.....133

List of Participants (APHCA: 01/10).....137

MINUTES OF THE 60TH EXECUTIVE COMMITTEE MEETING AND THE 25TH SESSION OF APHCA

(MANILA, PHILIPPINES, 24-26 SEPTEMBER 2001)

Monday, 24 September 2001

Introduction

The 60th APHCA Executive Committee Meeting was held as an early morning session on 24 September 2001 while the 25th APHCA Session was organized from 24 to 26 September 2001, in Manila, Philippines (detailed Timetable appears in the working paper - APHCA: 01/1).

Representatives from the fifteen APHCA member countries (Australia, Bangladesh, Bhutan, India, Indonesia, Iran, Laos, Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Sri Lanka, and Thailand) attended the Session. There were observers from Cambodia, Viet-Nam, EU Livestock Project in Laos, ILRI, JICA, and OIE (list of participants and observers appears in the working paper - APHCA: 01/10). Apologies were received from ACIAR, USAID, Asian Development Bank, Australian Agricultural Section at the Australian Embassy in Seoul, and New Zealand Government.

Organizational and Procedural Matters

The opening of the Session was presided over by H.E. Cesar M. Drilon, Jr., Under Secretary of the Department of Agriculture (DA) of the Philippines. Speeches were delivered by Sang Mu Lee, FAO Representative in the Philippines; V.K. Taneja, Animal Commissioner of India/out-going Chairperson of APHCA; Henning Steinfeld, Chief AGAL; HE Cesar M. Drilon who also conveyed the message from HE Leonardo Q. Montemayor, Secretary of the DA. V. Atienza, Chief of Animal Disease Division of the Bureau of Animal Industry (BAI) introduced individual guests and local organizers. The opening programme was completed by a welcoming address given by Jose Q. Molina, Director of the BAI.

Election of New Chairperson, Vice-Chairperson and Members of the Executive Committee

The following members of the APHCA Executive Committee (for year 2001-2002) were elected:

- Chairperson: Jose Q. Molina, Delegate from the Philippines
- Vice-Chairperson: Mohd Nordin Mohd Nor, Delegate from Malaysia
- Members of the Executive Committee: Delegates from Australia, Bhutan, and Thailand

V.K. Taneja, Delegate from India was thanked for his two-year contribution to APHCA as its Chairperson. He became an Ex-officio member to assist the new committee.

The out-going Executive Committee Members, i.e., delegates from Bangladesh, Nepal and Papua New Guinea were thanked for their contribution over the last year.

Adoption of the agenda (APHCA: 01/1); The agenda of the 60th Executive Committee Meeting and the 25th Session of APHCA was tabled and adopted (details appear in APHCA: 01/1).

Minutes of the 59th Executive Committee Meeting and the 24th Session of APHCA (APHCA: 01/3); The APHCA secretary briefed the participants on the above (full Minutes appear in APHCA: 01/3). The members accepted the Minutes of the previous meeting without comments.

Presentation of the Financial Statements of APHCA

The secretary presented the financial report as the follows: (APHCA: 00/4)

Introduction

The year 2000-2001 was again a consolidation year for APHCA. Despite limited funds, APHCA was able to run many workshops/conferences with co-funding from our partners. Over the last three years OIE has co-funded workshops coinciding with the annual sessions. This year, OIE will run its own regional Meeting in Nepal in November 2001 and can not contribute to this 25th APHCA session. AGAL, AGAH, and AGAP in FAO headquarters in Rome have supported the two workshops associated with the session. This sponsorship is very important and assured that all members attended the session. (It should be noted that all the 15 APHCA member countries were present at the session for the first time.) Countries were reminded that APHCA is an inter-governmental body, and under the articles of agreement singed by the member countries it is the sole responsibility of each individual country to make sure their delegates attend the annual sessions. APHCA will continue to attempt to obtain sponsors for future meetings but member countries are also urged to help by informing their governments of the obligations under the APHCA constitution.

Some Issues

APHCA Funds to Purchase ELISA Kits

The use of the APHCA Trust Fund facility to purchase ELISA Rinderpest Test Kits for India (reported in the 24th session) was not convenient and not used. The secretary was initially advised by the financial department in Rome in January 1999 that the use of APHCA Trust Fund would be possible. Later on because of possible difficulties, a more convenient procedure was proposed. Governments can request the FAO Representative (FAOR) to purchase such kits, providing the approximate costs. The FAOR establishes a unilateral Trust Fund in which the government deposits the funds to make the purchase. The FAO procurement department then makes the tender to purchase (including delivery and insurance arrangement for the purchase). Any funds remaining in the account after the procurement will be returned to the government. A service charge of 7% is charged to cover the administrative costs. This procedure is simpler than trying to use the APHCA Trust Fund account. This procedure, using the Unilateral Trust Fund (UTF), is now being followed by the government of India.

APHCA Communication and Information

The APHCA homepage has been updated. A report of the APHCA information communication can be found in APHCA 01/7.

APHCA Yearly Work

APHCA, with co-sponsors, ran a number of Workshops and Training Courses between Sessions. Details of these can be found in Works Performed/Achieved during December 2000 to September 2001 and works to be continued and planned during October 2001 and year 2002 appear as APHCA 01/5.

Some progress has been made on the three long-term proposals presented at the last Session. HOPE-A, FMD Control Unit in South Asia and ANGRASIA.

By explanation, the HOPE-A programme was a draft initiative endorsed at the 24th Annual APHCA Session in Bangladesh in November 2000. There is no need for any APHCA country to apply to participate in HOPE-A. The suggested organizational structure was an example only and all interested member countries would be included. The APHCA co-ordination/information unit, a central concept of HOPE-A, would be prepared to play a role in these countries if funds from bilateral projects were given to APHCA to support the HOPE-A co-ordination unit.

Basically HOPE-A is a concept designed to use the regional benefits of APHCA to start to play a coordinating and informational role within the region.

In recent years, the donor community has been moving away from funding regional organization and even international organizations to carry out development projects. The donors prefer to fund their own bilateral projects.

HOPE-A, as mentioned above, is an attempt to recognize this donor trend but to encourage donors to fund the coordination/information function of APHCA.

The next step is to make contacts with existing poultry projects in the region and encourage them to contribute to APHCA.

If funds start to flow into APHCA for HOPE-A work, APHCA members may need to consider using the option of the formation of a sub-commission account within the APHCA Trust Fund Account. However this needs the approval of the FAO director general and the amount of funds needs to be substantial before this would be considered necessary.

Statement on the Accounts

General Accounts

The APHCA Financial Statements are presented in APHCA 01/4. It was presented in FAO's Oracle system format. The summary statement shows the effective cash balance as of January 2001. The actual cash balance is the effective cash balance plus the accumulated interest of US$26987. Different budget papers for 2001, 2002, and 2003 follow this summary statement. Attempts have been made to estimate FAO's contributions to the

running of APHCA. Budget also includes US$20000 additional contribution received under FAO's Letter of Agreement (LOA) in year 2001 for the organization of the WTO's Sanitary and Phyto-Sanitary (SPS) Agreement in Chiang Mai, Thailand in year 2002.

The members will need to approve the proposed budgets for the biennium 2002-2003.

Scale of Contributions

The scale of contribution tables can be found in APHCA 01/4. The members were requested to consider in details and vote on whether APHCA should revert to the pre-1997 procedure of increasing contribution rates by 8% per year to keep APHCA viable and up with inflation or stay with the current rates.

The attention of members was drawn to the issue of arrears or non-contributing countries. The arrears, as of 12 June 2001, were US$163000 and represent two years' contribution by all the member countries. The arrears have been getting progressively worse over the past 10 years (see APHCA 01/4). This poses a number of problems:

1. Members that have not paid for the previous two years lose their voting rights under the APHCA Constitution.

2. No functional budget can be prepared if contributions are not received. Under the new Oracle system, the effective budget for 2002-2003 has been reduced to only US$46000 based on the contributions received. If all countries had paid, the budget would amount to US$77,860.

Achieved Activities in 2000-2001 and the Planned Activities towards Year 2002

The Secretary presented the detailed activities of APHCA which were achieved in the past year and the planned activities towards year 2002. (APHCA: 01/5)

Special Presentations

ILRI, JICA, OIE and EU Project in Laos were invited to make their statements.

Hans-Gerhard Wagner, Regional Animal Production Officer briefed members on the progress in the preparation for the First Report on the State of the World's Animal Genetic Resources. Countries which have not yet responded to the invitation by the director general of FAO should do so, and undertake the necessary steps in-country for the preparation of the country reports. A training course will be held in Bangkok to facilitate the task (26 November – 2 December 2001).

Henning Steinfeld briefed members about the Area-wide Integration (AWI) of Crop and Livestock Activities in selected Asian countries including important outcomes of the recent AWI Workshop, which was organized in Bangkok, Thailand during 17-20 September 2001.

The Secretary presented the Emerging Livestock Diseases in Asia together with Matta Abd. Rahman, Deputy Director General of the Department of Veterinary Services (DVS) of Malaysia. (The papers appear in APHCA: 01/9 A and B.)

The Secretary notified that, during the past seven years, three new zoonotic paramyxoviruses have caused diseases to humans in the region. The first and the second paramyxoviruses occurred in Australia as the Hendra and Menangle viruses. The third one is Nipah virus, which occurred in Malaysia and Singapore. It is imperative that every country must establish system for disease surveillance and response. Four strategies to control these emergent diseases were suggested, which include strengthening of existing surveillance system, and enhancing the capabilities of government agencies and disease control networks, developing of simpler, more cost-effective procedures in determining the disease, and interdisciplinary research to support in the control and prevention of the said diseases in the region.

Matta Abd. Rahman reported on the activities and consequences of the recent Nipah virus infection in Malaysia. He stressed that the outbreak has taught the country the importance of preparedness and management in disease emergency, preparation of an early warning system, laboratory competency, continuous effort for the implementation of programmes for both active and passive surveillance systems, and the need for international collaboration. (The original paper "Overview of Nipah Virus Infection in Peninsular Malaysia", which was authored by Dato' Mohd Nordin bin Mohd Nor, Director General of DVS, and published by OIE, appears as APHCA: 01/9-D.)

Dirk Van Aken completed the first day with the component strategies that the EU Livestock Project in Laos has undertaken, which include legislation, information systems, laboratory, extension services, regional coordination, information dissemination, and management of diseases.

Tuesday, 25 September 2001

(Presentations of the Workshops were made as per the timetable.)

The morning session:
Regional Workshop on Preparing for and Managing Disease Emergency

(The papers presented appear in APHCA: 01/9.)

Highlights of the Presentations

Roger Paskin, FAO Headquarters' Animal Health Officer stressed that a quick response to disease emergencies is critical in reducing the damage to animals and humans. Four key elements in ensuring that any response to a disease emergency is timely and adequate are: 1) an effective national veterinary service, 2) effective early warning system, 3) contingency plan, and 4) early reaction capability [i.e. adequate training in management of diseases, logistic support, and updating of plan] to implement them efficiently. He also made a brief presentation on the TADinfo epidemiology database system and outlined its future development. Thereafter, he introduced the GEMP (Good Emergency Management Practices) CD.

Carolyn Benigno, Head of FMD Task Force in the Philippines discussed the measures undertaken to control the foot and mouth disease (FMD) in the country. Measures have anchored on four strategies consisting of: 1) disease monitoring and surveillance, 2) public

awareness, 3) animal movement management (quarantine), and 4) vaccination. The importance of a national control programme was stressed (which was delegated to the Bureau of Animal Industry through an Executive Order from the President), the funding support provided by AusAID, administration of the Food and Agriculture Organization (FAO), and management made by the Philippine Government to control the epidemic in selected areas in the country. Mindanao, the second largest island group in the Philippines, is currently considered by OIE as an FMD–free recognized zone, the Visayas group as FMD-free zone, the northern regions for Luzon as a protected zone, central Luzon as the control or endemic zone, and southern Luzon as a buffer zone.

Mohammad Afzal, Head, Sciences Division of Pakistan Agricultural Research Council presented the Status of Rinderpest in Pakistan. Rinderpest outbreaks in 80s and 90s were reviewed. The last outbreak of Rinderpest was seen in Karachi, in September 2000, involving 6 out of 102 animals. However, no mortality was observed. The morbid animals were culled and ring vaccination controlled the disease. No active case of Rinderpest has been seen since then. Sero-surveillance revealed no antibody against Rinderpest in 940 samples collected from 4 districts of Balochistan. Sero-surveillance in other areas is being carried out.

The afternoon session:
The Regional Workshop on Buffalo Development

(The papers presented appear in APHCA: 01/9.)

Highlights of the Presentation

Professor Charan Chantalakhana of Suwanvajokkasikit Animal Research and Development Institute, Kasetsart University of Thailand, stressed that the creation of appropriate socio-economic policies is necessary to reverse the decline of buffaloes and for the sustainable development in Asia. Most countries in Asia have biased understanding on buffalo production, although buffalo is an Asian species. Model village of mixed crop-animal farming system will improve small farm production of buffaloes at the grassroots level.

Prof. Charan reviewed the situation of buffalo production in Asia based on the conclusion and recommendations of the Regional Workshop on Water Buffalo Development held in Surin, Thailand, in February 2001. The dramatic decline of buffalo numbers in some countries is worrying. The importance and the values of the buffaloes for the small holders and for food security were stressed. Governments are encouraged to undertake necessary steps to alleviate their decline. The speaker introduced the following project ideas:

- Formulation of Effective Strategies to Stop Declining Growth Rates of Buffalo Populations in some Asian Countries;
- Improving Buffalo Productivity through Performance Recording Schemes;
- Increasing Buffalo Production and Utilization in Mixed Farming Systems at Small Holder Level;
- Buffalo Recording and the Possible Role(s) of APHCA

The proposals were supplemented by the presentation of Hans-Gerhard Wagner introducing the subject of animal identification and “Traceability”. The key importance of animal identification for health and epidemiology issues, breeding and performance recording, and

for trade issue (WTO's SPS) was stressed. Countries supported the proposal for APHCA Secretariat to undertaken the necessary steps for standardization and harmonization of identification and recording schemes fully involving member countries and other stakeholders (ABA, AAAP, etc.).

Douglas Grey made a brief presentation on CGIAR's work in the field of Animal Genetic Resources.

Libertado C. Cruz, Executive Director of the Philippines Carabao Center completed the afternoon Workshop by reviewing the activities of the Center and the status of carabao development in the country.

Wednesday, 26 September 2001

The morning session:
A field trip to the Foodsphere Factory and a carabao farm.

The APHCA business session continued in the afternoon.

The Secretary drew the attention of the members to miscellaneous papers in APHCA: 01/07 in the working papers handouts. These were the IT Communication (APHCA Homepage) and the Small–scale Meat Processing House Model (now under the royal project of H.M. the Queen of Thailand), which can be replicated in other APHCA member countries.

The Secretary then raised the following issues for discussion and possible vote.

Issue 1 - Unspent interest of US$ 26,987

The advice regarding the use of APHCA's accumulated interest received from the Financial Department in FAO HQ was that as a courtesy this issue could be raised at the APHCA Session and the permission to use the interest obtained from the members. Members discussed this and approved to spend the interest earned on APHCA's forthcoming activities.

Issue 2 - The inflation index was mentioned in the Financial Statement on Monday, 24 September 2001. This issue was further explained, discussed and voted on.

The delegate from Malaysia proposed the increase of the 8% inflation and this was approved by the members. The Secretary was requested to notify concerned authorities in Rome and request them to inform the member countries on this increase.

The over-all Financial Statement was approved by the members.

The Secretary was requested to contact and request the Finance Department in FAO Headquarters to issue official reminders for contribution in early of each year (January – February) and the APHCA Secretariat in Bangkok immediately copy these reminders to all the APHCA delegates to help follow-up, in order that the member governments can manage for payment of contribution fee.

Issue 3 - Theme for the next year's APHCA Session

The three proposals received from the previous APHCA Session in Bangladesh in 2000 and not yet addressed were:

- Unmonitored Movement of Animals (Livestock Movement Management)
- Improving Livestock Productivity
- Present and Future Veterinary Services for the Region

(The Secretary had requested on Monday, 24 September 2001 that members consider these proposals.)

New proposals from this APHCA Session are: 1) Help in the Control of PPR (proposed by the delegate from Iran and supported by others), and 2) Standard Recording System for the Region (outlined in the concept note submitted by Hans Wagner was placed before members).

Discussions were made by members and the priorities were given to: 1) Animal Recording System, and 2) Livestock Movement Management. The Chairperson requested the APHCA Secretariat to follow-up on this matter.

Issue 4 – A suggestion for future buffalo development project was received.

One of the project activities should cover the active promotion campaign to improve the image of buffalo meat to the public. Future strategy for buffalo development in South-east Asia is how to convert the role of swamp buffaloes from draught to meat animals. Member governments do have to accept the role of swamp buffaloes as draught animals in diminishing further in all countries in Asia; and thus, the different role, e.g. buffaloes as meat animals should be promoted actively by governments, producer organizations, FAO/APHCA, ABA, etc.

Buffalo beef could be promoted in many ways:

- Improve the image of buffalo beef (meat from "retired" animals, cheap but so tough to eat) by actively promoting beef buffalo industry (young animals to be slaughtered for meat purpose only)
- Healthy meat (low cholesterol)
- Low production cost, attractive for small farmers

This campaign should create the incentive for rural small holders to raise more buffaloes so that they can generate higher income in their village conditions.

The subject was discussed and delegates from Bangladesh, India, Iran and Malaysia indicated their interest to join in a regional buffalo project. The Secretary informed the members of the nature of a regional TCP project to be funded by FAO which normally involves three countries in a region but he will explore the possibility to cover more countries; - perhaps two TCPs including the two main regions – South Asia where milk is a dominant product and South-east Asia where meat is the dominant product besides the important draught power provided to the crop agriculture.

Issue 5 - Asian Buffalo Association (ABA).

(Request to use the APHCA Secretariat as the ABA Secretariat) The Secretary briefed the members about the history and background of the ABA. There was an urgent need for the Association to have a permanent address as its Secretariat. It was suggested that it could be "care of" APHCA. Essentially, it was just a mailing address and did not incur any financial or legal responsibilities. The members approved of this.

Issue 6 - New Members

There has been a request from delegate from Papua New Guinea that since many South Pacific countries (SPC) are part of FAO, they should be invited to join APHCA. In particular, the South Pacific Commission should be invited, as the first step, to participate as an observer at the Session.

Costs of getting delegates to sessions from some of the smaller Pacific island countries could be substantial. A suggestion was that if they could not get support from their own countries (a legal requirement under the APHCA Constitution), it might be possible that one country could attend and represent the interest of the others, or possibly the SPC could play this role.

The members approved and the Secretary will issue invitations to the South Pacific countries to join APHCA and invite the SPC to attend the next APHCA Session as an observer.

General

- APHCA has commissioned an expert to draft a Nipah Virus Diagnostic Manual and this manual should be available in due time.
- HOPE-A Project Outlines shall be continued to be produced. Some HOPE–A draft project outlines have been produced for a number of countries. These countries include Bhutan, Indonesia and Myanmar. The Bhutan draft can be found in APHCA: 01/6. Countries wishing to use these outlines to seek bilateral funding are welcome to use them.
- The EC was approached and requested to fund the HOPE-A formulations.
- Handouts: Apart from the working papers, all members should have received in their bags:
    - Manual on the use of the LP System in milk handling and preservation CD ROM, Livestock and Environmental Toolbox
    - Guidelines for humane handling, transport and slaughter of livestock
    - The Second Ad-hoc Session of International Stakeholders in Animal Genetic Resources
    - OIE Report of the Regional Seminar on Nipah Virus Infection
    - The Global Strategy for the Management of Farm Animal Genetic Resources
    - DADIS leaflets
    - Preparation of the First Report on the State of the World Animal Genetic Resources
    - Water Buffalo for Food Security and Sustainable Rural Development – Workshop Proceedings
    - Waicent (FAO Statistical Databases) leaflets
    - Farm, their Animals and the Environment CD
    - Water Buffalo – “An Asset Undervalued” – leaflets

Additional handouts were produced during the Session which included TAD INFO Training CD, and GEMP–EMPRES Principles CD.

Venue and Dates of the 61st Executive Committee Meeting and the 26th Session

An offer to host the next APHCA Session was made by the delegate of Malaysia, Matta Abd Rahman. The tentative venue will be in Kuala Lumpur and the APHCA Session may be organized immediately prior to the meeting of the Federation of the Asian Veterinary Associations (FAVA) in September 2002. Tentative dates shall be provided.

The Secretary suggested the integration of the APHCA Session and the FAVA meeting in order to shorten the period that the APHCA delegates may find it difficult to stay due to their heavy workload in their respective countries. Non-FAVA member countries would be invited as observers at the FAVA meeting. The Secretary was requested to write to concerned Malaysian authorities re this matter to get the official approval.

Other Business

OIE and FAO-APHCA, in collaboration with the Department of Livestock Development of Thailand (DLD), accepted in principle to co-organize a Regional Workshop on BSE diagnosis in NIAH Bangkok in November 2001 for some selected APHCA member countries. The Secretary clarified to members (requested by the delegate from India) the criteria for selection of participants to the Workshop.

The main determinant was the limited funds available. Then the co-organizers looked into the list of the first ten countries at risk of BSE, being the importers of meat and bone meal (MBM) from the BSE-infected countries in Europe. Two trainees from each country (the first participant shall be a person who works in histo-pathology and the second in molecular ELISA laboratory) will be invited to the Workshop. The conditions are that the governments pay for international airfares while APHCA and OIE provide experts at the Workshop as well as some pocket money for participants, and DLD covers the local logistic costs.

The 25th Session of APHCA endorsed the concluding statements and recommendations of both workshops: the FAO-APHCA Regional Workshop on Preparing for and Managing Disease Emergency, and the FAO-APHCA Regional Workshop on Buffalo Development in Asia (25 September 2001). The final statements from these Workshops will be included as APHCA 01/9.

Hans Wagner informed the members that the Regional Training Workshop for the Preparation of Country Reports for the First State of the World's Animal Genetic Resources planned to be held in India was cancelled. Countries will now join the Workshop which will be organized in Bangkok, Thailand, during 25 November – 2 December 2002. The official invitations will be issued in due course.

Proposed Agenda for the Next Executive Committee Meeting and APHCA Session

The Provisional Agenda for the 61st Executive Committee Meeting and the 26th Session of APHCA was circulated to all members (APHCA: 01/8). The Chairperson informed that

amendments to the proposed agenda should be forwarded to the Secretary at the FAO Regional Office in Bangkok.

The Provisional Agenda was proposed for approval by the delegate from Australia and was seconded by the delegate from Pakistan.

Adoption of Report

The Commission adopted the 25th Session Report.

Closing of the Session

The Chairperson expressed his gratitude to all delegates and observers for their full co-operation and contribution to the 60th Executive Committee Meeting and the 25th Session of APHCA, the FAO-APHCA Regional Workshop on Preparing for and Managing Disease Emergency, and the FAO-APHCA Regional Workshop on Buffalo Development in Asia. He sincerely thanked his colleagues in the Organizing Committee and other concerned authorities for the excellent arrangements, hospitality, and hard work that contributed to the success of all the APHCA functions. He also thanked the APHCA Secretariat for their hard work before and during the Session.

The Secretary expressed his gratitude to all APHCA delegates, observers, his FAO colleagues, and especially the Organizing Committee, and the Government of the Philippines for their full support and assistance towards the successful Session. The Secretary was impressed with the book "25th year of APHCA". The various sponsors for lunches and dinners were also thanked for their kind hospitality. The full list of participants, observers and sponsors can be found in the full report (APHCA: 01/10). The Secretary indicated that he would be in contact with everyone during the upcoming years to keep the initiatives discussed at this Session alive and to further the co-ordinated efforts of APHCA. E-mail and other IT systems being developed by APHCA would be the vehicle for the APHCA Secretariat to communicate with the members. He wished everyone a safe trip home.

TIMETABLE

THE 60TH EXECUTIVE COMMITTEE MEETING AND THE 25TH SESSION OF APHCA
(MANILA, PHILIPPINES, 24-26 SEPTEMBER 2001)

Sunday, 23 September 2001 Arrival of Overseas Guests

Monday, 24 September 2001

Morning Programmes : *Registration and Opening of the 60th Ex-Com. Meeting, the 25th Session of APHCA, the FAO-APHCA Workshop on Preparing for and Managing Disease Emergency, and the FAO-APHCA Workshop on Buffalo Development*

08:00-09:00 Registration/The 60th Executive Committee Meeting (for Ex-Com. Members: - India, Philippines, Bangladesh, Papua New Guinea and Nepal)

09:00-09:30 Opening Ceremony (for the over-all functions, will include the chief guest/guests of honour from DA, BAI, AGAL, FAOR, and APHCA)

09:30-10:00 Tea/Coffee Break

10:00-12:30 The 25th APHCA Business Session

12:30-13:30 Lunch

Afternoon Programmes : *Special Presentations and APHCA Business Session (Cont.)*

13:30-14:00 The 25th APHCA Business Session (Cont.)

14:00-15:00 60 minutes for Presentations by Observers/Representatives from Organization/Institution (ILRI, JICA, OIE, EU project in Laos)

15:00-15:30 Tea/Coffee Break

15:30-17:30

- Update on SoW Animal Genetic Resources by Dr. Hans Wagner, FAO-RAP
- Area-Wide Integration of Specialized Crop and Livestock Activities by Dr. Henning Steinfeld, Chief of AGAL, FAO Headquarters
- Emerging Livestock Diseases in Asia
  - The Zoonotic Paramyxoviruses
  - Nipah Virus
- The Component Strategies of EU Livestock Project in Laos

Tuesday, 25 September 2001

Morning Programmes : *The FAO-APHCA Workshop on Preparing for and Managing a Disease Emergency*

08:30-09:15	Concepts in Emergency Management and Introduction to GEMP by Dr. R. Paskin
09:15-10:00	FMD Eradication & Preparedness by Philippines Representative
10:00-10:30	Tea/Coffee Break
10:30-12:15	Progress with Rinderpest Eradication by Pakistan Representative
12:15-12:30	General Discussion & Questions
12:30-13:30	Lunch

Afternoon Programmes : *The FAO-APHCA workshop on Buffalo Development in Asia*

13:30-15:30	The FAO-APHCA workshop on Buffalo Development
	CGIAR's Animal Genetic Resource by Dr. Douglas Gray
15:30-16:30	Tea/Coffee Break
16:00-17:30	Workshop (Cont.)
18:30-20:30	Dinner (Host by SEARCA and PCARRD)

Wednesday, 26 September 2001

08:30-12:30	Field Trip (Foodsphere Factory and a Carabao Farm)
12:30-13:30	Lunch

Afternoon Programmes : *Special Presentations and APHCA Business Session (Cont.)*

13:30-17:30	Wrap-up Meeting (Adoption of Session Report and Closing of the Session) (Tea/Coffee to be Served in the Meeting Room)
18:30-20:30	Farewell Dinner (Hosted by FAO-APHCA)

Thursday, 27 September 2001 Departure of Overseas Guests

PROVISIONAL AGENDA

1. Opening of the Session
2. Adoption of the Agenda, Induction of Chairman and Election of Executive Committee Members
3. Minutes of the 59th Executive Committee Meeting and the 24th Session of APHCA
4. Statement of Accounts of APHCA Trust Fund for 2000-2001 and other Financial Matters
5. Report on APHCA Activities during 2000-2001
6. APHCA Programme of Work and Budget for 2001 and 2002
7. FAO-APHCA Workshop on Preparing for and Managing a Disease Emergency
8. FAO-APHCA Workshop on Buffalo Development
9. Report on the International Workshop on Area-Wide Integration of Specialized Crop and Livestock Activities by Dr. Henning Steinfeld, Chief of AGAL, FAO Headquarters
10. Report on Emerging Livestock Diseases in Asia
    - The Zoonotic Paramyxoviruses
    - Nipah Virus
11. Venue and Date for the 61st Executive Committee Meeting and the 26th Session of APHCA
12. Provisional Agenda for the 61st Executive Committee Meeting and the 26th Session of APHCA
13. Other Business
14. Adoption of the Minutes/Report of the Session
15. Closing of the Session

DATES AND VENUES (HOST COUNTRIES) OF APHCA SESSIONS

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

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

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

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

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

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

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

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

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

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

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

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

Thirteenth
Bangkok, Thailand, 25-31 October 1988
Chairman: Dr. Vitoon Khumnirdpetch (Thailand)
Vice-Chairman: Dr. Soehadji (Indonesia)
Members of the Executive Committee:
Delegates from India, Malaysia
and Sri Lanka

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

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

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

Seventeenth
Manila, Philippines, 17-21 November 1992
Chairman: Dr. W. A. Geering (Australia)
Vice-Chairman: Dr. A.A. Motallebi (Iran)
Members of the Executive Committee:
Delegates from Indonesia, Malaysia
and Thailand

Eighteenth
Darwin, Australia, 17-20 August 1993
Chairman: Dr. A.A. Motallebi (Iran)
Vice-Chairman: Dr. Wipit Chaisrisongkram
(Thailand)
Members of the Executive Committee:
Delegates from Nepal, Philippines
and Singapore

Nineteenth
Tehran, Iran, 20-24 November 1994
Chairman: Dr. Wipit Chaisrisongkram (Thailand)
Vice-Chairman: Dr. S K Shrestha (Nepal)
Members of the Executive Committee:
Delegates from Australia, India
and Indonesia

Twentieth
Bangkok, Thailand, 30 August-2 September 1995
Chairman: Dr. S. K. Shrestha (Nepal)
Vice-Chairman: Mr. K. Rajan (India)
Members of the Executive Committee:
Delegates from Australia, Malaysia
and Sri Lanka

Twenty-First
Kathmandu, Nepal, 3-6 March 1997
Chairman: Mr. G. R. Patwardhan (India)
Vice-Chairman: Dr. A. S. Abeyratre (Sri Lanka)
Members of the Executive Committee:
Delegates from Australia, Indonesia
and the Philippines

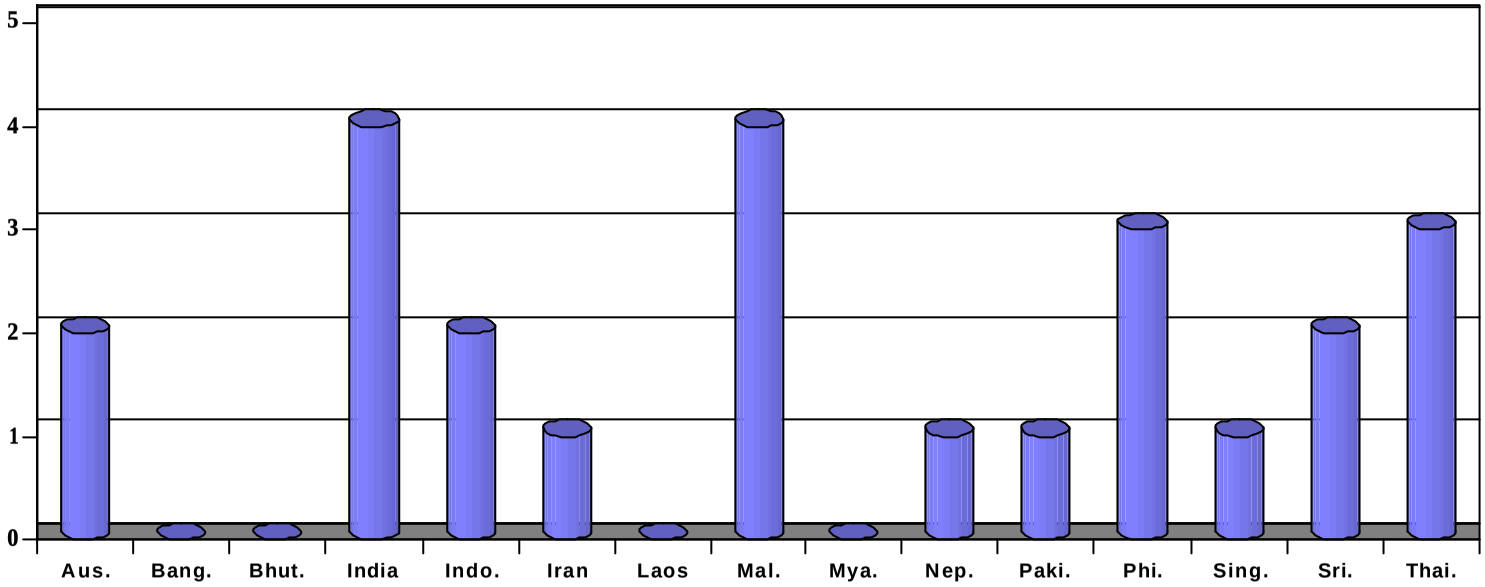
Twenty-Second
Bangkok, Thailand, 22-24 June 1998
Chairman: Dr. S. S. E. Ranawans (Sri Lanka)
Vice-Chairman: Mr. G. R. Patwadham (India)
Members of the Executive Committee:
Delegates from Laos, Myanmar
and Thailand

Twenty-Third
Kochi (Cochin), India, 4-6 September 1999
Chairman: Dr. V. K. Taneja (India)
Vice-Chairman: Dr. T. A. Abilay (Philippines)
Members of the Executive Committee:
Delegates from Nepal, Papua New Guinea
and Thailand

Twenty-Forth
Dhaka, Bangladesh, 6-9 November 2000
Chairman: Dr. V. K. Taneja (India)
Vice-Chairman: Dr. T. A. Abilay (Philippines)
Member of the Executive Committee:
Delegates from Bangladesh, Papua New Guinea
and Nepal

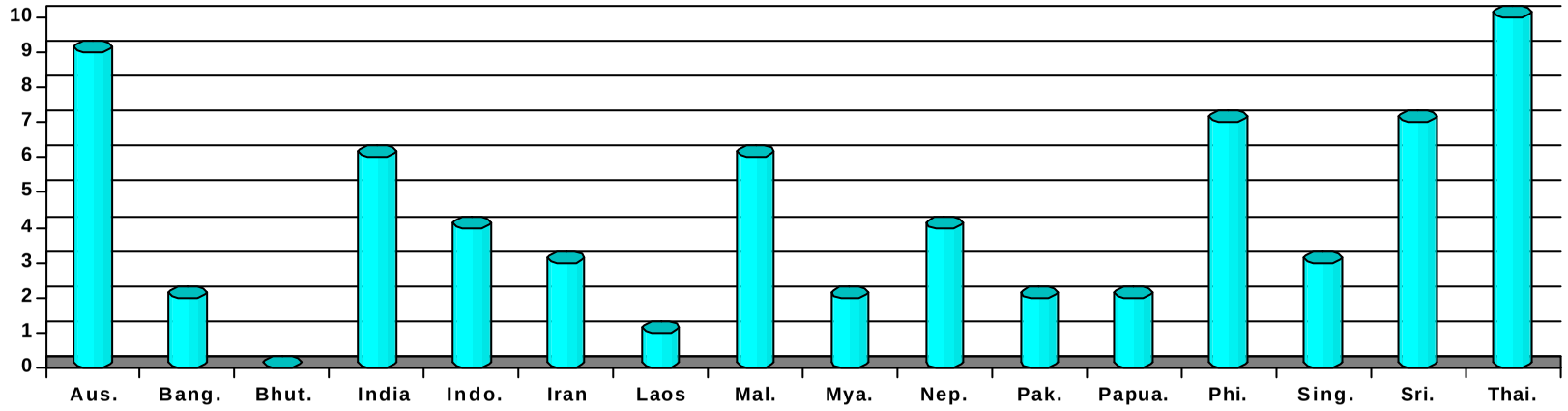
Twenty-Fifth
Manila, Philippines, 24-26 September 2001
Chairman: Dr. Jose Q. Molina (Philippines)
Vice-Chairman: Dr. Mohd Nordin Mohd Nor
(Malaysia)
Member of the Executive Committee:
Delegates from Australia, Bhutan, and Thailand

TURN OF APHCA CHAIRMANSHIP
(AS OF YEAR 2000)



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

TURN OF APHCA EXECUTIVE COMMITTEE MEMBERS
(AS OF YEAR 2000)



Australia	9	**Myanmar**	2
Bangladesh	2	**Nepal**	4
Bhutan	0	**Pakistan**	2
India	6	**Papua New Guinea**	2
Indonesia	4	**Philippines**	7
Iran	3	**Singapore**	3
Laos	1	**Sri Lanka**	7
Malaysia	6	**Thailand**	10

MINUTES OF THE 59TH EXECUTIVE COMMITTEE MEETING AND THE 24TH SESSION OF APHCA

(DHAKA, BANGLADESH, 6-9 NOVEMBER 2000)

I. Introduction

The 59th APHCA Executive Committee Meeting was held as an early morning session on 6 November 2000 while the 24th APHCA Session was organized during 6-9 November 2000, in Dhaka Bangladesh (detailed timetable appears in the working paper - APHCA: 00/1 of the 24th Session Report).

Representatives from thirteen APHCA member countries (Australia, Bangladesh, Bhutan, India, Iran, Laos, Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea, Sri Lanka, and Thailand) attended the Session. There were observers from Vietnam, ILRI, JICA, OIE, and USDA (a list of participants and observers appears in the working paper - APHCA: 00/10 of the 24th Session Report).

The Secretary noted that he has received an email from the Delegate from the Philippines. The Delegate apologises for missing the Session due to a typhoon at home that has prevented travel.

At the combined opening ceremony of the 59th Executive Committee Meeting and the 24th Session of APHCA, the FAO-APHCA/WHO/OIE Regional Workshop on Veterinary Public Health and Zoonoses (6-7 November 2000), and the OIE/FAO-APHCA Regional Workshop on WTO's Sanitary and Phyto-Sanitary (SPS) Agreement (8-9 November 2000), a welcome address was given by Md. Abdur Razaqque Mia, Director General of the Department of Livestock Services, Bangladesh, on behalf of the Organizing Committee. This was followed by a welcome address by the Chief Guest, H.E. Mr. A.S.M. Abdur Rob M.P., Minister for Fisheries and Livestock. Dr. Jorgen Hansen, Senior Animal Health Officer, FAO Headquarters gave an address on behalf of FAO and WHO while Dr. Y. Oketani and Dr. Teruhide Fujita delivered their speeches on behalf of the OIE Headquarters and the OIE Representation for Asia and the Pacific, respectively. Dr. V.K. Taneja, Animal Husbandry Commissioner, Government of India briefly welcomed all participants on behalf of APHCA's chairman followed by addresses by the special guests Professor Md. Abdul Quddus M.P., State Minister, and Mr. Syed Marghub Murshed, Secretary, Ministry of Fisheries and Livestock (The full opening addresses appear as APHCA: 00/11 of the 24th Session Report). Vote of thanks was given by the Director (Extension), Department of Livestock Services, Bangladesh.

II. Organizational and Procedural Matters

Dr. V. K. Taneja started the Session and welcomed Dr. Phuntsho Wangdi, the Delegate from Bhutan, a new member country, to APHCA. He welcomed all members and observers and then called for the adoption of the previous agenda and nominations for Chairman, Vice Chairman and Members of the Executive Committee.

Adoption of the Agenda (APHCA: 00/1 Previous Paper)

The Agenda of the 59th Executive Committee Meeting and the 24th Session of APHCA was tabled and adopted later in the meeting when members had time to consider the minutes (details appear in APHCA: 00/1 of the 24th Session Report).

Election of New Chairman, Vice-Chairman and Members of the Executive Committee

The following APHCA Executive Officials were elected:

- Chairman: Dr. V.K. Taneja, Delegate from India
- Vice-Chairman: Delegate from the Philippines
- Members of the Executive Committee: Delegates from Bangladesh, Papua New Guinea, and Nepal

Minutes of the 58th Executive Committee Meeting and the 23rd Session of APHCA (APHCA: 00/3 of the 24th Session Report)

The APHCA Secretary briefed the Participants on the above (full Minutes appear in APHCA: 00/3 of the 24th Session Report). The members accepted the minutes of the previous meeting without comments.

Presentation of the Financial Statements of APHCA (APHCA: 00/4 of the 24th Session Report)

The Chairman called on the Secretary to present the financial statement. Before doing so, the Chairman briefed the participants on the background of why the Government of India had requested the assistance of APHCA in purchasing Rinderpest ELISA kits, and urged members who might be considering similar purchases to also use the facilities of APHCA. He mentioned that this purchase through FAO/APHCA offers not only substantial discounts, but also brought in the experience of FAO in such purchases to ensure the delivery of quality kits, with the required insurance coverage, etc. A deposit from the Government of India would cover the full cost of the kits before the kits would be purchased, thus it did not involve APHCA in any costs or risk.

The APHCA Secretary briefed the participants on the above (full financial statements appear in APHCA: 00/4 of the 24th Session Report). The Secretary explained the new format of the financial statements and the reason for these changes. The main reason was the change in the accounting system within FAO. FAO has now adopted the Oracle accounting system (replacing the previous Finsys System). One of the main changes is that a special code exists for travel and all travel was now recorded on this code. The Secretary drew attention to a number of points:

1. The conservative nature of APHCA's expenditure in 1999 where only US$36,073 were spent against an approved budget of US$75,900 with a surplus at the start of 1999 of US$109,125.

2. The large number of outstanding contributions and how this needed to be addressed in the future. Some of these outstanding amounts might actually be paid but not yet recorded. Mr. Md. Abdur Razzaque Mia, the Delegate from Bangladesh informed that

only last week his government had made a payment to the trust account of US$19,647, which was the outstanding amount as of 31/12/1999. The Secretary thanked him for this information and expressed his delight to see that Bangladesh is making a tremendous effort to reduce its arrears. The Secretary explained that FAO/APHCA could also improve the system and inform governments of their obligation of contribution early in the financial year to give the governments time to respond within the financial year, rather than informing them towards the middle of the financial year. The Secretary would approach the Finance Department in Rome who is authorized to send reminder letters and see if this is possible.

3. The scale of contributions was explained to the members.

4. The Secretary pointed out that the scale of contributions had been frozen since 1997 because members felt the effects of the Asian financial crisis in 1997 was an extra burden on many countries. Since then, Asia has been recovering from the crisis and the members agreed in principle to the reintroduction of inflationary increases as in the past. Dr. Rafaqat Hussain Raja, the Delegate from Pakistan, suggested that the scale of contribution should stay at the same level until the 2002-2003 biennium budget. Over the next year, it was resolved that members would approach their Governments to inform them of the increase as agreed, and report back at the 25th Session where a decision could be made then on whether to reintroduce the inflation factor into the scale of contributions.

5. The approved year 2000 budget was presented and again a conservative expenditure was predicted.

6. The 2001 and the Biennium budget for 2002 and 2003 were presented in the Oracle format. Again a conservative budget was presented where total possible expenditure was kept at the level of only the projected receipts of the full contribution for that particular year.

7. The financial graph at the end of the budgets was explained which showed that the APHCA account was starting to show a reserve. This was a healthy sign.

The Secretary gave a long explanation supporting the Chairman's view that India would benefit substantially from the price discount available with APHCA acting as the ELISA kit purchasing agent. The APHCA 24th Session endorsed this action. Other countries wishing to purchase ELISA kits were invited to use the same procedure.

The Members were asked to consider the budget as presented and to make comments, if any. They endorsed the proposed and revised budget for 2001, the budgets for the biennium 2002-2003 and the use of the trust fund account to purchase the expensive ELISA kits against Rinderpest for India.

APHCA Activities in 2000 (APHCA: 00/5 of the 24th Session Report)

The Secretary gave a detailed briefing on the activities/work performed since the last meeting in September 1999 through to October 2000, and the work to be continued and planned from November 2000 and on into the year 2001. During this briefing he called on Dr. Fujita to explain to members the proposed Buffalo workshop. Also, Dr. Ted

Tesaprateep, Dean of Veterinary Science Chiang Mai University, Thailand explained the initiative of his faculty to provide a training course on subjects of interest to APHCA, and for APHCA to consider supporting member countries to send students to these courses.

The Secretary enumerated many activities that had been achieved with the collaborative efforts of a number of partners. The secretary explained how this was a cost-effective way to build on the limited resources of APHCA.

The Secretary also urged the members to read the three strategic objectives proposed by APHCA as ongoing long term objectives of APHCA, namely HOPE-A, FMD-Control Unit for South Asia, and ANGRASIA. This was discussed and later endorsed by the members.

The Secretary explained the development of the Information center of APHCA and urged members to read the paper "Information Communication Technology" (APHCA 00/7) that was presented to the APAARI meeting being held in Thailand during the same week. The author, Michael Riggs, arrived on Tuesday and presented a summary of the paper and his presentation. The Delegates from Bangladesh, Laos and Pakistan were thanked for having already returned the "Computer Survey", and the rest of the delegates were encouraged to also do so before the end of the week. This survey information will be valuable to insure that the APHCA Information center develops new technology that is most useful to its members.

The Secretary explained that Dr. Vishnu Songkitti, who had done so much in organizing this meeting with the capable assistance of Department of Livestock Services and the Department of Extension, Government of Bangladesh, had to leave on Tuesday, 7 November, for northern Thailand to assist in the international conference of countries in the Greater Mekong Sub-region, organized by the Royal Project Foundation of H.M. the King of Thailand.

Programme of Work and Budget for 2001-2002

It was agreed that the three long-term activities, HOPE-A, FMD-Control Unit for South Asia, and ANGRASIA should be pursued. Projects should be developed for these long-term programmes. However, the Secretary emphasized that it will be up to the individual governments, not APHCA, to submit these programmes for financial support.

The Chairman informed the participants that India would be organizing a workshop on the strategy for control of FMD in India during the first quarter of 2001, and offered that the South Asian members could participate in the workshop. After deliberation, it was decided that:

- The FMD-Control Unit for the South Asian Region may be set up,
- South Asian countries may send a participant each to the workshop on FMD in South Asia, and
- APHCA should consider supporting the attendance of the members to this workshop.

Miscellaneous Paper Presentations (detailed papers appear in APHCA: 00/7 of the 24th Session Report)

A presentation was made by Michael Riggs on his recent paper "Presentation on the ICT (Information Communication Technology) Status of APHCA" made to the APAARI Expert Consultation on the Implementation of APRAIS. (See working paper APCHA: 00/7)

Venue and Dates of the 60th Executive Committee Meeting and the 25th Session of APHCA

Requests/offers to host the next meeting were received from the delegates of Pakistan and Myanmar, Dr. Rafaqat Hussain Raja and Dr. Khin Maung Nyo, respectively. It was resolved that the Secretary should see if the Philippines was still interested as they had offered last year in India, and if not to contact the countries that offered and make a decision. Dr. Taneja pointed out that for the last four years, 1997 to 2000, the APHCA session had been held in South Asia and this should be considered when deciding where to hold the next meeting. The Secretary pointed out that August to October were the appropriate months. November was considered late, because of the necessity to stay within the FAO yearly budget planning period.

Other Business

The new member Bhutan and all observers were given an opportunity to say a few words. Bhutan, USDA and JICA made statements.

Some suggested possible topics for future workshops were "unmonitored movement of animals", "improving livestock productivity", and "present and future veterinary services for

The Secretary briefed the meeting on the following issues: FAO's partnership programme, TCDC, YPO, APO and volunteers. These are all initiatives under the FAO's partnership programme. TCDC is the Technical Cooperation between Developing Countries programme, and YPO is the Young Professional Officers programme. Both programmes require that individuals be paid US$100 per day plus DSA, accommodation, and travel. This usually involves a minimum cost of about US$3,000 per month. Therefore, they are not cheap. For example, to employ one TCDC expert to come to Bangkok to assist the APHCA Secretariat for 12 months would consume the total annual budget of APHCA. Cheaper ways to support the APHCA Secretariat may be to employ APOs (Associate Professional Officers) and FAO volunteers. In both these cases, the salary cost of the individuals are paid by the sponsoring countries, and only office support and travel expenses have to be paid by APHCA. This is a much cheaper option. The Secretary informed the delegates that he had sent in five requests for APOs to be placed in the Livestock section, but he also warned that they are very difficult to get. However, he has high hopes that some assistance to the Secretariat may be obtained by this method.

The delegate from Iran, Dr. Mohsen Meshkat, indicated his support to have an FAO EMPRES workshop to be held in Iran, possibly in the middle of next year.

OIE accepted in principle to co-organize a Regional Workshop on WTO's SPS agreement once again at Chiang Mai University, Chiang Mai, Thailand. The OIE Regional

Representative, Dr. T. Fujita, will propose this activity at the OIE Annual Session in Paris in May 2001, and the Workshop will likely be organized in July or August 2001. The four-day workshop will place an emphasis on risk analysis, HACCP, and food safety.

The Secretary made a Point of Notification. The University of Queensland, Department of Veterinary Pathology, is organizing a laboratory training course next year co-funded by IAEA and focused on the area of poultry vaccine production. APHCA may wish to send some members to this meeting.

The 24th Session of APHCA endorsed the concluding statements and recommendations of both workshops: the FAO-APHCA/WHO/OIE Regional Workshop on Veterinary Public Health and Zoonoses (6-7 November 2000), and the OIE/FAO-APHCA Regional Workshop on WTO's Sanitary and Phyto-Sanitary (SPS) Agreement (8-9 November 2000). The final Statements from these workshops will be included as APHCA 00/9 of the 24th Session Report.

Proposed Agenda for the Next Session

The Provisional Agenda for the 60th Executive Committee Meeting and the 25th Session of APHCA was circulated to all APHCA members (APHCA: 00/8 of the 24th Session Report). The Chairman informed all that amendments to the proposed agenda should be forwarded to the Secretary in FAO Regional Office in Bangkok.

III. Adoption of Report

The Commission adopted the 24th Session Report.

IV. Closing of the Session

The APHCA Chairman expressed his gratitude to all delegates and observers for their full co-operation and contribution to the 59th Executive Committee Meeting and the 24th Session of APHCA, the FAO-APHCA/WHO/OIE Regional Workshop on Veterinary Public Health and Zoonoses (6-7 November 2000), and the OIE/FAO-APHCA Regional Workshop on WTO's Sanitary and Phyto-Sanitary (SPS) Agreement (8-9 November 2000). He sincerely thanked Dr. Md. Abdur Razzaque Mia, Director General of Livestock services and all his colleagues in the Organizing Committee for the excellent arrangements, hospitality, and hard work that contributed to the success of all the APHCA functions. He also thanked the APHCA Secretariat for their hard work before and during the Session.

The APHCA Secretary expressed his gratitude to all APHCA delegates, observers, his FAO colleagues, and especially the Organizing Committee, and the Government of Bangladesh for their full support and assistance towards the successful Session. The various sponsors for lunches and dinners were also thanked for their kind hospitality. The full list of participants, observers and sponsors can be found in the full report (APHCA: 00/10 of the 24th Session Report). The Secretary indicated that he would be in contact with everyone during the upcoming year to keep the initiatives discussed at this Session alive and to further the co-ordinated efforts of APHCA. E-mail and other IT systems being developed by APHCA would be the vehicle for the Secretary to communicate with the members, and he thanked the members for filling out the Computer Survey questionnaire. He wished everyone a safe trip home.

SUMMARY STATEMENT OF APHCA ACCOUNT
(TF AA 97 AA 89142 – 916700 - MTF/INT/005/MUL)

FUNDS RECEIVED	Amount in US Dollars
3051 Prior Years Contributions Received	1,332,865
3052 Prior Years Contributions Earned***	21,033
Total	**1,353,898**

Sums received from member countries during January 2000 - December 2000

3051 Contributions Received in 2000	62,033
3052 Interests Earned in 2000***	5,954
Total	**67,987**

Accumulated Interests Received into Account since APHCA Started: ($21,033 + $5,954)

Total	**26,987**

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

CASH BALANCE AS OF 1 JANUARY 2000

Prior Years Contributions up to end 1999 of (without interests)	1,332,865
Year 2000 Contributions (without interests)	62,033
Sub-Total	**1,394,898**
Prior Years Expenditures up to end 1999:	1,244,773 (minus)

CASH BALANCE : 1 JANUARY 2000	**Total**	**150,125**

EXPENDITURES (JAN 2000 - DEC 2000)

5011 - Salaries Professionals	0
5012 - Salaries 0-S	9,652
5013 - Consultants	16,000
5014 - Contracts	3,457
5020 – Overtime (computer/scanning work by casual workers)	1,726
5021 - Travel	12,182
5023 - Training	0
5024 - Expendable Procument	418
5025 - Non-Expendable Procurement	309
5026 – Hospitality (at the workshop/training)	670
5025 - General Operating Expenses	4,027
Sub-Total	**48,441 (minus)**
CASH BALANCE AS OF 1 JANUARY 2001 **Total**	**101,684**

APPROVED APHCA TRUST FUND BUDGET FOR 2001, EXPENDITURES AND BALANCES UP UNTIL JUNE 30 2001 (in Oracle)

(EXPRESSED IN US$)

TYPE	ACCOUNT	BUDGET	EXPENSES	BALANCE
TF AA 97 AA89142 916700 MTF/INT/005/MUL		**APHCA TF9167 Approved Budget**	**Up until 30 June 2001**	**Up until 30 June 2001**
FUNDS RECEIVED	3051 TF Contributions Received		-25,203	25,203
	3052 TF Interests Earned [1/]		-0	0
EXPENDITURE	5011 Salaries Professional [2/]	0	0	0
	5012 Salaries GS	10,000	61	9,939
	5013 Consultants	23,000	13,683	9,317
	5014 Contracts	5,000	0	5,000
	5020 Overtime	1,000	916	84
	5021 Travel [3/]	18,000	10,519	7,481
	5023 Training	5,900	3,000	2,900
	5024 Expendable Procurement	2,000	186	1,814
	5025 Non-expendable Procurement	5,000	4,639	361
	5026 Hospitality	1,000	0	1,000
	5028 GOE	5,000	1,641	3,359
TOTAL		**75,900** [4/]	**34,645**	**41,255**

Note:

1/ Interests will not be credited until the end of the year.

2/ No Professional Post for APHCA is filled using APHCA funds.

3/ Travel under the Oracle system includes all travel and not just travel by officials. This means that travel which was included under training/attendance at workshops, etc., in the old Finsys system has now been removed and placed under 5021 travel.

4/ Approved budget for the year 2000 was US$75,900 but with Bhutan joining in 2000 this amount increased and the expected contribution has increased to US$ 77,870.

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PROPOSED APHCA TRUST FUND BUDGET FOR 2002[1/]
(For Approval at 25th Session in Oracle Format)

INCLUDES ESTIMATED CONTRIBUTIONS TO APHCA BY FAO

(EXPRESSED IN US$)

Type	Account	APHCA TF 9167	FAO's estimated contributions	Total
TF AA 97 AA89142 916700 MTF/INT/005/MUL				
FUNDS RECEIVED	3051 TF Contributions Received			
	3052 TF Interest Earned[2/]			
EXPENDITURE	5011 Salaries Professional[3/]	0	82,000[4/]	82,000
	5012 Salaries GS	8,825	7,000[4/]	15,825
	5013 Consultants	8,990	10,000	18,990
	5014 Contracts	4,900	14,000	18,900
	5020 Overtime	1,000	0	1,000
	5021 Travel	12,000	10,000	22,000
	5023 Training	3,635	2,000	5,635
	5024 Expendable Procurement	1,000	1,000	2,000
	5025 Non-expendable Procurement	4,000	5,000	9,000
	5026 Hospitality	500	1,000	1,500
	5028 GOE	2,000	5,000	7,000
TOTAL		**46,850**	**137,000**	**183,850**

Note:

1/ If 8% increase in the annual membership fee is approved, all budget figures are subject to 8% increase.

2/ Interest is not credited until the end of the year. Interest accumulates and can not be spent unless members approve it.

3/ No Professional Post for APHCA is filled using APHCA funds.

4/ Includes 3-man months APHCA Secretary (P5), 3-man months Animal Production Officer (P4), Technical Assistant (G7) and Secretary (G4).

ADDITIONAL CONTRIBUTION TO APHCA TRUST FUND BUDGET FOR 2002[1/] (in Oracle)

ADDITIONAL FUNDS TO MEMBERS' CONTRIBUTIONS EXPECTED FOR 2002 BY MEANS OF A LETTER OF AGREEMENT FAO/APHCA

(EXPRESSED IN US$)

Type	Account	Budget	Expenses	Balance
TF AA 97 AA89142 916700 MTF/INT/005/MUL		TF9167		
FUNDS EXPECTED		20,000		
	3051 TF Contributions Received			
	3052 TF Interest Earned2/			
EXPENDITURE				
	5011: Salaries Professional3/	0		
	5012: Salaries GS	0		
	5013 : Consultants	0		
	5014: Contracts	0		
	5020: Overtime	0		
	5021: Travel	14,000		
	5023: Training	0		
	5024: Expendable Procurement	0		
	5025: Non-expendable Procurement	0		
	5026: Hospitality	1,000		
	5028: GOE	5,000		
TOTAL		**20,000**		

Note:

1/ The reason for this separate budget is the additional contribution (US$20,000) FAO will provide to APHCA through a LOA to organize a WTO / SPS workshop next year.

PROPOSED APHCA TRUST FUND BUDGET FOR 2003[1/]
(FOR APPROVAL AT 25TH SESSION IN ORACLE FORMAT)
(INCLUDES ESTIMATED CONTRIBUTIONS TO APHCA BY FAO)

(EXPRESSED IN US$)

Type	Account	APHCA TF 9167	FAO's estimated contributions	Total
TF AA 97 AA89142 916700 MTF/INT/005/MUL				
FUNDS RECEIVED	3051 TF Contributions Received			
	3052 TF Interest Earned[2/]			
EXPENDITURE	5011 Salaries Professional[3/]	0	82,000[4/]	82,000
	5012 Salaries GS	8,825	7,000 [4/]	15,825
	5013 Consultants	8,990	10,000	18,990
	5014 Contracts	4,900	14,000	18,900
	5020 Overtime	1,000	0	1,000
	5021 Travel	12,000	10,000	22,000
	5023 Training	3,635	2,000	5,635
	5024 Expendable Procurement	1,000	1,000	2,000
	5025 Non-expendable Procurement	4,000	5,000	9,000
	5026 Hospitality	500	1,000	1,500
	5028 GOE	2,000	5,000	7,000
TOTAL		**46,850**	**137,000**	**183,850**

Note:

1/ If 8% increase in the annual membership fee is approved, all APHCA budget figures are subject to 8% increase.

2/ Interest is not credited until the end of the year. Interest accumulates and can not be spent unless members approved.

3/ No Professional Post for APHCA is filled using APHCA funds.

4/ Includes 3-man months APHCA Secretary (P5), 3-man months Animal Production Officer (P4), Technical Assistant (G7) and Secretary (G4).

STATUS OF CONTRIBUTION (AS AT 12 JUNE 2001*)

(EXPRESSED IN US$)

MEMBER GOVERNMENTS	Outstanding as at 31/12/2000	Contribution due for 2001	Received up to 12/06/2001*	Outstanding 12/06/2001*
AUSTRALIA	19,860.00	9,930.00	0.00	29,790.00
BANGLADESH	23,136.00	6,020.00	2,315.00	26,841.00
BHUTAN	0.00	1,970.00	0.00	1,970.00
INDIA	0.00	9,930.00	0.00	9,930.00
INDONESIA	0.00	6,020.00	0.00	6,020.00
IRAN	18,524.94	6,020.00	0.00	24,544.94
LAOS	3,960.00	1,970.00	0.00	5,930.00
MALAYSIA	6,020.00	6,020.00	6,020.00	6,020.00
MYANMAR	1,970.00	1,970.00	1,970.00	1,970.00
NEPAL	(1,430.00)	1,970.00	0.00	540.00
PAKISTAN	6,020.00	6,020.00	0.00	12,040.00
PAPUA NEW GUINEA	2,953.29	1,970.00	2,928.29	1,995.00
PHILIPPINES	27,406.00	6,020.00	10,000.00	23,426.00
SRI LANKA	15.00	6,020.00	0.00	6,035.00
THAILAND	0.00	6,020.00	0.00	6,020.00
TOTALS	**108,435.23**	**77,870.00**	**23,233.29**	**163,071.94**

* Official reminders, dated 12 June 2001, from DG of FAO sent to all APHCA member governments stating the Status Contribution of each country.

SCALE OF CONTRIBUTIONS FOR 2002
WITHOUT AND WITH THE 8% INFLATION

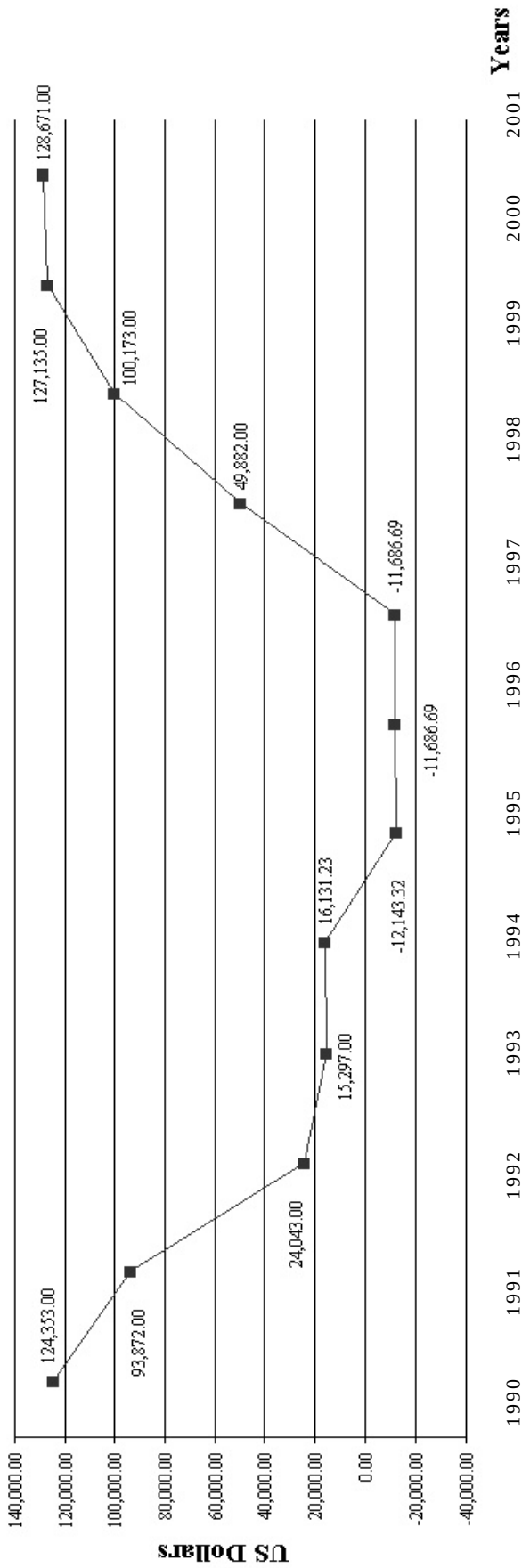
(EXPRESSED IN US$)

Country	Amount	Amount (plus 8% inflation rounded to nearest dollar)
Australia	9,930	10,724
Bangladesh	6,020	6,502
Bhutan	1,970	2,128
India	9,930	10,724
Indonesia	6,020	6,502
Iran	6,020	6,502
Laos	1,970	2,128
Malaysia	6,020	6,502
Myanmar	1,970	2,128
Nepal	1,970	2,128
Pakistan	6,020	6,502
Papua New Guinea	1,970	2,128
Philippines	6,020	6,502
Sri Lanka	6,020	6,502
Thailand	6,020	6,502
Total	**77,870**	**84,104**

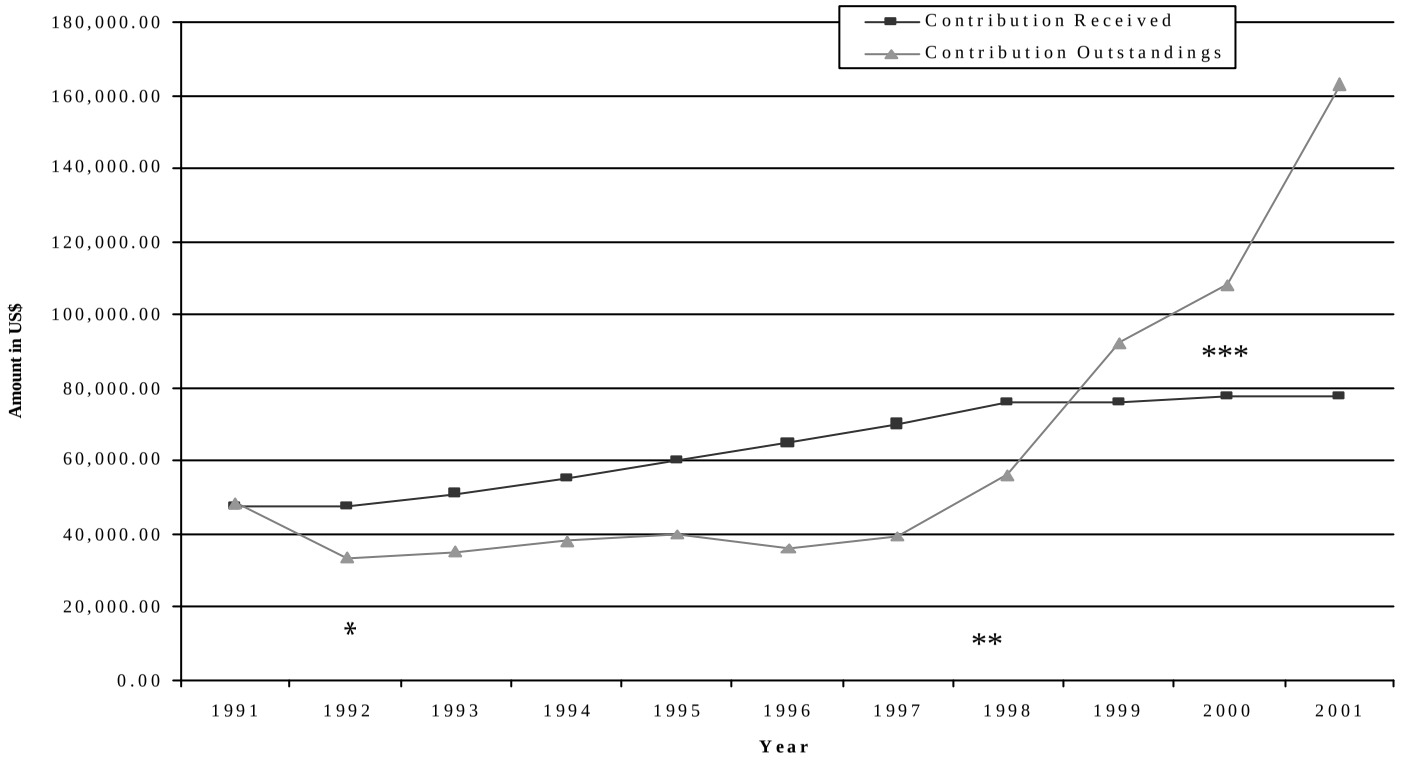
Members at the 24th Session decided to place on the agenda of the 25th Session and item for discussion and a vote to re-introduce the inflation index to the contribution scales.

Increased contribution was frozen at the 22nd Session (in Bangkok, 1997) because of the financial difficulties due to the Asian economic crisis.

YEARLY STATEMENT OF APHCA TRUST ACCOUNT (1990-2001)
(TFAA 97 AA 89142-9167 00 - MTF/INT/005/MUL)



CONTRIBUTION RECEIVED AND OUTSTANDINGS FOR THE APHCA TRUST FUND



* Introduced contribution scale to be increased yearly to cover inflation
** Contribution scale fixed (inflation increases dropped)
*** Bhutan jointed

SECRETARY'S REPORT

Introduction

This year was again a consolidation year for APHCA. Despite limited fund, APHCA was able to run some workshops/conferences with the help of co-funding from our partners. Over the last five years, OIE has helped by co-funding workshops coinciding with the annual session. Unfortunately, this year OIE was running it own Regional Meeting in Nepal in November 2001 and could not help with the APHCA Session. Fortunately, AGAH, AGAP and AGAD in Rome have supported the workshops associated with the Session. This sponsorship is very important in allowing members to attend the meeting. However, it is important to emphasize that as an inter-country meeting and under the Articles of Agreement signed by the joining APHCA member countries it is the sole responsibility of each individual country to make sure their delegates attend the annual sessions.

Some Issues

APHCA Funds to Purchase ELISA Kits

The use of the APHCA Trust Fund facility to purchase ELISA Rinderpest Test Kits for India (reported in the 24th Session) was not convenient. The Secretary had received advise from the Financial Department (TCDM) in Rome in January 1999 that the use of APHCA Trust Fund for the above was possible but when he visited the Financial Department in Rome in December 2000 (shortly after the 24th Session) it was explained that to do so would be difficult. He was advised of another much more tidy method. Any government can simply make a request to the FAOR to purchase such kits and detailing the approximate costs. The FAOR then contacts TCDM. TCDM requests the establishment of a Unilateral Trust Fund and the government then deposits the funds to make the purchase. The Procurement Department then makes the tender, purchase, delivery and insurance arrangement for the purchase. Any funds remaining in the account after the procurement is then returned to the government and the account closed. A service charge of 7% is leveled to cover the administrative costs. The Secretary does not wish to go into details here but just to say this is much simpler than trying to use the APHCA Trust Account. This procedure is now being followed by the Government of India.

APHCA Communication and Information

The APHCA homepage has been updated by our new APHCA contract employee CHANRIT UAWONGKUN who started with APHCA in February 2001. He is a graduated student from Charles Sturt University, Australia with a bachelor of Information Technology. A report of the APHCA information communication can be found in the attached papers APHCA: 01/7

APHCA Yearly Work

APHCA usually, with co-sponsors, ran a number of Workshops. Details of these can be found in Works Performed/Achieved during December 2000 to September 2001 and works to be continued and planned in October 2001. (APHCA: 01/5)

Very little progress was made on the three long-term proposals presented at the last Session. HOPE-A, FMD Control Unit in South Asia and ANGRASIA. The Secretary received an inquiry about HOPE-A, which indicated the concept was not well understood.

The HOPE-A programme was a draft initiative put to members and endorsed at the 24th Annual APHCA Session in Bangladesh in November 2000. There is no need for any APHCA country to apply to participate in HOPE-A. This is automatic for all member countries. The suggested organizational structure was for example only. It did not include all member countries because the organizational chart would have started to get too small to read. You will note that for example countries not even APHCA members are also shown in the organization chart. This was just to emphasize that the APHCA co-ordination/information unit, a central concept of HOPE-A, would be prepared to play a role in these countries if funds from these bilateral projects were given to APHCA to support the co-ordination unit.

Basically, HOPE-A was a concept designed to use the regional benefits of APHCA to start to play a coordinating and informational role within the region.

In recent years, the donor community has been moving away from funding regional organization and even international organization to carry out development project. The donors prefer to fund their own bilateral projects.

HOPE-A as mentioned above is an attempt to recognize this donor trend but to also encourage donors to fund the coordination/information function of APHCA.

The next step is to make contacts with existing poultry projects in the region and encourage them to contribute to APHCA to support this regional coordination role.

HOPE-A also proposed to assist any member country to develop and seek funding for poultry projects. As said earlier donors prefer individual countries to put up projects to them rather than to regional bodies. However since APHCA would be assisting countries right from the start there would be a better chance that funds for the APHCA coordination/information unit could be incorporated into the project budgets right at the start. As start has been made and a draft proposed for Bhutan can be found in APHCA 01/6.

If funds do start to flow into APHCA for HOPE-A work, APHCA members may need to consider using the option of the formation of a sub-commission account within the APHCA Trust Fund Account. However this need the approval of the FAO DG and the amount of funds need to be substantial before this would be considered necessary.

Statement on the Accounts

General Accounts

The accounts are presented in APHCA 01/4. The format this year fits the new oracle accounting system printouts and should make it easier to do the accounts in future years. The first page is the summary statement, and shows the effective cash balance as of January 2001. The actual cash balance is the effective cash balance plus the accumulated interest of 26,987 US dollars. Different budget papers for 2001, 2002, and 2003 follow this summary statement. Attempts have been made to estimate FAO's contribution to the running of APHCA.

The members will need to approve the proposed budgets for the biennium 2002-2003.

Scale of Contributions

The scale of contribution tables can be found in APHCA 01/4. The members will need to vote on whether to revert to the pre-1997 procedure of increasing contribution rates by 8% per year to keep APHCA viable and up with inflation.

Members will have to give some thought and discussion to the issue of non-contributing countries. The arrears as of 12 June 2001 were 163,000 US dollars and represent two full years of normal contribution. The arrears have been getting progressively worse over the last 10 years. This poses a number of problems;

1. Members that have not paid for the previous two years are no longer voting members under the constitution.

2. It does mean that it is difficult to prepare a realistic budget if contributions are not received. Under the new Oracle Budget revision system this means the effective budget for 2002-2003 have been reduced to only 46,000 while if all countries paid the budget would be 77,860.

If we do not find ways to resolve the situation the Secretary is of the opinion that APHCA 's budget will decline yearly to a stage of non-viability and we may have no choice but to fold.

General
Nipah Manual is in production.

HOPE-A Project Outlines
Some HOPE –A draft Project outlines have been produced for Bhutan. They can be found in APHCA 01/6. Countries wishing to use these outlines to seek donor bilateral funding are welcome to use them. More are in preparation

EC Request for Fund to HOPE-A
A proposal for EC funding to develop the HOPE-A concept was prepared and in being considered.

ND Manual
Commissioned

WORKS PERFORMED/ACHIEVED DURING NOVEMBER 2000 – SEPTEMBER 2001

1 Organized Meetings, Training, Courses, and Workshops:

1.1 Organized the 59th Executive Committee Meeting and the 24th Session of APHCA, Dhaka, Bangladesh, 6-9 November 2000.

1.2 Organized Regional Training in Meat Canning Technology in Chiang Mai, Thailand, during 7-11 November 2000. Participants from selected APHCA member countries were invited.

1.3 Participated in the "Preparation Workshop on M.Sc. (Veterinary Public Health-VPH) Programme" which was co-organized by the FU-Berlin and FVM-CMU. This Workshop was attended by representatives from Laos, Myanmar, Vietnam and several other institutions in Thailand (Chiang Mai University, Chulalongkorn University., Kasetsart University., Mahidol University., and Department of Livestock Development of Thailand (DLD). It was concluded that the M.Sc. (VPH) Programme will be operational at the Faculty of Veterinary Medicine of Chiang Mai University (FVM-CMU) starting from year 2002. Three Courses (2-year-course each) will be fully sponsored and students will be invited from APHCA member countries in South-east Asia during academic years 2002-2006.

1.4 Organized Regional Workshop on Water Buffalo Development in cooperation with the Japan Livestock Technology Association (JLTA), and DLD of Thailand, in Surin, Thailand, during 8-10 February 2001. The Workshop was well attended by 20 overseas participants from 18 APHCA and Asia-Pacific countries and 60 Thai participants. A wrapped-up Conclusion and Recommendations was adopted and appeared in the Workshop Proceedings which were distributed to all participants at the 25th APHCA Session and the Regional Workshop on Buffalo Development in Manila, during 24-26 September 2001.

1.5 Co-operated with AGAL in organizing the Regional FAO Brainstorm Workshop "Fostering the Policy Dialogue in Support of Equitable, Safe and Clean Livestock Farming", which was held in Bangkok, Thailand, during 19-22 February 2001. Participants from APHCA countries were invited.

1.6 Organized the FAO-APHCA/OIE Regional Workshop on World Trade Organization (WTO)'s Sanitary and Phyto-Sanitary (SPS) Agreement at the Faculty of Veterinary Medicine, Chiang Mai University (FVM-CMU), during 9-12 July 2001, with full co-operation of the Thai Department of Livestock Development (DLD), Free University of Berlin (FU-Berlin), and Japan Livestock Technology Association (JLTA). There were 30 participants and observers from 13 APHCA/Asia-Pacific countries.

1.7 Processed a Letter of Agreement (LOA) with FAO RAP. An allotment of US$ 20,000 will be available for APHCA to organize the Second Regional Workshop on WTO's SPS Agreement at the Faculty of Veterinary Medicine, Chiang Mai University,

Thailand, in year 2002 (in co-operation with OIE-Tokyo Office, FU-Berlin and the Thai DLD).

1.8 Cooperated with AGAL and organized "Workshop to Formulate Guidelines for the Implementation of Area-Wide Integration (AWI) of Specialized Crop and Livestock Activities" in Bangkok, Thailand, during 17-20 September 2001.

1.9 Organized the 60th Executive Committee Meeting and the 25th Session of APHCA together with the Regional Workshops on Preparing for and Managing Disease Emergency and Buffalo Development in Asia, in Manila, Philippines, during 24-26 September 2001.

2 Initiated and Assisted in FAO TCP Projects:

2.1 The TCP project - TCP/RAS: Regional (9-RAS-65) – "Strengthening Cross Border Disease Surveillance and Coordination" for APHCA member countries within the South-east Asian Sub-region is in the pipe-line awaiting for approval from FAO HQs.

2.2 The TCP project - Regional Asia (1-VII-RAS-078): "Improved Disease Recording Especially Regarding Transboundary Animal Diseases (TADInfo) in South-east Asia" for APHCA member countries within South-east Asian Sub-region was prepared and is now being processed in FAO HQs.

2.3 The Regional TCP project on Meat Inspection Training (TCP/RAS/….) (in Malaysia) is expected to be approved by the FAO TCP Unit HQs in September 2001.

2.4 Co-operate with AGAH/EMPRES in the on-going TCP project on Rinderpest Control and Eradication in Pakistan - TCP/PAK/8923.

3 Strengthen the APHCA Information Unit *(to be proposed as a five-year activity)*:

3.1 Scan and maintain valuable FAO and APHCA publications/papers in the APHCA electronic library. Some of these electronic documents have been recorded on CDs and diskettes for distribution upon request.

3.2 Develop and maintain the APHCA Mail Server (aphca-l@mailserv.fao.org) to serve APHCA Delegates/National Focal Points (NFPs) and external subscribers in order to promote electronic communications amongst the APHCA members and disseminate technical and useful information to all interested parties, in a timely manner. This server is now fully moderated by an APHCA network manager stationed at the APHCA Secretariat, attached to the FAO Regional Office in Bangkok.

3.3 Publish and distribute the electronic version of ASIAN LIVESTOCK both on the APHCA website and via e-mail.

3.4 Place the APHCA website on a permanent web hosting server (URL address: ***http://www.aphca.org***). *(Since September 2000.)*

3.5 Provide and distribute technical information, papers, and publications of FAO, APHCA and the others that are available within the APHCA Information Unit upon request, free of charge.

3.6 Create and maintain an ASCII text only website and e-mail for APHCA Delegates/National Focal Points.

4 Promote Membership of APHCA

4.1 Bhutan became the 15th member country of APHCA in 2000.

4.2 Invited Cambodia, China, Japan, Korea (Rep. of) and Vietnam to participate in the 25th APHCA Session and the attached Workshops, and encourage these countries to join in APHCA. *(A package introducing ways and means to join APHCA will be provided to these countries.)*

5 Cooperated Activities with International Organizations and Donor Agencies:

5.1 Contacted AGA in HQs and received funds from AGAH, AGAL and AGAP to help sponsor APHCA delegates and observers to attend the 25th APHCA Session and the attached Workshops.

5.2 Participated in the Preparation Workshop on M.Sc. (Veterinary Public Health-VPH) Programme which was co-organized by the FU-Berlin and FVM-CMU. This Workshop was attended by representatives from Laos, Myanmar, Vietnam and several other institutions in Thailand (Chiang Mai University, Chulalongkorn University, Kasetsart University, Mahidol University, and Department of Livestock Development of Thailand). It was concluded that the M.Sc. (VPH) Programme will be operational at the Faculty of Veterinary Medicine of Chiang Mai University (FVM-CMU) starting from year 2002. Three courses (2-year-course each) will be fully sponsored and students will be invited from APHCA member countries in South-East Asia during academic years 2002-2006.

5.3 Co-operate and act as Focal Point for the German Foundation for International Development (DSE) Training Courses/Programmes to be organized in Germany and in Thailand. Nominations from APHCA countries are given high priority.

5.4 Support the ILRI/CGIAR in organizing Workshops on "Identifying Priority Areas for International Action for the Development of Livestock Technologies" which were organized in Bangkok, Thailand (South-east Asia Workshop) on 30 April and 1 May 2001; and in Hyderabad (South Asia Workshop), India, on 4 and 5 May 2001, respectively. Participants from APHCA countries (in South-east Asia and South Asia) were invited via communications through the APHCA Secretariat.

6 Other Works to be Continued and Planned for September 2001 – Year 2002

6.1 In line with the recommendation made at the FMD Workshop in Nepal and in response to the request made by the Delegate of India during the 56th Executive Committee Meeting in Sri Lanka in February 1999 to have a strategic paper/plan on regional FMD control and eradication in the South Asian region, a FMD concept paper "SA-FMD" was presented at the 24th APHCA Session in Dhaka, Bangladesh, in November 2000. Follow-up will be made at the 25th APHCA Session. (APHCA: 01/6-C.)

6.2 Continue to support the FAO-executed/AusAID-funded country project - GCP/PHI/041/AUL – "Control of Foot and Mouth Disease Evaluation in the

6.3 The TCP project for Sri Lanka - TCP/SL/0169 – "Improved Services to the Livestock Sector" was recently approved and will be operational in due time.

6.4 The TCP project - TCP/RAS/0071: "National Demonstrations on the Application of the Lactoperoxidase System of Milk Preservation" for selected APHCA member countries in South and South-east Asia is in its pipe-line and is with the FAO HQs. awaiting for approval.

6.5 The country TCP project TCP/BHU/0166 (A) – "Assistance with Improving Food Security and Rural Incomes by Increasing Pig Production" for Bhutan was recently reviewed and is in the pipeline for approval from FAO HQs.

6.6 The joint project under approval on "Meat Commodity Diversification and Upgrading of Meat Processing Technologies in Asia and Pacific" (joint funding between the Governments of the Philippines, Myanmar, Bangladesh, and CFC, CIM/GTZ and FAO TCP) is expected to be approved and operational in due time.

6.7 ∗ Follow-up on the concept papers (as Regional priorities) which were presented at the 24th APHCA Session in 2000:

- 6.7.1 HOPE-A *(APHCA: 01/6-A.) (For information, the project paper for Bhutan was presented and the papers for Indonesia and Myanmar were prepared, while the one for Laos is in the process.)*
- 6.7.2 Foot and Mouth Disease Control and Eradication in South Asia - SA-FMD *(APHCA: 01/6-C.)*
- 6.7.3 Animal Genetic Resources (ANGRASIA) *(APHCA: 01/6-D.*)

6.8 A concept paper – Buffalo Recording and the Possible Role of APHCA - was prepared *(based on the information/conclusion and recommendations made at the Regional Water Buffalo Workshop held in Surin, Thailand in February 2001; and the Workshop on Development Strategies for Genetic Evaluation for Beef Production in Developing Countries held in Khon Kaen, Thailand in July 2001).* This concept paper will be presented during the Regional Workshop on Buffalo Development (attached to the 25th APHCA Session), and further discussion will be made*. (APHCA: 01/9-F.)*

6.9 Co-organize the FAO-APHCA/OIE/DLD Regional Workshop on Bovine Spongiform Encephalopathy (BSE) Diagnosis and Surveillance in Bangkok, Thailand, during 19 – 22 November 2001. A maximum of 20 participants will be accepted from pre-selected

APHCA/Asian countries (criteria agreed upon by all the co-organizers). The recipient governments who nominate their participants will be responsible for all the incurred international travel costs (home country to Bangkok, Thailand and return). FAO-APHCA and OIE will provide three experts from Switzerland to run the Workshop, and pay DSA and terminal expenses to the overseas participants; while DLD of Thailand will cover costs of logistics and meals and form an organizing committee to organize the Workshop.

6.10 The Second Joint Workshop with OIE, the Faculty of Veterinary Medicine, Chiang Mai University, Thailand and the Faculty of Veterinary Medicine, Berlin University, Germany on Food Safety and WTO's SPS Agreement will be organized in 2002 *(using FAO RAP's funds provided under the LOA with APHCA).* Participants from APHCA/Asia-Pacific countries will be invited.

6.11 Organize Regional Training in Meat Inspection in Kuala Lumpur, Malaysia, under the recently approved FAO Regional TCP project on Meat Inspection Training.

6.13 The FU-Berlin and FVM-CMU's M.Sc. (Veterinary Public Health - VPH) Courses will be opened for students from South-east Asian countries and proposal for funding from EU has been made to cover a 6-year activity/sponsorship starting from year 2002 (approval is expected in due time). APHCA shall provide necessary logistic support and act as Focal Point for nomination/recruitment of sponsored students from its member countries.

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* *Strong endorsement and support from the APHCA member countries to possible donors for funding is needed.*

TCP funding may be a good start to go for the regional projects in the various fields of activities proposed.

Do the APHCA members believe these ideas/activities are of high priority for their countries (and the Region) and that governments will give their full support including, if possible, some financial and logistic inputs ?

HOUSEHOLDER POULTRY ENTERPRISE IN ASIA
(HOPE-A)
= BHUTAN =

(A Draft Proposed as an Example)

Country Specific Project Document
Prepared by : R.G. Alders
July 2001

A. General Background

A1. Small farmers in Asia and the role of livestock

Almost one third of the world's population consists of Asian farming households. Across the continent, hundreds of millions of families make at least part of their living from small-scale agriculture. Among developing countries in the region, the proportion of the population engaged in agriculture lies between 42 % in Indonesia and 96% in Nepal. Most of these farming families are small holders. In Bhutan, the share of small holders in the total population is approximately 85 %.

Small farmers are the bedrock of Asian economic development. Because of the importance of small farmers as producers of each nations' food and industrial raw materials, as consumers of goods and services and as citizens, success in economic development largely hinges on the viability of smallholder agriculture and the vibrancy of social, economic and cultural life in rural areas.

Small farmers generally practice mixed farming and most raise small stock. By producing and raising a diversity of products and animals, farmers spread their risks decreasing the impact of lowered production in one of their endeavours.

To date over 1,300 livestock breeds have been identified in Asia, representing approximately 30 % of the world's known breeds. The majority of householders in Asia live in rural environments and raise poultry, usually chickens that are relatively cheap to buy and require very few inputs. Asia is home to 46 % of the world's chickens and 85 % of the world's ducks. In Bhutan, village chickens are kept throughout the country and constitute approximately 86 % of the national poultry flock.

In many cases, little or no supplementary feeding is given and chickens roost in trees or the owner's home. Village chickens in particular fulfil a wide range of functions, e.g., the provision of meat and eggs, food for special festivals, offerings for traditional ceremonies, pest control and petty cash. They require minimal external inputs, minimal human attention and cause minimal disruption to the environment. Village poultry are also the livestock most likely to be owned and cared for by women and children. Apart from chickens and ducks, other poultry raised on a small scale include pigeons, quails, turkeys and pheasants.

A2. Food security

Food security has been defined in a number of ways, but in any discussion on food security it is inferred that all people at all times need and deserve access to enough safe and nutritious food to maintain a healthy active life. Food security in practice, however, depends on activities carried out at various levels of aggregation such as the global, regional, national, household and individual. At the national level, food security has often been equated with the maintenance of a balance between availability of food and requirements for adequate nutrition (based on assumed needs per individual), known as the food balance. Food balance at any level, however, is not an adequate criterion for defining food security, because poor distribution and lack of purchasing power means not all of the national population would always have access to sufficient food, even though the food balance may be adequate.

Household food security relates to the ability of a household to meet its requirements from a variety of activities including food production, income generation, and gifts or assistance that can be used to provide the household with food. However, meeting household needs does not ensure individual food security because within a household food distribution may be based on social status, age and sex, rather than need, which makes estimating individual food security an extremely complex task.

When household and individual food security are lacking, malnutrition results. Asia and the Pacific as a whole has about 70 % of the world's severely stunted, underweight and wasted children. In 1998, it was estimated that 24 % of Bhutanese children were malnourished. This situation has wider implications for development because protein-energy malnutrition in children below the age of 5 years inhibits their growth, increases their risk of illness, affects their mental development, and reduces their subsequent school performances and labour productivity.

Food security is achieved efficiently when people produce or have access to affordable, high quality food. It is generally acknowledged that poultry production is the most efficient and cost-effective way to increase the availability of high-protein food. Eggs can be stored under village conditions more easily than most foods of animal origin. For decades, the egg has represented the standard reference food, perfectly balanced, containing most essential amino acids, large amounts of calcium, phosphorous, magnesium, iron and zinc. It represents one of the main sources of vitamin A and of vitamin B complex. One egg provides approximately 11.5 % of daily protein requirement and 5 % of daily energy requirements.

Food security is also more than access to an adequate quantity of good quality food. The available food must also be culturally acceptable. This is of particular importance in Bhutan where the majority of people are Buddhist. An infertile egg is acceptable food even to strict Buddhists.

Sustainable food security is linked directly to sustainable livelihoods. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintains or enhances its capabilities and assets both now and in the future, while not undermining the natural resource base.

Sustainable food security is also dependent on the ability of agricultural production systems to cope with new stresses and strains, new diseases and environmental constraints. The greater the degree of genetic diversity within livestock species, the more likely it is that the species as a whole will be able to survive challenges. Commercial breeds, especially commercial poultry breeds, have been highly selected for a few production traits and consequently have lost much of their genetic diversity. It is essential that the remaining indigenous poultry breeds be recognised as vital genetic resources and strategies put in place to ensure the survival of these local breeds.

Bhutan is not self-sufficient in food production. The food deficit measured in terms of production as a percentage of requirement was estimated to be around 35 % in 1996. It is expected that growth in agricultural output will lag behind population growth rate during the period 1997-2002.

Although social and human health statistics have improved over the past 10 years, there are still unacceptably high levels of malnutrition and stunting in children. Selected human health indicators for 1998 are listed –

- The infant mortality rate per 1000 live births was 70.7
- The child malnutrition rate (weight for age) was 24.2 %
- 23 % of children delivered had low birth weights
- 73.2 % of mothers suffering complications during pregnancy were anaemic.

While there are no obvious differences in the economic situation between the different regions in the country, there are regional differences in the nutritional status of children. In 2000, the nutritional status in the eastern regional was found to be comparatively poor where there was a chronic shortage of nutritious food. About 48 % of children in the east were stunted, 35 % in the central region, 31 % in the south and 34 % in the west.

A3. Prior and ongoing assistance to poultry development

Previous projects involving poultry:

- Improving poultry production, Bhutan. UNDP/FAO Project BHU/76/001.

- Poultry Development – Establishment of a Central Poultry Breeding Farm, Bhutan. FAO Project BHU/82/012.

Ongoing projects of relevance to this proposal:

- Development of a Newcastle disease (ND) vaccination program for village chickens in rural Bhutan using locally produced thermostable live vaccine. Small project funded by the Australian Agency for International Development (AusAID; New Delhi office). This project has supported: the local production of the thermostable I-2 ND vaccine at the Veterinary Vaccine Unit at Serbithang; field trials in Gedu and Gelephu in the south and Khaling in the east; and the preparation of a pilot extension package on the control of ND in village chickens.

- Completion of breed surveys project. A subcomponent of the FAO Programme for the documentation of Farm Animal Genetic Resources in Asia. Although this programme focuses on ruminants, similar approaches could be used to document indigenous poultry genetic resources.

A4. Results and lessons learnt from poultry projects

To date, government livestock and extension services have focused on the distribution of imported commercial breeds to small farmers in an attempt to improve production. Observations indicated that the distribution of 1 or 2 birds per household has had little impact. Where 200 to 250 birds where received by farmers, production was initially good but there were problems with feed supply and the unwillingness of farmers to cull birds at the end of their productive life (because of their Buddhist beliefs).

The government supports two chicken breeding farms that produce White Leg Horns and Rhode Island Reds. Farmers generally prefer the latter breed because of its red colour.

The poultry development program did not meet with success because:

- Hens of commercial breeds did not go broody;
- Too many farmers were asking for a low number of birds;
- There were very few commercial enterprises at the district (*Dzongkhag*) level;
- Poultry rations were in short supply and of low quality;
- Buddhist farmers were unwilling to cull old or low producing birds;
- Adequate veterinary and extension services were not available for small scale poultry producers; and
- Poultry farm production was below demand.

A5. Towards community livestock projects

To achieve a successful outcome, the project must build on what already exists. The project will work not only with the types of poultry that have been a feature of rural life in Asia for centuries, but it will also explore and document the wealth of ethnoveterinary knowledge possessed by poultry farmers.

Farmer participation will be sought from the outset to ensure that interventions respond to local priorities and are appropriate to local circumstances. Local farming systems will be investigated together with the social and cultural context in which poultry production is carried out. Gender sensitive, participatory methodologies will be employed to promote and support community-based food security and nutrition programmes that encourage self-reliance.

Time will be required to work with farmers in the field. Time and resources will also be required to enable the veterinary and extension services to integrate participatory methodologies into their daily routines. For this programme to be successful in the long term, it will work with the relevant government department and training institutions to ensure that subsequent generations of professional staff use participatory gender-sensitive methodologies as a matter of course.

B. Project Rationale

B1. Problems to be addressed

a) The development problem

- A lack of adequate quantities of safe and nutritious food for the most vulnerable households to maintain healthy and active lives.

b) Problems which will be directly addressed by the programme

- Inadequate production by local and commercial breeds of chickens in the eastern and southern regions of the country.
- Lack of understanding and appreciation of farmers' objectives with regards to small-scale poultry production.
- Lack of appreciation of the worth of indigenous chickens.
- Lack of veterinary staff trained in poultry production and health issues.
- Lack of field staff trained to diagnose and treat poultry diseases and production problems in a cost-effective manner.
- Lack of understanding of clients' preferences for different types of poultry products and marketing options.

B2. The situation expected at the end of the project

At the end of the project :

- Village chicken production in participating households in the east and south of the country will increase by at least 100 %.
- The indigenous poultry breeds will have been identified and their beneficial characteristics determined.
- Key government and private decision makers will have better understanding of the contribution that village poultry can make to improved household and community food security.
- Veterinary and extension services staff will use participatory and cost-efficient techniques to assist village poultry farmers in a process of continuous improvement.
- Veterinary services will have a veterinarian qualified in avian pathology.
- A field guide will have been prepared that will assist the diagnosis and cost-effective treatment of disease and production problems.
- Veterinary and extension services staff will have a better understanding and appreciation of farmers' objectives.
- The optimum mix of indigenous and commercial breeds of chickens will have been determined for farmers who wish to specialise in egg production.
- Buyer preferences and marketing strategies will have been determined to enable farmers who wish to sell products to choose the option that gives the best returns on investment.

B3. Project beneficiaries

The beneficiaries of the project will be vulnerable rural households who raise or wish to raise poultry in the east and south of Bhutan. Women and children, in particular, will be targeted.

B4. Project strategy

This project will build on experience gained in earlier projects. During the five years of the project, emphasis will be placed on the training of key national staff within the veterinary and extension services as well as within the relevant training institutions. Capacity building of these staff will occur at the same time as pilot field activities commence to assist with the development of appropriate participatory techniques and receive feedback directly from farmers with regards to project activities.

The productivity of locally available resources will be studied and enhanced. The use of local breeds of chickens rather than commercial breeds alone will be studied. Investigations into the control of ND in the project areas will continue. This will include refinements in the production, distribution and use of locally produced thermostable ND vaccine once the AusAID-funded project comes to a close in September 2001.

B5. Technical scope of the programme

This project will use a range of physical and social science techniques to support the development of holist and sustainable householder poultry activities. These techniques will facilitate:

- Quantitative and qualitative data collection dealing with poultry production, farmers' knowledge and perspectives and consumer preferences.
- Reliable, cost-efficient veterinary diagnostic techniques to assist with the diagnosis of poultry diseases.
- The development of cost-efficient disease control programs.
- Genetic studies and conservation of local poultry breeds.
- Preparation of effective and cost-efficient extension materials and methodologies.
- The determination of farming systems and sustainable livelihoods from the farmers' perspectives.
- Post-graduate training of Bhutanese nationals in avian pathology, poultry production and extension methodologies.
- In-service training of Bhutanese nationals in the participatory methodologies including farming systems research, action learning and the sustainable livelihood approach.

B6. Institutional arrangements

The Programme Advisory Committee will consist of the National Co-ordinator, representatives of the participating Bhutanese institutions, Donor representatives and the Household Poultry Enterprise in Asia (HOPE-A) Project Manager. The National Co-ordinator will represent Bhutan at the regional level (Animal Production and Health Commission for Asia and the Pacific HOPE-A Steering Committee).

B7. Reasons for technical assistance from FAO

FAO is well placed to bring together the technical expertise required to support the activities outlined in this proposal. The Organisation has been supporting the development of family poultry for several decades and is currently doing so in many countries via its food security programme.

B8. Special considerations

a) People's participation

The participation of all stakeholders will be facilitated at all stages of the project. Particular attention will be given to ensuring effective participation of both male and female farmers in project activities.

b) Non-government organisations

Non-government organisations (NGOs) are not abundant in Bhutan. Where relevant, collaboration with NGOs will be sought.

c) Integration of women in the programme

In Bhutan, the majority (62 %) of women in the labour force are involved in agriculture. Unlike many other countries in the region, Bhutanese women have an important and visible role in agricultural and food production. Studies in selected areas of the country have shown that women have greater responsibility for livestock activities. In the north of Bhutan, marketing of livestock products in the neighbourhood is usually conducted by women and the funds generated are used mostly to purchase food for their households. However, there are indications that the degree of involvement of Southern Bhutanese women in marketing is lower compared to women in the north.

Among the strategies recommended by the Eighth Five Year Plan in Bhutan, the improvement of women's social and economic status was to include vocational and skill development training. This would include the improvement of women's knowledge about backyard poultry production.

The World Food Program of the United Nations estimates that female literacy in Bhutan is 19%, less than half that for men which stands at 45%. Many rural women have not received formal education and speak only local languages. Project meetings, training sessions, etc. will be conducted using the appropriate level of language and non-formal methods of training, especially where illiteracy is common. Such methods may include drama, role plays, song, dance, visual aids and "learning by doing."

A range of approaches will be used when implementing project activities to facilitate the participation of women:

- Training sessions will be done in short, regular bursts and not run for the entire day and will be located in the village rather than at provincial training centres;
- Training methodologies will take into account the high levels of illiteracy among rural women. Visual aids for training will be used where possible, but this type of

methodology is more difficult for veterinary training, which involves recording medicines and dosages;

- Information will be imparted in short training sessions over a longer time period to make it more easy to remember;
- When new information is introduced which relates specifically to women's areas of work, it is particularly important to ensure that women are given control over this information. Veterinary training is one such area, because women are responsible for small livestock. Where this training and information is provided to men, there is a risk that women will lose control over areas formerly considered female;
- Female extension workers will be involved as much as possible. They are important role models and increase women's self-esteem and the awareness that women are intelligent, particularly when they approach village women on the same level, and not as alien city women. Female extension workers are a significant influence on the participation of women in extension and support activities. Field workers have noted that female extension workers managed to work effectively in a way that still allowed them to behave in a manner considered appropriate for women. In this way, they were respected and listened to by all members of the community;
- The number of female extension workers will be increased. The lack of female extension workers is a setback. The numbers of women currently in agricultural higher education institutions is low.

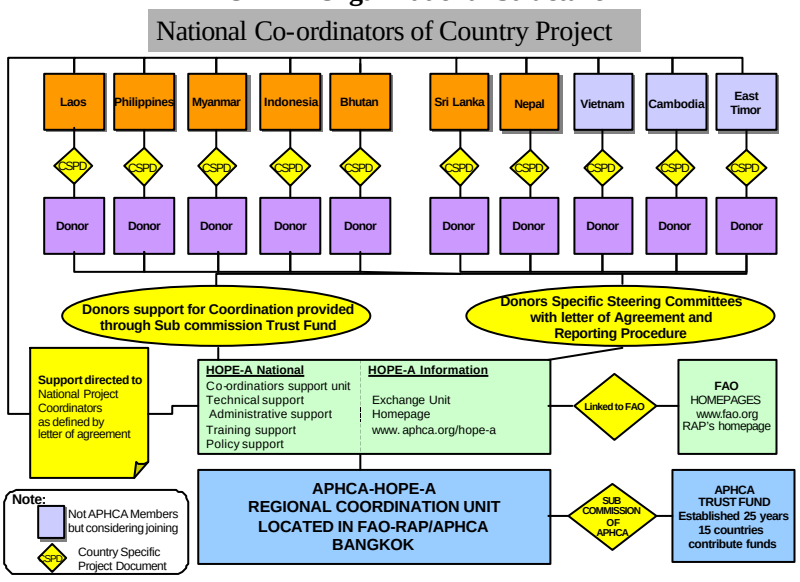
B9. Co-ordination arrangements

a) General remarks on co-ordination APHCA

Overall coordination of the project will rest with the Animal Production and Health Commission for Asia and the Pacific (APHCA) HOPE-A Regional Coordination Unit located in FAO-RAP/APHCA, Bangkok. The Project Manager will be based within the Animal Production and Health Commission for Asia and the Pacific (APHCA) in Bangkok and will supervise a number of country sub-projects.

HOPE-A will be an active enterprise, of and for APHCA member countries. It will aim to promote joint action, co-operation, co-ordination and information exchange among the members for better householder poultry production.

HOPE A Organizational Structure



C. Development Objective

To improve food security and alleviate poverty of householders in eastern and southern Bhutan, by means of sensible interventions, involving participatory decision-making focussing on sustainable, affordable village poultry production.

D. Immediate Objectives, Outputs and Activities

Objective 1

To improve food security and alleviate poverty of householders by increasing the production of poultry in rural areas of eastern and southern Bhutan.

Output

1. Poultry numbers at the household level increased by at least 100 % in participating households.
2. Productivity of village chickens increased in terms of egg production.
3. Household access to high quality protein increased in participating areas.
4. Open communication between veterinary and human health services reinforced.

Activities

1. Newcastle disease control activities initiated with support from AusAID will continue in the east and south of the country.
2. Baseline data collection on issues relating to rural poultry production, ethnoveterinary knowledge and farmers priorities will be done in order to identify the key issues to be dealt with by the project.
3. Develop appropriate technological interventions and extension materials in response to farmers' priorities using participatory and action learning methodologies.
4. The possible role of the farmer field schools in improving rural poultry production will be investigated and schools initiated if the concept is found to be relevant in the Bhutanese context.
5. Determine the optimum mix of indigenous and commercial chickens at the household level for farmers who wish to specialise in egg production.
6. A field guide will be prepared and training sessions held to assist field staff with the diagnosis and cost-effective treatment of the problems that appear in village poultry.
7. Develop links with mother and child nutrition programmes operating in the east and south of Bhutan. Veterinary staff will work with Human Health workers to ensure that the increased numbers of chickens and eggs result in an increased consumption of this high quality food by rural households.
8. A study tour to Bangladesh Small Holder Poultry Development Project will be conducted. Tour members will include veterinarians, extensionists and farmers.

Objective 2

To conserve the natural resource base with special emphasis on the conservation of genetic diversity of local poultry breeds.

Output

1. Local breeds of poultry identified.
2. Characterisation of local poultry breeds in terms of production potential and hardiness commenced.
3. Key government and private decision makers will have a better understanding of the contribution that village poultry can make to improved household and community food security.

Activities

1. Establish links with the FAO Programme for the Documentation of Farm Animal Genetic Resources in Asia.
2. Conduct initial survey work to determine the number of local poultry breeds in existence.
3. Compile local knowledge available on each breed.
4. Commence production and hardiness studies on those breeds most preferred by farmers.

Objective 3

To improve communication between farmers and government services involved with poultry production.

Output

1. Veterinary and extension services staff will have a better understanding and appreciation of farmers' perspectives and priorities.
2. Farmers will understand the services offered by government services and be aware of whom to consult when they need to seek advice.

Activities

1. Veterinary and extension services staff at all levels will receive training in participatory methodologies (including farming systems research, action learning and the sustainable livelihood approach).
2. Veterinary staff will receive training in village poultry production that will emphasise the benefits of poultry production in comparison to ruminant species.
3. The range of communication media used by veterinary services will be expanded to include radio and printed media.
4. Regular meetings between government personnel and farmers will become institutionalised such that farmers are able to provide feedback on activities being supported by the project.

Objective 4

To increase the capacity of government staff to offer cost-effective advice to village poultry farmers.

Output

1. Staff trained at the post-graduate level in avian pathology, poultry production and extension methodologies.
2. Field staff trained in the use of participatory and action learning methodologies, baseline data collection, and the diagnosis and cost-efficient treatment of poultry disease and production problems.
3. Reliable field data available concerning the prevalence of avian diseases.
4. Prevention of diseases and improved poultry husbandry practices performed routinely.
5. Farmers' receiving relevant and cost-efficient treatment of their poultry.

Activities

1. One Bhutanese national to complete a Masters degree in avian pathology.
2. One Bhutanese national to complete a Masters degree on the improvement village egg production with the field work to be done in Bhutan.
3. One Bhutanese national to complete a short course or post-graduate diploma in livestock extension.
4. Workshops dealing with participatory methodologies, baseline data collection, field diagnosis and treatment of poultry diseases and production constraints to be held in the south and east of Bhutan.
5. Refresher courses for field staff will be held on an annual basis. In the initial phases of the project these courses will also serve to provide feedback to project leaders about the effectiveness of early training and how project activities may be improved.

Objective 5

To improve the marketing of village poultry products.

Output

1. Village poultry producers informed about the preferences of consumers such that they are able to produce products that are guaranteed a market.
2. Importation of poultry products reduced.

Activities

1. Current marketing practices will be investigated and documented.
2. A consumer survey will be conducted in urban, peri-urban and rural settings in the east and south of Bhutan.
3. The results of the above activities will be compiled, analysed and discussed with farmers. Strategies to enable farmers to benefit from the information will be developed.
4. The marketing strategies employed by the Bangladesh small holder poultry development project will be studied during a study tour.

E. Inputs

E1. Government inputs

National Co-ordinator
Office space

E2. Donor inputs

a) Experts and duty travel

The Project Manager will be based within the Animal Production and Health Commission for Asia and the Pacific (APHCA) in Bangkok and will supervise a number of country sub-projects.

b) International consultants and sub-contracts

- Poultry health specialist (ND control in village chickens)
- Sociologist (gender, social and cultural issues)
- Extension specialist (communication, participatory technologies)
- Poultry production specialist (genetics, characterisation of local breeds, husbandry and production)
- Rural Marketing specialist

c) Regional consultants

Consultant from the Bangladesh Smallholder Livestock Development Programme.

d) National experts and consultants

Co-ordinator of ND control programme

e) General operating expenses

- Administrative support
- Communication costs
- Production and distribution of media materials
- Support costs for APHCA Information Unit
- FAO Management Fee

f) Equipment

- Technical equipment – expendable
- Technical equipment - nonexpendable
- Office equipment - computer, printer, fax and photocopier

g) Training

It is expected that this project will be followed by additional phases. Training forms a large component of this project to ensure that sound foundations are constructed onto which subsequent phases can be built.

Training will include:

- Masters degrees in avian pathology and poultry production. Where appropriate these degrees will be done as sandwich courses to enable the research component of the degree to address local priorities.
- A short course or post-graduate diploma in livestock extension.
- In-service training in participatory methodologies will be conducted.
- A study tour of the Bangladesh Smallholder Livestock Development Programme.

F. Risks

F1. Community

- Relevant NGOs do not exist.
- Participatory planning, implementation, monitoring and evaluation processes and gender and development principles not used by all stakeholders in project activities.
- Staff and community have insufficient readiness to use participatory processes.
- Dependency syndrome will exist.
- Natural disaster.

F2. Newcastle disease control program

- Loss of master vaccine seed/working seed.
- Failure of egg supply.
- Breakdown in cold chain: poor maintenance.
- Poor distribution systems for vaccine.
- Funds recovered deposited into consolidated revenue and are lost to the control program.

F3. Extension

- Chicken owners unable to pay for the Newcastle disease vaccination.
- Disinterested extension officers and/or other agencies.
- Lack of senior-level government support.
- Poor/ineffective extension services.
- Extension methods and/or materials inappropriate to stakeholder needs.
- Extension personnel overloaded with work.
- Extension materials not relevant and/or appropriate to target populations.
- Extension program ineffective.
- Poor marketing infrastructure for chickens and eggs leading to oversupply at village level.
- Inadequate numbers of extension personnel available.
- Stakeholders not interested in creating or maintaining communication mechanisms and linkages.
- HIV/AIDs.

F4. Policy issues

- The Royal Government of Bhutan fails to create facilitating policy environment.
- Countries continue to use exotic genetic materials indiscriminately without determining the long-term consequences of their use, and without properly evaluating the role indigenous genetic resources should play in the poultry development strategies.

F5. Project management

- Suitable personnel not available to be seconded by their home organization to work as the National Coordinator.
- Employment policies leading to non-replacement of key staff if they leave.
- Key staff will not be released for training.
- Government agencies not willing to be involved in linkage activities.
- National coordinators lack adequate financial management and accounting skills or resources to prepare and acquit accurate financial claims.
- Recipient government unable to provide necessary project office space and unable to expedite the provision of telecommunications and provision of utilities.
- Adequate communication mechanisms do not exist or will not be used.

G. Prior Obligation and Prerequisites

The salary of the National Co-ordinator and office space is to be guaranteed by the Royal Government of Bhutan.

The Royal Government of Bhutan should confirm its commitment to the development of rural poultry and the creation of a policy environment that will facilitate the sustainability of the programme beyond the life of this FAO project.

H. Project Reporting

H1. Reporting

Formal Reporting to FAO and Donor Agency

- Quarterly activity reports will be submitted to the Project Manager by the National Co-ordinator.
- Activity reports and financial acquittals will be submitted to FAO and the donor agency every six months.
- Annual reports and financial acquittals will also be submitted to FAO and the donor agency.

Communication with Partners

- A national newsletter will be circulated within Bhutan every six months.
- Communication with other member countries involved with HOPE-A will be facilitated by posting all reports and publications on the APHCA Information Unit website.

H2. Reviews and evaluations

a) Meetings of the Programme Advisory Committee

Annual meetings of the Programme Advisory Committee will be held. All relevant reports and publications will be submitted and circulated prior to the meeting.

b) Mid-Term Review

A mid-term review will be conducted after two and a half years by a multidisciplinary team including a poultry specialist (with expertise in village poultry production), a sociologist (with expertise in gender analysis) and a livestock economist.

c) In-depth Evaluation

A major evaluation by a multidisciplinary team will be completed within the last six months of the project.

HOUSEHOLDER POULTRY ENTERPRISE - ASIA (HOPE-A)

Introduction

Improving poultry production at the householder level will improve food security and assist with poverty alleviation. The majority of householders in Asia live in rural environments and raise poultry, usually chickens which are relatively cheap to buy and require very little inputs. In many cases, little or no supplementary feeding is given and the birds roost in trees or the owner's home. Village chickens in particular fulfil a wide range of functions, e.g., the provision of meat and eggs, food for special festivals, offerings for traditional ceremonies, pest control, and petty cash. They require minimal external inputs, minimal human attention and cause minimal disruption to the environment. Village poultry are also the livestock most likely to be owned and cared for by women and children. Other poultry raised on a small scale with similar requirements are pigeons, quails, turkeys, ducks and pheasant.

HOPE-A is designed to assist and encourage village poultry production in Asia including intensification if the conditions are right, with the aim of assuring food security and income generating in case of surplus production, benefiting the rural poor, especially woman and children.

It is proposed that **HOPE-A** be established as a sub-commission of APHCA, as an initiative of the members at their 25th Anniversary Session to be held in Bangladesh in November 2000.

The objectives of APHCA have always included the development of livestock as an integral part of agriculture. The strategy for achieving this goal has been founded on collective self-reliance and mutual assistance between the developing countries, and this successful model will be followed with **HOPE-A.**

"A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintains or enhances its capabilities and assets both now and in the future, while not undermining the natural resource base." From DFID Sustainable Livelihood Approach"

HOPE-A will therefore be an active enterprise, of and for APHCA member countries with the specific aims of:

- promoting joint action, cooperation, coordination and information exchange among the members for better householder poultry production;
- overcoming existing constraints to householder poultry production in Asia to the extent achievable;
- developing appropriate agricultural education and research that relates to Asian householder poultry systems;
- seeking cooperation and assistance from relevant UN and other international and intergovernmental organizations to help implement **HOPE-A** activities;
- carrying out the above functions so as to raise the output and income of farmers, by developing profitable village poultry production.

For **HOPE-A,** poultry production assistance has a broad meaning. It includes research, development, extension, training and support activities relevant to the production, marketing and management of village poultry in Asia.

HOPE-A will not directly undertake all the above-mentioned activities but will commission groups in Asia such as private, public and non-governmental organizations and individuals to carry out this work under umbrella partnership agreements.

HOPE-A, as a legitimate sub-commission of APHCA, will operate within the framework of the APHCA constitution, established 25 year ago, which stipulates management by the members and annual international audit of accounts. APHCA presently consists of 15 member countries; Australia, Bangladesh, Bhutan, India, Indonesia, Iran, Laos, Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Sri Lanka, and Thailand. Any country, which is a member of FAO, can easily join APHCA and therefore become a part of **HOPE-A** by requesting membership in writing, and

acknowledging the existence of and willingness to follow the articles of APHCA.

HOPE-A's postal address is:

HOPE-A

Sr. Animal Production & Health Officer, Secretary of APHCA

FAO Regional Office for Asia and the Pacific (RAP)

Maliwan Mansion
39 Phra Atit Road
Bangkok 10200, THAILAND

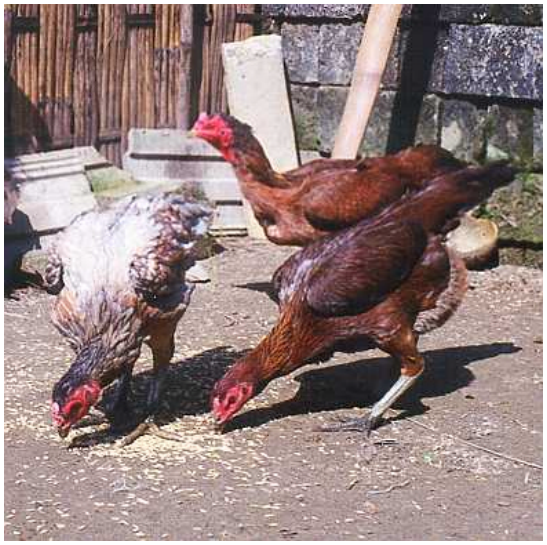
The Challenge

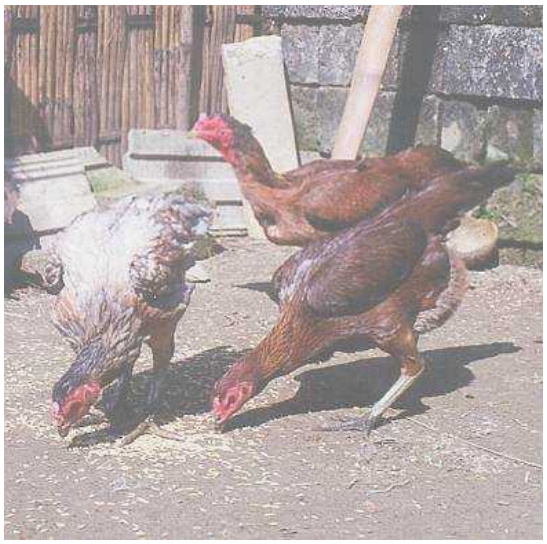
By the year 2020 it is expected that the population in Asia will represents 57% of the world's population and rural poverty is expected to increase.

Food security has been defined in a number of ways, but in any discussion on food security it is inferred that all people at all times need and deserve access to enough safe and nutritious food to maintain a healthy active life. Food security in practice, however, depends in activities carried out at various levels of aggregation such as the global, regional, national, household and individual. At the national level, food security has often been equated with the maintenance of a balance between availability of food and requirements for adequate nutrition (based on assumed needs per individual), known as the food balance. Food balance at any level, however, is not an adequate criterion for defining food security, because poor distribution and lack of purchasing power means not all of the national population would always have access to sufficient food, even though the food balance may be adequate.

Household food security relates to the ability of a household to meet its requirements from a variety of activities including food production, income generation, and gifts or assistance that can be used to provide the household with food.

However, meeting household needs does not ensure individual food security because within a household food distribution may be based on social status, age and sex, rather than need, which makes estimating individual food security an extremely complex task.





Only through sustainable rural development and by developing sustainable ways of using natural resources will it be possible to meet the challenge to provide food security for the world's hungry millions: 790 million in the developing countries.

Our Mission

To improve food security and ameliorate poverty of householders in Asia, by means of sensible interventions, involving participatory decision-making, in sustainable, affordable, village poultry production.

Our Goals

The governing principle behind our mission is the same as for all principled development endeavours: taking seriously the priorities, knowledge and realities of people living in rural areas of Asia who wish to improve their own lives, that of their communities, and the coming generations.

Our Principal Goals are:

- reduce poverty, enhance food security and conserve the natural resource base;
- analyse and respond to local needs and resources;
- assist development planners and government officials to match their plans and expectations to these local priorities and resources;
- allocate sufficient time to investigating local farming systems and the social and cultural contexts in which poultry production is carried out in each country in the region;
- promote and support community-based food security and nutrition programmes that encourage self-reliance, utilizing participatory planning and implementation processes;

- foster the growing appreciation in the region of the benefits of indigenous breeds and the inefficiency of improved breeds in resource-poor environments;
- encourage rural households and communities to adopt low-cost technologies and innovative practices for improved poultry production;
- promote policies and programmes which encourage appropriate input technologies, farming techniques, and other sustainable methodologies associated with local integrated poultry production;
- promote, concurrently, regional collaboration in poultry disease control and sharing of information;
- give assistance to national policy-makers and regional bodies involved in the development of legal, institutional and economic mechanisms which affect poultry production;
- support applied research including the continued collection, analysis and dissemination of data already available in numerous locations to foster greater regional and world understanding of agro-ecosystems;
- undertake studies based on economic principles to demonstrate the benefits gained from activities undertaken with donor financing;
- encourage participatory studies of women's involvement in poultry production training programmes to determine constraints to their involvement; development of planning procedures and training approaches which improve women's involvement in poultry production.

Livelihoods are sustainable when they:

Are resilient in the face of external shocks and stresses
Are not dependent upon external support (or if they are, this support itself should be economically and institutionally sustainable)
Maintain the long-term productivity of natural resources and

Do not undermine the livelihoods of other people, or compromise the livelihood options open to them. From DFID Sustainable Livelihood Approach

Stakeholders

HOPE-A 's primary investors are FAO, APHCA and its member countries who contribute to the APHCA trust fund as well as members of the international donor community who may be encouraged to invest in this initiative.

HOPE-A's partners include those invited national and international agricultural research centers, scientists and administrators in national governments, policy and planning groups and agencies, non-governmental organizations and private individuals that can assist us in our mission.

HOPE-A's main beneficiaries are the rural and semi-rural poor in Asia, and, by future extension, of other countries in Asia and the rest of the world, when the advantages of HOPE-A's integrated communicative participatory approach to solving the difficult problems of food security in the region are seen.

Food security is a multi-dimensional development issue that requires intervention in an integrated fashion.

Our Vision and Values

HOPE-A's vision as part of APHCA is expected to be recognized as an organization that:

- Contributes to improvements in food security and the lives of the people in rural communities in Asia;
- Assists with poverty alleviation in Asia;

- Is a partner in facilitating collaboration in the aid community in overcoming the problems of the future; and
- Acts as an information source for the region and the world.

Our Pledge Hope -A will:

- encourage administrative processes driven by flexibility and desired outcomes;
- ensure projects are developed to benefit the target group(s);
- encourage innovation in the pursuit of our stated goals; and
- encourage autonomy and results and not be merely driven by the process.

Asia and the pacific as a whole has about 70 percent of the world's severely stunted, underweight and wasted children. These daunting statistics underscored the scale and depth of the food insecurity problem in Asia.

Our Critical Operational Issues

When examining the possibility of productivity gains in household poultry through better feeding, improved genetic material, health care, extension, the provision of credit and marketing, value adding to poultry outputs, and the encouragement of private sector investments in inputs and output processing, we are aware of critical operational issues such as:

- Reflecting the identified needs and priorities of our target group(s);
- Recognising that possible solutions for problems within any community may differ from those applicable to others, and the importance of local ownership of, and devolution of, decision-making;
- The importance of delivery of solutions to problems to the sufferers;
- Ensuring implementation of programmes planned, with sensitivity and timeliness;
- Involvement of the private sector;
- The effects of national macro-economic policies on small-scale poultry production and concomitant food security;
- Local area, national, and regional human capacity building needs;

Outcomes, Indicators and Strategies

Outcome 1
Productive and sustainable village poultry production in Asia is enhanced

Indicators

Evidence of **HOPE-A** activities providing:

- increased levels of village poultry outputs
- reduction in the costs of production
- adoption of appropriate technologies
- improved policy adoption relating to the above-mentioned, and
- significant social, economic and environmental benefits for target group/s in participating countries.

Strategies

- Seek funding for, and commission bilateral projects that address the constraints to rural householder poultry production.

- Broaden the information base and develop effective decision-making tools.
- Promote appropriate technologies.
- Develop effective interactions and communication.

Outcome 2
Efficient, transparent, accountable utilization of donated resources.

Indicators

- **HOPE-A**'s stated project objectives achieved within budget.
- Regular meaningful reviews of progress published.
- Appropriate levels of stakeholder interactions.

Strategies

- Seemly problem identification and addressing.
- Programme completed on time and within budget.
- Pertinent delivery of benefits of research and development technologies.
- Implementing communication network.
- To attract external resources for funding initiatives under **HOPE-A**

APHCA has, for almost 25 years now, provided a new direction for planning in rural development by advocating technical cooperation and development assistance appropriate to the real basis of Asia's farming traditions. mutual exchange of experience and expertise between the farmers themselves from countries with common problems enabled the identification of development alternatives.

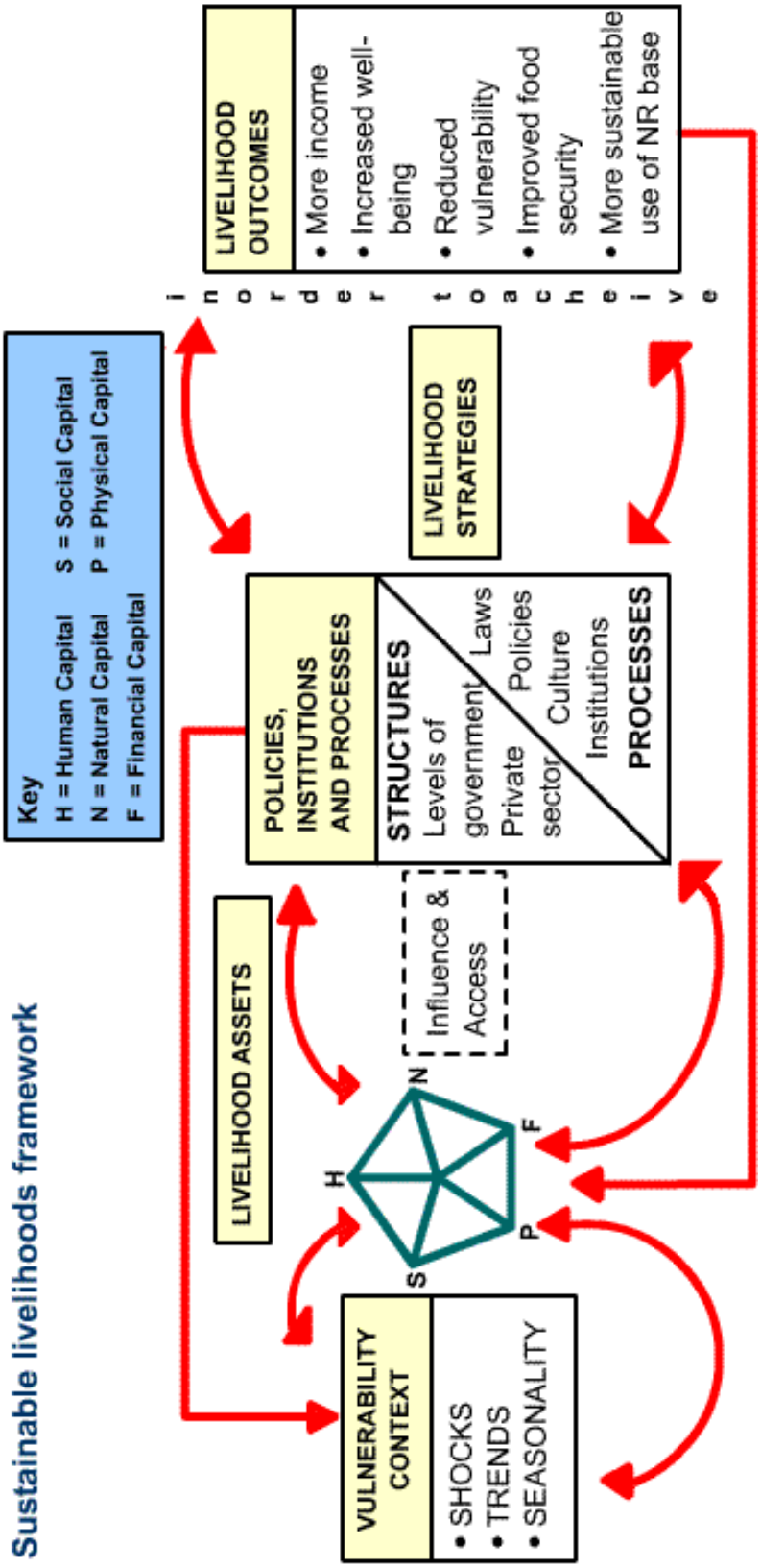
The Future

Food security is an important issue and agricultural production including livestock production plays an important part in providing food security for small-scale farmers in Asia.

Advances in human-environment understandings made in recent times mean that it is no longer enough for us to say "We are increasing livestock (poultry) production" or "We are preventing or controlling (poultry) diseases" and to be content that these activities are by definition good things. It is now necessary for us to provide evidence of the sustainable benefits to the whole environment to be derived from our actions in livestock production and animal health. The need to determine these benefits actions is an imperative throughout the world, and livestock production specialists are not alone in having to come to grips with the problem of defining their role within this context. HOPE-A participants need to be aware of this, and to review progress, and commission cost-benefit analyses both ex-ante and ex-post of activities.

Food security is one aspect of livestock production and livestock production is one aspect of food security. Livestock production needs to be viewed in the broader context of sustainable rural development and food security is part of that broader context.

Through time, the focus of food security has shifted from national and international food security concerns (food supplies) to individual and household food security (access, vulnerability, entitlement).


Sustainable livelihoods framework
Key
H = Human Capital
N = Natural Capital
F = Financial Capital
S = Social Capital
P = Physical Capital
VULNERABILITY CONTEXT
• SHOCKS
• TRENDS
• SEASONALITY
LIVELIHOOD ASSETS
H
N
F
P
S
Influence & Access
POLICIES, INSTITUTIONS AND PROCESSES
STRUCTURES
Levels of government
Private sector
Laws
Policies
Culture
Institutions
PROCESSES
LIVELIHOOD STRATEGIES
LIVELIHOOD OUTCOMES
• More income
• Increased well-being
• Reduced vulnerability
• Improved food security
• More sustainable use of NR base
influence
outcomes
feedback

SOUTH ASIA FMD CONTROL UNIT
POSSIBLE MANDATE OF THE SOUTH ASIA FMD CONTROL UNIT
(SA-FMD-CU)

The Main Functions of the SA-FMD-CU are:

- To stimulate regional interest and cooperation on control of FMD;
- To formulate FMD control/eradication strategies in South Asia;
- To seek and provide technical support to the member countries in South Asia;
- To coordinate epidemiological studies of FMD in the region;
- To coordinate FMD control activities in the region;
- To assist in improvement FMD surveillance and reporting systems in each country;
- To assist in improvement of FMD diagnostic services in each country;
- To coordinate research and training activities related to the FMD campaign;
- To provide technical advice to national FMD campaign coordinators.

Plan of Action of the SA-FMD-CU

In order to carry out its mandate to coordinate and harmonise the FMD control and eradication activities in the South Asian region, the CU will work in close collaboration with all the national coordination units. In doing so, the CU will implement the following activities:

- Arranging consultancy/technical visits by the regional coordinator(s) and consultants recruited by the Unit/APHCA;
- Organizing international workshops and training courses that are relevant to the regional FMD activities;
- Assisting the national FMD control activities that require international inputs (such as virus typing, consultancy/technical services, emergency assistance, etc.);
- Assisting/promoting bilateral negotiations on the control of FMD along national borders;
- Contributing to the development of national strategies for the control of FMD in the member countries;
- Harmonizing technical and strategic processes to be adopted in the member countries;
- Assisting in support solicitation for national activities from national and international sources and coordination of international assistance by other aid agencies;
- Preparing annual progress reports for submission to the authorities concerned;
- Liaison with OIE, FAO-EMPRES, IAEA and other similar authorities/bodies.

Location of the RCU

The SA-FMD-CU will be provisionally located in Bangkok attached to the APHCA Secretariat.

ANIMAL GENETIC RESOURCE MANAGEMENT FOR ASIA (ANGRASIA)

Introduction

Livestock production in Asia and the Pacific region has been increasing dramatically. Figures for 1988-98 (FAO RAP 1999/34) show an increase in the Gross Livestock Products index (1989/91 level set as 100) to 154.9 in Asia, compared to the world figure of 113.8. During this period Asia had a four-fold increase over the rest of the world.

A study of the individual species shows that for almost all the annual rate of increase is much higher than the rest of the world. This suggests that much of the increase has been through increased numbers rather than better efficiency and, therefore, it is likely that environmental pressures are greater and food security is at more risk. Certainly a study of environmental aspects would confirm the increased degradation and therefore the lack of sustainability of some of the livestock production now practiced.

Predictions suggest that the increase in demand for livestock products will continue and that the major region for this demand is Asia. The problem, if not addressed urgently, is likely to get worse rather than better thus increasing the risk to food security as environmental damage undermines sustainable production. There is need to increase efficiency of production and not to increase numbers of animals per se. The most likely improvements in efficiency will come from the better use of local resources rather than greater reliance on imported feedstuffs. This can be exemplified by those industries totally reliant upon imported materials, feed, etc., such as the poultry industries of Indonesia and Laos, which collapsed during the Asian economic crisis. Given that the better use of all local resources is crucial and that most livestock production in Asia takes place at the small farmer level generally in a mixed farming system, then better use has to be made of those resources adapted to the local conditions.

One of the basic resources crucial to livestock production is the genetic one. In the majority of countries in Asia, agriculture is a major use of labour and this will continue for many years. Livestock are a means of adding income as well as providing many other benefits such as food, fuel, fertiliser, hides, skins, savings bank, draught power. Various different species and breeds/types provide a means to alleviate poverty in many situations. It is crucial to have the correct genetic base to achieve the outputs required with acceptable efficiency in use of all other resources and in a sustainable manner.

Twelve Asian countries took part on a Trust Fund project (GOJ Supported) and these possess about one third of the world's known farm animal breeds (the addition of the rest of Asia would add a small proportion to this). Much has been achieved in Asia over the last few years in terms of awareness of the potential problems and of the need to establish national plans for the optimal use of all genetic resources available – indigenous and exotic. Eleven of the twelve participants in the pilot scheme produced National Animal Genetic resources Management Action Plans (NAGMAPs) while the twelfth already had produced a similar publication just as the project started. There has been a realisation that several indigenous breeds are at risk of extinction – indeed the global figures suggest that about one

third of the known resources are at risk. Given the need to exploit the adaptive abilities of the local breeds as well as the improved output offered by some exotic breeds,

ANGRASIA aims to continue the process started by this initial 'pilot' scheme through APHCA which took over the co-ordinating role when the original project finished. It is designed to assist Asia in the management of its animal genetic resources so as to maximise the effective use of resources in a sustainable manner whilst adding significantly to the financial improvement of small farmers. Given that, at household level, most livestock are cared for by women and children, it is anticipated that they will be the major beneficiaries.

The intention is to formally adopt ANGRASIA as a sub-commission or working group of APHCA at the 25th Anniversary Session in November 2000 to be held in Bangladesh. Such an activity fits well within the objectives of APHCA and would enable countries to be better involved with all activities given that they are directly involved under the umbrella of APHCA.

The Specific Aims of ANGRASIA – APHCA will be:

- To promote joint action, cooperation, cordination and information exchange among members to improve the use and maintenance of the genetic resources for food and agriculture by various methods including improved networking.
- To assist in the prioritisation of all aspects of the management of genetic resources including research (this in cooperation with ILRI).
- To provide means of communication between members and to assist members in the development of communication strategies within their own country.
- To enhance capacity building by developing and assisting in appropriate training programmes at all levels.
- To assist in the development of appropriate breeding strategies and breed improvement programmes.
- To seek support and assistance from all relevant agencies in the implementation of the various aspects and activities of ANGRASIA.
- To provide the background administrative support under the UN/APHCA umbrella to allow the full range of activities to be implemented.
- To commission any individual, group or organisation to undertake all or part of activities supported under ANGRASIA.

These objectives will contribute in a significant manner to the urgently required "State of the World for Animal Genetic Resources" which has been recommended by the Commission on Genetic Resources for Food and Agriculture to FAO as a major priority to be achieved by 2005.

As a result of the earlier regional 'pilot' project, ANGRASIA already has the programme document prepared by the twelve national coordinators in conjunction with the regional coordinator and an outside consultant as a useful guideline of the future needs and priorities within the region. These will clearly require further debate with donors and the members prior to development of any project as part of ANGRASIA.

The membership of APHCA covers 15 countries within Asia and the Pacific region of which ten are common with the 12 participants of the regional AnGR project to which reference has been made. The two not in APHCA are China and Vietnam while the present APHCA

members not in the project are Australia, Bangladesh, Iran, Papua New Guinea and Sri Lanka. Several of these together with others expressed their interest in becoming involved in a project on Animal Genetic Resources Management.

The Challenge

The region has the largest proportion of the world's population (over 50%) but 30% of arable land. Asia has the largest and fastest growing livestock industry of any region but the sustainability of this position is in doubt unless there is much improved efficiency. Rural and urban poor populations are likely to increase. At the same time, a large proportion of the animal genetic resource base is at serious risk, which if lost will seriously reduce the possibilities of achieving sustainable agriculture.

Food security has been defined in a number of ways but all infer that people need and deserve access to sufficient, safe and nutritious food to develop and maintain a healthy, active life. At the basic level, food security aims at each individual but, in practice, the lowest grouping that can be effectively addressed is that of the individual household.

Given the rapid increase in food output from livestock, it is important to note that this has been mainly from increases in livestock population and changes to the population type/breed. Over the last 25 years or so, there has been a great deal of 'exotic' material introduced in an effort to increase output. Some of these introductions have been successful but, unfortunately, the majority has also created new difficulties – often not obvious until many years after the original introduction. These difficulties range from large increases in feed for maintenance requirements (as well for the extra production), lower reproductive rates, greater disease and stress susceptibility and, in many cases, debts for the local farmers who then were unable to pay off the loans given to acquire the exotic material. The introduction of exotic material usually was as semen and crossbreeding with local breeds took place. The resultant first crosses were generally highly successful and resulted in further back-crossing to the exotic which then created a level of indigenous genes which was too low to provide the adaptation requirements for that environment/management system.

The most effective strategy both for the nation and the individual farming household has to be developed to provide adequate food to meet demand from sustainable production while providing a proper income for the farmer.

Rationale

Failure of the region to address the problems outlined will seriously impair the region's ability to provide adequate food, reduce economic opportunities in the longer term and create serious environmental damage which itself will further exacerbate the situation. The 'Asia and Pacific' region contains about 70% of the severely stunted, underweight and wasted children.

- The loss of genetic material needs addressing urgently – this will need to include proper genetic characterization at a level which allows the development of a strategy to maintain genetic diversity - not necessarily all breeds.
- The lack of management capacity must be resolved by proper training programmes at all levels.

- Breeding strategies with both the short and long term implications identified and agreed need developing.
- An awareness programme is a crucial element especially as the proportion of the population in agriculture is reducing.
- Increased communication between all levels and all involving the farmers and consumers must be achieved urgently if policy and planning is to provide the sustainability required to provide food security.
- Improved co-ordination and co-operation between countries, sub-regional groups and within the region must be achieved if the most effective actions for the maintenance of the region's genetic resources and diversity are to be maintained in order to ensure long term achievement of the goals of sustainable, intensive production to meet demand.

Box

"*Livestock are central to the livelihood of the rural poor in developing countries in at least six ways (Livestock in Development 1998, DFID UK). First, they are an important source of cash income. Second, they are one of the few assets available to the poor, especially poor women. Third, livestock manure and draught power are vital to the preservation of soil fertility and the sustainable intensification of farming systems in many developing areas facing increasing population density. Fourth, livestock allow the poor to exploit common property resources, such as open grazing areas, in order to earn income. Fifth, livestock products enable farmers to diversify incomes, helping to reduce income variability, especially in semi-arid systems characterized by one cropping season per year. Sixth, livestock provide a vital and often the only source of income for the poorest and most marginal of the rural poor, such as pastoralists, sharecroppers, and widows***"**
(p.40 Livestock to 2020 The Next Food Revolution, IFPRI)

Our Mission

To improve food security and to ameliorate poverty in households of Asia by means of realistic interventions and assistance agreed by participatory decision making in the management of all the animal genetic resources available.

Our Goals

The governing principle is the same as for all principled development endeavours – to take seriously the priorities, knowledge and realities of rural households and urban livestock keepers who wish to improve their lives and those of the whole community both at present and for the coming generations.

The Principle Goals are to:

- Reduce poverty and enhance food security.
- Conserve the natural resource base.
- Foster the appreciation of the contribution of local breeds to sustainable production and develop strategies and schemes for livestock breeds.
- Assist development planners and government officials to match their plans and expectations with those of the local resources and priorities.
- Allocate sufficient time and resource to investigating local farming systems and the social and cultural contexts in which livestock are used in each country.

- Promote and encourage participatory processes to achieve community based food security and nutrition programmes.
- Give assistance to national and regional policy makers and planners in developing the most effective management and maintenance of genetic diversity of farm livestock.
- Provide assistance to those involved in the development of legal, institutional and economic mechanisms which affect livestock production.
- Promote research and data collection and analysis into the livestock systems and the specific role of different genotypes to foster better understanding and more effective methods of maintaining biodiversity with respect to farm animals and in line with the requirement of the Convention on BioDiversity (CBD).

Box

Livestock and livestock products are essential elements in the food and agricultural sector in the Asian region. Over thousands of years, a diverse array of animal breeds has been developed in order to take advantage of a wide range of production environments. Over 1300 breeds have so far been identified representing approximately 30% of the world's known breeds. These resources not only contribute to food and agricultural production in the region, they have been shared around the world enhancing global food security.

The next five years is a critical period for livestock production in the Asian region. Poorly planned animal breeding strategies and the loss of many indigenous breeds threaten the region's ability to meet future demands, reducing food security. Countries and the region as a whole must immediately begin to increase understanding of the role and value of the full range of their AnGR, and develop comprehensive and effective strategies to ensure their wise use and conservation. (Programme Document for Farm Animal Genetic Resources in Asia, 1997. FAO RAP, Bangkok.)

Our Pledge

ANGRASIA-APHCA will:

- Encourage administrative processes driven by the desire to achieve the stated outcomes while retaining full accountability.
- Provide full, independent auditing and transparent accounting procedures.
- Ensure that projects are developed with full participatory procedures.
- Maintain links with global sources of information and provide an open base for accession of these.
- Cooperate and liaise fully with all who have similar aims and objectives.
- Constantly maintain contact with all interested agencies with a view to obtaining support as required to achieve the prioritised objectives.
- Provide reports and reviews on all activities on a regular basis.

Out Comes

1. A mechanism for developing regional animal genetic resource policies and an interface between the region and the Global Focal point for Animal Genetic Resources.
2. Enhanced management capacity for the use and maintenance of farm animal genetic diversity at regional, sub-regional and national levels.
3. Improved margins for farmers coupled to long term system sustainability.
4. Improved communications, data collection and sharing among farmers, scientists, managers, countries and interested organizations.

Evaluation of Success

1. Operational ANGRASIA within APHCA – governed under the constitution of APHCA.
2. Completed training courses, fully evaluated by participants, comparisons of capacity prior to and after (this would be a component for the State of the World Surveys).
3. Study of breeding strategies, programmes and National Action Plans and the ability of a country to observe the CBD.
4. Direct studies of systems and financial margins when FULLY costed together with measures of sustainability (agreed with experts from relevant organizations).
5. Studies of network size and usage, publications, guidelines and common documents translated for use in each country. Measures of information provided to the State of the World Survey and to outside organizations/people on request.

Stakeholders

ANGRASIA's present primary stakeholders are FAO and the member countries of APHCA who contribute to the APHCA Trust Fund. Those agencies who invest in this initiative will also become direct stakeholders.

ANGRASIA's partners include those invited international and national agricultural research centres, scientists and administrators involved in the agricultural policy and planning agencies, interested non-governmental organizations and invited private individuals who can contribute to our mission.

ANGRASIA's Beneficiaries are:

- Farmers, rural communities and urban livestock farmers in Asia and the Pacific region through enhanced management capacity to use the resources available.
- Policy makers and planners by improved mechanisms for identifying policy issues, needs and the implications of any potential solution.
- Scientists, managers and extensionists by further training and improved communication between all levels – especially with farmers.
- Improved access to quality information and assistance in developing co-ordinated programmes at the regional and sub-regional level.
- The countries which have ratified the Convention on BioDiversity. (CBD)

Box

For billions of people, the regular consumption of a range of animal products provides almost complete protection against a variety of nutritional disorders. The three major human nutritional problems that the world still faces are iron deficiency, Vitamin A deficiency and protein-energy malnutrition. An increased consumption of a relatively small amount of animal product in populations at risk would substantially and efficiently ameliorate all three diseases. Animals provide the draught power for about 28% of the world's arable land, and will be the most economically realistic and socially appropriate technology for many regions of the world into the foreseeable future. Estimates suggest that about 22% of total nitrogen fertilisation and 38% of total phosphate be of animal origin. There is a wide range of other important products from animals. (Vizard, A.L. 2000 Animal Contributions to Human Health and Well-being. Asian- Aus. J. Anim. Sci. 13 Supplement, July 2000 A: 1-9.)

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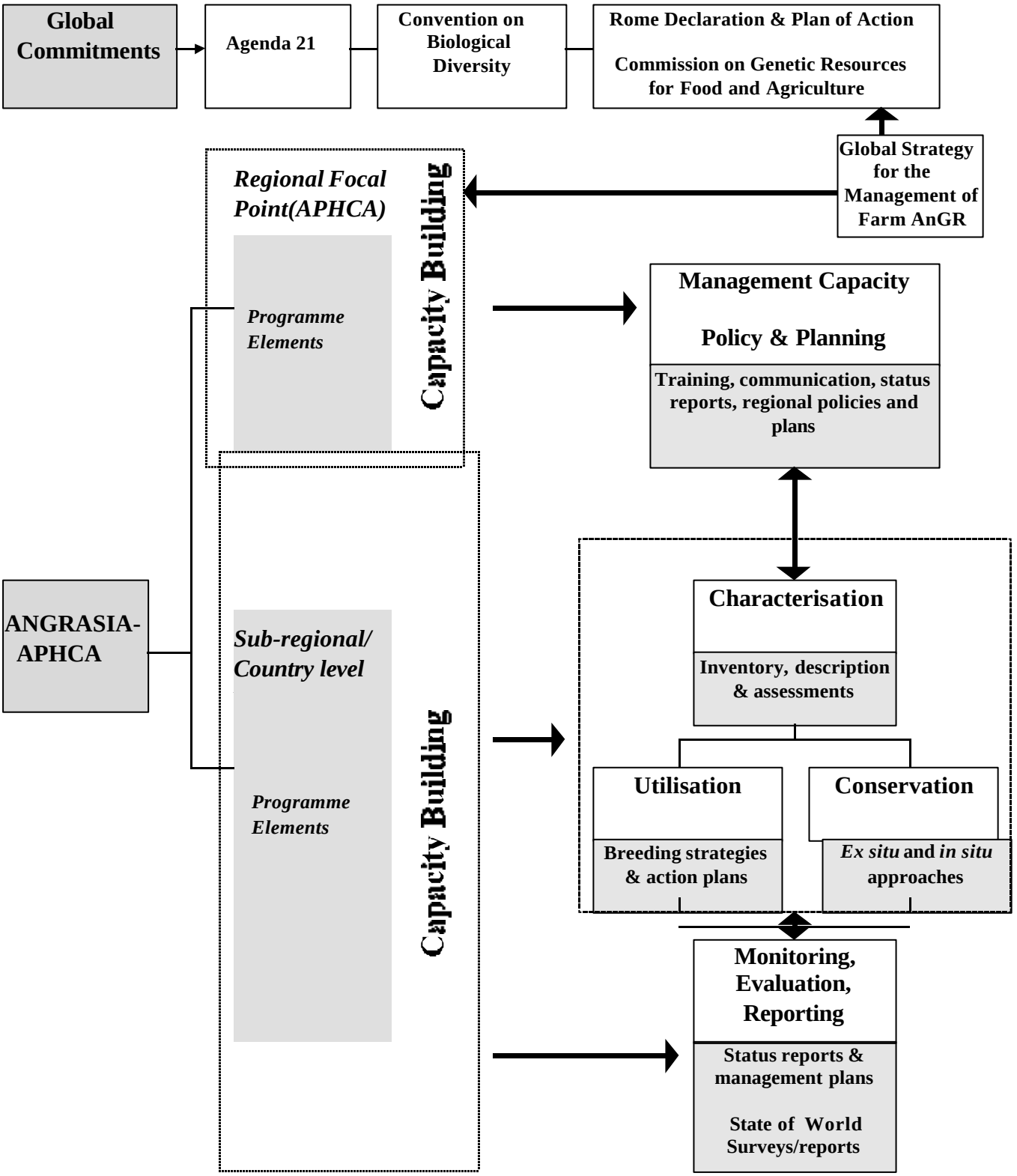
Global Commitments
Agenda 21
Convention on Biological Diversity
Rome Declaration & Plan of Action
Commission on Genetic Resources for Food and Agriculture
Global Strategy for the Management of Farm AnGR
Regional Focal Point(APHCA)
Programme Elements
Capacity Building
Management Capacity
Policy & Planning
Training, communication, status reports, regional policies and plans
ANGRASIA-APHCA
Sub-regional/ Country level
Programme Elements
Capacity Building
Characterisation
Inventory, description & assessments
Utilisation
Breeding strategies & action plans
Conservation
Ex situ and in situ approaches
Monitoring, Evaluation, Reporting
Status reports & management plans
State of World Surveys/reports

THE FIRST REPORT ON THE STATE OF THE WORLD'S ANIMAL GENETIC RESOURCES

The process of preparing the report is a way to:

- Analyze data on animal breeds to determine the state of global farm animal genetic resources
- Evaluate policies and traditional and new technologies to use develop and conserve these resources better
- Identify country priorities so immediate action can be taken
- Build countries' capacities to manage their resources

What are the goals of the report?

To promote the wise use and development of locally adapted animal genetic resources, improve food security, strengthen environmental protection and reduce poverty. It also aims to protect traditional livestock practices of smallholder farmers and nomads.

Demand for livestock products in the developing world is expected to double over the next 20 years, because of population growth, urbanization and rising incomes. To meet this demand, animal agriculture is intensifying and relies increasingly on a few breeds that can produce high yields. As a result, less productive but genetically valuable local breeds are threatened. Already an estimated 35 percent of mammalian breeds and 63 percent of bird breeds risk extinction — 60 percent of them in developing countries. And of the local breeds that remain, few are being bred for higher productivity, a missed opportunity to help the developing world feed its people.

What is the report's mandate?

Recognizing the important role animals play in food security, FAO started develop in a Global Strategy for the Management of Farm Animal Genetic Resources in 1993. In 1998, at the first meeting of the Intergovernmental Technical Working Group on Animal Genetic Resources, FAO was asked to coordinate preparation of the Report on the State of the World's Animal Genetic Resources. Participants placed great importance on the process leading up to the report, which will be country-driven and will strengthen countries' ability to manage their animal genetic resources.

Is the focus of the report on conservation or development of animal genetic resources?

The emphasis is on both. It is essential not only to conserve local breeds that have unique features but also to use breeding methods to develop animals further in response to the food security needs of developing countries.

It is important to conserve breeds at risk because they may be able to:

- Withstand lower-quality feed
- Be more resilient to climate stress

- Have stronger resistance to local parasites and diseases
- Be a source of unique genes for use in improving the health and performance of breeds chosen for industrialized animal production

It is important to develop local breeds because an animal that is genetically adapted to its environment will:

- Produce the most at the lowest cost and be sustainable in the long term
- Support food, agriculture and cultural diversity
- Be most effective in achieving local food security objectives

How will the report assist in the conservation and development of these breeds?

The report will provide countries with essential information so they can manage their animal genetic resources wisely. This information will enable countries to:

- Determine core genetic resources for each species
- Monitor breed populations at risk
- Establish conservation priorities
- Establish genetic improvement priorities
- Assist the development of an early warning system for breeds at risk
- Identify appropriate environments for breeds to be most productive

Who are the players?

In addition to international stakeholders and FAO, the key contributors will be the 120to 150 countries that are expected to submit country reports by 2002. Countries will assign coordinators to lead National Consultative Committees, which will be the driving force behind the process. Each committee will consider the most pressing issues in its country and organize efforts to produce an accurate and comprehensive country report. Countries will also be encouraged to invite local stakeholders (including government a land non-governmental technical organizations such as training institutes and breeding associations) to workshops where the process will be discussed. Consultants at the regional level will offer assistance in preparing reports and keep track of progress and priorities. Finally, the working group will monitor the progress of the report's development, evaluate the results and provide support in national and regional assessments.

How can international stakeholders help?

Funding from FAO's regular programme will support the coordination activities of the secretariat of the report on the state of the World's Animal Genetic Resources. But international stockholder support will be necessary to ensure that developing countries are able to participate fully. This will require:

- Regional training workshops for members of the National Consultative Committees
- Equipment and expert advice so countries can prepare comprehensive and accurate reports
- International scientific consultations to develop sustainable breeding strategies
- Funds to begin priority actions, for example, to protect endangered breeds that have unique disease resistance or to breed poor-performing animals to adapt better to harsh climates

What role will the experts play?

The high profile of this report guarantees the participation of the world's top experts in animal genetic resources. These experts will in turn train others, leading to the establishment of a network of over 2,500 animal genetics specialists with expertise in both traditional knowledge and modern technology. The experts will play an essential role at organizational meetings and scientific consultations. They will also be called upon by FAO to prepare selected reports to complete the picture of the world's animal genetic resources.

What is DAD-IS and how will it help in the preparation of the report?

DAD-IS, the Domestic Animal Diversity Information System, is FAO's Internet-based database for countries to collate and store information on animal genetic resources (www.fao.org/DAD-IS). A special module of this system has been created for the preparation of country reports. DAD-IS will also help in planning and monitoring the process by providing online training and by fostering information-sharing and decision-making among National Consultative Committees, stakeholders and donors. Regional workshops will train countries to use DAD-IS effectively.

Should priority actions take place while the report is being prepared?

The country reports will identify priority actions to be taken to use and conserve the full range of domestic animal breeds better. FAO will encourage and support such actions at national and regional levels during the process.

What comes next?

The process, the overall schedule and the guidelines for country reports have been developed and endorsed by the working group. A prototype of the computer module for preparing country reports and the final report has been created for DAD-IS and will be available for country training. Meanwhile, almost 100 countries have identified coordinators for their National Consultative Committees, started building partnerships with local stakeholders and begun to use DAD-IS.

2001
Secretariat invites countries and international stakeholders to participate. Second Ad hoc session of international stakeholders meets at FAO in Rome.

Countries establish National Consultative Committees and raise necessary resources. Regional and country training begins, including the use of DAD-IS.

National Consultative Committees, with participation from local stakeholders, prepare supporting data.

National Consultative Committees draft country reports and begin submitting them for government clearance.

2002
Countries and international stakeholders submit reports to FAO.

Third Ad hoc session of international stakeholders meets at FAO in Rome to review progress.

Secretariat begins analysing reports.

Secretariat reports to the working group so it can evaluate progress.

2003
Secretariat drafts strategic priority action report.

Fourth Ad hoc session of international stakeholders meets at FAO in Rome to review progress.

Working group and ninth session of FAO's CGRFA to finalize and adopt strategic priority action report. Secretariat proposes follow-up mechanism.

2004
Priority actions begin in areas requiring urgent attention.

Secretariat completes analysis of country reports and regional reports.

Secretariat finalizes draft of first report on the state of the World's Animal Genetics Resources.

2005
Working group and tenth session of FAO's commission on Genetic Resources for food and agriculture review the draft of the report.

Governments and stakeholders continue to implement follow-up actions.

INFORMATION COMMUNICATION TECHNOLOGY (APHCA HOMEPAGE)

Introduction

Homepage or WebPages became one of the most reasonable tools to many organizations, companies, institutions and people, which use this technology to distribute information to many people around the world. The HyperText Markup Language (HTML) is an SGML (Standard Generalized Markup Language) application for marking up documents for inclusion in the World Wide Web, and allows you to:

- Publish documents to the Internet in a platform independent format
- Create links to related works from your document
- Include graphics and multimedia data with your document
- Link to non-World Wide Web information resources on the Internet

The first homepage for APHCA have been created and uploaded at a free Internet service provider call www.xoom.com and host by to www.hypermart.com with an address at http://aphca.hypermart.net. After that, APHCA have registered domain name with Network Solutions under a name of www.aphca.org or http://aphca.org. But APHCA homepage still used the free Internet provider with www.xoom.com until mid 2000.

APHCA decided to host a space with a private Internet service provider call 'Tierranet put yourself on the web' at www.tierranet.com. Tierranet helps APHCA to operate and run APHCA homepage for better quality and privately.

Problem Definition

The free Internet wed hosting provides a space for less then 50Mb per homepage and user need to log-in through http://www.hypermart.net/index.gsp webpage each time of upload information and edit information, there is an advantage and disadvantage with occurred during that service;

- Time consuming to upload, edit and manage website.
- The slow speed of transmitted at 28.8Kb per second and caused runtime error especially with a huge size of homepage.
- The free Internet service including many advertising within AHPCA homepage
- Created a delay when Internet viewers view and download information.
- However, there is not expended cost to run the homepage

Previously, APHCA homepage was written in a source code in a text programme and convert to html later. This implementation takes time for programmer to implement. Normally, source code for each homepage contains the code line more then 50 lines that cause problems for other programmer for future development.

The layout of homepage could make viewer confused, if size of icons too small. Colors and size of characters are important when display in difference background and difference Internet browsers.

Requirements

- Gathering extra information from other research institution, education department, member countries, outsider and FAO articles or magazines under a consideration of APHCA staffs.

- Encourage member countries and user of APHCA homepage to contact and exchange information via e-mail through APHCA homepage.

- Creating the new layout of APHCA homepage as simple as possible and setup structure chart of homepage for future development.

- Using application software to create the homepage for a fast process and programmer could see the visual layout of homepage in real time, which is easy to make any changes while implementing.

- The menu items need to reallocate and re-decide from the most interesting to the less interesting. Thus, cut down some links or information that not need (undertake by case study of statistic report from web hosting and staff suggestions) to keep the space free.

- Creating heading/highlight of information that interesting and link them to full story in separate session. Also includes function when the size of information too big such as Zip files or PDF format

Implementing Information

Page Layout
The layout of homepage consists of information that needs to provide on the website such as pop up article, general information, Asian livestock and news flash. Color of background and color of character using black and white which, these colors are easy to read, well present and its can see from a distance.

Structure
The structure of homepage depends on information and always good to setup as prototype to use as pattern of homepage. Whereas each prototype can spilt into many branches and many forms of information. In the future development, each prototype can expended and links together as the whole system but base on the original creation.

Heading and Highlight
Heading/highlight make user to feel comfortable and user friendly within homepage. The location, color, size of heading should sport on eyes of viewer and meaningful.

Graphic
The graphic or image is making a page more interested when viewer brows the homepage. Putting image on the homepage has to be careful because each page contains difference information and the image should related to topic.

Size
Size of homepage depends upon information but the first page of the homepage should less than 30kb size because it will take longer time to download especially with a slow speed of Internet connection and a busy network. Also It is better to keep the size of each homepage as small as possible.

Tools of Implementation (Macromedia Dreamweaver 3.0)

Dreamweaver is a professional visual editor for creating and managing Web sites and pages. With Dreamweaver, it's easy to create and edit cross-platform, cross-browser pages.

Dreamweaver provides advanced design and layout tools, as well as making it easy to use Dynamic HTML features such as animated layers and behaviors without writing a line of code. Browser-targeting checks your work for potential problems on all popular platforms and browsers. Macromedia's Roundtrip HTML technology imports HTML documents without reformatting the code and you can set Dreamweaver to clean up and reformat HTML when you want to.

Dreamweaver is fully customizable. You can create your own objects and commands, modify menus and keyboard shortcuts, and even write JavaScript code to extend Dreamweaver with new behaviors and property inspectors

Object palette
The Object palette contains six panels by default: Characters, Common, Forms, Frames, Head, and Invisible. Use the pop-up menu at the top of the palette to switch between panels. You can modify any object in the palette or create your own objects

Property inspector
The Property inspector allows you to examine and edit properties for the currently selected page element. (A page element is an object or text.) You can select page elements in either the Document window or the HTML Source inspector

Launcher
The Launcher contains buttons for opening and closing various palettes, windows, and inspectors. For information on the default Launcher buttons are About the Site window, Library palette, Formatting text using HTML styles, CSS Style palette, Behavior inspector, About the History palette, or HTML Source inspector.

Conclusions

- One of key factors, contributing to the success in designing the APHCA homepage is responsiveness to Internet viewers. In the development of homepage, information is the major concern. Therefore, the homepage was designed to accommodate their specific need such as list of publications, APHCA paper, news and Asian livestock.

- Another factor of success is the simple created of the homepage layout because a lot of Internet players are not familiar with computer. In addition the simple layout can be display with small number of images and text.

- The analysis processes is the structure charts that useful for programmer because it provides more flexibility to edit information in the future developments.

- Menu bars help viewer to feel comfortable with a link to information that homepage provided and the meaningful of menu bar is also important to viewers to understand.

- Zip file and PDF file help to reduce time to download information and viewers don't need to spend long time on the Internet.

SMALL-SCALE MEAT PROCESSING HOUSE MODEL
(MAE HONG SON PROVINCE, THAILAND)

Small-scale Meat Processing House Model

- The project on pilot small-scale meat processing house was initiated in 1999 upon request made by the Royal Project staff through the Provincial Livestock Office of Mae Hong Son province, Thailand.
- The first allotment/seed money of US$5,000 was granted by the German Embassy in Bangkok through Dr. Gunter Heinz, ex-Regional Animal Production Officer of RAP. This amount was spent on landscaping and structural construction

Further construction was made, using funds from Department of Livestock Development (US$5,000).

This meat processing house was fully constructed and equipped with necessary equipment in early of year 2001 and is ready for official hand-over to Her Majesty the Queen of Thailand for use as a small-scale training center capable of accommodating around 20-25 trainees at a time.

PROPOSED PROVISIONAL AGENDA
THE 61ST EXECUTIVE COMMITTEE MEETING AND THE 26TH SESSION OF APHCA

1. Opening of the Session
2. Adoption of the Agenda, Induction of Chairman and Election of Executive Committee Member
3. Minutes of the 60th Executive Committee Meeting and the 25th Session of APHCA
4. Statement of Accounts of APHCA trust fund for 2002 and other Financial Matters
5. Report on APHCA Activities during 2001-2002
6. Revision of APHCA Programme of Work and Budget for 2002 and 2003
7. Country Paper/Invited Paper Presentation
8. Provisional Agenda for the 62nd Executive Committee Meeting and the 27th Session of APHCA
9. Venue and Date for the 62nd Executive Committee Meeting and the 27th session of APHCA
10. Other Business
11. Adoption of the Minutes/Report of the Session

DEALING WITH LIVESTOCK DISEASE EMERGENCIES

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1. Introduction

Transboundary livestock diseases are defined as "those that are of significant economic, trade and/or food security importance for a considerable number of countries; which can easily spread to other countries and reach epidemic proportions; and where control/management, including exclusion, requires co-operation between several countries."

Their importance to the progress of development is crucial, because they:

- Constrain production, with immediate negative impact on household food security
- Are a barrier to trade and cause of great national economic loss
- Require expensive control and eradication measures
- Cause loss of valuable genetic material
- Discourage investment in the livestock sector
- Threaten diversification and intensification
- Maintain millions of livestock farmers in poverty

FAO has created the EMPRES (Emergency Prevention Systems) programme for livestock as a response to these diseases. In terms of the EMPRES programme transboundary animal diseases are classified as follows:

- Epidemic diseases of strategic importance, namely rinderpest, foot-and-mouth disease and Contagious Bovine PleuroPneumonia (CBPP)
- Diseases requiring tactical attention at the international/regional level, e.g. Rift valley fever, lumpy skin disease, Peste des Petits Ruminants (PPR), Newcastle disease, African swine fever (ASF) and Classical swine fever
- Emerging or evolving diseases, e.g. BSE, Porcine Reproductive and Respiratory syndrome (PRRS)

Early warning of the occurrence of epidemic disease events and **Early reaction** to these events are crucial for the effective prevention, containment and management of disease outbreaks. The speed of response to an introduction of disease is obviously a critical element in disease management. The faster the response, the more likely it is that the emergency will be overcome and the damage limited.

2. Preparedness and Response

Early warning is defined as all disease intelligence initiatives, which predominantly would be based on epidemiological surveillance, that would lead to improved knowledge of the distribution of disease or infection and that might permit the forecasting further evolution of an outbreak. Early detection of a transboundary disease enables an early response, and is contingent upon having a reliable disease surveillance system in place.

The overall responsibility for disease surveillance lies with national governments; they have a responsibility not only for the wellbeing of their own community and their national herd or flock, but also an international responsibility for ensuring that neighbouring countries are not threatened by potentially disastrous epidemics.

Early reaction is identified as all actions that would be targeted at rapid and effective containment leading to elimination of a disease outbreak, thus preventing it from turning into a serious epidemic. This should include contingency planning (a predetermined set of responses) and emergency preparedness (the capacity to react).

Being prepared for a disease emergency is also seen as a national responsibility. Each national veterinary service should have a contingency plan in place, and have access to a secure emergency fund. Because of the important nature of such plans, they should be drawn up in collaboration with all role players; they should have political approval; and governments should have the will and the commitment to set resources aside to deal with any emergencies should they arise.

3. Essential Elements

The speed of response is critical; the faster the response, the more likely it is that an emergency will be overcome quickly and the damage limited.

There are a number of key elements in ensuring that any response to a disease emergency is timely and adequate. They can be summarised as follows:

- **An effective National Veterinary Service**. Not only should such a body have sufficient personnel and expertise, but it should also be well funded and have appropriate legislative backing. This would include a direct chain of command and reporting from the Chief Veterinary Officer (the veterinarian at the head of the Service) to field workers; emergency powers to impose, where necessary, quarantine and slaughter; and access to an emergency fund. Other support, such as a professional licensing body, is also needed to maintain professional standards. There should be adequate legislation to enforce control of the supply and distribution of drugs and vaccines.

- **Effective Early Warning**. There needs to be a surveillance system capable of detecting disease (or changes in disease status) at a very early stage, and capable of rapid transmission of information to a Central Epidemiology Unit under the command of the national Chief Veterinary Officer. Such an early warning system will require the full co-operation of all possible stakeholders (farmers, abattoirs, traders) in order to have the necessary sensitivity to function effectively. While most detection systems function on a passive basis, it will also be necessary to have organised active surveillance campaigns

in place, especially where a disease is in an eradication phase, and it is desirable to provide proof of absence.

- **A Contingency Plan**. Having an emergency plan, specifying exact responses to an emergency, and agreed upon by stakeholders, is essential. Not only should all possible players in the plan be agreed upon its contents, but also the plan should have political support and be backed by an emergency fund that can be disbursed at short notice to finance the response.

- **Early Reaction Capability**. A Veterinary Service should not only have a plan in place, but also the capacity to implement it efficiently. This implies staff with adequate training in management and logistics, and annual revision of the emergency plan that should be tested at intervals through simulation exercises.

4. Organising Emergency Management

Emergency management is aimed at four key areas of work.

- The first key area is **Prevention**. In any country, measures should be in place to prevent, as far as possible, the entry or emergence of epidemic diseases. This would include border controls, quarantine measures, possible vaccinations, public awareness, effective surveillance, etc.
- **Preparedness**., This would include all arrangements in place to ensure a rapid response to an emergency - i.e. having an agreed plan in place, access to emergency funds, vaccine banks.
- **Effective Response**., Implementation of the plan, rapid deployment of personnel, mobilisation of resources.
- **Recovery**., A disease emergency could devastate a livestock industry or sector thereof. There would need to be the means available to verify eradication, re-stock, rehabilitate markets, etc.

5. The Contingency Plan

A Contingency Plan is a strategy document containing, amongst other things:

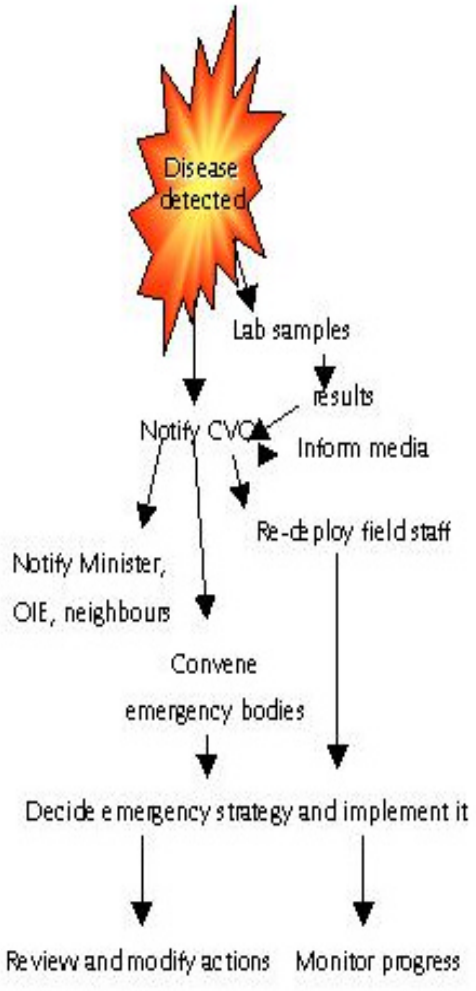
- A description of the disease for which it is intended.
- A description of the resources, including their locations, available to fight the disease.
- A detailed description of an action plan with alternative strategies for control/eradication and recovery.

All information necessary to attack a disease problem should be included. The plan should have an elementary summary, outlining the procedures to be followed upon detection of the disease, with a series of detail appendices containing all the action plans, resource descriptions, contact addresses, and so on. Even such apparently simple procedures, such as sample taking, should be included. It is as well to remember that a disease may be absent for a country for many years before reappearing, and that by the time of its reappearance, the country's veterinary profession may no longer have practical experience in dealing with it.

The plan, while extensive and detailed, should be easy to follow and "navigate". A flow diagram should summarise, in concise form, the sequence of actions undertaken in the event of an outbreak.

It is a dynamic document and should be subject to frequent updates and revisions.

A very brief outline of the kind of information to be included in a contingency plan is given below.

Information Required in Plan	**Actions that should be outlined**
The Disease	
Livestock distribution (susceptible species within the country)	
Staff distribution	
Vehicles - numbers, types and distribution	
Emergency stores (e.g. protective clothing, vaccines, syringes, sampling equipment - where they are and what they contain)	
Diagnostic laboratories - addresses for primary diagnosis and reference labs	
Names & addresses, telephone numbers of experts	

It is of great importance that Contingency Plans are tested by means of simulation exercises, and weak points/bottlenecks identified and rectified.

6. The Initial Response

The initial response to any disease emergency, apart from notification of local, national and international authorities (especially OIE), should be a full disease investigation. This will involve taking of appropriate samples for both the disease under suspicion and for key differential diagnoses. Back- and forward tracing is necessary to establish the origin of the infection and possible routes of spread.

Immediate measures should also be taken to prevent further spread; decisive action should be taken immediately.

7. FAO Support

FAO has undertaken a number of initiatives to provide technical assistance to Early Reaction. These include the development of TADinfo epidemiology software, contingency planning manuals, disease recognition manuals and multimedia presentations. The EMPRES website http://www.fao.org/EMPRES may also be consulted for details.

DISASTER RISK MANAGEMENT STRATEGIES FOR ANIMAL HEALTH

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Introduction

During the 1970's there was hope that the major epidemic diseases of livestock and humans were being brought under control in many countries and practically eliminated from OECD countries. Most predictions were emphasising the increasing importance of endemic and productivity-limiting non-infectious diseases with a concomitant progressive reduction in the relevance of epidemic diseases to livestock production. With increasing intensive livestock farming in the industrialised world, there was also a notion that at worst infectious diseases could be confined to the least developed parts of the world and therefore would have little impact on development, food security and trade.

During the last 15 years, however, infectious and vector-borne animal diseases have become of increasing importance world-wide and disease emergencies are occurring with increasing frequency. Even industrialised nations have been affected. Thus in 1997, the World Health Organisation (WHO) observed, for human health, that:

> *"Experience has shown that reducing resources to control infectious diseases in favour of other priorities leads to the resurgence of disease and can create problems more widespread and costly than before".*

This is equally true of animal health and recent examples of outbreaks of either old diseases or newly recognised diseases or re-emerging or evolving diseases bear testimony to this. Some examples are summarised in Table 1.

TABLE 1- EXAMPLES OF RECENT EPIDEMICS OF TRANSBOUNDARY ANIMAL DISEASES

Rinderpest is perhaps the most serious cattle plague. The optimism of the 1970s was shattered when during the 1980s rinderpest spread practically throughout South Asia, The Middle East and Tropical Africa, affecting cattle, buffalo and wildlife. The disease has come under control again, thanks to an international partnership through the Global Rinderpest Eradication Programme. Currently (2001), it is confined to only 3 isolated eco-systems: southern Somalia, southern Sudan and parts of southern Pakistan. The success of GREP will depend on whether rinderpest can be eliminated from these foci befere the end of 2003, otherwise there remains a risk that rinderpest could flare up again as it did in 1980s.

Foot-and-Mouth Disease (FMD) is a highly contagious virus disease of cloven-hoofed animals. There are seven distinct types of FMD virus. It is the animal disease with the greatest impact on international trade. Ordinarily the OECD countries are free from this disease while it is endemic in the Least Developed Countries. Roughly, the endemic distribution of the seven types of FMD is as follows: Type O: Asia, Africa, Middle East and South America; Type A: Asia, Africa, Middle East and South America; Type C: Asia, Africa, South America (NB: this type occurs rarely and tends to be sporadic); Type Asia 1: Asia; Types SAT 1, SAT 2, and SAT 3: Africa. In recent years serious epidemics of FMD have occurred outside areas of endemicity causing major economic losses e.g. type O FMD in Taiwan, Province of China in 1997 and again in 2000; type O Pan-Asian topotype which over a period of 10 years spread progressively from South Asia eastward to China, Japan, South Korea, Vietnam, Cambodia and Taiwan Province of China and Westward to the Middle east and Southeast Europe and during 200-2001 leapt to South Africa and to UK, France, Netherlands and Ireland. Type SAT 2 spread to in Saudi Arabia in 2000, which is the first time this type has been recorded outside Africa.

Peste des Petits Ruminants (PPR) PPR was until relatively recently considered to be limited in distribution to West Africa. However, it is now the most evolving epidemic of small ruminants. It has extended throughout sub-Saharan Africa from Mauritania to Somalia and southwards to the coastal belt of the Congo Republic in the west and Sudan, Ethiopia and Somalia in the east. In the Middle East there have been serious epidemics in Jordan, Saudi Arabia and Iraq and now PPR has extended as far west as Turkey, which borders Europe, and Asia it now extends as far eastwards as Bangladesh. It appears that there has been an actual extension of its range as well as increasing aetiological differentiation between PPR and other causes of pneumonic disease in sheep and goats. In India many cases in sheep formerly ascribed to rinderpest are now known to have been caused by PPR. It has been responsible for heavy losses in small ruminants in Nepal, Pakistan, India and Bangladesh.

Contagious Bovine Pleuropneumonia is a serious mycoplasmal disease of cattle. There has been a catastrophic spread of CBPP over the last few years in Africa where it now affects some 27 countries and causes estimated losses of up to US$2 billion annually. In 1995 the disease was reintroduced to Botswana for the first time in 46 years. As part of the eradication campaign, all cattle (approximately 320 000) in an area of northern Botswana had to be slaughtered at a direct cost of $100 million; indirect losses were over $400 million.

TABLE 1- EXAMPLES OF RECENT EPIDEMICS OF TRANSBOUNDARY ANIMAL DISEASES

Classical Swine Fever (CSF) is a generalised virus disease affecting only pigs. It is endemic throughout many of the swine-rearing areas of the world. It is a major and constant constraint to swine production in the countries of Eastern and Southeastern Asia. It is also endemic in some of the Latin American countries and Cuba (since the 1980s). In 1996 it was introduced into Haiti causing major losses and it is now endemic there; it has spread to the Dominican Republic. In 1998 outbreaks were reported in Costa Rica. Classical swine fever is a disease that poses serious threat to the swine industry of the Americas. It is practically absent from the continental part of the Americas. Therefore, the recent epidemic in the Caribbean is seen as a serious threat to North America and South America as well as non-infected Caribbean countries. In Europe, the most serious, recent epidemics have been in Germany, The Netherlands, Spain and the UK. Molecular genetic studies indicated that the causal virus strain was more related to those isolated from Southeast Asia than those circulating in the wild suidae in Europe.

African Swine Fever is another generalised virus disease affecting pigs. It is endemic in southern and eastern Africa where it is maintained an endemic cycle involving soft ticks (*Ornthodorus moubata*) and wild *Suidae* (warthogs and bushpigs). Since mid-1990s there have been serious outbreaks in areas, which either had never experienced ASF before or had not had outbreaks for a long time. For example, in 1994 ASF moved from the endemic area in northern Mozambique to Maputo and devastated the pig population killing 80 per cent of the estimated 4000 pigs in the area. In 1996 it occurred for the first time in Côte d'Ivoire, where it killed 25 percent of the pig population and, according to various estimates, cost the country between US$13 and 32 million in direct and indirect losses and eradication costs. There has since been serious spread of ASF to Togo, Benin, Gambia and Nigeria. In 1999 the disease spread to Ghana where it has since been eradicated.

Newcastle Disease (ND) is one of the most important viral diseases of poultry. The history of ND is marked by at least three pandemics in domestic birds. The first began with the emergence of the disease in fowl in the middle of the 1920s and spread slowly from Asia throughout the world. The second outbreak appeared to emerge in fowl in the Middle East in the late 1960s, reaching all continents by mid-1970s. A third outbreak in the 1970s, also starting in the Middle East, was associated with a mainly neurotropic and viscerotropic velogenic disease in pigeons. Currently, we are witnessing *the forth panzootic*. Since 1991, there has been an increase in incidence with series of related outbreaks affecting again poultry in many European countries. Iran, India South East Asia was hit by the worse epidemic ever reported. In 1999, the panzootic reached the American continent and Australia. ND is regarded to be endemic or epidemic almost allover the world.

Infectious Bursal Disease (IBD/Gumboro) emerged in 1957 as a clinical entity responsible for acute morbidity and mortality in broilers in USA. The diseases has now been reported to occur in most parts of the world and is widespread in commercial chicken as well as scavenging chickens. IBD is caused by infectious bursal disease virus (IBDV). Recently, IBDV isolates were described in USA and Europe displaying an antigenic drift. These new "hot" isolates are very virulent for chickens. The disease has an acute stage followed by immunosuppression, resulting in lowered resistance to a variety of infectious agents and poor response to commonly used vaccines. The acute stage of the disease and

TABLE 1- EXAMPLES OF RECENT EPIDEMICS OF TRANSBOUNDARY ANIMAL DISEASES

the immunosuppression that follows are major factors contributing to the economic significance.

Nipah Virus: Between late 1998 and mid-1999, a new pig disease characterised by a pronounced respiratory and neurologic syndrome, sometimes with sudden death of sows and boars was noticed to spread among some pig farms in Peninsular Malaysia. A new virus belonging to the paramyxoviridae family, named 'Nipah' was discovered and later confirmed to be the same agent responsible for the human and pig disease. In humans, the virus causes fever, severe headache, myalgia, and signs of encephalitis or meningitis. The case fatality rate has been about 40%.
By May 1999 when WHO declared the outbreak to be controlled, a total of viral encephalitis cases with 105 deaths were recorded in human related to pig farming activity. To bring the outbreak under control in the States of Negeri Sembilan, Perak and Selangor a 'stamping out' policy was instituted to cull all pigs in the outbreak areas in the first phase. A total of 901, 228 pigs from 896 farms were destroyed in the infected areas from 28 February to 26 April 1999.

Rift Valley Fever is a mosquito-borne viral zoonotic disease. Until 1977 it was confined to Sub-Saharan Africa. Then it occurred in Egypt in 1977 and again in 1993 caused an estimated 200 000 human cases of the disease with some 600 deaths as well as large numbers of deaths and abortions in sheep and cattle and other livestock species. Following the heavy El Nino rain in 1997/98 a serious outbreak was experienced in Eastern Africa causing not only livestock losses and human deaths but also seriously disrupted the valuable livestock export trade to the Near East. During 2000 an outbreak of Rift Valley fever occurred in Saudi Arabia and Yemen in the wet areas of Gizan and Al-Hudaydah. This is the first time that an outbreak of RVF has been recorded outside Africa.

Bovine Spongiform Encephalopathy (BSE), a prion disease of cattle, was first recognized in the United Kingdom in 1986. Since then, over 170 000 cattle have either died or been slaughtered. The discovery of a probable link between BSE and new variant Creutzfeld-Jakob disease of humans in 1996 led to major disruptions of world beef markets.

The Impact of Livestock Intensification on Animal Disease

Demographic estimates indicate that the world urban population is growing at the rate of 60 million per annum and that by 2010 the urban population will have exceeded that of rural areas. It is also estimated that 26 cities in the world will have populations of 10 million or more and that these will be located mainly in what are now classified as developing countries. This growth in urban population has fuelled the growth of intensification of and peri-urban livestock farming in several developing countries. Inevitably this has led to an increasing importance of endemic diseases in addition to the increased risk of epidemic diseases. The impact of livestock intensification is many-fold:

- The congregation of highly susceptible animals creates conditions for rapid amplification of the disease-causing agents that may even be associated with changes in

virulence. Classical swine fever in Europe and FMD in the Philippines are recent examples.

- Many endemic diseases that under extensive farming systems are of little consequence they often cause significant productivity losses under intensified systems. Examples include the enteric and respiratory disease complexes in young cattle and pigs due to viral and bacterial infections, helminthosis and many poultry diseases.

- Several livestock development projects have been compromised by exacerbated disease conditions where the focus has been on improving production without adequate attention to the health hazards. Examples include PPR in Bangladesh and African swine fever in West Africa.

- While the origin of Nipah virus is still not definitely identified, there is strong indication that extension of large pig breeding units to new areas may have brought pigs into contact with a virus that might have previously circulated in nature with little impact on animal and human health. Once introduced into the large pig units it multiplied rapidly, possibly increasing its virulence for pigs and humans. Thus the Malaysian authorities have now prohibited pig rearing in the previously infected areas of Negeri Sembilan to avoid future possible amplification of wild Nipah virus.

- The emergency of BSE in the UK has been associated with the feeding of inappropriately treated Meat and Bone Meal to dairy cattle.

These examples illustrate the dangers that are likely to be associated with livestock development and intensification in developing countries, where the disease burden is greater than in temperate climate, industrialised countries. Therefore, the success of such schemes is bound to depend on the degree of attention given to disease prevention, detection, control and management of animal diseases.

Impact of Structural Adjustment Programmes

The collective geographical location of the diseases of livestock of major economic importance e.g. FMD, rinderpest, contagious bovine pleuropneumonia, classical swine fever, African swine fever, sheep and goat pox, trypanosomosis, tick-borne diseases, Newcastle disease and probably infectious bursal disease extends from Africa across the Middle East and into Asia encompassing many of the poorer countries of the world. The sustained control of these diseases requires socio-political stability and ability to access all livestock by veterinary personnel, apart from the input of resources to supply and deliver vaccines, maintain effective surveillance systems to detect suspected cases at an early stage and provide the trained manpower and resources to implement disease control strategies in the event of outbreaks. Most countries across this sector of the globe do not have resources required to support all of those elements and so they resort to strategic approaches. The national veterinary services in developing countries have, like other departments, to compete for scarce resources but unfortunately they are often politically weak and fare badly when the cake is cut up. Furthermore, economic structural adjustment programmes tended in several cases to weaken the administrative, legal and financial capacity for dealing with major animal diseases. Consequently, progress in the control of animal diseases in many developing countries has become a tediously slow and unpredictable business.

In the immediate post colonial period of the 1960s, the public sector veterinary services of most developing countries were engaged in the delivery of the full spectrum of veterinary activities and services with little or no participation of the private sector. By the mid-1970s many countries were experiencing serious economic difficulties and started seeking financial remedial assistance. It was felt that the rescue lay in structural adjustment of their economies. Changes in fiscal, financial and pricing policy included the elimination of subsidies and removal of tariffs while institutional reforms included privatisation of government-owned enterprises and the introduction of cost-recovery. In seeking to move services from public to private sectors, it was argued that, in most domains, any form of private enterprise is likely to outperform the public sector. This led to a drive for the privatisation of veterinary services, thus aiming at diminishing drastically the role of the state in these activities. Animal health was seen as a private good and veterinary services were seen essentially as providing an animal health care delivery system. So issues like the sale of veterinary medicines and vaccines, provision of clinical services or undertaking vaccinations became uppermost in the implementation the privatisation programme. Surveillance, early warning, laboratory diagnostic services, planning, regulation and management of disease control programmes as well as assurance of the quality and safety of animal products became a secondary consideration. The concepts of control of epidemic (and usually trade-related) diseases and the international obligation to manage and report on these diseases, was lost. As a result of restructuring and decentralisation government veterinary officers were often placed under the control of regional and local authorities within a general agricultural extension system. Thus, the chain of veterinary command that required notification of disease outbreaks enabled a response to disease emergencies and also which managed national disease control programmes was often effectively dismantled.

The combination of a poor financial resources and an improperly organised national veterinary service often has led to a deterioration in animal health services with epidemic diseases often spreading unchecked. However, there are examples where greater involvement of the private sector has actually improved the control of epidemic diseases. The most notable example is the case of countries of the Mercosur of South America. Here the private farming and trading sectors became involved in the planning and monitoring of disease control programme and exerted pressure on governments so much so that the efficiency of the supervisory and regulatory roles of the public sector actually improved. As a result, South America has made great strides in FMD control and government services have been able also to react resolutely to disease emergencies. Another example is provided by the Indian National Dairy Development Corporation's involvement in FMD control on farms of members of the co-operative.

The Impact of Political and Social Instability on Animal Health

When political upheaval leads to conflict the consequences for disease control programmes can be catastrophic. For example, following the Gulf War and the military offensive of the Iraq government forces against the rebellious Kurds in the north, there was mass migration into Turkey. The refugees took as many of their animals as possible with them and in doing so introduced rinderpest into Turkey’s susceptible livestock population. Turkish farmers in the south-east of the country, rushing to dispose of their sick animals as quickly as possible, spread the disease through the marketing chain to Ankara and as far west as the Sea of Marmara.

International political isolation of countries can also lead to a worsening disease situation within the region

Thus there are strong associations between political and social instability and the increased incidence of disease. Attendance to animal health through professionally guided community-based programmes will need to be an increasing component of humanitarian programmes in conflict affected areas to avoid consequential major epizootics.

Effect of Climatic Change on Animal Diseases

Climatic factors can have a major effect on the rate of transmission of many infectious diseases. Microbial agents and their vector organisms are sensitive to factors such as temperature, humidity, precipitation, surface water, wind and changes in vegetation. This applies particularly to vector-borne diseases (VBDs), such as Rift Valley Fever (RVF) transmitted by mosquitoes; African horse sickness (AHS) and bluetongue (BT) - both transmitted by biting midges (*Culicoides spp*), African swine fever (ASF), East Coast fever, anaplasmosis, babesiosis and Nairobi sheep disease transmitted by ticks; and trypanosomosis transmitted by tsetse flies. It is projected, therefore, that climate changes and altered weather patterns will affect the range, intensity, and seasonality of many vector-borne and other infectious diseases.

Considerable progress has been made in dissecting and defining the climatic and environmental factors that influence vector biology. The data has generally been obtained by a combination of field and laboratory studies. These approaches, combined with satellite remote sensing, geographical information systems (GIS) and biomathematical modelling could be used to develop simulation models to predict when and where disease outbreaks are likely to occur and how things might alter with climate change. Armed with this information control strategies e.g. the use of prophylactic vaccination and vector control, could be used to protect animals in advance of the spread of a disease and thereby reduce its impact.

For example, successful attempts have been made to model the abundance and distribution in southern Africa of *Culicoides imicola*, the vector midge of AHS and BT viruses. The abundance of *C. imicola*, together with associated climate data have been analysed in combination with certain satellite-derived variables with the aim of developing models of *C. imicola* abundance to predict the risk of AHS and BT. Similarly for the 1997/98 Rift Valley fever in Eastern Africa, an examination of the satellite remote sensing images could readily identify areas for intensive ground surveillance for RVF and other VBDs

Some VBDs are zoonotic diseases and cause serious illness and death in humans. Climate change is likely to increase the prevalence and incidence of many such diseases (geographically or from season to year-round). For example, global warming and resulting rising sea level would displace some human populations, perhaps resulting in migration into wilderness areas where zoonotic infectious agents are being transmitted in silent life cycles.

It is predicted that global warming will be characterised by more frequent storms and flooding in certain areas. Higher temperature, increased humidity and more extensive surface water might result in increased insect populations and a higher incidence of VBD. On the other hand, periods of drought will cause the extensive migration of pastoral herds in search of water and grazing and favour the spread of disease by vectors and by contact between animals. These conditions would increase the likelihood of livestock mingling with

wildlife populations and the transmission of pathogens. Support for these predictions is provided by the strong association shown between the major epidemics of AHS in South Africa which occur every 10 to 15 years and the warm (El Nino) phase of the El Nino/Southern Oscillation (ENSO) which is mediated by the combination of rainfall and drought brought to South Africa by ENSO. Warm-phase ENSOs bring both rainfall and drought to southern Africa. Populations of *C. imicola* can increase 200-fold in years of heavy rain. However, heavy rainfall occurs for other reasons in many non-ENSO years but epidemics of AHS do not result. It seems that a combination of heavy rainfall followed by drought is the critical combination, which leads to epidemics. It has been proposed that this is because the high temperatures during droughts increases vector population growth rates and the coincidence of this with the congregation of horses with the virus reservoir (zebra) at the few remaining sources of water creates the conditions favourable for the vector to transmit AHS virus.

In Asia the impact of floods, droughts and cyclones has has not been a sufficiently analysed in term of animal health. Yet these climatic changes are taking place with increasing veracity on the continent. For example in Bangladesh only six years between 1960 and 1992 were free of climate induced disasters. It has been estimated that droughts occurred on average every 2.3 years and floods and cyclones every 1.8 years. It can be expected that both established diseases and newly introduced diseases are likely to be of increasing intensity. This has already been evidenced in Bangladesh by the pattern of Peste des Petits Ruminants, a disease, which was first recognised in the country in 1993.

The Impact of Animal Movement and Trade on Disease Incidence

Increased road construction across Central and South America, Africa and Asia aimed primarily at responding to expanding industrial needs has also made it easier and cheaper to transport animals over long distances on land. Similarly, the growth of sea and airfreight systems facilitates the transport of animals around the world. The most common mechanism for the transmission of infectious organisms is contact between infected and susceptible hosts. Modern animal transport systems are ideally suited for spreading disease. The animals commonly originate from different herds or flocks, they are often confined together for long periods in a poorly ventilated stressful environment - all of which will favour the transmission within the group of infectious disease should one or more sick animals be present. If not destined for slaughter, the animals will be introduced into new herds or flocks where they will be subjected to social and dietary stress and an exchange of microorganisms with the resident population.

A spectacular inter-continental trade transfer of a pest was exemplified by the New World Screwworm (*Cochliomyia hominivorax*) in Libya in 1988. This was the first time this pest became established outside its natural range in the Americas. Recent years have seen some spectacular examples of the consequences of extended trade links. The outbreaks of FMD type SAT 2 in dairy herds in Saudi Arabia and in sheep in Kuwait during 2000 probably resulted from the importation into the Arabian Peninsula of cattle or sheep from Eastern Africa. While FMD type SAT 2 virus is endemic in many parts of Africa this is the first occasion that the SAT 2 sero-type has been recorded outside Africa.

The dynamics of FMD between Myanmar, Thailand and Malaysia is often a direct result of movement of trade cattle. Similarly the vast movement of pigs in eastern Asia has been associated with the spread of foot-and-mouth disease.

The movement of infected animals is the most common mechanism by which infectious diseases such as FMD and ND are transmitted. However, spread can also result from the feeding to animals of contaminated foodstuffs such as hay and contaminated unheated waste food of animal origin. The transport of contaminated meat and fodder around the world is a mechanism by which FMD can be spread over long distances and by which exotic strains can be introduced into new territories.

FOOT-AND-MOUTH DISEASE
(Evolution of South Asia FMD Topotype)

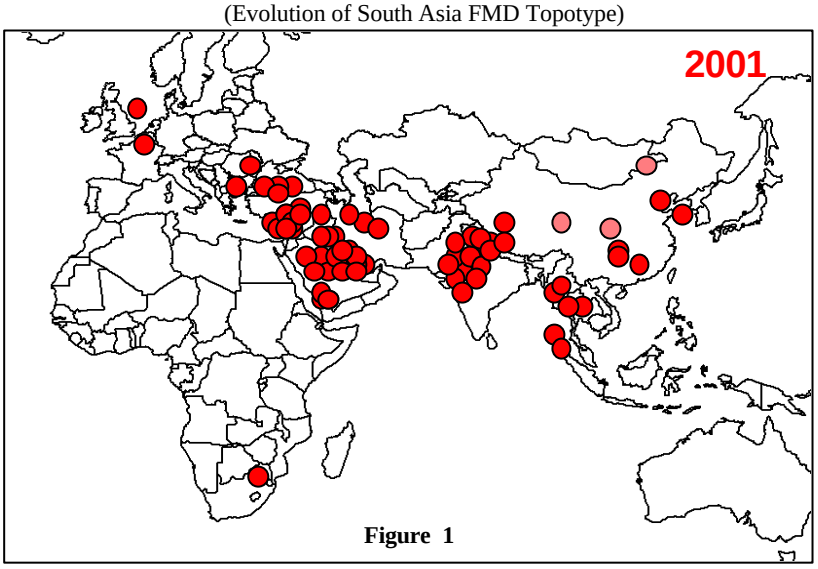

Figure 1

The most dramatic example, however, is the evolution of the spread of FMD sero-type O that is now referred as the Pan-Asian topotype, which over a 10-year period has spread through most of Asia, has affected parts of Europe and South Africa. This virus was first identified in northern India in 1990 and spread westwards into Saudi Arabia during 1994 and, subsequently, throughout the Near East and into Europe (Turkish Thrace, Bulgaria and Greece) in 1996. In 1993 it was found in Nepal and later in Bangladesh (1996) and Bhutan (1998). In 1999, it was reported from Mainland China (Tibet, Fujian and Hainan) and then detected in Taiwan Province of China. In late 1999 and in 2000 it reached most of Southeast Asia. Most recently it has been introduced into the Republic of Korea, Japan, the Primorsky Territory of the Russian Federation and Mongolia (areas free from FMD since 1934, 1908, 1964 and 1973, respectively). The virus has been isolated from a wide variety of host species (cattle, water buffaloes, pigs, sheep, goats, camels, deer and antelope). In September 2000, the FMD Pan-Asian topotype was identified on a pig farm in Kwa Zulu, South Africa. It is believed that infection was introduced there through swill collected from a ship originating from South Asia. In February 2001 the same strain was identified in England, again probably introduced through swill feeding. This virus has now (early April 2001) already resulted in over 1000 outbreaks in the UK and a small numbers of outbreaks in Ireland, France and the Netherlands.

Good Emergency Management Practices in Animal Health

Animal diseases are increasingly been accepted as natural disasters both in their own right and as consequences of other disasters. In view of the increasing frequency of disease emergencies, it is necessary to develop systems for their prediction, early detection, and

structured risk-based surveillance leading to early warning. This in turn should be able to lead to an organised and structured response in order to contain a disease outbreak and prevent it from evolving into a major epidemic. It is equally important to address disease at source where it is ordinarily endemic in order to reduce its impact on food security, on the vulnerability of poor communities and to reduce the risk of spread from endemic areas to free areas causing serious disasters. This is the basic principle which underlines the EMPRES-Livestock programme, whose vision is stated as:

"To promote the effective containment and control of the most serious epidemic livestock diseases as well as newly emerging diseases by progressive elimination on a regional and global basis through international co-operation involving early warning, early/rapid reaction, enabling research and co-ordination"

Therefore, in addressing animal disease as a natural emergency EMPRES has developed a Code of Conduct to guide Member Countries to establish a structured approach to disease emergencies. This is referred to ***G**ood **E**mergency **M**anagement **P**ractice* **(GEMP)** in animal health which is defined as the sum total of organised procedures, structures and resource management that lead to early detection of disease or infection in an animal population, prediction of the likely spread, prompt limitation, targeted control and elimination with subsequent re-establishment of verifiable freedom from infection in accordance with the International Animal Health Code.

http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGA/AGAH/EMPRES/GEMP.htm

The programme is also available on CD. It approaches disease emergencies in four main segments:

- Planning for an Emergency
- Recognising an Emergency
- Responding to an Emergency
- Recovering from an Emergency

The programme is underpinned by a set of resource materials as videos, manuals, photo-library, model contingency plans and has links to major internet sites dealing with disease emergency management.

Finally, it should be noted that faced with the dilemma of the need for sustained agricultural production coupled with the desire for increased and liberalised trade on the one hand and the threat of infectious diseases on the other, the World Food Summit in Rome 1996 committed the world governments and the civil society to: -

Seek to ensure effective prevention and progressive control of plant and animal pests and diseases, including especially those which are of transboundary nature, such as rinderpest, cattle tick, foot and mouth disease and desert locust, where outbreaks can cause major food shortages, destabilise markets and trigger trade measures; and promote concurrently, regional collaboration in plant pests and animal disease control and the widespread development and use of integrated pest management practices

DEALING WITH FOOT AND MOUTH DISEASE IN THE PHILIPPINES

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The Situation Then

In 1995, the Philippines experienced an FMD epidemic. Almost all the provinces in Luzon were hit with Foot and Mouth Disease. Records of more than a thousand outbreaks were recorded affecting almost 100,000 heads of animals. There could be more not reported at that time.

To say that the situation was under control was an understatement. While Foot and Mouth Disease was nothing new to livestock authorities, what was occurring was then puzzling. The outbreaks were mostly in pigs. The incubation period was from 24 to 48 hours. The vaccines currently in use were not working. It would be later learned that indeed there is an introduction of a new type of FMD.

The sudden occurrence of this kind of a situation caught authorities off guard. Different pronouncements were released confusing both field officers and the public. As a result, consumers shunned from buying pork, which affected the market of the commercial raisers.

Furthermore, within the government organization, there was a dawning realization that the control program initially set in place was no longer effective. For one, the provincial veterinarians who before were under the Department of Agriculture were devolved and placed under their respective local executives thus putting them under a different department. Within the Department of Agriculture, a similar reorganization was taking place. Thus in terms of coordination, a different tact is required.

The scenario above exemplifies a situation where emergency measures were not factored in. The initial program surely has not put this in its provisions so that when a new type of FMD was emerging, the routine measures listed in the plan proved to be direly lacking.

Measures Taken

The only alternative then was to draft a new plan. Hence, in 1996, the Plan on the Control and Eradication of FMD was written and approved. The plan this time was careful to note the changes in the organizational structure and allowed some flexibility for the field officers to decide on a case confronting them.

The goal was to eradicate FMD from the country. To achieve this, it is anchored on four strategies, namely: Disease Monitoring and Surveillance, Public Awareness, Animal Movement Management (Quarantine) and Vaccination.

The President of the country released an initial fund to control FMD and the National FMD Task Force was strengthened in terms of manpower. Note that before the epidemic, the said body was only a committee collating reports from the field and was thrust to supervise the control work during the epidemic. With the issuance of an Executive Order by the President delegating the Bureau of Animal Industry to supervise and coordinate the control activities, the Task Force therefore was given the role of overseeing the day-to-day operations of the control program.

The task at hand was to control the epidemic. The immediate move was to inform the public on the disease and correcting the notion that FMD was zoonotic. A public awareness campaign was launched to correct misconceptions on the disease. Part of this is to caution farmers in selling sick animals to prevent the further spread of the disease. On the technical side, vaccination commenced after a new batch of vaccines arrived. Movement control was implemented to check the spread of the disease. Field officers were directed to report all incidences of FMD.

Simultaneous with the emergency control measures adapted, regional task forces were being formed to make coordination easier. With the National Task Force identified to speak on FMD and to oversee the day to day operations, it provided a focal point for the field officers, the commercial raisers and the media practitioners. Release of information was now centralized. In effect actions taken were now guided.

As the epidemic slowly subsided, the Task Force had to focus also on organizational issues, establish guidelines so that a repeat of the epidemic would be avoided. With support from management, the Task Force strengthened its network with the regional offices. The regional task forces formed were also a network in the respective areas consisting of representatives of government agencies that have a role in FMD control, non-government organizations and provincial veterinarians of the provinces of that region. These regional task forces link with the national task force and implement the strategies stated in the national plan.

The FMD Diagnostic Laboratory was encouraged to link with the World Reference Laboratory and the IAEA to improve its diagnostic capability and to verify/validate its laboratory results.

The next step was to train the technical staff on the nature of the disease and what to do when there is a suspect case. A series of epidemiology trainings were conducted among the provincial veterinarians so they would understand the importance of reporting an outbreak and how this information could help in the control of said outbreaks.

At the same time, the Information Management System was installed at the national office. This enabled the staff to analyze the data that is coming in and allow for the more efficient use of resources. For instance, data analysis reveals that the trader is the number one factor in the spread of FMD. This justifies the resources to pour into the strengthening of the checkpoints. It also puts direction into the public awareness campaign.

To date, the data has allowed for the classification of the country into status zones, which results into a more efficient use of resources. With the three major groups in the country, Mindanao is now considered an OIE FMD free recognized zone, the Visayas group as FMD free zone, the northern regions of Luzon as protected zone, central Luzon as the control or endemic zone and the southern Luzon as a buffer zone. With such a classification, resources such as vaccines are channeled only to the endemic regions while biosecurity measures are more emphasized in the free and protected areas rather than vaccination.

Protecting the Gains

The epidemic has been put under control. FMD has been confined to smaller areas but with status zones identified, there is always a risk of introducing the disease to the free areas.

The Task Force has improved on the guidelines and has compiled it into one handbook for the field officer. Guidelines include what to do when an outbreak occurs, how to set up a checkpoint, the recommended vaccination schedule, proper cleaning and disinfection, pertinent rules and regulations on FMD and the like.

With the establishment of the EMPRES, the Task Force has included this as part of its training module called the EMPRES Run. While the EMPRES Run sticks to the principles espoused by EMPRES, the Task Force has modified the approach of the training to suit Philippine conditions. It starts the Run with an explanation on the disease, its nature and signs. Then a discussion on the impact of FMD on the farmer's livelihood and on the economy is given for the field officer to better appreciate the importance of the FMD control and eradication program. At this point their attention is usually captured thus, the EMPRES principles are then discussed. The last part is a workshop asking them to suggest a suitable flow of information and how they will act to prevent the entry of FMD and in case FMD enters the area. The output is then adapted for that area and is usually what would be followed by the Task Force in case of emergencies.

In so doing, the Task Force respects what is ideal for a given area.

To date, the areas, which have benefited from the EMPRES Run, have applied the principles of the FAO EMPRES. For FMD free areas the Task Force now receives serum samples, negative incident reports, and monitoring results from slaughterhouses. These activities have become effective gauges for free areas to determine its disease status.

Applying Empres to Real Life Situations

Concretely, the Task Force has encountered situations where preparedness proved helpful.

A very glaring example is the outbreak in Iloilo, a province in the Visayas. A suspect case was reported to the Task Force in the morning of September 6 and immediately, a Task Force representative was at the sight in the afternoon of the same day. (The area could be reached by plane.) Confirmation and samples were sent to Manila, all on day 1. On day 2, a meeting cum briefing was held among the staff of the regional task force, followed by a briefing for the commercial raisers. When the actions were identified and tasking done, a press conference was held to inform the media what was going on. Immediately also the

local officials issued executive orders to their constituents to cooperate in the cleaning and disinfection of the province as well as report any suspect cases. This actually made the job easier.

A center was immediately established to receive reports and it also sent out teams to where these reports are, to verify whether it is FMD. Meanwhile, teams of two were also dispatched to the whole province to monitor whether FMD has spread to that part of the province. In this activity, slaughterhouse monitoring proved very useful in the sense that a municipality usually has one slaughterhouse and if there were cases, peopled would for sure bring them to the said facility. Thus a positive case detected in the slaughterhouse means that outbreak might be widespread while a record of chealthy animals from the said facility means that the area is clean.

After implementing cleaning and disinfection, massive information campaign for people to report and later, on vaccination, was launched. The last reported case occurred in Oct. 7. There were no other cases reported after Oct. 7. At that point, the Task Force considered the episode over.

Note that vaccination was only introduced two weeks after the outbreak has been reported. The time lag could be explained by whether the cost of stamping out could outweigh the cost if vaccination was used. After much discussion, it was then decided that vaccination be introduced. The commercial raisers did introduce vaccination and so did the government for the backyard raisers. After six months, vaccination stopped in some areas. Vaccination has ceased for more than a year now.

There were several scares too from the other free areas. Field Officers reported the slightest observation of a foot or a mouth lesion. When that happens, it is not left to chance. A representative immediately visits the area and verifies the suspicion. It has always been a false alarm. Nevertheless, the Task Force welcomes such reports because then it is usually a measure of their vigilance. Note that on the part of the Task Force, response is made within 24 hours.

Requirements

While the field officers get to learn the principles of emergency preparedness, there are points to consider in making sure that the measures to be adapted would work.

Firstly, getting the information of a suspect case is very important. A 24-hour response time is useless if the information received is days old.

Each staff member must know his/her role. In the Philippines, a copy of the FMD Handbook is given to field officers. This handbook contains all the standard operating procedures when suspecting a case, confirming a case, managing an FMD outbreak and maintaining an area FMD free.

Other administrative matters must be considered too and must not be taken for granted. Some of these matters are making sure one has access to authorities so that they can easily be reached in times of crisis. There must be ready access to initial funds for emergencies in the field and a fund for stamping out in case this approach is applied. When the report

comes, the receiving end must have access to the field officer who reported the disease to make sure that updates of the situation are being given.

Usually, there would be a need for supplies such as disinfectants, other pharmaceuticals, etc. Thus there must be ready access to suppliers. If processing of papers to request these supplies takes time, then an arrangement to avail of these supplies on credit must be made.

Arrangements with airlines should be done so that the response time would be short as possible. This means, contracting a travel agency to arrange for bookings at short notice and that would be willing to take bookings on credit.

A ready template to write in reports and advisories would be helpful. When an emergency crops up, informing the public and other field offices must also be addressed.

The stakeholders must be informed of the problem and in this case the confirmed outbreak. Their suggestions and assistance could be a big help for the Task Force.

Lastly, information must be ready for the press to avoid speculation by the public and the press itself. A press statement would come in handy so that there would be no consumer panic. The Iloilo incident did not cause a stir among the consumers because the statement from the Task Force was distributed.

What Now?

With FMD as a pilot disease in applying emergency preparedness, the Philippine government realized that the public must be assured of swift, accurate action when a report of a suspected case is submitted.

In 1999, the Department of Agriculture established a Quick Response Team (QRT) and delegated this to the Bureau of Animal Industry. The QRT is designed to address all other exotic diseases that might enter the country or if a sudden increase in disease incidence is observed. The QRT is manned by epidemiology staff and receives an annual budget. To complement this, a special budget allocation has also been set aside for the control, eradication of economically important diseases. FMD control gets a separate funding.

Disease emergency preparedness if properly planned and done could minimize costs and undue stress.

THE ZOONOTIC PARAMYXOVIRUSES

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Outbreaks of diseases in humans in three countries of the region were caused by zoonotic paramyxoviruses; Hendra (1994) and Menangle (1997) in Australia, and Nipah (1998-99) in Malaysia and Singapore. These outbreaks were initially observed as disease in animals (Hendra, horses; Menangle and Nipah, pigs) followed by disease in humans who had contact with the infected animals. There is clear evidence that implicates fruit bats (suborder Megachiroptera, genus Pteropus) as the natural hosts and wildlife reservoir of these paramyxoviruses. Evidence of Hendra virus infection has been found in these bats throughout their range in Australia and in Papua New Guinea, and Nipah virus infection in populations in Malaysia. While the Hendra and Nipah viruses are apparently closely related, the Menangle virus is seemingly distinct. In the multi-age piggery where it was isolated, it caused widespread mortalities and deformities in pig fetuses while all other infected pigs showed subclinical infection.a similar virus has been isolated from bats in Malaysia. Eradication of the grower pigs seemingly broke the cycle of infection, but highlighted the serious and potentially devastating economic and social costs of these and future outbreaks of zoonotic paramyxoviruses. We need to be able to detect, investigate and respond effectively to these, and possible other, potentially emerging diseases.

Introduction

In the past 7 years, three newly described zoonotic paramyxoviruses causing diseases in humans have been reported from the region. In Australia two of these diseases were caused by the paramyxoviruses Menangle and Hendra (formerly equine morbillivirus), and the third in Malaysia and Singapore was caused by the paramyxovirus Nipah virus. All three caused significant economic and social disruption, particularly as the causative agent was not immediately identified, and the disease control outcome was therefore unpredictable.

The disease outcome and the frequency of occurrence are influenced by many variables called disease determinants. These usually include one or more specific agents, as well as factors associated with the host animals and their environment. The relative importance of all identifiable determinants and the interplay between them must be considered in attempting to prevent or control diseases. It is important that policy advisors are aware of the consequences and implications of making decisions not based on sound advice on disease control as the economic consequences of a bad decision can be both devastating and long term.

Hendra Virus

Hendra virus was first recognised in 1994 after a sudden outbreak of severe, fatal respiratory disease affecting race horses and humans. Twenty race horses in the Brisbane suburb of Hendra were infected and 13 died. The trainer and stable hand were also infected, and the

trainer died. A second incident occurred in Mackay, a coastal town approximately 1,000 km north of Brisbane, when two horses and a farmer died. The death of the horses and the initial infection of the farmer occurred in 1994 and preceded the Brisbane outbreak; the virus is believed to have then entered a latent phase for 1 year before reactivating to cause fatal encephalitis. No connection was found between the Brisbane and Mackay incidents. In 1999 a horse died in Cairns which was later confirmed by laboratory investigations to be Hendra virus.

Experimental studies on Hendra virus have shown that in horses and cats, after subcutaneous, intranasal, and oral administration, the virus causes fatal pneumonia. In guinea pigs, subcutaneous administration is also fatal, but the infection is more generalised. Black fruit bats (Pteropus alecto) infected by subcutaneous, intranasal, or oral routes contract a subclinical infection and generate an antibody response. Endothelial cell tropism and formation of syncytia in blood vessels are common pathologic findings in both overt and subclinical infections.

Initial seroepidemiologic studies found no evidence of Hendra virus among horses, other farm animals, or more than 40 species of wildlife in Queensland. However, working on the hypothesis that if outbreaks at two distant sites were connected, the most likely wildlife source would be either birds or fruit bats, P. L Young and colleagues subsequently showed that fruit bats (flying foxes), members of Megachiroptera, were the natural hosts on serologic grounds and by virus isolation, with widespread evidence of infection in four species of fruit bat: the black (Pteropus alecto), grey-headed (P. poliocephalus), little red (P. scapulatus), and spectacled (P. conspicillatus) fruit bats. Indeed the virus was antigenically and genetically indistinguishable from the earlier horse and human isolates. Thus, it is now clearly established that Hendra virus is a fruit bat virus and is widely distributed throughout the range of pteropid bats in Australia, with serologic evidence of infection in an average of 42% of wild-caught bats. Serologic evidence of infection of fruit bats has also been reported from Papua New Guinea. Two species of antibody-positive bats (Dobsonia moluccense, P. neohibernicus) were identified from Madang on the north coast of Papua New Guinea, and four more species (D. andersoni, P. capistratus, P. hypomelanus, and P. admiralitatum) were identified in Port Moresby and New Britain.

An accumulating body of evidence—size of genome, comparative sequence analyses, coding capacity for a small basic protein in the P gene, morphologic features, host range, and various biologic properties, together with the wildlife host of the virus—suggests that the virus was neither an equine virus nor a morbillivirus and that it be renamed Hendra and be classified in a new genus within the Paramyxoviridae.

Menangle Virus

An apparently new virus in the family Paramyxoviridae was isolated from stillborn piglets with deformities at a large commercial piggery in New South Wales in 1997. The farrowing rate in the piggery decreased from an expected 82% to 60%; the number of live piglets declined in 27% of the litters born; the proportion of mummified and stillborn piglets, some with deformities, increased; and occasional abortions occurred. A virus was isolated from lung, brain and heart tissues of infected piglets, and shown morphologically to be similar to viruses in the family Paramyxoviridae. No disease was seen in postnatal animals of any age, but a high proportion of sera (>90%) from animals of all ages contained high titers of neutralising antibodies against the virus. Tests performed at the Australian Animal Health

Laboratory confirmed that the virus, named Menangle virus, was unrelated to other known paramyxoviruses, including viruses known to infect pigs.

Serum from two workers—one at the affected piggery and one at an associated piggery that had received weaned pigs from the original piggery—had high titer, convalescent-phase neutralising antibodies to the new virus. Both workers had an influenzalike illness with rash during the pig outbreak, but extensive serologic testing showed no evidence of any alternative cause; therefore, the illness is believed to have been caused by the new virus.

A large breeding colony of gray-headed and little red fruit bats roosted within 200 m of the affected piggery. In a preliminary study, 42 of 125 serum samples collected from fruit bats in New South Wales and Queensland had neutralising antibodies to the new virus. In addition, antibodies were found in sera collected in 1996, before the outbreak, and from a colony of fruit bats 33 km from the piggery. Therefore, the fruit bats are believed to be the primary source of virus causing the outbreak. Sera collected from wild and domestic animals near the affected piggery were seronegative.

The geographic range, normal host species and genetic relationship of this new virus to other paramyxoviruses remain unknown. Nevertheless, Menangle appears to cause fatal disease and malformations in prenatal pigs and may be associated with influenzalike illness in humans.

Nipah Virus

Between September , 1998 and April 1999, approximately 229 cases of febrile encephalitis (48% fatal) were reported to the Malaysian Ministry of Health (MOH). During March 1999, nine cases of similar encephalitic illnesses (one fatal) and two cases of respiratory illness occurred among abattoir workers in Singapore. Tissue culture isolation identified a previously unknown infectious agent from ill patients. Epidemiologic and laboratory investigations of these cases indicate that a previously unrecognised paramyxovirus Nipah Virus related to, but distinct from, the Australian Hendra virus was associated with this outbreak.

A case of suspected illness was defined as fever severe headache, myalgia and signs of encephalitis or meningitis. Three clusters of cases have been identified. The first cluster began in late September 1998 near the city of Ipoh in the state of Perak. Cases continued to occur in this region until early February 1999. The second cluster occurred near the city of Sikamat in the state of Negri Sembilan in December 1998 and January 1999. The third and largest cluster began near the city of Bukit Pelandok in the state of Negri Sembilan in December 1998. Two cases occurred in the state of Selangor

Cases have occurred primarily among adult men who had histories of close contact with swine. Concurrent with the human cases, illness and death occurred among swine from the same regions. Initially, Japanese encephalitis (JE) virus was considered the probable etiologic agent for this outbreak, and specimens from some patients tested positive for infection with JE virus. However, the predominance of illness in men who had close contact with swine suggested the possibility of another agent.

Tissue culture isolation from central nervous system specimens at the Department of Medical Microbiology, University of Malaya, identified a previously unknown infectious

agent. Electron microscopic studies of isolation material from three patients demonstrated virus-like structures consistent with a paramyxovirus, and immunofluorescence tests of cells infected with this virus suggested a virus related to Hendra virus. Additional laboratory testing, including preliminary nucleotide sequence information, indicated the virus was related to but not identical to the Hendra virus.

In some instances, illness in pigs occurred 1-2 weeks before illness in humans. The disease in swine is not well defined but appears to include rapid and laboured breathing; an explosive nonproductive cough; and neurologic changes, including lethargy or aggressive behaviour.. Very small numbers of goats, dogs, horses and cats have shown serologically to have been infected with the Nipah virus but there is little evidence to suggest these animal obtained their infection other then from infected pigs. Serological evidence that the virus can reside in indigenous bat populations has been demonstrated and virus isolated . For a fuller outline of the Nipah virus outbreak in Malaysia see the report by Mohd. Nordin B. Mohd Nor of Department of Veterinary Services Malaysia, which was recently presented at a meeting in Malaysia and printed in the APHCA papers with his kind permission.

Situation Assessment

It is important to be ever vigilant about the emergence or re-emergence of diseases. The drive in Southeast Asia to satisfy the increasing demand for animal protein has resulted in many changes to common agricultural practices. The intensification of some of the animal production industries, combined with urbanisation, global changes and the increasing ease of travel/transport has produced environments that may lead to the emergence of diseases once thought to be uncommon. These changes challenge the normal control methods and indicate that new ways need to be found if these emerging diseases are to be controlled. It raises profound issues for human health, livelihoods and the environment. From the beginning of the 1970s to the mid 1990s, consumption of meat and milk in developing countries increased by 175 million metric tonnes. The market value of the increase in meat and milk consumption over this period in developing countries was approximately US$155 billion (US dollars of 1990), more than twice the market value of increased cereal consumption under the Green Revolution. The population growth, urbanisation and income growth that fuelled the increase in meat and milk consumption are expected to continue well into the new millennium, creating a veritable Livestock Revolution.

Hendra, Menangle and Nipah virus have probably existed in fruit bats in the Australasian area for hundreds of years and yet only recently have they been detected in other species. It is possible that the viruses may have moved out of the host (fruit bat) to other species on previous occasions but never become established in the new host and it is probable that these viruses will " emerge " in another time and place, and (possibly) animal host. There is strong evidence that bats are the maintenance hosts. Bats are probably the oldest forms of placental mammal in Australia, with fossil evidence from the Middle Miocene era, *circa* 15 million years ago. Some species of bats migrate between various countries of southern Asia. We now have evidence that Nipah virus has crossed into pigs in Malaysia and become well established there in pigs. We also know there has been pig-to-man transmission.

These recently recognised diseases are known as “emergent”, but it is highly likely that they have always been present. However, once they became involved with humans and/or domestic/productive animals the farming scientific and public health regulatory communities were galvanised into action. Fear and overreaction are the result when the risk

is not quickly and correctly assessed. Therefore, it is imperative that every country must establish systems for disease surveillance and response. This would include four strategic objectives: surveillance, diagnostic tests, response and interdisciplinary research. In this region, the Asian-Pacific, much has been done in all these areas, but more needs to be done, and quickly, in particular:

Surveillance

There is a need to strengthen existing surveillance systems so that changes in the incidence of known diseases are routinely reported and information on the emergence of new or unusual diseases is readily available to the ministries in other nations.

Diagnostic Tests

There is a need to develop or adapt simpler, more cost-effective procedures to determine the causes of disease. Ideally, these procedures should be simple enough for use in the field when laboratory facilities are not available.

Response

There is a need to enhance the capabilities of Government agencies and existing disease-specific networks to respond to recognised outbreaks identified through improved surveillance.

Interdisciplinary Research

There is a need to support the capacity to undertake control and prevention strategies in the region.

More specifically a WHO working group on Enzootic Paramyxoviruses made the following recommendation and comments. Although the outbreak has been successfully controlled, various problems were identified including coordination between human and veterinary public health services and other involved government departments, coordination of international inputs, and response to the mass media. A number of lessons have been learned about outbreak response during the Nipah virus outbreak and these are reflected in the recommendations below.

Recommendations

1. To facilitate dealing with outbreaks of known and emerging communicable diseases including zoonoses, all countries should develop an outbreak response plan at national level. This plan should cover the following areas at minimum:
    a) The designation of responsible officers for the declaration of an outbreak situation
    b) A core group of members for the formation of an outbreak response task force and a pool of potential members depending on the nature of the outbreak
    c) The designation of appropriately trained contact officers for dealing with the media and public information
    d) A mechanism for regular contact and information sharing between human and veterinary public health services and laboratory services

2. Appropriate guidelines on dealing with mass media and public information during outbreaks should be developed and widely disseminated

3. The following control measures are recommended in the event of further outbreaks of Nipah virus:
   a) Elimination of the infected and in-contact domestic animals
   b) Restrictions on the movement of domestic animals involved
   c) Adoption of protective clothing and procedures for workers in high risk professions
   d) Intensive health education for target groups
   e) Continuous and timely information exchange between human and veterinary public health services and laboratories
4. To facilitate the elimination of sources of infection from domestic animals and to prevent further spread through animal movement, appropriate levels of compensation for farmers should be established which will ensure their early and full collaboration

5. Given the current lack of knowledge on the mechanisms of transmission of these viruses, safe animal handling procedures, including protective clothing and safe injection procedures (a single sterile syringe and needle) should be followed by farmers and veterinarians.

6. International collaboration during periods of outbreak response should be coordinated centrally, in country by the Ministry of Health and among external agencies by WHO.

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OVERVIEW OF NIPAH VIRUS INFECTION IN PENINSULAR MALAYSIA

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Between late September 1998 to May 1999, a new pig disease with zoonotic implications, characterized by a pronounced respiratory and neurological syndrome and sometimes with sudden death of sows and boars, was discovered to spread among certain pig farms in Peninsular Malaysia. The disease was identified to be associated with the viral encephalitis epidemic in people related to pig farming activities resulting in 265 human cases and 105 deaths. The disease also infected 11 abattoir workers with one fatal case in Singapore [8]. In March 1999, a new virus, belonging to the paramyxoviridae family, was discovered and named 'Nipah' after the village 'Sungai Nipah' where the virus was first isolated from a human case [1]. Nipah virus was confirmed by molecular characterization to be the same agent responsible for both the human and pig disease. The Nipah virus is also related to the Hendra virus that had killed two people and 16 horses in Australia since 1994.

The new pig disease was presented as an outbreak in the Tambun, Ulu Piah and Ampang areas in the vicinity of Ipoh city, in the State of Perak; in Sikamat, Sungai Nipah, Kg. Sawah and Bukit Pelanduk in the State of Negeri Sembilan and in Sepang and Sg. Buloh in the States of Selangor.

The clinical patterns of disease after natural infection were observed to vary according to the age of the pigs. Sows were noted to present primarily the neurological syndrome while in porkers the respiratory syndrome predominated. However, clinical disease in pigs was very subtle. A large proportion of pigs on a farm can be infected without showing clinical signs. The disease appeared highly contagious, with concurrently affected animals being distributed randomly over a farm.

Mortality in farm was low, from less than 1% to 5%, but the infection rate can approach to about 80%. Disease manifestation varied from asymptomatic or mild to fulminant. Stress was considered to exacerbate clinical signs.

The majority of the cases demonstrated mild to severe lung. Histologically, the principal lesion was a moderate to severe interstitial pneumonia with widespread haemorrhages and syncytial cell formations in the endothelial cells of the blood vessels of the lung. Immunohistology showed a high concentration of the viral antigens in the endothelium of the blood vessels, particularly in the lung. Evidence of viral antigens in the cellular debris in the lumen of the upper respiratory tract suggested the possibility of virus transmission through nasal mucus and coughed droplets.

Dogs were shown to be infected with the virus and suffer fulminant disease during the outbreaks in Peninsular Malaysia. The evidence of infection in dog led to the decision to

shoot all dogs in infected areas at that time. Further study on dogs conducted after the outbreak in the infected areas later, did not showed any evidence of virus circulation and transmission among the dog population. Other animals such as cats, goats and horses can be infected. All these species were infected only if exposed to infected pigs. However, there was no evidence of transmission of disease from these animals to human.

The origin and reservoir of Nipah virus is still not confirmed. Preliminary wildlife surveillance has demonstrated neutralizing antibodies in fruit bats of the genus *Pteropus.* The role of this species in transmission of the disease requires further study
[2]

The Nipah virus epidemic is believed to have originated in the State of Perak and moved south to the other infected areas, like Sikamat and Bukit Pelanduk in the State of Negeri Sembilan and Sepang, and Sg. Buloh in the State of Selangor. The mode of transmission of the virus among pig farms within and between the States of Peninsular Malaysia was the sale and movement of infected pigs. [5] Active trading between pig farms was a normal practice in Peninsular Malaysia. Other routes of transmission between farms were considered, for example, lorries carrying infected pigs, artificial insemination, sharing boar semen and transmission by dogs and cats, but there is no conclusive evidence at the present time.

The disease was observed to spread rapidly among pigs on infected farms. Transmission between pigs on the same farm was possibly through direct contact with excretory and secretary fluids such as nasal mucus, saliva, nasopharyngeal fluid and bronchial secretions. Pigs were kept in close confinement and acted as a multiplying host.

Transmission studies in pigs at the Australian Animal Health Laboratory (AAHL) of the Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia, had established that pigs could be infected by either the oral route or by parenteral inoculation and have demonstrated excretion of virus via oronasal routes. Infection was observed to spread quickly to the in-contact pigs, and virus shedding from asymptomatic pigs was demonstrated. [3]

The Phase I of the Nipah virus infection control and surveillance programme started on February to April 1999 and involved the complete stamping out of infected pig farms. A total of 902,228 pigs from 896 farms in the outbreak areas were destroyed. The culling of pigs in these areas had successfully controlled the human epidemics in the states of Negeri Sembilan, Perak, and Selangor. [4]

The Phase II of control programme which involved the national swine testing and surveillance on all remaining pig farms was launched on 21 April 1999 to 20 July 1999. In this programme IgG-capture ELISA using Nipah virus antigen was used. [9] Each farm was sampled twice, with a minimum interval of three weeks between samplings. A minimum of fifteen sows per farm were sampled and tested. Farms with 3 or more sera ELISA positive were designated as positive farms. A total of 889 farms were tested and fifty farms were found serologically positive. These 50 farms were considered as infected and a total of 172,750 pigs from these farms were destroyed. [7]. Since May 1999, there is no new clinical disease detected in human and pig.

The phase III of the control programme began in October 1999 and was completed in December, 2000. In this programme, IgG-capture ELISA was used as a screening test and all ELISA positive cases were sent to AAHL, Geelong for confirmation by SNT. In the abattoir, twenty sera per farm were collected for testing while a minimum of 30 sows per farm were sampled for testing. Each farm was again sampled twice, with a minimum interval of three weeks between samplings. All sera sampled through the abattoir were negative by SNT but two farms in Perak were found SNT positive through farm screening. Based on the serology finding, all the pigs in these 2 farms were culled eventhough there is no new human and animal disease detected.

The outbreak of Nipah virus infection is a tragedy for the Malaysian pig industry. It has significantly reduced the number of pig farms from 1,800 prior to January 1999 to only 796 after July 21, 1999. The standing pig population was also reduced from 2.4 million to 1.3 million. Value of pig loss due to destruction is about USD 97 million assuming the average price of live pig was USD 95/pig Loss of revenue in export to Singapore was about USD 120 million assuming the average price of live pig was USD 120/pig [6].

Following the outbreak, new guidelines were proposed to restructure the pig industry. New pig farming areas have to be identified as a long-term strategy for farming. The industry should move into producing safe, wholesome and nutritious pork for its consumers by practising good animal husbandry.

The emergence of a new deadly virus, the Nipah virus, that infects pigs as well as its ability to cross over and infects humans, has taught us a great deal about how important is our preparedness to confront, control, and eradicate such diseases. An early warning system for any disease should be seriously looked into. For this to be effective, competent disease diagnosis and aetiologic agent identification, capabilities of our laboratories, be it veterinary or medical, must be developed and strengthened.

It has also taught us the importance of inter-departmental, inter-agency, national, regional and international collaborations in dealing with such a deadly disease, especially in the identification, control, surveillance, and eradication of such diseases. There should also be a continuous programme, involving both active and passive surveillance systems, for the control of Nipah virus infection in the country and in this region.

Finally, continuous efforts should be made to investigate the source of Nipah virus and the role played by bats and other animals in the transmission of the disease in order to understand the disease better. Complete understanding of the virus and the disease it causes is a prerequisite for successful control and eradication of the disease.

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BUFFALO DEVELOPMENT IN ASIA

PROJECT TITLE
INCREASING PRODUCTIVITY OF THE WATER BUFFALOES FOR FOOD SECURITY

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This Project consists of three related components or sub-projects, their titles are:

1) Formulation of Effective Strategies to Stop Declining Growth Rates of Buffalo Populations in Some Asian Countries.
2) Improving Buffalo Productivity through Performance Recording Schemes.
3) Increasing Buffalo Production and utilization in Mixed Farming Systems at Smallholder Level.

Background and Justification

Recognizing the important roles of water buffaloes in agricultural and rural development, the FAO/APHCA, Japan Livestock Technology Association (JLTA) and the Department of Livestock Development (Thailand) jointly organized a Regional Workshop on "*Water Buffaloes for Food Security and Sustainable Rural Development"* during 8-10 February 2001 in Surin province, Thailand. The Regional Workshop was attended by 72 country representatives and delegates from 18 countries.

The Workshop reemphasized the important roles and significant contribution of water buffaloes to rural development in terms of alleviation of poverty and hunger, providing food security, strengthening of economic self-sufficiency and social stability of rural community, as well as supporting the sustainability of agricultural production and the environment. Approximately 96 percent of the world water buffalo population (162 million) is raised in Asia (FAO Regional Office for Asia and the Pacific, 1999), especially in the developing countries. The Workshop clearly recognized that in spite of the call for international attention in water buffalo research and development in Asia during the last four decades, the buffalo has been more on less neglected. While some R/D support has bee provided by many national governments but constrained by limited funding resource, greater international support for buffalo R/D is urgently required.

As clearly indicated by the data from the FAO Regional Office for Asia and Pacific (2000), in a number of countries including Bhutan, Indonesia, Iran, Laos, Malaysia, Philippines, Sri Lanka, Thailand, Vietnam and few others the buffalo population has either declined at alarming rates or reached almost zero growth rate. The Workshop identified urgent need for technical and policy supports in order to stop the decline of buffalo population and to enhance buffalo production in such countries.

Recent study jointly undertaken by FAO/IFPRI/ILRI[1] clearly showed that the demand for beef and milk in Asia in 2020 will increase by 2.6 and 2.7 times respectively, as compared to that in 1993 (Delgodo, et al, 1999), and significant portion of beef and milk supplies will come from buffalo production in Asia. Buffalo meat and milk production in Asia is almost totally produced by mixed crop-livestock systems (Sere and Steinfeld, 1996), in which smallholder farmers are major operators.

Overall Objectives

The overall objective of the Project is to improve buffalo production and to enhance the utilization of water buffalo at smallholder level in order to increase food security and the sustainability of farming systems and resources.

Due to time span of the Project, more specific objectives are:

- Formulating effective policy strategies relating to production, slaughter, market, pricing and other socio-economic aspects in order to enhance buffalo production and utilization.
- Establishing buffalo recording scheme in order to allow productivity improvement and better utilization of superior genetic resource.
- Enabling smallholder farmers to increase buffalo production and utilization in mixed crop-livestock farming systems.
- Strengthening farmers' capability in animal management and efficient utilization of farm resources in integrated manner.
- Encouraging farmer cooperation and group action.

to achieve all these objectives three related sub-projects are proposed to be carried out as followings.

[1] IFPRI = International Food Policy Research Institute
ILRI = International Livestock Research Institute

Sub-Project (I)

Formulation of Effective Strategies to Stop Declining Growth Rates of Buffalo Populations in Some Asian Countries

Background and Justification

As recommended by the FAO-APHCA/JLTA/DLD Regional Workshop, "*government policies should be formulated and implemented in order to slow down or stop the declining buffalo population, and causes of the decline need to be assessed.*" In some countries such as Philippines and Vietnam there has been declining trends in buffalo population growth rates during the last decade. Such country cases also need an assessment of buffalo production situation in order to prepare safeguards to prevent population decline.

Objectives

- Examining unfavorable government policies affecting the decline of buffalo production.
- Identifying major constraints and limitations related to socio-economics of small-farm conditions, market, indiscriminate slaughter, differential pricing of buffalo meat, deficiencies in other institutional supports, including a lack of credit schemes.
- Proposing integrated strategies to regional organizations and national governments concerned in order to improve policies and institutional support to enhance buffalo production.

Project Duration

Six to 10 months, depending on the number of countries involved. Possible participating countries are Indonesia, Sri Lanka, Philippines, Thailand and Vietnam.

Expected Project outputs

(a) Policy strategies for national governments to stop the decline of buffalo population growth rates.
(b) Recommendations for institutional supports to promote buffalo production and utilization.
(c) Future project proposals related to policy and institutional improvement for buffalo development in APHCA region.

Sub-Project (II)

Improving Buffalo Productivity through Performance Recording Schemes

Background and Justification

As identified by the FAO-APHCA/JLTA/DLD Regional Workshop in Surin, one of the major constraints hindering potential genetic improvement in water buffalo is a general lack of information on animal identification, performance, and pedigrees.

Other activities in the area of buffalo recording have been initiated in the recent past. FAO/ICAR (International Committee on Animal Recording) organized a Workshop on Animal Recording for Improved Breeding and Management Strategies for Buffalo (in Bled, Slovenia, May 2000) with the objectives to:

- Promote buffalo recording in developing countries and to make possible comparison of animal productivity across countries;
- Enforce international collaboration (network) for the development of buffalo production;
- Increase awareness of the value of appropriate recording systems for the management of buffalo genetic resources; and
- Promote the use of records to assess the merit of animals, improve farm management systems and increase profitability of farming.

ACIAR, reported at the Workshop on "Development Strategies for Genetic Evaluation of Beef Production in Developing Countries" (Khon Kaen, Thailand 24-28 July 2001), has recently introduced BREEDPLAN and HERDMAGIC as a genetic management tool for buffalo identification, recording and calculation of EBVs in Indonesia, Philippines, Thailand and Vietnam.

The participants in the Workshop in Khon Kaen realized that there is no co-ordination/harmonization of the recording activities amongst the countries and recommended that an effort should be made to harmonize/standardize animal identification systems, parameters to be recorded and analytical models to allow at a later stage comparison of data and records between countries and the evaluation of breeds. APHCA was mentioned as a possible body/structure to serve as a forum for discussion and harmonization of these activities.

Objectives

- Developing regional buffalo recording schemes based on existing know-how.
- Promoting and strengthening regional cooperation in implementing buffalo recording schemes in participating member countries.
- Training of technical personnel from collaborating countries.

Project Duration

First phase is 2 years. Countries involved are Indonesia, Philippines, Thailand and Vietnam.

Project Outputs

(a) Common systems for animal identification.
(b) Agreement on measurements and recording of animal performance traits.
(c) Methods for summarizing and analysis of the parameters.
(d) Methods for feed back to farmers.
(e) Methods for calculation of breeding values

Sub-Project (III)

Increasing Buffalo Production and utilization in Mixed Farming Systems at Smallholder Level

Background and Justification

Most farmers (75 to 90 percent) in Asia are smallholder farmers most of whom depend on mixed crop-livestock farming systems (Chantalakhana, 2001). Crops and livestock of various species are produced on the same farm in an integrated manner i.e. they depend on each other and together their productivities can be sustained, while maintaining the quality of farm environment. Water buffaloes form an integral component of mixed farming systems, they provide, besides meat and milk for human foods, farm power, manure as fertilizer, control of weeds around crop field, and family and food security during difficult time.

The Regional Workshop organized by FAO-APHCA/JLTA/DLD recommended that technical and grant aid cooperation should be encouraged and should consider better management of water buffalo production, through farmer participation (particularly by woman) for rural development and poverty alleviation.

Rural farmers are generally constrained by lack of credits for purchase of breeding buffaloes. They have little access to appropriate technological information that can be used to improve herd management and health. Rural farmers generally cannot afford cash inputs such as feeds or medical supplies. It is very important that production improvement should be based primarily on locally available resources. Fortunately, mixed crop-livestock farming systems, with appropriate know-how, can make use of most locally available resources such as straws, compost, manure, tree leaves, etc. For rural farmers, if appropriate inputs for instance buffalo breeding stocks, better management practices, access to information, and farm training can be made available at village level buffalo production and utilization in mixed farming systems can definitely be improved.

Objectives

- Increasing buffalo raising at village level.
- Promoting use of buffalo for draft power in crop production.
- Improving the quality of crop residues for buffalo feeds.
- Increasing forages and fodder availability for buffalo feeding.
- Promoting cooperation among farmers.
- Strengthening farmer's capability to improve their farm productivity.

- Promoting self-sufficient economy at small-farm level.

Participating Countries

Laos, Philippines, Sri Lanka, Thailand, and Vietnam.

Activities

(a) Selection of at least one model village in rainfield paddy area in each country to participate in this project.
(b) Provision of breeding buffalo to smallholder farmers in the project through "Buffalo Bank" arrangements by participating national governments.
(c) Training of national development personnel from participating countries.
(d) In-country farmer training on improving buffalo production and utilization in mixed farming systems.
(e) Exchanging information and experiences among participating countries regularly.

Outputs

(a) Increase of farmer income from buffalo production.
(b) More use of buffalo draft power and manure for crop production.
(c) Better use of straws and crop residues for buffalo feeding.
(d) Increased availability of forage and fodder for buffalo feed.
(e) Farmers become better informed about herd management and farming techniques.
(f) Increased farmer awareness of buffalo conservation and use for sustainable farm production.

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BUFFALO RECORDING AND THE POSSIBLE ROLE OF APHCA[2]

- A Concept Note -

96 % of the world's water buffaloes can be found in Asia (80% riverine 20% swamp). They are an important asset in Asian agriculture. The riverine type is very much appreciated for their dairying abilities. In some countries, buffalo numbers increases while cow numbers remain stable or decrease as buffaloes are much hardier and buffalo milk is more appreciated. Increased mechanization has lead to a significant decrease of swamp buffaloes in many Asian countries, as alternative traits to draught were not exploited.

To better exploit the still untapped potential in this species, breeding programmes are required to:

- Improve milk and meat traits in the riverine buffalo.
- Improve meat traits in the swamp buffalo.
- Investigate/research/develop strategies for crossbreeding for milk and meat.

Countries have to clearly identify breeding objectives and breeding goals. Breed development programmes have to be accompanied by recording schemes. Traits to be recorded are a function of the breeding objectives and breeding goals which may vary between buffalo producing countries. Recording systems have to be adapted to local conditions (cost, frequency of recording, traits to be recorded and communication of results) without jeopardizing the value of the results.

Animal recording is the prerequisite for any livestock improvement scheme at the farm level, for industrial production or at national level.

Performance recording includes several steps:

1. Identification and registration of animal. It has to be permanent and unique (number or code);
2. Measuring and recording of the parameters;
3. Summarizing and analysis of the parameters;
4. Feed back to the farmers; and
5. Calculation of breeding values.

A number of activities in the area of buffalo recording have been initiated in the recent past. FAO/ICAR (International Committee on Animal Recording) organized a Workshop on Animal Recording for Improved Breeding and Management Strategies for Buffaloes (in Bled, Slovenia, May 2000) with the objectives to:

- Promote buffalo recording in developing countries and to make possible comparison of animal productivity across countries;
- Enforce international collaboration (network) for the development of buffalo production;

[2] The same holds true for cattle and should be linked/co-ordinated

- Increase awareness of the value of appropriate recording systems for the management of buffalo genetic resources; and

- Promote the use of records to assess the merit of animals, improve farm management systems and increase profitability of farming.

The FAO - Department of Livestock Development of Thailand - Japan Livestock Technology Association Regional Workshop on Water Buffalo Development held in Surin, Thailand (8 –10 February 2001) considered amongst others, as a technical constraint the lack of animal identification, pedigrees and performance recording which severely limits the potential for buffalo genetic improvement programmes.

An initiative by ISZ (Istituto Sperimentale per la Zootecnia, Monterotondo, responsible for the Buffalo Newsletter and linked to ICAR) raised the interest by countries for an (inter) regional project for buffalo milk recording targeting FAO/TCP funds.

ACIAR, as reported at the Workshop 'Development Strategies for Genetic Evaluation of Beef Production in Developing Countries' (Khon Kaen, Thailand 24 – 28 July 2001), has recently introduced BREEDPLAN and HERDMAGIC as a genetic management tool for buffalo identification, recording and calculation of EBVs in Indonesia, Philippines, Thailand, and Vietnam.

The participants in the Workshop in Khon Kaen realized that there is no co-ordination/harmonization of the recording activities amongst the countries and recommended that an effort should be made to harmonize/standardize animal identification systems, parameters to be recorded and analytical models to allow at a later stage comparison of data and records between countries and the evaluation of breeds. APHCA was mentioned as a possible body/structure to serve as a forum for discussion and harmonization of these activities.

APHCA is an Inter-governmental forum representing 15 countries with the objectives:

- To promote livestock development in general; and more particularly
- To promote national and international action and research programmes relating to animal husbandry and health problems;
- To build up regional and national livestock programmes based on collective self-reliance and mutual assistance within the Asia-Pacific Region;
- To promote livestock production as an industry and as part of the farming system based on self-reliance at the farm level; and
- To raise the level of nutrition and living standards of small-farmers and rural communities through optimal exploitation of resources for livestock development.

APHCA in collaboration with other Regional Organizations such as the Asian Buffalo Association and ICAR is ideally placed to serve as a forum to develop and propose regional/international standards for animal identification and recording. APHCA could also serve as a forum for training and the exchange of experiences among buffalo recording organizations of different countries

This activity is considered timely as a number of countries are initiating activities in this area and co-ordination at this early stage would avoid problems experienced now by some OECD countries.

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