



Australian Government
AusAID



Cardno
ACIL



Strengthening Aquatic Animal Health Capacity and Biosecurity in ASEAN (AADCP-RPS 370-021)

**Technical Mission to Vietnam
4-9 December 2006**

Final Report

Executive Summary

This report pertains to the Technical Mission undertaken to Viet Nam from 3rd to 9th December, as a part of the ongoing AADCP-RPS project “Strengthening Aquatic Animal Health Capacity and Biosecurity in ASEAN” to assist national authorities in the development and implementation of simple and practical national aquatic animal health management strategies.

The Technical mission was undertaken by a group of 4 experts; Dr Ingo Ernst from DAFF, Australia, Dr Supranee Chinabut from DOF Thailand, Drs Flavio Corsin and CV Mohan from NACA. The technical mission was coordinated by CV Mohan in close cooperation with senior officers from NAFIQAVED and RIA 1.

The objective of the Technical mission was to work closely with National Authorities to support development of national strategies on aquatic animal health management and develop short and long term plans. Specifically the TOR of the Technical Mission included:

- Identification of key national issues concerning aquatic animal health
- Identifying national priorities for aquatic animal health management
- Developing a framework for national strategies on aquatic animal health
- Providing recommendations on the work programme of the National aquatic animal health advisory committee
- Providing recommendations on the National list of diseases
- Evaluating capacity for national list of diseases
- Developing a framework for surveillance and reporting
- Developing a framework for contingency planning, and
- Supporting participants of the workshops and training programme to follow up on some of the identified country action plans

Viet Nam is witnessing a phenomenal growth in aquaculture in recent years. From just over 300,000 tons in 1993, aquaculture production increased to 1,150,000 tons in 2003, and is expected to touch 1.8 million tons in 2006. Catfish (Tra and basa) and shrimp (black tiger) played a major role in this rapid development. Escalating environmental deterioration, increased movement of live aquatic animals for the purpose of aquaculture and the associated aquatic animal health problems, have led to significant economic losses to the sector. Increased use of chemicals, including banned antibiotics, have led importing countries to impose restrictions on Vietnamese aquaculture products. The government of Vietnam has recognized the urgent need to implement comprehensive health management strategies in order to sustain the rapidly developing aquaculture sector.

The technical mission workshop sessions were conducted as per the agenda (Annex 1). In brief, the workshop involved presentations by technical mission team members and national delegates followed by facilitated discussions and development of outputs. Representatives from key national institutions (NAFIQAVED, RIA 1, RIA 3, DAH, Department of Aquaculture, Department of Science and Technology) participated in the discussions. Throughout the sessions, translations were provided. A very informal meeting structure was adopted to encourage active participation of national delegates. Outputs were developed taking into account the existing national frameworks and facilities so that the national aquatic animal health strategies developed are practical and at the same time could be implemented with the existing

resources. All the outputs developed during the mission were based on the inputs received from the national delegates.

On the last day of the mission, a wrap-up session provided feed back to the participants on the salient outcomes and way forward. The technical assistance provided by the technical mission team members was highly appreciated by the national authorities. Director General of NAFIQAVED was very pleased with the outcomes and indicated that he would be writing a letter to NACA Director General, thanking the technical mission for its contributions to supporting aquatic animal health management in Viet Nam.

Recommendations from the Technical Mission to MOFI

1. National Committee on Aquatic Animal Health (NACAAH)

- NACAAH should drive the process of establishing a national aquatic animal health strategy and an action plan for its implementation. This process should involve all the key stakeholders to optimize the utilization of resources and expertise available within Vietnam
- Develop a work programme for NACAAH which is consistent with the national strategy and the related action plan

2. National Strategy

- The strategy should be developed through a process of wide consultation
- The strategy should address priority issues concerning aquatic animal health management
- The following key elements should be considered
 - Operation of National Committee on Aquatic Animal Health
 - National list of aquatic animal diseases
 - National level surveillance system
 - Regional and international reporting
 - Emergency preparedness and contingency planning
 - Risk analysis
 - Quarantine system
 - Aquatic animal Health certification
 - Legal framework
 - Capacity building (disease diagnosis, field personnel, etc)
 - Research
 - Interactions with regional and international expertise
 - Contributions to the international standards (e.g. OIE code and manual)
 - Funding mechanisms
- Identify an action plan which is achievable, cost effective, consistent with available resources/systems and inclusive of clear milestones
- The action plan should recognize the roles and responsibilities of different stakeholders
- Seek high level endorsement for the national strategy and action plan

3. National aquatic animal disease list

- Develop one national disease list that meets identified requirements including;

- international and regional reporting and import/export certification
- domestic movement and certification
- management of aquatic animal health priorities
- Develop a mechanism for updating/revising the disease list (at least on an annual basis) considering the revisions made to the OIE and QAAD lists.
- Develop disease manuals and field guides to support diagnosis

4. Surveillance and Reporting

- Agree on priority needs for a national surveillance system
- Develop a harmonized national surveillance system which meets the agreed needs
- Identify the available and potential sources of aquatic animal health information that should be included in the national surveillance system
- Identify a structured mechanism to integrate aquatic animal health information acquired from different sources
- Consider utilizing the expertise and resources available with DAH
- Translate the DAFF/NACA field guide on aquatic animal diseases into Vietnamese

5. Emergency preparedness and contingency planning

- Agree on priority needs for a national contingency plan (e.g. exotic diseases like KHV or IMNV)
- Develop generic emergency preparedness strategy and specific disease control manuals for some key diseases
- Identify a structured mechanism to integrate all the available resources to implement a emergency plan

List of Abbreviations and Acronyms

AADCP-RPS	ASEAN Australia Development Cooperation Program-Regional Partnership Scheme
AAHC	Aquatic Animal Health Committee
AAHC-TWG	Aquatic Animal Health Committee-Technical Working Group
AAHRI	Aquatic Animal Health Research Institute
ADG	Asia Diagnostic Guide
ASEAN	Association of South East Asian Nations
BMP	Better Management Practices
CAAHRI	Coastal Aquatic Animal Health Research Institute
CVO	Chief Veterinary Officer
DAFF	Department of Agriculture, Fisheries and Forestry, Australia
DAH	Department of Animal Health
DFID	Department for International Development
DOF	Department of Fisheries
FAO	Food and Agricultural Organization of the United Nations
GAP	Good Aquaculture Practices
IMNV	Infectious Myonecrosis Virus
IRA	Import Risk Analysis
KHV	Koi Herpes Virus
KHVD	Koi Herpes Virus Disease
MOFI	Ministry of Fisheries
MrNV	<i>Macrobrachium rosenbergii</i> Noda Virus
NACA	Network of Aquaculture Centres in Asia-Pacific
NACAAH	National Committee on Aquatic Animal Health
NAFIQAVED	National Fisheries Quality Assurance and Veterinary Drugs
NC	National Coordinator
OIE	World Organisation for Animal Health
QAAD	Quarterly Aquatic Animal Disease
RIA	Research Institute for Aquaculture
SEAFDEC	South East Asian Fisheries Development Center
SVC	Spring Viraemia of Carp
TG	Technical Guidelines
TM	Technical Mission
WAHIS	World Animal Health Information System
WAHID	World Animal Health Information Database
WTO	World Trade Organization

Background

AusAid, under the ASEAN-Australia Development Cooperation Program's Regional Partnership Scheme (AADCP-RPS) is supporting two aquatic animal health projects: (a) Strengthening Aquatic Animal Health Capacity and Biosecurity in ASEAN (370-021) and (b) Operationalise Guidelines on Responsible Movement of Live Food Finfish in ASEAN (370-018). NACA and AusVet Animal Health Services are implementing these two projects in partnership with the ASEAN Secretariat; ASEAN Sectoral Working Group on Fisheries; NACA National Coordinators; Department of Agriculture, Fisheries and Forestry (DAFF) Australia; Aquatic Animal Health Research Institute (AAHRI) Department of Fisheries, Thailand; and the ASEAN governments.

Under the project, 4 policy workshops, 2 training programmes and technical missions to 4 ASEAN countries (Lao, Cambodia, Vietnam and Myanmar) are planned. Implementation of these two projects commenced in January 2006 and will run concurrently until June 2007. The first set of 2 policy workshops and one training programme were completed recently. Six government nominated delegates from Vietnam participated in the above activities:

1. First Policy workshop (project 370-021) from 3-6 April 2006 at Bangkok, Thailand was participated by **Ms Phan Thi Van** and **Ms Bui Thi Cuong**
2. First Policy workshop (project 370-018) from 10-12 April 2006 by **Mr Pham Vn Thu** and **Mr Le Duy Binh**
3. First training workshop (project 370-021) from 7-13 May 2006 at Singapore by **Mr Nruyen Viet Khue** and **Ms Bui Thi To Nga**

Viet Nam is witnessing a phenomenal growth in aquaculture in recent years. From just over 300,000 tons in 1993, aquaculture production increased to 1,150,000 tons in 2003, and is expected to touch 1.8 million tons in 2006. Catfish (Tra and basa) and shrimp (black tiger) played a major role in this rapid development. Other important cultured species include mollusc, tilapia, snake-head, cobia, grouper, sweet snail and sea weeds. According to FAO's ranking, Vietnam stood third after China and India in fish production in 2004. This sharp increase in production has come at a cost. Escalating environmental deterioration, unregulated movement of live aquatic animals for the purpose of aquaculture and the associated aquatic animal health problems, have led to significant economic losses to the sector. Increased use of chemicals, including banned chemicals, have led importing countries to impose restrictions on Vietnamese aquaculture products. The government of Vietnam has recognized the urgent need to implement comprehensive health management strategies in order to sustain the rapidly developing aquaculture sector.

Vietnam, like many other countries in the region, face several challenges in the practical implementation of national health management strategies. Specifically, the challenges are in the areas of:

- Disease diagnosis;
- Surveillance and reporting;
- Quarantine and certification;
- Emergency preparedness;
- Risk analysis; and
- Resources (trained manpower, infrastructure)

Developing simple and practical national aquatic animal health management strategies that suit the needs of the Vietnam and at the same time utilize the existing resources effectively, should be the way forward. Such an approach should focus on:

- Awareness and capacity building;
- National networking;
- Sharing of resources;
- Promoting cooperation; and
- Giving ownership to all stakeholders

Objectives of the Technical Mission

The objective of the Technical mission was to work closely with National Authorities to support development of a national strategy on aquatic animal health management and develop short and long term plans. Specifically the TOR of the Technical Mission included:

- Identification of key national issues concerning aquatic animal health
- Identifying national priorities for aquatic animal health management
- Developing a framework for national strategies on aquatic animal health
- Providing recommendations on the work programme of the National aquatic animal health advisory committee
- Providing recommendations on the National list of diseases
- Evaluating capacity for national list of diseases
- Developing a framework for surveillance and reporting
- Developing a framework for contingency planning, and
- Supporting participants of the workshops and training programme to follow up on some of the identified country action plans

The technical mission to Vietnam was undertaken from 4th to 9th December 2006 with the intention of supporting the development and implementation National strategies on aquatic animal health. Specifically this was a follow up activity to the first set of 2 policy workshops and one training workshop, to provide further assistance to the 6 workshop and training participants and to follow up on the identified country specific action plans. A team of 4 experts undertook the technical mission.

Members of the Technical Mission

Dr CV Mohan

Regional Aquatic Animal Health Specialist

Network of Aquaculture Centres in Asia-Pacific (NACA)

Suraswadi Building, Department of Fisheries, Kasetsart University Campus,
Bangkok 10900, THAILAND

Tel: 66-2-561-1728 (ext 106)

Fax: 66-2-561-1727

Email: mohan@enaca.org

Dr Ingo Ernst

Senior Policy Officer, Aquatic Animal Health

Australian Government Department of Agriculture, Fisheries and Forestry

PO Box 858

Canberra ACT 2601

AUSTRALIA

Ph. +61 2 6272 5615

Fax + 61 2 6272 3372

Email Ingo.Ernst@daff.gov.au

Dr. Supranee Chinabut
Senior Advisor/Fish Disease Specialist
Department of Fisheries
Kasetsart University Campus
Ladyao, Jatujak, Bangkok 10900
THAILAND
Tel: 66 2-5796803; Fax: 66 2-5613993
E-mail: supranee@fisheries.go.th

Dr Flavio Corsin
NACA
c/o NAFIQAVED, Ministry of Fisheries
Ba Dinh District, Ha Noi
VIET NAM
flavio.corsin@gmail.com
Tel: +84-912776993
Fax: +84-4-8317221

Approach adopted by the Technical Mission

The technical session workshop sessions were conducted as per the agenda (Annex 1). In brief, the workshop involved presentations by technical mission team members and national delegates followed by facilitated discussions and development of outputs. Representatives from key national institutions (NAFIQAVED, RIA 1, RIA 3, DAH, Department of Aquaculture, Department of Science and Technology) participated in the meeting discussions (Annex 2). Throughout the sessions, translations were provided. A very informal meeting structure was adopted to encourage active participation of national delegates. Outputs were developed taking into account the existing national frameworks and facilities so that the national aquatic animal health strategies developed are practical and at the same time could be implemented with the existing resources. All the recommendations developed during the mission were based on the inputs received from the national delegates. On the last day of the mission, a wrap-up session provided feed back to the participants on the salient outcomes and way forward.

1. National Strategy on aquatic animal health

1.1 Background:

The purpose of a national strategy on aquatic animal health is to reduce risks of aquatic animal disease impacting on livelihoods of aquaculture farmers, national economy, trade and human health. The essential components of such a strategy should include:

- Identification of key national issues in relation to aquatic animal health management;
- Identification of national priorities concerning aquatic animal health;

- Identification of key Institutions and responsibilities;
- Formation of a national committee on aquatic animal health;
- Developing a National list of aquatic animal diseases;
- Developing Disease diagnosis support;
- Capacity building and resources;
- Developing surveillance and reporting system;
- Establishing quarantine and health certification mechanisms;
- Emergency preparedness and contingency planning; and
- Risk analysis.

Development and implementation of National strategies would have several benefits to a country. Important ones include the following:

- It identifies the action plans of a country to implement the various elements contained in the National strategy;
- It will ensure responsible health management; and
- It provides the road map for phased implementation based on national priorities and available resources.

1.2 Workshop Presentations:

NAFIQAVED provided details of the existing system of aquatic animal health management in Vietnam. This included details of organizational structure, roles and responsibilities of key national institutions, and national priorities concerning aquatic animal health management. The presentation also highlighted constraints and problems.

NACA informed the workshop of the developments in the Asia-Pacific region and progress made by different countries in the development and implementation of national strategies.

Australia provided details of AQUAPLAN 2005-2010, Australia's National Strategic Plan for Aquatic Animal Health. This included background to the development of the first AQUAPLAN 1998-2003, development of the second AQUAPLAN 2005-2010, scope, strategies and implementation of the AQUAPLAN. The need to prioritize areas that could be taken up as strategies was stressed by Australia. The AQUAPLAN 2005-2010 focuses on 7 national strategies: (1) Enhanced integration and scope of aquatic animal health surveillance in Australia; (2) Harmonisation of approaches to aquatic animal health in Australia; (3) Enhancement of aquatic animal emergency disease preparedness and response framework; (4) Education and training in the aquatic animal health sector; (5) Welfare standards for aquaculture; (6) Appropriate use of therapeutics for aquatic animal health management and (7) Aquatic animal health as part of ecologically sustainable development. Action plans under each of the strategies and expected outputs was described. Each individual strategy has specific objectives, projects and performance indicators. Industry and Governments have agreed to responsibilities for the implementation of *AQUAPLAN 2005-2010*. In Australia, the DAFF and the AAHC are coordinating the implementation of AQUAPLAN.

Thailand provided details of its national strategy (2004-2008) development and implementation. The objectives, process used for identifying national priorities for inclusion as strategy, and mechanisms of implementation were described in detail. In

brief, Thailand started the process by identifying the key constraints for improvement of aquatic animal health and good quality aquatic animal products. The key constraints included: (1) Law and regulations (2) Information and knowledge of responsible personnel (3) Research and researchers (4) Standard diagnostic techniques and laboratories (5) Field personnel (6) Cooperation of researchers from different institutions (7) Public awareness (8) Contingency plans and (9) Financial support. National strategy of Thailand was later developed to address these 9 key constraints and develop guidelines for implementation. Thailand stressed the need for identifying a coordinating agency or body to over see the implementation of national strategies. In Thailand, the DOF is taking the lead in implementing the national strategy with support from Fish Disease Committee.

NACA presented details of project activities conducted in Vietnam since 2003 and its contribution towards supporting national strategy development. Achievements under each of the projects and its contribution towards supporting national strategy development was described in detail. Based on the lessons learned and considering that Vietnam does not have an agreed national strategy, NACA came up with several suggestions and placed it before the national authorities for consideration while developing a national strategy on aquatic animal health management. Key suggestions and recommendations included:

- Strengthen harmonization and cooperation amongst national institutes within VN for the purpose of Surveillance (NAFIQAVED, DST, RIAs) and Research (Vifinet)
- Address aquatic animal health management broadly using available resources (prioritization)
- Build capacity in epidemiology (hands-on training)
- Build capacity in Risk Analysis & conduct IRA before importing exotics
- Improve health certification system: must be accurate and credible
- Increase preparedness (emerging diseases, new regulations)
- Maximize use of regional expertise (e.g. RR Base)
- Improve reporting to OIE & NACA
- Comment on OIE documents (link with DAH)
- Develop & disseminate GAP/CoC/BMP for important commodities: increase quantity & quality
- Strengthen capacity on Level 1 diagnosis (farmers & extension workers)
- Promote development of farmer organizations: decrease risks & costs, increase dissemination & surveillance

1.3 Discussion Session:

The meeting participants were very pleased with the information they received and appreciated the broad concept of national aquatic animal health management under an agreed national strategy. The national delegates recognized that a national strategic plan for aquatic animal health was very essential for Vietnam, if it has to support the envisaged rapid expansion of aquaculture in a sustainable manner. Following facilitated discussions, several national priorities were identified by national delegates. Some of the key priorities that emerged from the discussions include the following:

- Promoting cooperation and networking amongst key national research and development organizations

- Developing a national strategy framework and identifying responsibilities of different institutions and the National Advisory Committee for Aquatic Animal Health (NACAAH)
- Setting up disease control/surveillance centers at provincial, district and commune levels
- Training personnel on disease recognition, clinical diagnosis, drugs management, etc
- Networking national competent authorities with counterpart agencies in neighboring countries (e.g. China, Lao PDR, Cambodia)
- Developing national mechanisms to comply with regional (e.g. NACA, ASEAN) and international (e.g. OIE, FAO, IPPC) obligations and requirements concerning aquatic animal health
- Promoting application of better management practices (e.g. GAP, COC) to key aquaculture species

1.4 Recommendations:

Based on the outcomes of the discussions and considering the existing system in Vietnam, the following recommendations were made by the TM members on development and implementation of national strategy for aquatic animal health management.

- The strategy should be developed through a process of wide consultation
- The strategy should address priority issues concerning aquatic animal health management
- The following key elements should be considered
 - National list of aquatic animal diseases
 - National level surveillance system
 - Regional and international reporting
 - Emergency preparedness
 - Risk analysis
 - Quarantine and aquatic animal Health certification
 - Capacity building (disease diagnosis, field personnel, etc)
 - Legal framework
 - Research
 - Interactions with regional and international expertise
 - Funding mechanisms
 - Contributions to the international standards (e.g. OIE code and manual)
- Identify an action plan which is achievable, cost effective, consistent with available resources/systems and inclusive of clear milestones
- The action plan should recognize the roles and responsibilities of different stakeholders
- Seek high level endorsement for the national strategy and action plan

2. National Committee on Aquatic Animal Health (NACAAH)

2.1 Background:

The objective of establishing a national aquatic animal health committee is to provide a formal mechanism to drive the process of national strategy development and implementation. Members of such a committee should have a broad understanding of the concept of health management. They should be also aware of the negative consequences of not having a national strategy on national economies, trade and livelihood of fish farmers. The members need not always be aquatic animal health experts. Among others, the benefits of having national committee include:

- It highlights the importance a country places on aquatic animal health;
- It provides a formal framework and process to drive the development and implementation of national strategy;
- It identifies roles and responsibilities of different stakeholders;
- It ensures some degree of implementation of aquatic animal health programmes
- It provides for wider participation and ownership to different institutions

2.2 Workshop Presentations:

NACA provided the background and status of Aquatic Animal Health Advisory Committee development and operations in the Asia-Pacific region. A detailed account of NACA's role in facilitating the formation of national committee for Vietnam was presented to the meeting. In brief, through the Danida funded NACA/SUMA project, support was provided for attendance of 6 Vietnamese officials to a regional workshop on AAH Emergency Preparedness & Response (Jakarta, September 2004). A follow-up 2-day workshop was set up involving 6 VNse officials, Experts from Australia, Indonesia, Malaysia, Thailand and representatives from FAO and NACA. The two day workshop involved presentations by experts, question-answer sessions, drafting a framework for national committee by Vietnamese officials, presentation of the draft to experts, revisions and finalization. Following on from this, several national consultations were held and NACAAH was finally established officially in April 2005.

Australia provided details of Australia's National Aquatic Animal Health Committee. Fish Health Management Committee (FHMC) was established in 1997 under AQUAPLAN 1998-2003. Aquatic Animal Health Committee (AAHC) replaced the interim FHMC in 2002. Now the AAHC is the primary industry/government interface for policy, communication and awareness related to aquatic animal health issues. AAHC holds one face-to-face meeting annually (mid year) to consider (a) the outcomes from meetings of more senior committees (b) the outcomes from the annual meeting of its advisory committee NAAHC-TWG (c) reports from established sub-committees and working groups (d) other current issues as required. AAHC is served by an Executive Officer who organizes meetings and workshops, prepares agenda papers, prepares minutes and action agenda, manages out-of-session business and prepares work plans. AAHC members represent the Australian, state and Northern Territory government departments with responsibility for aquatic animal health; the CSIRO Australian Animal Health Laboratory; the capture and recreational fishing industries; the finfish, mollusc, and crustacean aquaculture industries; the ornamental fish industry (19 members in total); an observer from

AAHC's parent committee, the Primary Industries Health Committee. The TOR of the AAHC include

- Takes a lead role in reviewing and refining national aquatic animal health policies and programs;
- Coordinates action on identified emerging aquatic animal health issues and makes recommendations for policy development and management and carries out a coordinating role across the states and territories through existing processes;
- Actively responds to identified resource requirements of national aquatic animal health policies and programs;
- Provides comment as required to existing processes responsible for providing advice on international quarantine and import risk assessments;
- Provides advice and submits recommendations to high level government committees and other stakeholders on those issues;
- Reports on strategic issues and submits recommendations relating to AQUAPLAN and its implementation to high level government committees and other stakeholders
- Provides strategic guidance on the development of aquatic animal disease diagnostics, disease emergency management planning (including oversight of AQUAVETPLAN), and disease emergency management training and incident simulation; and
- Reviews communication and extension strategies on aquatic animal health issues and facilitates implementation of those strategies.

Thailand informed the workshop participants of the Fish Disease Committee, its duties and responsibilities, role in national strategy implementation including surveillance and contingency planning. Thailand emphasized that for the committee to be effective at the national level, due representation must be given to all key national institutions dealing with aquatic animal health matters. The Fish Disease Committee of Thailand does not meet on a regular basis, but meetings are convened as and when required.

NACAAH The Chairman presented the organizational structure, function, responsibility and the progress made since establishment. Some of the highlights included

- Role: mainly advisory
- Functions: advise the Minister and MOFI institutions on AAH matters
- Responsibilities: strategy/plan development, surveillance, disease list, SPF programs, food safety, provide scientific information for legislation & resolution of conflicts...
- Headquarters: NAFIQAVED, Hanoi
- Membership: 18 members from MOFI Depts, RIAs, Universities, VINAFIS, Dept Animal Health (MARD), Inst of Biotechnology, Inst of Pharmacy
- Invited members
- 2 Technical Units
 - AAH and Environment
 - Drugs and chemicals
- Provision to form *ad hoc* technical groups
- Meeting yearly & as needed
- Funding: Ministry of Fisheries through NAFIQAVED

2.3 Discussion Session:

The TM members were very pleased with the progress made in Vietnam with respect to establishment and functioning of NACAAH. The TM members were of the view that the committee offers an ideal platform to bring key national institutions together, build consensus, promote cooperation and ensure sharing of responsibilities by key national institutions while developing and implementing a national strategy on aquatic animal health

2.4 Recommendations:

Recognizing the existence of an active NACAAH and the lack of an agreed national strategy, the TM made the following recommendations:

- NACAAH should drive the process of establishing a national aquatic animal health strategy and an action plan for its implementation. This process should involve all the key stakeholders to optimize the utilization of resources and expertise available within Vietnam
- NACAAH should develop a work programme for NACAAH which is consistent with the national strategy and the related action plan

3. National List of diseases

3.1 Background:

National list of diseases is a tool to collate and disseminate information on diseases of national importance for the purpose of developing national disease control strategies, and complying with regional and international disease reporting requirements. Having a national list of diseases, allows the development of national strategies (e.g. surveillance, contingency planning) around some of these diseases. While developing a national list, considerations must be given to some of the following key criteria:

- Cultured and traded species in the country;
- Economic impact of diseases on farmers and national economy
- Diseases exotic to the country
- Diseases present in neighboring countries in view of shared water sheds and porous land borders;
- Existing international (OIE) and regional (QAAD) disease lists; and
- List of diseases considered important by the ASEAN countries.

3.2 Meeting Presentations:

NACA presented background material on national list of diseases and highlighted the importance of international (OIE) and regional (QAAD) aquatic animal disease lists. The process of listing and delisting of diseases to the international and regional disease lists was also described.

Australia provided information of national list of diseases in Australia including purpose of the list, criteria for including in the list, revision of list, etc. Australia's National List of Reportable Diseases of Aquatic Animals was first established/developed in 1998 as a tool to collate and disseminate information on

diseases of national importance. The current National List includes 48 diseases of finfish, crustacea and molluscs. Some diseases are exotic to Australia while some occur in parts of Australia. To be on the list, diseases must meet at least one of the following criteria: (a) the disease is internationally notifiable to OIE ; or (b) the disease is reportable to NACA /OIE under a regional reporting scheme ; or (c) the disease is of national and genuine concern to Australia. If a disease is being considered because it is of national and genuine concern the following criteria apply: (a) the disease is exotic to Australia, or a disease does occur in parts of Australia but vigilance is necessary to minimise its spread; and (b) the disease would have significant socio-economic impacts if it occurred; and (c) the disease can be clearly described by its aetiology (causative agent). The National List is reviewed under the oversight of Aquatic Animal Health Committee by its technical working group which considers any changes made at the OIE/NACA level. De-listing of diseases from the National List does not necessarily follow delisting by the OIE or NACA and Australia may retain diseases of regional and national significance as required.

Thailand presented the process adopted for developing and revising its national list of diseases. To a large extent the list in Thailand is similar to the NAO/FAO QAAD regional list. Thailand re-emphasized the benefits of having a national list in terms of it serving as a guide for developing disease control strategies and contingency plans.

Vietnam presented the draft national list of diseases and explained the process used and criteria selected to develop the list. The purpose of developing a national list was to prevent introduction of exotic diseases, to reduce risk to farmers, to ensure correct certification and to perform notification responsibly. While developing the list, considerations were given to (a) health certification of fish and fishery products for domestic circulation, (b) inspection and quarantine of imported fish and fishery products, and (c) quarantine and health certification as per OIE and exporting country requirements. The following criteria were used for developing the list:

- The disease is notifiable by OIE
- The disease is widespread and risks of outbreaks are high
- Causative agent is known and diagnostics is available
- Provision to include unidentified diseases causing high mortality in Vietnam

Vietnam has developed two lists, the first list is for disease for health certification of fish and fishery products for domestic circulation and the second list is for inspection and quarantine of imported fish and fishery products. The first list for the purpose of domestic certification has 7 finfish, 8 crustacean, 1 amphibian, 1 mollusk and 2 reptile diseases. The second list for the purpose of quarantine of imported fish has 17 finfish, 8 crustacean, and 8 mollusk diseases.

3.3. Discussion Session:

The TM members were pleased with the progress made by Vietnam in developing a national list. The meeting discussed at length the advantages and disadvantages of having 2 lists as in the case of Vietnam, one for the purpose of domestic certification and one for the purpose of import certification. The TM members felt that it is not a good idea to have 2 separate lists, instead one list clearly stating the purpose of listing would be more desirable. The capacity and resources available in Vietnam to support diagnosis and management of the diseases in the national list was also

discussed. The TM members were informed that Vietnam has the diagnostic capability for many of the diseases in the national list.

3.4 Recommendations:

Based on the discussions that followed and taking into consideration the draft national lists developed in Vietnam, the TM members made the following recommendations:

- Develop one national disease list that meets identified requirements including;
 - international and regional reporting and import/export certification
 - domestic movement and certification
 - management of aquatic animal health priorities
- Develop a mechanism for updating/revising the disease list (at least on an annual basis) considering the revisions made to the OIE and QAAD lists.
- Develop disease manuals and field guides to support diagnosis

4 Surveillance and Reporting

4.1 Background:

Surveillance is defined as a systematic series of investigations of a given population of aquatic animals to detect the occurrence of disease for control purposes, and which may involve testing samples of a population. General (passive) surveillance is the ongoing work, which maintains a continuous watch over the disease profile of a population so that unexpected and /or unpredicted changes can be recognized. It includes all the routine disease investigation activities that may be undertaken in a country/state such as field investigations of disease incidents and results of laboratory testing. It is important that passive surveillance is undertaken on a continuous basis throughout a country/state and that the disease information produced is effectively captured, analyzed and used for mounting an early response. Active surveillance collects specific information about a defined disease or condition so that its level in a defined population can be measured or its absence reliably substantiated. Practical and effective surveillance systems coupled with early warning and early response, are critical to the effective management of disease emergencies. Disease surveillance should be an integral and key component of all national/state aquatic animal health services. This is important for early warning of diseases, planning and monitoring of disease control programs, provision of sound aquatic animal health advice to farmers, certification of exports, international reporting and verification of freedom from diseases. It is particularly vital for animal disease emergency preparedness.

Implementation of a practical surveillance and early response systems will directly and indirectly contribute to improved disease diagnosis, better research collaborations, reliable advice to primary producers, capacity building at the level of extension workers and primary producers, development of an early warning and emergency preparedness system. A good surveillance system has several benefits:

- Forms the basis for all national disease control programs
- Helps to meet regional and international reporting requirements
- Helps to meet trade requirements (e.g. health certificates)

- Helps to initiate development of capacity, infrastructure and resource material

4.2 Workshop Presentations:

NACA provided the status of surveillance and disease reporting in the 21 Asia-Pacific countries participating in the NACA/FAO regional quarterly disease reporting system.

Australia presented the framework for surveillance and reporting of aquatic animal disease in Australia. Historically, most programs have been based on passive surveillance. Information routinely collected for other purposes has been used to assess a population's health status (or example, the use of laboratory diagnostic records). Passive surveillance is still widely employed, however active techniques are increasingly being utilised.

Monitoring and surveillance programs take a number of forms in Australia. The range of data sources currently used includes (but is not limited to): (a) diagnostic laboratory services (b) specific surveillance programs (c) specific surveys (d) accreditation and certification programs (e) specific investigations (f) research investigations (g) public health protection programs (such as shellfish quality assurance and residue testing programs). Some of the key progress made with regards to surveillance under the AQUAPLAN 1998-2003 include:

- Assessment of the current status of surveillance and monitoring in Australia
- Agreement on the *National List of Reportable Diseases of Aquatic Animals*
- Development of a generic strategy for national aquatic animal disease reporting
- Adherence to international reporting objectives
- Development of *Zoning Policy Guidelines*, explaining generic principles of zoning based on pathogen epidemiology
- Development of a surveillance and monitoring template, outlining the principles of surveillance and monitoring programs
- Involvement of recreational and capture fisheries in surveillance
- Development of standardised diagnostic and sampling techniques, and standard operating principles
- Development of strategies to address the shortage of diagnostic capacity Australia-wide
- Establishment of the Aquatic Animal Health Committee to enhance communication and co-ordination among jurisdictions and between governments and industry on aquatic animal health monitoring and surveillance issues

Some of the projects and activities on surveillance under the AQUAPLAN 2005-2010 include:

- Development and implementation of cost-effective surveillance systems tailored to address the requirements of specific industry sectors.
- Development of systems to have surveillance information and analyses readily accessible at a national level, as appropriate.
- Improvement in the investigation and reporting of major (wild) fish kills; and
- Creation of a consistent system of aquatic animal disease laboratory diagnosis and reporting across Australia.

Concerning disease reporting, Australia informed the workshop that consistent and accurate reporting is important in demonstrating Australia's regional commitment to disease management as well as helping to support its claims to freedom from disease of significance to its trading partners. As a signatory to the World Organisation for Animal Health (OIE), Australia is legally obligated to report to the OIE Central Bureau on OIE listed and non-listed diseases. Australia also reports to the Asia-Pacific community under the NACA/FAO/OIE QAAD program. This arises from Australia's agreements with NACA to report to the Asia-Pacific community under the NACA/FAO/OIE QAAD program. Australian States and Territories submit quarterly reports to the OCVO via a secure on-line reporting system on the monthly status of the diseases/disease agents on Australia's *National List of Reportable Diseases of Aquatic Animals*. Each quarter, DAFF collates the information and produces a full version of all data for confidential use by States and Territories, as well as an amalgamated version which is used as the 'Australian Quarterly Aquatic Animal Disease Report' for quarterly and semestral international reporting purposes.

Thailand informed the workshop on the process of disease surveillance and reporting and stressed the point that passive surveillance still plays a major role in Thailand. The ongoing surveillance system for aquaculture establishments, wild fish kills, and farms and hatcheries, was explained in detail. Local field officers and local level DOF laboratories play a key role in gathering disease information and collecting samples. In addition regional laboratories in AAHRI and CAAHRI undertake targeted surveillance for specific diseases (e.g. KHVD, SVC). Disease information collected from passive and active surveillance systems from all provinces will have to reach the national centers (e.g. AAHRI and CAAHRI). The national center (AAHRI) collates, validates and summarizes all the information in the required format for national, regional and international reporting and forwards to DG of DOF, who in turn sends it to CVO for appropriate action.

Thailand also informed the meeting about the procedures adopted for quarantine and health certification of aquatic animals for both import and export. The import regulations for quarantine and health certification include:

- Pre-arrival of the aquatic animals; The importer must have a certificate indicated that the quarantine facilities have been inspected and passed the standard requirements from the DOF.
- Animal arrive at the port; Animal shipment must accompany with health certificate. Animals will be inspected and examined for OIE listed diseases and other pathogens.
- Post-arrival of the aquatic animals; The aquatic animals will be quarantined at the following places;
 - At the quarantine area at the port of entry
 - At the quarantine area of the importer premise
 - At the place assigned by the Head of the port
- Inspection; During 2-3 weeks quarantine, DOF health inspector will visit and take fish samples for disease diagnosis. If the diseases found, fish will be destroyed or sent back to the original country.

The export regulations for quarantine and health certification include

- Pre-exportation: Includes Farm registration and sanitary inspection. DoF sends inspector to inspect the farm, to sampling and test for OIE listed diseases.

- Request for exportation DoF inspects all documents and fish species
- Steps to obtain Health Certificate: Fish must be in Quarantine for 14 days and treated with chemical to kill all parasites, Fish will be sampled and sent to DoF Laboratory for final health examination, Issue Health Certificate

Department of Animal Health (DAH), Vietnam provided details about the surveillance and reporting in terrestrial animals including the new FAO transboundary animal disease information (TADinfo) on-line database and surveillance system being implemented in Vietnam. TAD info is developed by FAO, uses 'open source' (Java/HTML), provided free-of-charge. Viet Nam is the first country employing TADinfo web-based version while many other countries are using LAN version. Many more countries are planning to use TADinfo. It is a confidential system for Vet services controlled by username and password. The emphasis is on minimum set of data: (a) Date of observation - WHEN? (b) Location - WHERE? (c) Name of suspected disease (Tentative diagnosis) - WHAT? (d) Number of infected/died by species - HOW SEVERE (e) all other data is optional. The deployment progress in Vietnam in terms of training, capacity building, setting up of infrastructure, etc was provided to the meeting.

TADinfo provides online database permitting almost real-time analysis, and there is provision for map-based display of data. The TADinfo helps users to extract 'local value' from analyzing their own data (map, charts, etc. - visualisation tools) contributing to improved data ownership. Supports two way flow of information (reporting and feedback) and also serves as a database. Supports decision-making at local level thereby enabling better disease control and helps management of data in a structured manner. However, the system has some imitations: (a) require IT infrastructure (broadband Internet, PCs, GPS devices) (b) requires a certain level of computer literacy amongst users (provincial staff) (c) the issue of incentives for data submitters (d) recognizing the long term benefits will take time.

NACA presented the progress made in piloting surveillance in 5 provinces under the NACA/SUMA project. Some of the key issues identified included: limited resources (Financial, Extension workers, Diagnostic facilities), large number of producers, farmers sometimes in remote areas, systems are available but often slow & using unstructured flows of information, and sometimes poorly accurate data. The suggested approach included:

- Identify priorities: no need to report every mortality event, but try to solve as many problems as possible
- Use Level 1 (gross) observations effectively
- Promote cooperation between all major stakeholders (sharing info also with DAH)
- Identify right incentives for farmers, extension workers and other stakeholders
- Data digitalised by an *enumerator* at the lowest possible level to increase speed and accuracy
- Digitalised data go to a database to which all stakeholders have (different levels of) access

The information flow suggested in pilot provinces included the following steps

- Ponds registered
- Farmers collect normal/abnormal info on pond-book (gross observation)

- (Voluntary) Extension workers (enumerators) visit pond regularly & upon emergencies and collect info from pond book + gross observations
- Data on normal/abnormal observations reported on recording sheet & coding sheet using coding instructions
- Samples may be submitted to a laboratory for higher level diagnosis
- Messages sent by SMS (1 phone per commune)
- Information approved at provincial level
- Data accessible on the web for all stakeholders to take action

Some of the key findings included

- Extension workers & Farmers can collect & send information (normal & abnormal)
- 97% enumerators no difficulties to transfer info from pond to recording sheet
- Quality of information appeared good
- 97% enumerators no difficulties to transfer info from recording sheet to coding sheet
- 47% had difficulties in sending info using mobiles
- All enumerators complained about the IT system (complicated & slow feedback)
- Enumerators needed more feedback from other stakeholders
- The new MOFI surveillance system is going to use some of the experiences learned in the project

RIA 1 gave a presentation on the application of information technology in monitoring and warning environment and aquatic animal disease in Vietnam. Under MOFI a national programme has been established since 2005 and the 3 RIAs are functioning as National environmental and disease monitoring centers. DST is acting as the nodal point. These 3 centres will produce database for water quality and disease, covering all the geographical regions in Vietnam and key aquaculture commodities. In the north (RIA1), there will be 3 centres, 8 branches with 46 points of data collection. In the middle (RIA3), there will be 11 branches. In the south (RIA2), there will be 3 branches and 34 points of data collection. These centers are expected to support capacity building, technology transfer, provide services to DOFI and farmers and provide data for administrative bodies. The disease database will also be used to support health certification and disease reporting requirements of the country. RIA 1 in collaboration with STOFA, NAFIQAVED, RIA 2, RIA 3, and RIMF will establish the information network to support the establishment and operation of the databases. In addition to the activities of the centers, farmers, extension workers, private, central and provincial administrative authorities like MOFI and DOFI at provincial and district level, research institutes, etc are expected to contribute to the database. These centers are expected to use the data and provide warnings on environmental factors and disease, to all the relevant stakeholders.

NAFIQAVED presented the existing disease surveillance and reporting system in Vietnam. The current reporting system depends on disease information collected by 6 NAFIQAVED branches at regional level and 38 sub-departments at provincial level. In addition, NAFIQAVED sends official letters to RIA1, RIA2, RIA3 and University of Fishery in Nhatrang seeking disease information to include in the Quarterly report for NACA and OIE. Some of the limitations with the present system include:

- Information normally comes late as it is sent by post. This will not meet the OIE requirements in case of emergency notifications

- There is no mechanism for rapid 2-way information exchange
- Not able to obtain good quality information due to lack of training to information collectors and providers
- Incomplete diagnosis and difficulty in verifying accuracy of reports
- No clear structure for the reporting system
- There is no regulation on the roles and responsibilities of individuals, and institutions to provide disease information

Information on other systems in the country (OIE-WAHIS, TADinfo, MOFI environmental and disease control centers) was also presented. The presentation identified the need to develop a robust surveillance system for Vietnam and the need to integrate all the available systems was recognized.

4.3 Discussion Session:

This session stimulated the maximum discussion. The TM members made it very clear that the goal should be developing a national surveillance system and all key national institutions have responsibilities to contribute towards its development and implementation. The TM members appreciated the various initiatives ongoing in Vietnam and recognized the unique value of each system. From long-drawn discussions it emerged that the purpose of different ongoing efforts in the area of monitoring and surveillance needs to be clearly defined and where possible integrated with other similar national initiatives. One thing that came out very clearly was the recognition that all institutions presently involved with monitoring and surveillance activities need to join hands and come up with a system or arrangement to support effective national surveillance system.

4.4 Recommendations:

Based on the review of existing surveillance and reporting system and considering the ongoing surveillance and monitoring activities of different key national institutions (DAH, NAFIQAVED, RIAs), the TM members made following recommendations

- Agree on priority needs for a national surveillance system
- Develop a harmonized national surveillance system which meets the agreed needs
- Identify the available and potential sources of aquatic animal health information that should be included in the national surveillance system
- Identify a structured mechanism to integrate aquatic animal health information acquired from different sources
- Consider utilizing the expertise and resources available with DAH
- Translate the DAFF/NACA field guide on aquatic animal diseases into Vietnamese

5. Contingency planning/Emergency Preparedness

5.1 Background

A disease emergency exists when a population of aquatic animals is recognized as undergoing severe mortality events, or there is otherwise an emerging disease threat where urgent action is required. Infectious disease emergencies may arise in a number of ways, for example: introductions of known exotic diseases, sudden changes in the pattern of existing endemic diseases or the appearance of previously unrecognized diseases.

Contingency planning is an agreed management plan and set of operational procedures that would be adopted in the event of an aquatic animal disease emergency. Everyone in the framework knows their responsibilities and actions to be taken. Some of the important components of a contingency plan include: technical plans (e.g. manuals on disease strategy, general procedures); support plans (e.g. financial, resource); and operational plans (e.g. management manual, diagnostic resources, training resources), all with clearly designated responsibilities.

Through a well-documented contingency action plan agreed upon by all major stakeholders, it should be possible to minimize the impact of an aquatic animal disease emergency. Contingency planning, early warning and early response are critical to the effective management of disease emergencies. The aim of early warning is to rapidly detect the introduction of an exotic pathogen or a sudden increase in the incidence of any disease. Emergency response is identified as all actions that would be targeted at rapid and effective eradication/containment/mitigation of an emergency disease outbreak.

5.2 Workshop Presentations:

NACA presented information on some of the recent disease emergencies in the region including outbreaks of KHVD in koi carps, IMNV in *P.vannamei*. The participants were informed of the status of emergency preparedness in different Asia-Pacific countries and highlighted the need for establishing sound contingency plans to minimize the risks associated with disease emergencies.

Australia provided an elaborate account of its emergency preparedness plan called AQUAVETPLAN. AQUAVETPLAN is a series of technical response plans that describe the proposed Australian approach to an occurrence of an emergency aquatic animal disease. The Guidance is based on sound analysis, linking policy, strategies, implementation, coordination and emergency management plans. Very importantly, the plans are prepared during “peace time”. It is a set of working documents which are updated as priorities change or new information becomes available. Aquatic animal health officers receive training in using specific manuals and the plans are tested regularly. The plan is adopted by all Australian States and Territories and are aimed at Government at State and territory levels, policy and decision makers, industry at both farm and association level and researchers. Important working documents are: Training resources, management manuals, agency support plans, disease strategies, operational procedures, enterprise manuals and diagnostic resources.

Training resources comprise of manuals and kits covering important components of Australia's emergency management framework, such as industry training manuals for the Aquatic Consultative Committee on Emergency Animal Diseases (e.g. disease Watch Awareness Kit, development and conduct of a training course for exotic diseases of animals). Management manuals outline the organisational response during the investigational, alert, operational and stand-down phases of an emergency aquatic animal disease incident. Agency support plans are generic management manuals that have been adapted to local legislative and administrative requirements by each State and Territory government. Disease strategies address specific diseases that have been identified as important to the Australian aquaculture industry. Operational procedures are designed to complement State, industry or farm operational emergency plans including guidance on destruction, disposal and disinfection. Enterprise manuals guides the rapid development of emergency aquatic animal disease control strategies according to four types of production systems affected (open, semi-open, semi-closed, closed). Diagnostic resources include recently updated Aquatic Animal Diseases Significant to Australia: Identification Field Guide, Database of Australian aquatic animal disease diagnostic capability and Database of Australian aquatic animal disease pathogens. All the manuals are available as PDF documents at www.daff.gov.au/aquaticanimalhealth also available on compact disc.

Thailand provided information on its emergency preparedness. The emergency preparedness plan is provided as Annex 1. In Thailand, Fishery health inspectors have been authorized as Veterinarian under the Ministerial Notification on July 19, 2006 and as Authorized Veterinarian Inspector under the Departmental Notification on November 10, 2004 of the Animal Epidemic Act. This notification gives the DOF officers the authority to effectively implement national contingency plans.

NAFIQAVED presented the existing system of emergency notification and its proposals for developing a full fledged contingency plan.

5.3 Discussion Session

Discussions centred around the operational logistics of emergency plans and the resources required to effectively implement such plans. The issue of compensation to farmers in the event of destruction of stock was also discussed. Both Australia and Thailand provided examples of disease emergencies and how they were tackled. Australia re-emphasized the fact that it is an agreed management plan and all stakeholders know their responsibilities as well as their liabilities. Considering the rapid expansion of aquaculture and large scale movement of live aquatic animals, the TM members and the workshop participants, strongly felt that Vietnam should consider developing a proper contingency plan to protect its aquaculture systems from the impact of exotic diseases.

5.4 Recommendations

Based on the discussions and recognising the fact that there has been limited progress in Vietnam towards development of contingency planning, the TM made the following recommendations

- Agree on priority needs for a national contingency plan (e.g. exotic diseases like KHV or IMNV)

- Develop generic emergency preparedness strategies and specific disease control manuals for some key diseases
- Identify a structured mechanism to integrate all the available resources to implement an emergency plan

6. Resources to Support National Strategy development and implementation

There are considerable resources available to support the process of national strategy development and implementation. NACA through the regional mechanism assists member countries to access the resources. Resource material including power point presentations related to all the presentations made during the TM were handed over to the national delegates for wider dissemination. Some of the important institutions, international, regional and national resources are listed below:

Institutions:

- FAO and OIE
- NACA
- DAFF
- AAHRI (ASEAN Disease Centre)
- SEAFDEC
- ASEC
- NACA three tier regional resource base (Regional resource experts, resource centres and reference laboratories)
- NACA Asia Regional Advisory Group

International and Regional documents

- OIE Manual of Diagnostic tests for aquatic animals, fifth edition, 2006-www.oie.int
- OIE Aquatic animal health code, ninth edition, 2006-www.oie.int
- OIE Risk analysis in aquatic animal health 2000-www.oie.int
- Manual on risk analysis for the safe movement of aquatic animals-APEC 2004
- Surveillance and zoning for aquatic animal diseases FAO-2004-www.fao.org
- Regional Workshop on Preparedness and Response to Aquatic Animal Health Emergencies in Asia. FAO. 2005 - www.fao.org
- FAO/NACA Asia regional Technical Guidelines on health management for the responsible movement of live aquatic animals and the Beijing consensus and implementation strategy - www.enaca.org
- FAO/NACA Manual of procedures for the implementation of the Technical guidelines - www.enaca.org
- FAO/NACA Asia Diagnostic guide to aquatic animal diseases - www.enaca.org
- Asia-Pacific disease identification field guide (DAFF/NACA 2006)
- QAAD Reports (1999-2006)-www.enaca.org

National Documents

- AQUAPLAN from Australia
- AQUAVETPLAN - emergency preparedness plan from Australia
- Disease identification Field Guide from Australia
- National Strategy Documents from Thailand,
- National strategy document from Indonesia
- National strategy document from Vietnam

Annex 1. Technical Mission to Vietnam - Work plan		
Date	Topic/Meeting	Participants
Sunday 3 Dec 2006	Arrival in Hanoi	
Monday 4 Dec 2006	Framework for National Aquatic Animal Health Strategies	NAFIQAVED
AM	Formal Introductions	All
AM	Objectives of the Technical Mission and expected outcomes	Mohan (M)
AM	Organizational structure and the existing system of aquatic animal health management system in Vietnam and national Priorities in aquatic animal health management aspect	DG of NAFIQAVED
AM	Background and developments in the region	M
AM	Australia's AQUAPLAN	Ingo (I)
AM	Thailand's National Strategy	Supranee (T)
AM	NACA project activities in Vietnam and its contribution towards National strategy development	Flavio (F)
	Lunch	
PM	Discussions on national priorities and what can be done with the existing resources, identification of areas which need strengthening in the short and long term	M/S/I/F with Officers of MOFI, DOFI, Members of NACAAH, Workshop attendees (WA) and other key stakeholders (KS)
Tuesday 5 Dec 2006	National Committee on aquatic animal health (NACAAH)	NAFIQAVED
AM	Background and developments in the region	M and F
AM	How it is working in Australia	I
AM	How it is working in Thailand	S
AM	Organizational structure, function and responsibility of NACAAH and progress made in last 2 years	Chairman of NACAAH
AM	Future work plan of NACAAH	Permanent chairman
AM	Discussions to develop a framework for future activities of NACAAH	M/S/I/F with Officers of MOFI, DOFI, Members of NACAAH, Workshop attendees (WA) and other key stakeholders (KS)

	<i>Lunch</i>	
	National List of diseases	
PM	Importance of international (OIE) and regional disease lists (QAAD)	M
PM	How national lists are developed in Australia	I
PM	How national lists are developed in Thailand	S
PM	Draft List of diseases for importation quarantine for fish and fishery product, criterion of the List, diagnostic capacity, etc	Chief of Aquatic animal health Division
PM	Discussions on the national disease list for Vietnam followed by evaluation of diagnostic capacity and resources	M/S/I/F with Officers of MOFI, DOFI, Members of NACAAH, Workshop attendees (WA) and other key stakeholders (KS)
Wednesday 6 Dec 2006	Framework for Surveillance and Reporting	NAFIQAVED
AM	Importance of surveillance and reporting from national perspective, regional and international trade	M
AM	Process of surveillance and reporting in Australia	I
AM	Process of surveillance and reporting in Thailand	S
AM	Updates in pilot surveillance project in Vietnam	F
AM	Terrestrial animals surveillance and reporting system and experience in developing the system	Mr Dung (DAH)
	<i>Lunch</i>	
PM	Application of information technology in monitoring and warning environment, aquatic animal disease in Vietnam	Mr Nguyen Huu Nghia (RIA 1)
PM	Existing aquatic animal disease reporting procedure in Vietnam	Chief of Aquatic animal health Division
PM	Discussions and developing agreements for a draft aquatic animal disease reporting system for Vietnam	M/S/I/F with Officers of MOFI, DOFI, Members of NACAAH, Workshop attendees (WA) and other key stakeholders (KS)

Thursday 7 Dec 2006	Emergency preparedness	NAFIQAVED
AM	Importance and present status in the region	M
AM	AQUAVET Plan of Australia	I
AM	Contingency plans in Thailand	S
AM	Existing plan and specific policy plan for the next time and requesting the comments	Chief of Aquatic animal health Division
AM	Discussions on developing a contingency planning for Vietnam	M/S/I/F with Officers of MOFI, DOFI, Members of NACAAH, Workshop attendees (WA) and other key stakeholders (KS)
AM	Discussions on project ideas and development of draft project proposals	M/S/I/F with Officers of MOFI, DOFI, Members of NACAAH, Workshop attendees (WA) and other key stakeholders (KS)
	<i>Lunch</i>	
PM	Field trip to nearby aquaculture facilities	
Friday 8 Dec 2006	Field Trip	
Saturday 9 Dec	Mohan/Supranee/Ingo leave for Bangkok	

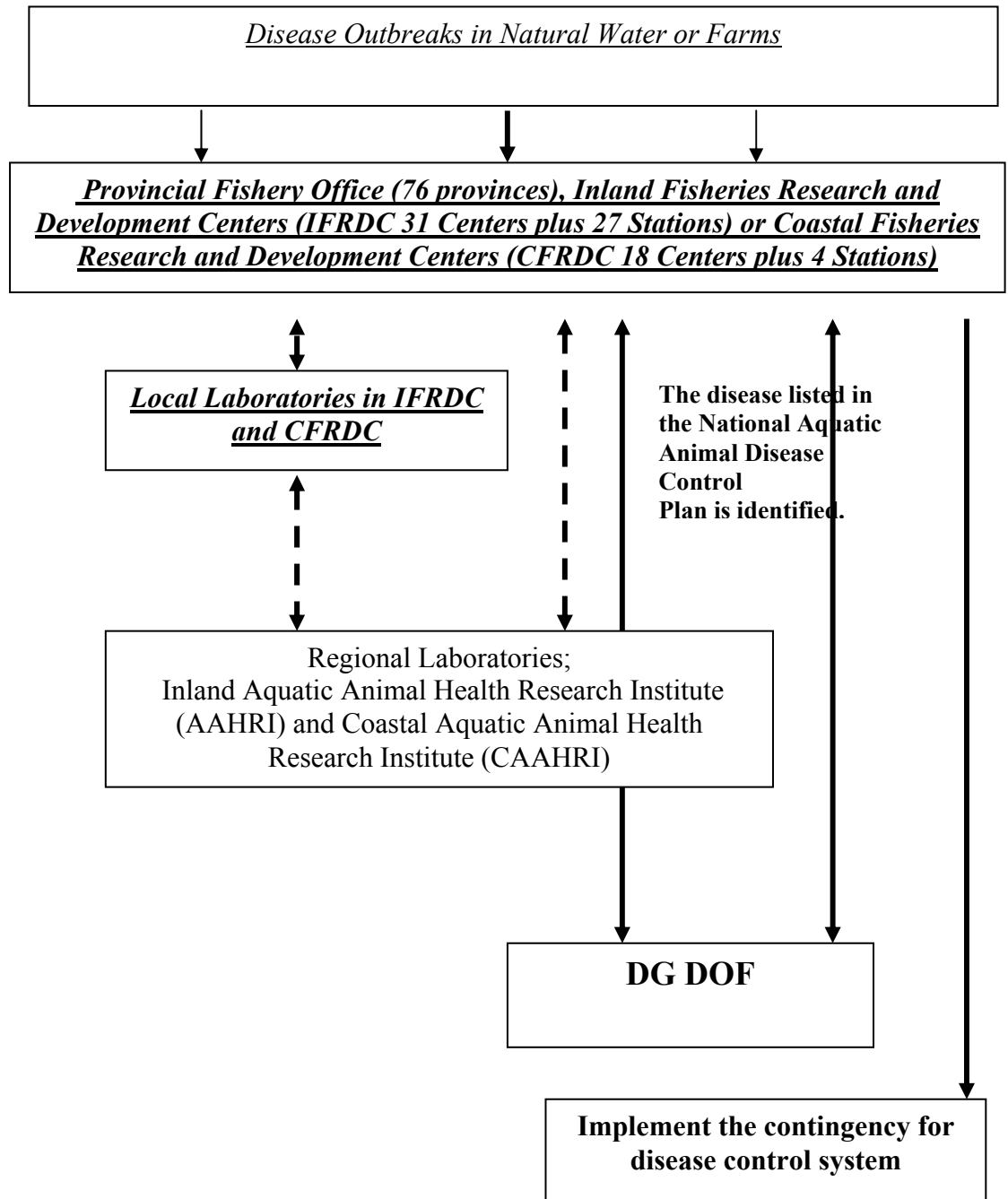
Annex 2:

List of participants at the Vietnam Technical mission

No	Name	Unit
1	CV Mohan	NACA
2	Flavio Corsin	NACA
3	Ingo Ernst	DAAF
4	Supranee Chinabut	DoFI- Thái Lan
5	Nguyen Tu Cuong	General Director of NAFIQAVED
6	Nguyen Nhu Tiep	Chief of Aquatic Animal Health Division - NAFIQAVED
7	Nguyen Van Thanh	Chairman of National Committee (NACAAH)
8	Le Thanh Luu	Director of RIA 1
9	Phan Thi Van	RIA 1
10	Nguyen Thi Xuan Thu	Vice director of RIA 3
11	To Long Thanh	Department of Animal Health (MARD)
12	Nguyen Thi Minh	Department of Aquaculture - MOFI
13	Le Duy Binh	Vice Director of NAFIQAVED 4
14	Le Thi Nhan	Vice Director of NAFIQAVED 1
15	Nguyen Hien Nang	Chief of Aquatic Animal Health Division - NAFIQAVED 5
16	Nguyen Dinh Xuan Quy	Chief of Aquatic Animal Health Division - NAFIQAVED 6
17	Dinh Thanh Phuong	Director of NAFIQAVED2
18	Nguyen Thi Phuong Mai	NAFIQAVED 3
19	Nguyen Huu Nghia	RIA 1
20	Pham Van Thu	RIA 1
21	Nguyen Viet Khue	RIA 1
22	Do Huu Dung	Department of Animal Health (MARD)
23	Bui Thi To Nga	NAFIQAVED
24	Bui Thi Viet Hang	NAFIQAVED
25	Vi The Dang	NAFIQAVED
26	Bui Duc Manh	NAFIQAVED
27	Nguyen Van Be	NAFIQAVED
28	Lê thị Huệ	NAFIQAVED
29	Luu Phuong Thanh	NAFIQAVED branch 1
30	Nguyen Hai Ha	NACA
31	Le Van Quy	Sub-department of Fishery Quality Assurance and Veterinary in Ho Chi Minh City

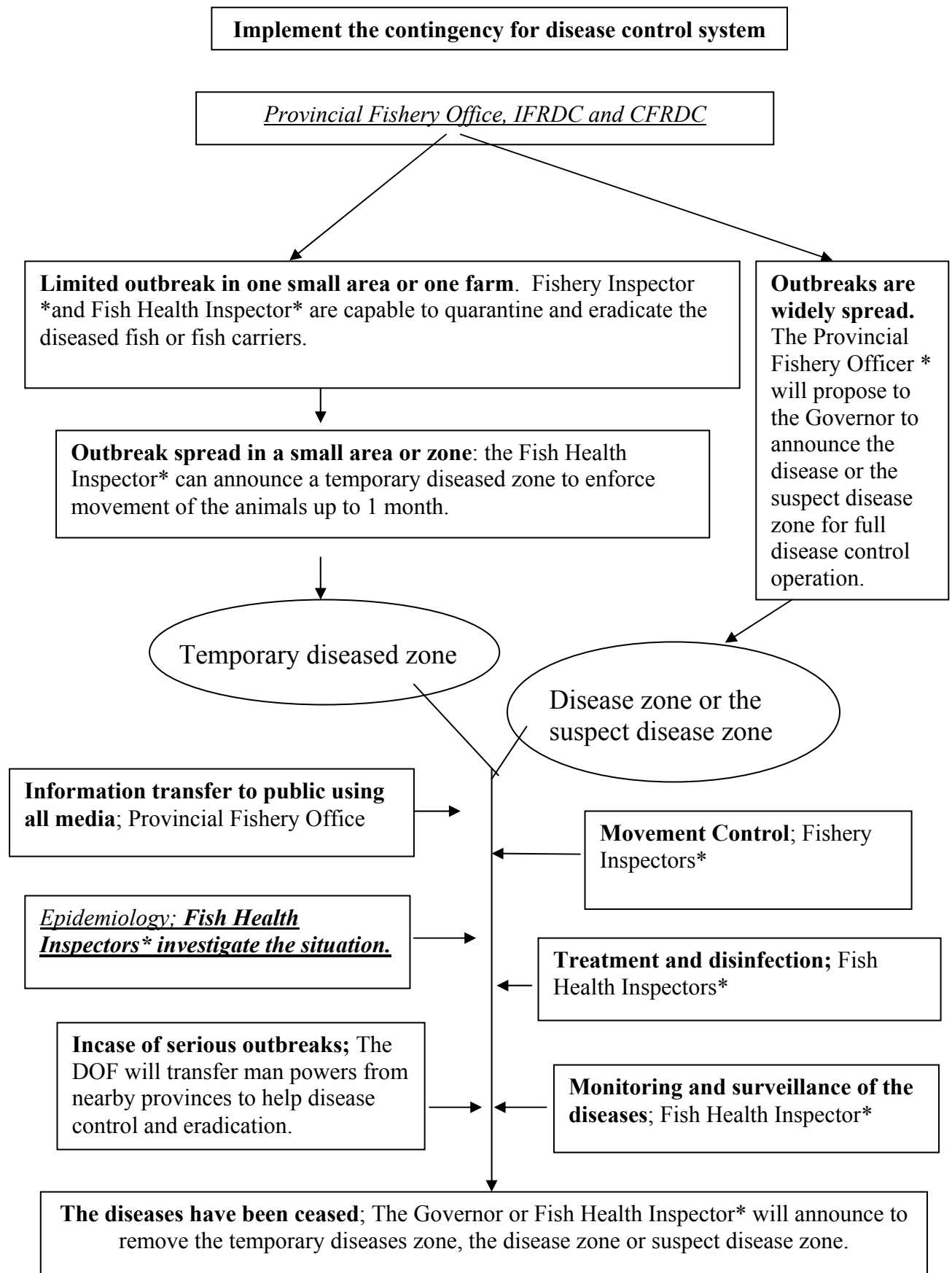
Annex 3.

Thailand Contingency Planning for Aquatic Animal Disease Control System



———— Positive reactions (alert information), as the diseases or suspect diseases are found.

- - - - - No reaction, as no disease or suspect disease is identified.



* have been authorized as Authorized Veterinarian under the Ministerial Notification dating on July 19, 2006 and as Authorized Veterinarian Inspector under the Departmental Notification dating on November 10, 2004 of the Animal Epidemic Act.