

SEAFDEC

Annual Report 2007



Southeast Asian Fisheries Development Center



# SEAFDEC

## Annual Report 2007

### **Preparation and Distribution of this Document**

The SEAFDEC Annual Report 2007 was prepared by the Secretariat of the Southeast Asian Fisheries Development Center (SEAFDEC), in collaboration with the Departments namely, the Training Department (TD), the Marine Fisheries Research Department (MFRD), the Aquaculture Department (AQD), and the Marine Fishery Resources Development and Management Department (MFRDMD). The document is distributed to SEAFDEC Member Countries, its Departments, concerned institutions, and public to promote activities of the Center.

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**Southeast Asian Fisheries Development Center**



## 2007 SEAFDEC Council of Directors

### Chairman of the Council

Mr. Nao Thuok

#### Brunei Darussalam

Council Director:	Dayang Hasnah binti Ibrahim Director, Department of Fisheries
Alternate Council Director:	Abd. Halidi bin Mohd. Salleh Deputy Director, Department of Fisheries

#### Cambodia

Council Director:	Mr. Nao Thuok Director-General, Fisheries Department, Ministry of Agriculture, Forestry and Fisheries
Alternate Council Director:	Mr. Sam Nouv Deputy Director-General, Fisheries Department, Ministry of Agriculture, Forestry and Fisheries

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Alternate Council Director:	Mr. Husni Mangga Barani Director-General of Capture Fisheries, Ministry of Marine Affairs and Fisheries

#### Japan

Council Director:	Mr. Akira Nakamae Deputy Director-General, Fisheries Agency
Alternate Council Director:	Mr. Toru Maeda (until September 2007) Director, First Country Assistance Planning Division, Economic Cooperation Bureau Mr. Kozo Honsei (since September 2007) Director, First Country Assistance Planning Division, Economic Cooperation Bureau

#### Lao PDR

Council Director	Dr. Khamphay Thammavong Deputy Director-General, Department of Livestock and Fisheries
Alternate Council Director	Mr. Somphanh Chanphenxay Deputy Director-General, Department of Livestock and Fisheries

#### Malaysia

Council Director:	Dato' Junaidi bin Che Ayub Director-General of Fisheries Malaysia, Ministry of Agriculture and Agrobased Industries
Alternate Council Director:	Mr. Ibrahim Saleh (until March 2007) Deputy Director-General of Fisheries Malaysia Mr. Ahamad Sabki bin Mahmood (since March 2007) Deputy Director-General of Fisheries Malaysia

#### Myanmar

Council Director:	Mr. Than Tun (until April 2007) Director-General, Department of Fisheries, Ministry of Livestock and Fisheries Mr. Khin Maung Aye (since April 2007) Director-General, Department of Fisheries, Ministry of Livestock and Fisheries
Alternate Council Director:	Mr. Khin Ko Lay Deputy Director-General, Department of Fisheries

#### The Philippines

Council Director:	Atty. Malcolm I. Sarmiento, Jr. Director, Bureau of Fisheries and Aquatic Resources
Alternate Council Director:	Mr. Gil A. Adora Assistant Director for Technical Services, Bureau of Fisheries and Aquatic Resources

#### Singapore

Council Director:	Dr. Chua Sin Bin Chief Executive Officer, Agri-food & Veterinary Authority, Ministry of National Development
Alternate Council Director:	Mr. Leslie Cheong Director, Food Supply & Technology Department, Ministry of National Development

#### Thailand

Council Director:	Dr. Jaranthada Karnnasuta Director-General, Department of Fisheries, Ministry of Agriculture and Cooperatives
Alternate Council Director:	Dr. Somying Piumsombun Deputy Director-General, Department of Fisheries, Ministry of Agriculture and Cooperatives

#### Vietnam

Council Director:	H.E. Mr. Luong Le Phuong Vice Minister, Ministry of Agriculture and Rural Development
Alternate Council Director:	Dr. Chu Tien Vinh Director of National Directorate of Aquatic Resources Exploitation and Protection

## **2007 SEAFDEC Senior Officials**

### **Secretary-General**

Dr. Siri Ekmaharaj

### **Deputy Secretary-General**

Mr. Hideki Tsubata

### **Training Department (TD)**

#### **Chief**

Dr. Siri Ekmaharaj

#### **Deputy Chief**

Mr. Hideki Tsubata

### **Marine Fisheries Research Department (MFRD)**

#### **Chief**

Ms. Tan-Low Lai Kim

### **Aquaculture Department (AQD)**

#### **Chief**

Dr. Joebert D. Toledo

#### **Deputy Chief**

Dr. Koichi Okuzawa (until March 2007)

Dr. Hiroshi Ogata (since April 2007)

### **Marine Fishery Resources Development and Management Department (MFRDMD)**

#### **Chief**

Mr. Raja Mohd. Noordin bin Raja Omar (until November 2007)

Ms. Mahyam Mohd. Isa (since November 2007)

#### **Deputy Chief**

Dr. Yoshinobu Konishi (until October 2007)

Dr. Osamu Abe (since October 2007)

# Message

## from the Chairman of the SEAFDEC Council of Directors



The year 2007 was indeed very significant for SEAFDEC as it has brought valuable memories in its 40 years of existence. Life really begins at 40, so the saying goes, as has been manifested within SEAFDEC when it celebrated its 40<sup>th</sup> anniversary in December 2007. Throughout its past 40 years, SEAFDEC has implemented several activities to support the development of the region's fisheries sector in line with the policy directives and priority actions identified by the SEAFDEC Council. This resulted in several accomplishments which have greatly contributed to the development of fisheries in the Member Countries and Southeast Asia as a whole. On behalf therefore of the SEAFDEC Council of Directors, I would like to congratulate SEAFDEC for its achievements.

SEAFDEC has been promoting responsible fisheries in Southeast Asia since 1998 by actively advancing the Code of Conduct for Responsible Fisheries (CCRF). Starting from the regionalization of the CCRF, this was followed by massive human resource development programs to support the implementation of the CCRF. As judgment time came, the efforts of SEAFDEC were rewarded and globally recognized when SEAFDEC was given the Margarita Lizárraga Award for 2006-2007 by FAO, another milestone in the history of SEAFDEC. Again, on behalf of the SEAFDEC Council, I would like to extend my compliments to SEAFDEC for earning additional feather on its cap, and would wish to thank the Member Countries for strongly believing in and embracing the CCRF.

Specifically for the year 2007, SEAFDEC has continued conducting activities in responsible fishing operations, fisheries management, aquaculture and fisheries post harvest technologies. Another significant event during that year was the outcome of our efforts in strengthening further the cooperation and collaboration between SEAFDEC and the ASEAN. The formal establishment of the ASEAN-SEAFDEC Strategic Partnership (ASSP) in November 2007 has paved the way for a closer ASEAN-SEAFDEC cooperation to strengthen the common goals towards sustainable fisheries development for food security and poverty alleviation. In 2007, SEAFDEC also continued to assist the Member Countries in addressing international/regional issues and problems that may affect fish trade and the development of the region's fisheries sector as a whole. By closely monitoring the emerging international fisheries issues, SEAFDEC in collaboration with the ASEAN unfurled the vast opportunities for the Member Countries to develop common stands on the issues.

While the end of 2007 marked the 40<sup>th</sup> year of SEAFDEC establishment, it has given SEAFDEC the aspiration to brace itself to making the best of what it already had and using this to move forward. Since life begins at 40, beyond 2007 SEAFDEC will continue to take faster strides and continue to play an important role in facilitating regional cooperation in fisheries development. As Chairman of the SEAFDEC Council, I can assure the Member Countries that SEAFDEC will proceed in providing the means of policy and technical advisory support to the Member Countries towards sustainable development of fisheries in the region, and that SEAFDEC will go on linking fisheries with the other sectors in a broader perspective of "sustainable development for food security" in the region.

As my term as Chairman of the SEAFDEC Council ends in April 2008, allow me to express in advance my heartfelt gratitude to the SEAFDEC Secretary-General, Dr. Siri Ekmaharaj, the Deputy Secretary-General, Mr. Hideki Tsubata, the Department Chiefs and Deputy Department Chiefs, Advisors, and all the SEAFDEC staff for their hard work and for supporting me in my work with the Council. Lastly, I would also like to express my sincerest gratitude and appreciation to the SEAFDEC Council Directors for helping me steer SEAFDEC towards achieving its goals. I really consider the year that passed a fruitful one for it was during this phase which ended in 2007 that SEAFDEC attained its major achievements. As SEAFDEC begins a new phase in 2008, I am hopeful that with the support and cooperation of its partner organizations and the Member Countries, more successes will surely come its way.



**Nao Thuok**  
SEAFDEC Council Director for Cambodia and  
Director General of the Fisheries Administration

# Foreword

## from the Secretary-General

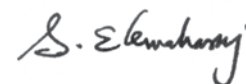


SEAFDEC was established in December 1967 for the purpose of promoting sustainable fisheries development in the Southeast Asian region. Throughout its 40 years of existence, SEAFDEC has been building-up its technical capacity and working towards achieving sustainable fisheries development. SEAFDEC continued to implement several activities in close collaboration with the SEAFDEC Member Countries as well as with its partner organizations. One of the most significant SEAFDEC activities which had been globally acknowledged was its effort in supporting Member Countries for the implementation of the global Code of Conduct for Responsible Fisheries (CCRF). Through its program on the Regionalization of the Code of Conduct for Responsible Fisheries which started in 1998, SEAFDEC made sure that the issues contained in the CCRF are regionalized, gradually taken up by the Member Countries, and eventually embedded in their respective national fisheries policies and priorities. The global recognition received by SEAFDEC

for its efforts in promoting the CCRF in the Southeast Asian region through the Margarita Lizárraga Award Medal for 2006-2007 presented by FAO in November 2007, is a significant milestone in the history of SEAFDEC. During the Margarita Lizárraga Medal Awarding Ceremonies, I have assured FAO and the sponsors that as “the Award has given SEAFDEC more inspiration and aspiration to intensify its efforts and to set higher sights in promoting responsible fisheries in the Southeast Asian region,” SEAFDEC will continue to promote responsible fisheries in the region more intensely under the framework of the CCRF. This means that the task of ensuring that responsible development of fisheries in the Southeast Asian region would be sustained by SEAFDEC and the Member Countries while the momentum in the implementation of the CCRF would also be continued.

The “Resolution” and “Plan of Action” adopted during the ASEAN-SEAFDEC Millennium Conference “Fish for the People” in 2001 have been used as the main frameworks in the formulation and implementation of several fisheries-related programs during the past five years and until the present. Starting in 2002, several projects under the Special Five-year Program which were developed in-line with the issues and priority addressed in the two policy framework documents, had been undertaken by SEAFDEC after which the regional momentum in the implementation of such activities has been continued. The successful implementation of the Special Five-year Program until 2007 which was fully supported by the Member Countries is another milestone in the history of SEAFDEC. In addition, other equally important policy framework documents have also been adopted including the ASEAN Vision “to be leader in sustainable tropical fisheries” as well as the Information Strategies for Enhancing SEAFDEC Visibility which was developed to guide SEAFDEC in the formulation and implementation of its information activities. In 2007, SEAFDEC also strengthened its cooperative partnership with the ASEAN through the ASEAN-SEAFDEC Strategic Partnership which is envisaged to greatly lead to closer collaboration between the two organizations for fisheries development in the region.

Although during the past years, several difficulties were encountered by SEAFDEC due to the uncertain financial support for the operation and implementation of its activities, SEAFDEC also received strong commitment from the Member Countries ensuring the continued existence of SEAFDEC in the future, and proving the importance of the SEAFDEC mandates and activities to support the sustainable development of fisheries in the region. In my capacity as SEAFDEC Secretary-General and on behalf of all SEAFDEC Departments, I wish to take this opportunity to express my utmost appreciation to all the Council Directors and the agencies responsible for fisheries of the Member Countries, for providing guidance and support to SEAFDEC making all its initiatives possible. I would also like to thank the partner organizations that have been collaborating with SEAFDEC in the implementation of several activities during the past years, and wish that the collaborative spirits would be continued and further strengthened to ensure the full benefits from sustainable fisheries development in the Southeast Asian region in the years to come.



Siri Ekmaharaj  
SEAFDEC Secretary-General



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# List of Acronyms

<b>AMC</b>	Australian Maritime College, Australia
<b>AMAF</b>	ASEAN Ministers of Agriculture and Forestry
<b>APFIC</b>	Asia Pacific Fisheries Commission
<b>AQD</b>	SEAFDEC Aquaculture Department
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>ASSP</b>	ASEAN-SEAFDEC Strategic Partnership
<b>ASWGFi</b>	ASEAN Sectoral Working Group on Fisheries
<b>AVA</b>	Agri-food and Veterinary Authority, Singapore
<b>BFAR</b>	Bureau of Fisheries and Aquatic Resources, Philippines
<b>BIMP-EAGA</b>	Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area
<b>CITES</b>	Convention on International Trade in Endangered Species of Wild Fauna and Flora
<b>COFI</b>	Committee on Fisheries, FAO
<b>CWP</b>	Coordinating Working Party on Fishery Statistics
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FCG</b>	ASEAN-SEAFDEC Fisheries Consultative Group
<b>FIGIS</b>	Fishery Global Information System, FAO
<b>FIRMS</b>	Fishery Resources Monitoring System, FAO
<b>FRA</b>	Fisheries Research Agency, Japan
<b>HACCP</b>	Hazard Analysis and Critical Control Point
<b>JAMARC</b>	Marine Fisheries Research and Development Center of the Fisheries Research Agency, Japan
<b>JTED</b>	Juvenile and Trash Excluder Device
<b>KU</b>	Kasetsart University, Thailand
<b>MI</b>	Marine Institute of the Memorial University of Newfoundland, Canada
<b>MFRD</b>	SEAFDEC Marine Fisheries Research Department
<b>MFRDMD</b>	SEAFDEC Marine Fishery Resources Development and Management Department
<b>MRC</b>	Mekong River Commission
<b>NACA</b>	Network of Aquaculture Centres in Asia-Pacific
<b>NFU</b>	National Fisheries University, Japan
<b>OIE</b>	World Organisation for Animal Health
<b>RCCRF</b>	Regionalization of the Code of Conduct for Responsible Fisheries in Southeast Asia
<b>RFPN</b>	Regional Fisheries Policy Network
<b>SEAFDEC</b>	Southeast Asian Fisheries Development Center
<b>Sida</b>	Swedish International Development Cooperation Agency
<b>TD</b>	SEAFDEC Training Department
<b>TED</b>	Turtle Excluder Device
<b>TUMSAT</b>	Tokyo University of Marine Science and Technology
<b>UNEP</b>	United Nations Environmental Programme
<b>WGRFP</b>	Working Group on Regional Fisheries Policy
<b>WTO</b>	World Trade Organization

# **SEAFDEC Achievements**

in the Year 2007





## SEAFDEC Achievements in the Year 2007

During the year 2007, the activities of SEAFDEC were implemented in-line with the policy directives and priority actions identified by the SEAFDEC Member Countries during the SEAFDEC annual meetings, i.e. the 9<sup>th</sup> Meeting of the ASEAN-SEAFDEC Fisheries Consultative Group (FCG) (7-8 December 2006, Thailand), the 29<sup>th</sup> Meeting of SEAFDEC Program Committee (4-6 December 2006, Bangkok, Thailand), and the 39<sup>th</sup> Meeting of SEAFDEC Council (4-7 April 2007, Cambodia). The activities implemented during the year 2007 has been endorsed by the 30<sup>th</sup> SEAFDEC Program Committee Meeting (26-28 November 2007, the Philippines) and the 10<sup>th</sup> ASEAN-SEAFDEC FCG Meeting (29-30 November 2007, the Philippines); while the activities proposed for 2008 has been scrutinized and would be further proposed to the forthcoming 40<sup>th</sup> SEAFDEC Council, to be organized in April 2008, for consideration and endorsement.

At the **39<sup>th</sup> Meeting of SEAFDEC Council**, the programs, which have been previously scrutinized at the 29<sup>th</sup> Meeting of SEAFDEC Program Committee and endorsed at the 9<sup>th</sup> Meeting of the ASEAN-SEAFDEC FCG, were presented and approved. In addition to the program matters, several important issues were also considered by the Council. These included the international fisheries related issues, i.e. endangered aquatic species under CITES concern, small-scale fisheries related issues, fish trade related issues, eco-labelling, and fisheries subsidies. The Council also supported the new modality for regional cooperation in addressing international fisheries related issues, and requested for the establishment of a Drafting Mechanism to compile the common/coordinated position on international fisheries issues agreed by Member Countries to be submitted to relevant authority that has direct responsibility on the issue(s). During the SEAFDEC Council Meeting, the Council also supported in principle the establishment of the Regional Scientific Advisory Committee for Fisheries Management in Southeast Asia (RSAC), and approved the Post-harvest Centre of Singapore as Collaborating Center for SEAFDEC; and also provided recommendations for immediate and long-



SEAFDEC Secretariat (left); and  
TD, MFRD, AQD and MFRDMD (from top to bottom)



*The 39<sup>th</sup> Meeting of SEAFDEC Council hosted by the Ministry of Agriculture, Forestry and Fisheries of Cambodia*

term improvement of SEAFDEC programming exercises and other important operation matters.

The **30<sup>th</sup> Program Committee Meeting** scrutinized the programs implemented in 2007 and those planned for 2008 in order to ensure the effectiveness of the program planning and implementation. For 2007, in addition to the SEAFDEC Departmental Programs and Programs under the ASEAN-SEAFDEC Fisheries Consultative Group (FCG) Mechanism with support from the Japanese Trust Fund, Swedish International Development Cooperation Agency (Sida), and the ASEAN Foundation; several pipeline programs still under the process of discussion and coordination with donors were presented. The Meeting also highlighted the issues that need investigation for the benefit of the region, e.g. the establishment of the Regional Scientific Advisory Committee for Fisheries Management in Southeast Asia.

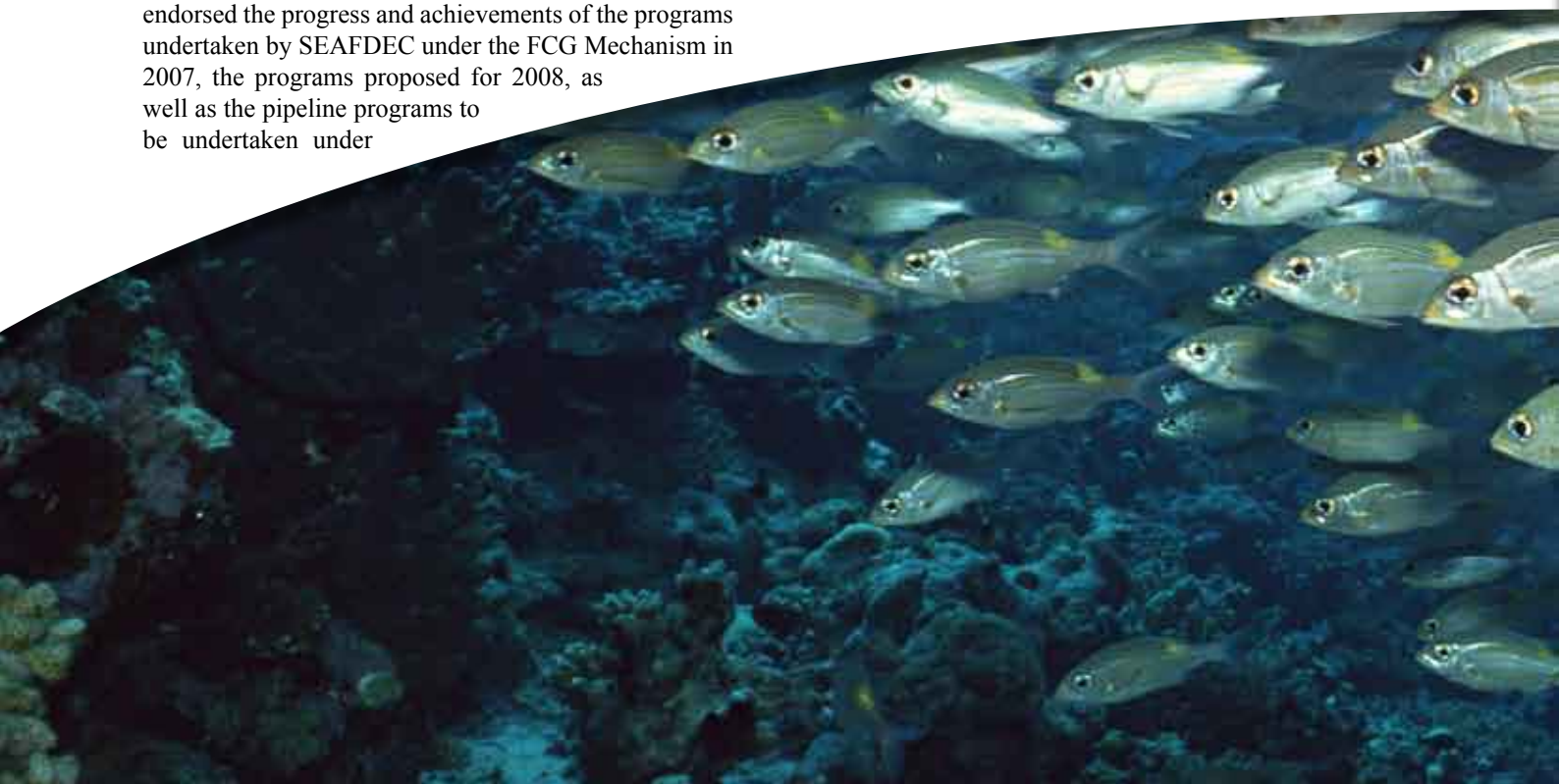
Back to back with the 30<sup>th</sup> Meeting of SEAFDEC Program Committee, the **10<sup>th</sup> ASEAN-SEAFDEC FCG Meeting** was organized to discuss the ASEAN-SEAFDEC fisheries collaborative programs, as well as policy considerations on the ASEAN-SEAFDEC important issues. The Meeting endorsed the progress and achievements of the programs undertaken by SEAFDEC under the FCG Mechanism in 2007, the programs proposed for 2008, as well as the pipeline programs to be undertaken under

the FCG Mechanism. Besides important areas to be incorporated into the future programs, discussions also focused on directions to enhance the implementation of the ASEAN-SEAFDEC Strategic Partnership (ASSP), e.g. establishment of regional management mechanism, supporting ASEAN in the implementation of the Roadmap for Integration of Fisheries Sector. Required actions in response to emerging international issues with implications to fisheries activities of the region were also discussed.

## **Highlight of Activities and Achievements**

In addition to the policy directives from the SEAFDEC Council, the principle policy frameworks taken into consideration in the development and implementation of SEAFDEC programs and activities, included:

- Code of Conduct for Responsible Fisheries (1995), and its subsequent International Plans of Actions
- SEAFDEC Strategic Plan (1998)



- Regional Guidelines on Responsible Fisheries: 1) Fishing Operations (1999), 2) Aquaculture (2001), 3) Fisheries Management (2003), 4) Post-harvest Practices and Trade (2005)
- Resolution and Plan of Action on Sustainable Fisheries for Food Security in the ASEAN Region (2001)
- Statement from the Seminar on ASEAN-Japan Cooperation for Sustainable Fisheries through SEAFDEC (2003), and ASEAN's fisheries vision: "To be a leader in Sustainable Tropical Fisheries for the People"
- Information Strategies for Enhancing SEAFDEC Visibility and Communications (2006)

In addition to the above policy frameworks, In November 2007, the cooperation between ASEAN and SEAFDEC was formalized with the establishment of the ASEAN-SEAFDEC Strategic Partnership (ASSP). The ASSP is envisaged to further enhance a closer ASEAN-SEAFDEC cooperation and herald a new phase of ASEAN-SEAFDEC collaboration in achieving long term common goals and objectives under both organizations'

commitment for collective regional development and management of sustainable fisheries.

In 2007, SEAFDEC implemented eight (8) Departmental Programs and twenty-two (22) Programs under the ASEAN-SEAFDEC Fisheries Consultative Group (FCG) mechanism; and six (6) other programs/activities. The major achievements of SEAFDEC in various fishery aspects are summarized as follows:

## Promotion of Responsible Fisheries

The Regionalization of the Code of Conduct for Responsible Fisheries (RCCRF) has been implemented by SEAFDEC since 1998 with support from the Japanese Trust Fund. The implementation started off with the regionalization of the CCRF, and came up with four Regional Guidelines for Responsible Fisheries: 1) Fishing Operations, 2) Aquaculture, 3) Fisheries Management, and 4) Post-harvest Practices and Trade. These four guidelines were published from 2000 to 2005. In addition, in 2006, the Supplementary Guidelines on Co-Management Using Group User Rights, Fishery Statistics,



*Participants of the 30<sup>th</sup> SEAFDEC Program Committee Meeting held back-to-back with the 10<sup>th</sup> ASEAN-SEAFDEC FCG Meeting*





*Signing of the ASSP by SEAFDEC Secretary-General and the ASEAN Secretary-General at the 29<sup>th</sup> AMAF Meeting*

Indicators, and Fisheries Refugia was published. These regional guidelines have been used as policy framework for SEAFDEC in the formulation of its activities and for Member Countries in the implementation of the CCRF at the national level. After completion of the CCRF regionalization process, SEAFDEC activities have been broadened to provide support to Member Countries in the implementation of the CCRF, i.e. through translation of the Guidelines to national languages and conduct of national activities on various aspects. Starting in 2003, SEAFDEC has also received funding support from the Swedish International Development Cooperation Agency (Sida) for activities to build upon the existing SEAFDEC



*SEAFDEC Secretary-General Dr. Siri Ekmaharaj, accompanied by SEAFDEC Special Advisor, Dr. Yasuhisa Kato who is the prime mover of the Regionalization of the CCRF, receiving the Margarita Lizárraga Award from FAO Director General, Dr. Jacques Diouf in November 2007 in Rome, Italy.*



*The Margarita Lizárraga Award Medal for the Biennium 2006-2007 given to SEAFDEC for the promotion of sustainable fisheries in Southeast Asia*

momentum on the CCRF, and further promote the implementation of sustainable fisheries management in the context of the RCCRF through appropriate human resource development activities.

On 22 October 2007, SEAFDEC organized the “Seminar on Implementation of the Code of Conduct for Responsible Fisheries in Southeast Asia” to review the activities and achievements of the Member Countries in the implementation of the CCRF. The Seminar also came up with priorities and needs as well as recommendations for future implementation of the CCRF in Southeast Asia, which later on was submitted to the 10th Meeting of the ASEAN-SEAFDEC FCG for consideration and support.

The efforts of SEAFDEC in promoting the implementation of the CCRF throughout the past decade have been recognized at a global level, and in 2007 SEAFDEC’s success in the promotion of responsible fisheries in the region was recorded when SEAFDEC was awarded the Margarita Lizárraga Award Medal for the biennium 2006-2007 at the 34<sup>th</sup> Session of FAO Conference in Rome, Italy.

## **Resources Explorations and Promotion of Responsible Fishing Operations**

TD is currently equipped with two marine research and training vessels to conduct fishery resources survey and development of fishing technologies for the region. The M.V. SEAFDEC (1,178-GT steel purse seiner) was granted by the Government of Japan in 1992; and the M.V. SEAFDEC 2 (200-GT trawler) was granted by the Government of Japan in 2003.

To explore the existing fishery resources in the waters of Member Countries, TD conducted several research cruises through the M.V. SEAFDEC 2 in collaboration with concerned Member Countries under a cost-sharing basis. In 2007, surveys were conducted in the Andaman Sea specifically in the EEZ of Thailand and Myanmar from February to March 2007, to assess the demersal fishery resources on the continental shelf slopes and large pelagic resources. In addition, the inventory survey of Tuna FADs deployed by fishermen was also conducted in the Mindanao Sea of the Philippines, in September 2007, in collaboration with the Philippine Bureau of Fisheries and Aquatic Resources (BFAR).

In addition to the resources survey, the M.V. SEAFDEC 2 was also utilized to explore Deep Sea Fisheries Resources in the Southeast Asian Waters. In 2007, TD conducted a review work on the biological and physical information of deep sea resources, in order to develop/improve/modify appropriate deep sea fish sampling technologies, i.e. Bottom Longline, Collapsible Trap for Deep Sea Shrimp, Giant Cast Net for Purple-back Flying





*The M.V. SEAFDEC (top)  
and M.V. SEAFDEC 2 (above)*

Squid. TD also developed an appropriate gear to collect fish larvae samples.

SEAFDEC also conducted a research survey cruise using the M.V. SEAFDEC. From 25 October to 21 December 2007, a joint survey to assess the marine resources in the Bay of Bengal and Andaman Sea was conducted by TD in collaboration with the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Data on the oceanographic and fishery resources in the Bay of Bengal was collected and analyzed.

In addition to the resources survey conducted by TD using the M.V. SEAFDEC and the M.V. SEAFDEC 2, MFRDMD starting in 2007 collaborated with TD to implement a Tagging Program for Economically Important Pelagic Species in the South China Sea and Andaman Sea. The program aims to support the use of information for appropriate fisheries management, with activities to study the migration route of small pelagic fishes and obtain the information on the status of shared stocks for targeted pelagic species. On 1 May 2007, demonstration of tagging procedures and practices was conducted, and this was followed by the Core Expert Meeting from 2-3 May. From November to December 2007, a series of on-site training for tagging was conducted for participating countries, i.e. for Indonesia, Brunei Darussalam, Malaysia, Thailand, Vietnam, the Philippines, Cambodia, and Myanmar, respectively. During these on-site trainings, a standard poster format

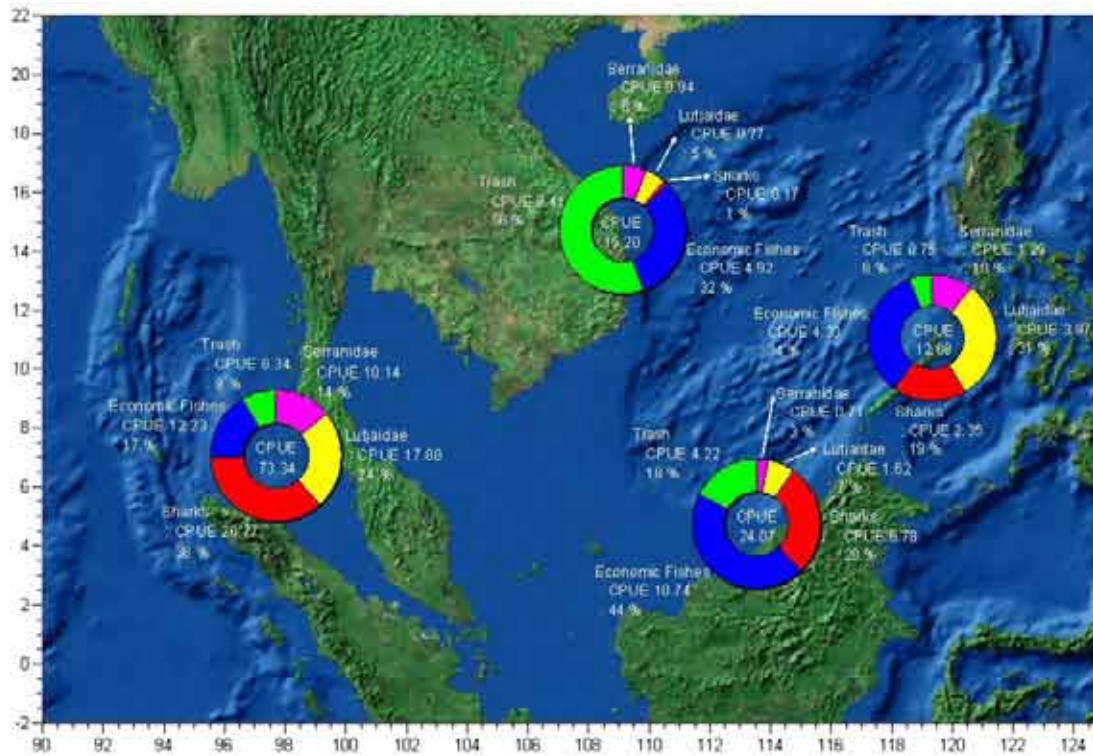
and layout has been distributed to all Member Countries for translation into their own national languages in order to increase public awareness about tagging activities especially among the local fishermen in the participating countries.

TD also continued the Promotion of Responsible Fishing Technologies and Practices through the use of selective fishing gears and devices, i.e. the Juvenile and Trash Excluder Devices (JTEDs) and the Turtle Excluder Devices. In particular, in 2007, TD collaborated with national agencies in Malaysia, the Philippines to conduct surveys to assess the implementation and cost-effectiveness on use of JTEDs in each respective country. Data were collected from fishermen engaged in trawl net fishing to study their attitude about JTEDs, and assess the understanding of fishermen about JTEDs and the use of JTEDs in trawl fishing. TD also promoted the use JTEDs in Malaysia and Thailand through the conduct of JTEDs demonstrations to fishermen and fishery officers; and from 19-23 March 2007, TD collaborated with FAO to organize the “SEAFDEC-FAO Workshop on Assessing the Relative Importance of Sea Turtle Mortality Due to Fisheries in Southeast Asia” in Bangkok, Thailand, where the relevant initiatives of TD and the efforts of the Southeast Asian region were promoted worldwide.

As another effort of TD to minimize by-catch from fishing operations, since 2002, TD started the collaboration with FAO/GEF/UNEP and 12 partner countries (Indonesia, the Philippines, Cameroon, Nigeria, Bahrain, Iran, Colombia, Cuba, Costa Rica, Mexico, Trinidad and Tobago and Venezuela) to launch the project “Reduction of Environmental Impact from Tropical Shrimp Trawling, through the Introduction of By-catch Reduction Technologies and Change of Management” (REBYC). The overall objective of the project is to reduce the environmental impact from tropical shrimp trawling. The first phase (REBYC 1) has come up with successful outcomes particularly for industrial fisheries, in reducing by-catch through improved fishing gear design, developing new by-catch management strategies, and developing close cooperation between industrial and



*Part of the activities in promotion and demonstration of the use JTEDs in Member Countries*



Comparison of the CPUEs and species compositions on the continental shelf slopes areas in the Southeast Asian waters.

governmental sectors to solve the by-catch problems. After the project completion in June 2008, TD plans to continue the collaboration with FAO/GEF/UNEP in implementing the second phase of the project (REBYC 2) from 2008 to 2013.

TD in 2007 also promoted the Rehabilitation of Fisheries Resources and Habitats/Fishing Ground through Resources Enhancement. The second version of permanent Fish Aggregating Devices (FADs) or the so called “Fish Enhancing Device (FEDs)” was designed, which could be used both in coastal and off shore waters. Experiments on the use of FEDs were conducted in Malaysia, Thailand and the Philippines. Moreover, a survey was also conducted to observe species composition using underwater camera and VDO recorder; observe fish abundance using the echo-sounder and under-water observation; record fish catch by hand-line fishing operation; and interview local

fishermen on the use of FEDs, of which many fishermen expressed their appreciation on the installation of FEDs and FADs.

## Enhancing Management for Sustainable Fisheries

### Establishment of Regional Fisheries Management Mechanisms

In response to the support made in principle at the 39<sup>th</sup> SEAFDEC Council Meeting on the establishment of the Regional Scientific Advisory Committee for Fisheries Management in Southeast Asia (RSAC), the “First ASEAN-SEAFDEC Regional Expert Consultation on Future Roles of SEAFDEC in Fisheries Management in Southeast Asia” was organized from 26 to 28 June 2007, and the “Second Regional Expert Consultation” was organized from 23 to 25 October 2007 in Bangkok, Thailand. Based on the discussion at the two Consultations, the draft proposal for the establishment of RSAC was prepared. In particular, the second RSAC Consultation concluded that in order to assist the SEAFDEC Member Countries in achieving sustainable utilization of fisheries resources through improved fisheries management in Southeast Asia, RSAC should be established with the main role of providing technical/scientific advice to the SEAFDEC Council. The meeting also agreed on the scope of RSAC to cover management of fisheries generally conducted in marine waters within the EEZs and inland waters in Southeast Asia including fisheries



Fish composition around the Fish Enhancing Devices (FEDs)



*The first (left) and second (right) consultations on the establishment of RSAC*

with particular attention to transboundary fish stocks. The Consultation also discussed and concluded the draft Terms of Reference, organizational structure and working mechanism for RSAC.

Taking the opportunity at the 30<sup>th</sup> Meeting of SEAFDEC Program Committee, the RSAC proposal and Terms of Reference were reviewed and adopted by the SEAFDEC National Coordinators. The National Coordinators also recommended that the draft RSAC proposal should be further submitted to the forthcoming SEAFDEC Council Meeting in April 2008 for consideration, particularly on some parts that have not been concluded.

In parallel with the RSAC initiatives, under the framework of the ASSP, SEAFDEC and the DOF Thailand also jointly organized a “Regional Consultation and Workshop on the Concept of the Establishment of an ASEAN Fisheries Development and Management Mechanism” to brainstorm on the concept and framework for the establishment of an ASEAN regional fisheries management mechanism. The outcomes of the Workshop are expected to contribute to the formulation and establishment of an ASEAN regional fisheries management (ARFMM). The DOF Thailand plans to further coordinate with the ASEAN Member Countries, SEAFDEC and FAO to develop a proposal for the establishment of ARFMM for submission to the 16<sup>th</sup> Meeting of the ASWGFi to be held in early 2008.

### **Integrated Coastal Fisheries Management**

The importance of integrated coastal management was also emphasized by SEAFDEC, and since 2004, TD has implemented a program on “Capacity Improvement of Fisheries Community for Fisheries Management and Alleviation of Poverty”. Under this program, TD implemented the project on Integrated Coastal Resources Management. The project’s activities have been implemented in three project sites: 1) Pathew District in Chumphon Province, Thailand, 2) Pulau Langkawi in Malaysia, and 3) Sihanoukville in Cambodia.

In 2007, the activities in Pathew District, Thailand focused in concluding the past project outcomes and follow-up of the project which has been turned over to the local fishers group. Several research data were compiled and published, while the final project report was being prepared. To conclude the outcomes from the project, a “Wrap-up Seminar” was organized in Chumphon Province, Thailand from 10 to 12 July 2007. The Seminar reviewed the project impacts to the community and the coastal fishery resources management system, taking into consideration the efforts made in disseminating the applicability of the coastal fishery resources management concept to the Member Countries. The report on the final evaluation of the project activities conducted by an outsourced consultant was published and disseminated.

The project in Pulau Langkawi, Malaysia has particular focus on the rehabilitation and reactivation of fisheries sector after the devastation caused by the Tsunami in December 2004. Up to 2007, activities in Langkawi were concluded with the establishment of the zoning demarcation and the formulation of its fishery management plan. In addition, all necessary infrastructures constructed for tsunami rehabilitation have been completed.

The project activities in Sihanoukville, Cambodia focused on human and institutional capacity building for community fisheries in the project area. The activities in 2007 mainly aimed to encourage community-based resources management. In addition, activities were undertaken to support resources enhancement through the establishment of crab bank and fish refugia; encourage local business through mushroom production, mud-crab culture and tilapia/sea-bass culture; and strengthen the management capacity of community fisheries in the project operational area.

To transfer the project concept and principle as well as the experience in integrated coastal fisheries management in the three project areas to the other SEAFDEC Member Countries, in 2007, TD organized two training courses: 1) the International Training Course on Coastal Fisheries Management for Fishery Managers (10-24 June 2007), and 2) the International Training Course in Coastal



*Woman activity on fish processing in Pulau Langkawi, Malaysia Local business on mushroom production by women's sub-group in Sihanoukville, Cambodia*

Fisheries Management and Extension Methodology (11 September – 11 October 2007).

In addition to the program on Capacity Improvement of Fisheries Community, TD has also introduced Set-Net fishing technology as a tool to promote sustainable coastal fisheries management. The project activities were implemented in Rayong Province, Thailand, and recently expanded to South Sulawesi in Bone, Indonesia.

### **Fishery Statistics and Information for Management of Fisheries**

The importance of fisheries information and statistics as tools for management was also addressed through the implementation of the program on “Improvement of Fishery Statistics and Information for Planning and Management of Fisheries in the ASEAN Region”. Activities focused on the establishment of the framework for fishery statistics in Southeast Asia (also as minimum requirement for fishery statistics), streamlining reporting of fishery statistics from Member Countries to FAO and SEAFDEC through the new statistical framework; and harmonization of standards, norms, classification and definition of fishery statistics and information with the international standards and requirements. From 12 to 14 December 2007, SEAFDEC organized a Regional Consultation on Fishery Statistics and Information. The draft statistics framework and streamlining process were discussed and agreed upon, and would be proposed to the 40th SEAFDEC Council for consideration before actual implementation in 2008.

SEAFDEC also implemented activities in line with the initiative of FAO in developing the Status and Trends of Capture Fisheries and Aquaculture (STF) in Southeast Asia, with the Philippines as a pilot country; and in 2007, a Planning Consultation was organized in the Philippines from 5 to 7 June 2007. Following the Planning Meeting, a consultation among national agencies of the Philippines was conducted to elaborate on the process, role and responsibilities of each agency in further developing the national STF report

### **Improving Utilization of Catch and Food Safety**

SEAFDEC undertakes activities to maximize the utilization of fish catch starting from on-board the fishing vessel. In 2007, TD conducted an observation and test of a new fish handling and preservation technology from Japan, called “Liquid Ice”, on-board the M.V. SEAFDEC 2, and developed the appropriate handling and preservation techniques for squid to be promoted to the fishermen in Thailand and Cambodia.

MFRD also implemented the program on Quality Assurance Systems for Small and Medium-sized Fish Processing Establishments in ASEAN Member Countries. The program aims to develop quality assurance systems, which incorporate GMP and SSOP, for traditional products processing establishments (TPEs), and pre-processing establishments (PPEs). In 2007, a Regional Planning Meeting was conducted from 20-21 June 2007, and concluded that in 2007, seven participating countries (Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand and Vietnam) with the total of 10 products would develop the GMP/SSOP for PPEs; while in 2008 ten countries with a total of 19 products will develop the GMP/SSOP for TPEs. Based on the outcomes from the Planning Meeting, the GMP/SSOP program for the PPEs was also developed, and national projects have been implemented to develop GMP guidelines for their respective PPEs.

Also to ensure safety of fishery products, activities to monitor the Chemical and Drug Residues in Fish and Fish Products in Southeast Asia were also continued by MFRD. From 7-9 March 2007, MFRD organized a Mid-Term Review Meeting to clarify the project scope and update on the progress of activities. Throughout 2007, four regional surveys were conducted on 1) heavy metals, 2) pesticide residues, 3) histamine, and 4) drug residues (Chloramphenicol and Nitrofurans) in Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand and Vietnam. From 2-5 October 2007, MFRD also jointly organized the “Regional Workshop in Seafood Safety for Laboratory Personnel” with the “National Fisheries Quality Assurance & Veterinary Directorate (NAFIQAVED) of Vietnam” to share the experiences

of NAFIQAVED in the analysis of chemical and drug residues with the workshop participants.

During the year, the ASEAN-SEAFDEC experience on value addition of fish and fishery products was also publicized to other countries in Asia and the Pacific when MFRD was invited as a resource person to make a presentation at the Seminar on Good Management Practices for Enhancing the Value Addition of Fishery Products. The Seminar was organized by the Asian Productivity Organization (APO) from 14 to 18 May 2007 in Karachi, Pakistan, and was participated in by participants from Bangladesh, India, Indonesia, Iran, Malaysia, Philippines, Sri Lanka, Thailand, and Vietnam as, well as a number of observers from Pakistan.

## Aquaculture Development

AQD is committed to generating and transferring the technologies for sustainable aquaculture in developing countries in the ASEAN region. In line with this commitment and the need to match our work programs with the changing priorities of the region, AQD, in 2007, conducted a series of strategic planning workshops to redefine its core values, mandate and strategic work directions. Following this, AQD saw the implementation of initiatives that would contribute to the fulfillment of its new vision - 'to be a global leader in the generation and transfer of appropriate and sustainable tropical aquaculture technologies for food security and holistic human development.

Inspired by the new vision, AQD continued implementing research and development activities under the following Departmental programs: 1) marine fish; 2) mud crab and shrimp; 3) mollusk; 4) small-holder freshwater aquaculture; 5) seaweed; and 6) aquatic ecology. Activities under these Programs focused on research and verification of aquaculture technologies in the priority areas; i.e. broodstock development and management, seed production, nursery and grow-out culture. Accomplishments under the Marine Fish Program were the following: continuation of studies to refine the technologies for broodstock management, seed production, nursery and grow-out culture of marine fishes; completion of experiments to verify the use of AQD diets during grow-out culture of milkfish in sea cages; testing and improvement of AQD diets for the hatchery production and culture of carnivorous marine fish species; and initiation of studies on breeding and seed production of pompano. Studies were also continued to find (i) biochemical markers for egg quality in marine fishes, (ii) cheaper and cost effective alternatives to fish meal in practical feeds, and good immunostimulants against microbial and viral infections. Concerning the program on mud crab and shrimps, accomplishments included refinement of techniques to domesticate the mud crab and shrimp (*P. monodon*); formulation of diets for the nursery, grow-out and fattening phases of mud

crab; and adoption and refinement of techniques used for *P. monodon* to culture the native (Philippine) white shrimps species *P. indicus/P. merguensis*. Under the mollusk program, research and verification studies were continued to refine the techniques for seed production and development of technology packages for hatchery, nursery and grow-out rearing of abalone. Another significant milestone during the year was the launching of Philippine national program for breeding and culture of abalone. Concerning the program on small-holder freshwater aquaculture, studies were conducted to refine the seed production and grow-out technologies for tilapia, catfish, carps and freshwater prawn, including selection for tilapia with higher fillet yield and spawning and larval rearing of freshwater prawn in reduced salinity. The year also saw the completion of studies related to evaluation of the effects of shelter on growth of freshwater prawn reared in cages and assessment of economic impacts of aquaculture development in Laguna lake. With regard to program on seaweeds, experiments were continued to propagate plantlets by tissue culture; produce seed from spores; and determine ammonium uptake of *Gracilariopsis* and impact on culture of abalone in recirculating system. The program has progressed with the successful production of seaweeds from spores that are ready for outplanting in marine waters. Under the program on Aquatic Ecology, the year 2007 marked the initiation of studies that will assess the (i) environmental capacity of selected aquaculture sites in Guimaras and Antique provinces and the (ii) qualitative and quantitative information concerning the Tangab (large-fixed filter net) fishery in Iloilo Strait.

To complement the activities under Departmental Programs and to specifically address the needs of the Member Countries, AQD continued implementing the Programs which are regional in perspective. These programs which are being undertaken under the ASEAN-FCG collaborative mechanism are: 1) Promotion of sustainable aquaculture in the ASEAN region; 2) Development of Fish Disease Surveillance system; and 3) Research and Development on Stock Enhancement for Threatened Species of International Concern. In 2007, efforts were continued in the transfer of viable technologies on seed production and grow-out culture techniques for abalone, freshwater and marine fishes through training courses. AQD also continued assisting the Member Countries in managing and averting the spread of aquatic animal diseases in the ASEAN region through projects that focus on refinement of diagnostic methods and development of new prevention methods for aquatic animal diseases, surveillance for important viral diseases of fish and shrimps, and capacity building programs. One of the significant accomplishments in 2007 was the conduct of on-site training courses focused on diagnostic methods for shrimps and fish diseases in Myanmar and Vietnam. Another was the International Workshop on Emerging Fish Diseases convened by AQD in December 2007 in Thailand. This workshop reviewed



*On-site training on shrimp and prawn disease management in Myanmar, February 2007 (left) AQD Chief with Philippine President Gloria Arroyo and officials of the Petron Foundation, Inc. during the signing in 2007 of an agreement with Petron Foundation to collaborate on a milkfish cage culture demonstration project as livelihood option for communities in Guimaras Province affected by the oil spill. (right)*

the status of emerging fish diseases in the region and discussed the future orientation of fish disease studies. Workshop results would be incorporated in the future research thrust of the Regional Fish Disease project implemented by AQD.

The benefits that can be achieved through transfer of aquaculture technologies developed by SEAFDEC can only be sustained if training is involved and strategic partners are engaged in the process. Recognizing this and using the Philippines as a model, AQD went full swing in the project aimed to institutionalize the practice of sustainable and responsible aquaculture through capacity building of local government units and community-based organizations. Overall, significant efforts were made during the year on formal and informal training to facilitate adoption of aquaculture technologies developed over the years. About 23 courses were conducted in 2007 and a total of 300 international and local participants were trained. The year also marked the initiation of a program called ABOT (Agree-Build-Operate-Transfer) AquaNegosyo which caters directly to the needs of the private investors, aquaculture farmers.

Moreover, while recognizing the importance of aquaculture for food security and development of rural communities particularly in the inland areas, the SEAFDEC Secretariat implemented the project on Promotion of Sustainable Freshwater Aquaculture for Rural Communities. In this regard, SEAFDEC strengthened its collaboration with concerned organizations in the region, specifically with the Asian Institute of Technology (AIT), the Department of Fisheries of Thailand, the Mekong River Commission (MRC), and the World Wildlife Fund (WWF) to mobilize their respective capacities and experiences particularly tapping them for the conduct of the two-week Joint Regional Training on Community-based Aquaculture for Remote Rural Areas of Southeast Asia from 2-15 July 2007 in Lao PDR.

## Conservation and Management of Aquatic Species

In 2007, the SEAFDEC Secretariat continued the implementation of a program on “Environmental Related Tasks in Southeast Asia”. Two aquatic species under international concerns (sharks and sea cucumbers) were addressed. SEAFDEC also continued to support the Member Countries in the development of their respective National Plan of Action (NPOA) on Conservation and Management of Sharks. Brunei Darussalam, Myanmar, Indonesia, and Thailand have finished their draft NPOA-sharks, while those of the other countries are still under development process. In November 2007, SEAFDEC also supported the Philippines in organizing a Planning Workshop for the Conservation and Management of Sharks.

For sea cucumbers, the 8<sup>th</sup> Meeting of ASEAN-SEAFDEC FCG and the 38<sup>th</sup> Meeting of SEAFDEC Council expressed their strong support that a regional comprehensive study on existing available data and information on sea cucumbers should be conducted. An Ad-hoc Regional Working Group on Sea Cucumber Fisheries was therefore established to analyze the sea cucumber situation and develop policy recommendations, to be properly integrated into the regional plan. It is expected that the outcomes from the regional study on sea cucumber fisheries, utilization and trade will be submitted to the 40<sup>th</sup> Meeting of SEAFDEC Council and the 16<sup>th</sup> Meeting of the ASWGFi (in 2008) for their consideration and support.

Throughout 2007, MFRDMD in collaboration with TD also continued the Research for Stock Enhancement of Sea Turtles. In particular, MFRDMD conducted the DNA study to identify the stock/population of sea turtles (green turtles and hawksbill turtles) in the Southeast Asian region,



*Abalone, Seahorse, Angelwing clam, Sea cucumber and Giant Clam (from left to right)*

to detect multiple paternities from estimation of stock size of male sea turtles (green turtles) in a pilot nesting beach. MFRDMD also conducted sea turtle tagging using Inconel Tags and PIT Tag, and satellite telemetry to investigate their migratory routes, foraging grounds, reproductive biology and growth rate, and to estimate the sea turtle stock size. On 5 June 2007, MFRDMD organized a Regional Core Group Meeting on tagging and satellite telemetry research to review the regional tagging and satellite telemetry studies. Following the Core Group Meeting, from 6-7 June, the Second Regional Technical Consultation on the Process of Research for Stock Enhancement of Sea Turtles was convened by MFRDMD

to discuss the outcomes from the SEAFDEC program on turtle conservational and management implemented from 2005-2006.

MFRDMD and TD also jointly conducted studies on the interaction between sea turtles and fisheries, where data on sea turtle mortality in fishing operations was collected in Vietnam and Indonesia. A comparative study on the efficiency of the circle hook and J-hook in longline fishing was continued, and the preliminary report on the study is still being prepared.

As part of the initiative to enhance the stocks of threatened aquatic species, AQD continued developing protocols for breeding and seed production of suitable species, and the strategies for ecologically sound release of stocks in selected sites. In 2007, significant milestone was achieved under this Program with the first release of AQD-bred abalone (*Haliotis asinina*) juveniles into the Philippine seas. A series of studies on behavior of juvenile abalone under laboratory conditions have been conducted for developing release techniques.

Other significant achievements under the Program are the refinement of technologies on seed production of seahorse (*Hippocampus barbouri*, *H. comes*, *H. kuda*), angelwing clam *Pholas orientalis* and sea cucumber *Holothuria scabra*; initiation of a collaborative activity with Research Institute for Aquaculture, No. 3 (Vietnam) on sea cucumber; and publication of the "Manual on Giant Clam Hatchery, Ocean Nursery and Stock Enhancement".



*Ceremonial release of abalone for sea-ranching in Philippine seas in 2007.*

## Addressing International Trade Related Issues

Since 1999, the SEAFDEC Secretariat implemented a program on “Assistance of Capacity Building in the Region to Address International Trade Related Issues” (original title: Fish Trade and Environment). The program aimed to strengthen cooperation and establish joint approaches among Member Countries in addressing international/regional issues and problems that may affect fish trade and the development of fishery sectors of the region. In 2007, SEAFDEC closely monitored emerging international fisheries issues, and organized the ASEAN-SEAFDEC Regional Technical Consultation on International Fish Trade Related Issues (2007). Issues discussed at the RTC included the Code of Conduct for Responsible Fisheries (CCRF), Small-scale Fisheries Related Issues, Fish Trade Related Issues, Aquaculture Related Issues, Issues Related to Commercially-Exploited Aquatic Species and CITES CoP-14, and Fisheries Subsidies under WTO. The Meeting also agreed on the coordinated positions of ASEAN-SEAFDEC Member Countries which has been used as basis for Member Countries’ inputs to the 27th Session of FAO Committee on Fisheries (COFI) held in March 2007.

In April, based on the monitoring of the international fisheries-related issues as well as the outcomes from the 27th Session of COFI, SEAFDEC Secretariat prepared an “Executive Summary of International Fisheries Related Issues 2006-2007” which was submitted to the 39th Meeting of SEAFDEC Council organized in April 2007. In November, the issues and their progress had been updated and reported to the 10th ASEAN-SEAFDEC FCG Meeting for endorsement. These issues included Fisheries Subsidies, Endangered Aquatic Species, Port State Measures, Traceability, Certification and Labeling, and Climate Change, Welfare of Fishing Crew and Fishing Labour, Emerging Fish Diseases, ASEAN Shrimp Alliance, EU Catch Documentation Scheme for Importation of Capture Fisheries Products from Foreign Countries, and Small-scale Fisheries

## Information Activities and Enhancing SEAFDEC Visibility

SEAFDEC information-related activities in 2007 have been implemented based on the Information Strategies for Enhancing SEAFDEC Visibility and Communication adopted by the 38th Meeting of SEAFDEC Council. In 2007, organizational promotional and technical materials were produced, as well as other information kit/media. Public relation activities, e.g. exhibition, etc., were conducted; and information materials/packages in the form of reports, manuals, VCD, posters and brochures were regularly produced.



*The 8th Information Staff Exchange Program Meeting hosted by MRFDMD in Malaysia, where the knowledge management concept was introduced in addition to the exchange of views and discussion on SEAFDEC information-related matters*

In November 2007, SEAFDEC organized the Eighth SEAFDEC Information Staff Exchange Program (ISEP) Meeting. The Meeting reviewed the information-related activities conducted throughout the year, and discussed the activities to be organized in the following year. In addition, the Meeting also reviewed the implementation of the “Information Strategies”, of which the outcomes would be summarized and reported to the 40th Meeting of SEAFDEC Council for consideration and endorsement.

SEAFDEC also established the Regional Fisheries Policy Network (RFPN), with members seconded from SEAFDEC Member Countries. In 2007, the RFPN comprised representatives from Cambodia, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam stationed at the SEAFDEC Secretariat; and virtual members from Japan, Myanmar and Singapore. Throughout the year, the RFPN members had played important roles in enhancing close communication and coordination between SEAFDEC and Member Countries in the implementation of SEAFDEC programs and providing technical inputs on important fisheries-related policy issues.

To strengthen the capacity of SEAFDEC Secretariat staff including the RFPN members in preparation of information package to promote the initiatives and



*The RFPN members from Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Vietnam*





*The first and the second Policy Briefs training session*

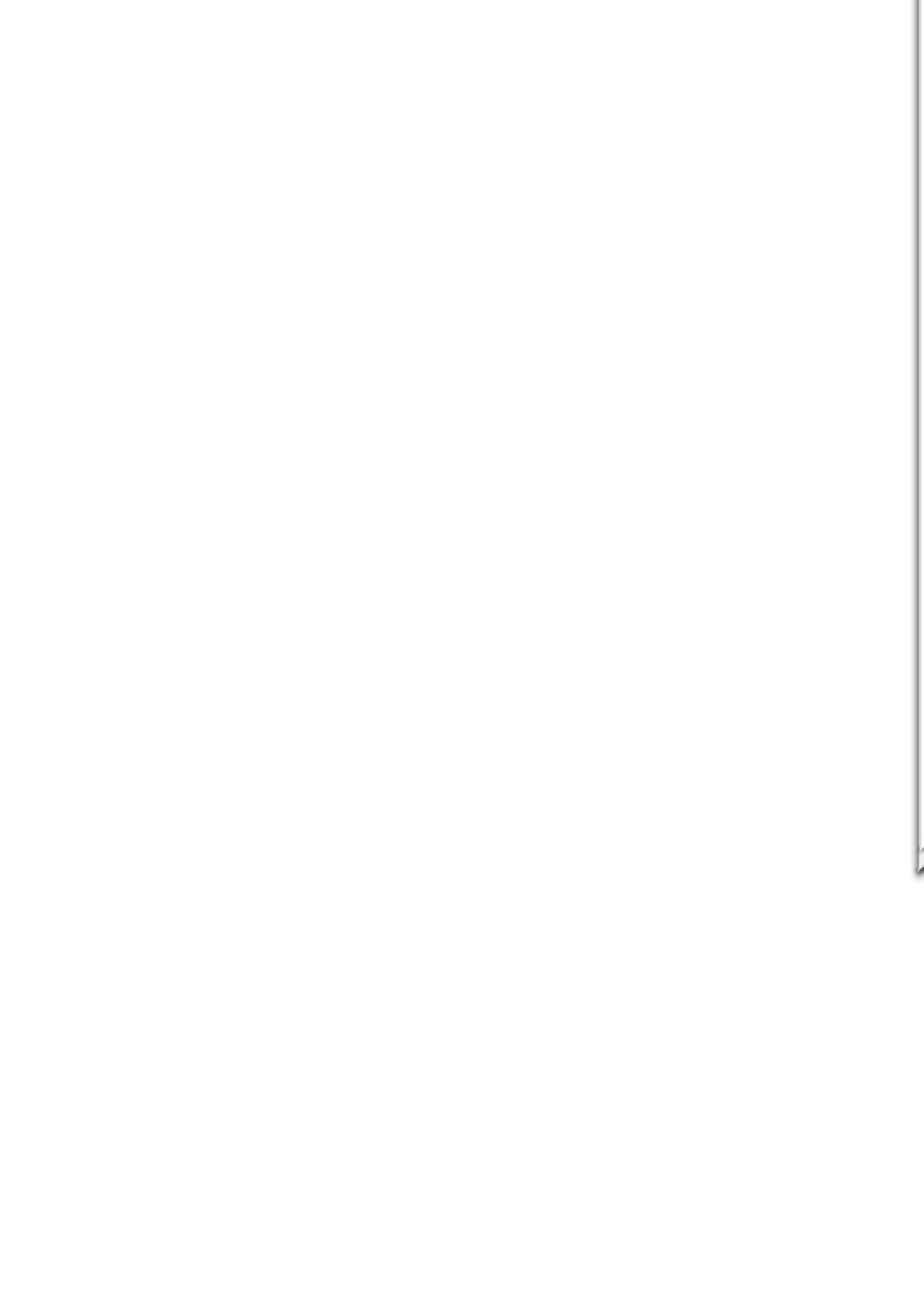
activities of SEAFDEC in a form of “Policy Brief”, SEAFDEC Secretariat organized two training sessions on writing fisheries Policy Briefs. The first session (18 October 2007) focused on providing basis and principle on the development and requirement from policy briefs; while the second session (19-20 December) which was meant to be a practical session aimed to present and evaluate the policy briefs prepared by each participant .

The two training sessions were actively participated in by the RFPN members, as it is envisaged that the activities would not only contribute to the promotion of SEAFDEC activities while they are stationed at SEAFDEC, but also enhance their capacity in formulation of policy options to support fisheries management and planning in their home countries in the future.

## **SEAFDEC Beyond Its 40<sup>th</sup> Anniversary**

The end of 2007 marked the 40<sup>th</sup> year of SEAFDEC establishment. For 40 years, SEAFDEC has generated thousands of research and development in various disciplines and sub-sectors of fisheries. In taking steps forward, SEAFDEC as a regional fishery body is determined to play an important role in facilitating regional cooperation in fisheries in the region; and provide means of policy and technical advisory support to Member Countries towards sustainable development of fisheries considering social, economic, aquatic ecosystem and environmental dimensions.

Along this line, close linkages between regional programs and initiatives, and common national priority issues would be given more emphasis. In addition, programs and initiatives will be widened in scope and approach, to pace up processes towards improved management of fisheries at national and regional levels; to address poverty alleviation, food security and livelihoods by fisheries interventions; and to incorporate eco-system and environmental consideration in future initiatives supporting fisheries development. This is in order to better link fisheries and other sectors in a broader principle of “sustainable development for food security”, and for the region to continue “to be a leader in sustainable tropical fisheries development for the people”.



# **SEAFDEC Programs**

in the Year 2007





# SEAFDEC PROGRAMS IN 2007

## List of Programs Implemented in the Year 2007

<b>Departmental Programs</b>	
Center-wide Information Network	Secretariat
Information and Communications Technology	TD
Integrated Mollusc Production	AQD
Mud Crab and Shrimp Domestication	AQD
Marine Fish	AQD
Small-holder Freshwater Aquaculture	AQD
Seaweed Strain Improvement	AQD
Aquatic Ecology	AQD
<b>ASEAN-SEAFDEC FCG Programs</b>	
Regionalization of the Code of Conduct for Responsible Fisheries	Secretariat
Assistance of Capacity Building in the Region to Address International Trade Related Issues	Secretariat
Strengthening Small-scale Fisheries Management through the Promotion of Rights-based Fisheries and Co-management *	TD
Improvement of Fishery Statistics and Information for Planning and Management of Fisheries in the ASEAN Region	Secretariat
Responsible Fishing Technologies and Practices (Fishing in Harmony with Nature)	TD
Rehabilitation of Fisheries Resources and Habitats/Fishing Grounds through Resource Enhancement	TD
Sustainable Utilization of Potential Fisheries Resources and Reduction of Post-harvest Losses	TD
The Use of Indicators for Sustainable Development and Management of Capture Fisheries in the ASEAN Region*	MFRDMD
Development of Integrated Inland Fisheries Management in ASEAN Countries*	MFRDMD
Development of Technologies and Human Capacity Building for Sustainable Aquaculture	AQD
Quality Assurance Systems for Small and Medium-sized Fish Processing Establishments in ASEAN Member Countries	MFRD
Utilization of Freshwater Fish in ASEAN Member Countries*	MFRD
Good Laboratory Quality Management in ASEAN Member Countries*	MFRD
Environmental Related Tasks in Southeast Asia	Secretariat
Establishment of Disease Surveillance System of Aquatic Animals	AQD
Chemical and Drug Residues in Fish and Fish Products in Southeast Asia	MFRD
Research and Development (R&D) of Stock Enhancement for Species under International Concerns	AQD
Research for Stock Enhancement of Sea Turtles	MFRDMD
Capacity Improvement of Fisheries Community for Fisheries Management and Alleviation of Poverty	TD
Fisheries Resource Survey and Operational Plan for M.V. SEAFDEC 2	TD
Deep Sea Fisheries Resources Exploration in the Southeast Asia	TD
Tagging Program for Economically Important Pelagic Species in the South China Sea and Andaman Sea	MFRDMD
<b>Other Programs/Activities</b>	
Institutional Capacity Development on Sustainable Aquaculture	AQD
ABOT Aquaculture Technology	AQD
Promotion of Set-Net: an Eco-friendly Fishing Gear of Sustainable Coastal Fisheries Management	TD
Information Collection for Economical Important Species: as Surimi Raw Materials	TD
Collection of Information about International Support in the Region	TD
Promotion of Sustainable Freshwater Aquaculture for Rural Communities	Secretariat

**Remark:**

\* No activity implemented in 2007 due to unavailability of fund

## Departmental Programs

### Center-wide Information Network

The program on Center-wide Information Network aims at keeping the Member Countries, other organizations and the public well informed on SEAFDEC activities; raising public awareness and visibility of SEAFDEC; and providing various forms of fisheries information to support decision-making, management and development of the fisheries sector.

The activities in 2007 included the production of organizational promotional publications, SEAFDEC Annual Report 2006, reports of 39<sup>th</sup> SEAFDEC Council Meetings, 9<sup>th</sup> ASEAN-SEAFDEC FCG Meetings and 29<sup>th</sup> SEAFDEC Program Committee Meeting, Special Publication “Fish for the People” (Volume 5 Numbers 1-3), as well as the compilation of fishery statistics for the Fishery Statistical Bulletin. The SEAFDEC Integrated Website was maintained and linked to the departmental websites. In addition to SEAFDEC Website, the Secretariat also initiated the Small-Scale Fisheries Global Website, upon the recommendations from the first Regional Fishery Bodies Secretariat Network (RSNs) held at FAO in March 2007. To monitor the implementation of information-related activities undertaken in 2007, and provide platform for SEAFDEC Secretariat and Departments to formulate activities for 2008, the Eighth Information Staff Exchange Program (ISEP) Meeting was organized from 12-15 November 2007 at MFRDMD in Kuala Terengganu, Malaysia. The ISEP Meeting also reviewed the progress and achievement in the implementation of the Information Strategies for



*The SEAFDEC exhibition booth promoting Thai-Japan cooperation through SEAFDEC*



*The RFPN members participating in the 2<sup>nd</sup> meeting for the establishment of Regional Scientific Advisory Committee for Southeast Asia (RSAC)*



*Part of the publications/materials produced in 2007 to promote activities and visibility of SEAFDEC*

Enhancing SEAFDEC Visibility and Communication, to be further reported to 40<sup>th</sup> SEAFDEC Council Meeting for consideration and endorsement.

In addition to the information-related activities, the prominent roles of the Regional Fisheries Policy Network (RFPN) in coordination with Member Countries and enhancing SEAFDEC Visibility and implementation of activities was also recognized as part of the Center-wide Information Network framework. In 2007, the RFPN comprises representatives from Cambodia, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam stationed at the SEAFDEC Secretariat; and virtual members from Japan, Myanmar and Singapore.

## Information and Communications Technology

The program was implemented by TD to enhance the visibility of SEAFDEC and activities of TD in the development of sustainable fisheries in Southeast Asia, to public. During 2007, TD took part in seven national fisheries-related exhibitions. The highlighted exhibitions are the Thailand Fishery Exhibition or “Pramong Nomkloa” organized from 23 June to 1 July 2007, and the national exhibition of the Celebrations on the Auspicious Occasion of His Majesty the King’s 80<sup>th</sup> Birthday organized from 28 November to 2 December 2007.

To celebrate the 40<sup>th</sup> anniversary of SEAFDEC, from 25 to 27 December 2007, TD held its “Open House”



SEAFDEC exhibition booth at the national exhibition of the Celebrations on the Auspicious Occasion of His Majesty the King’s 80<sup>th</sup> Birthday (top) Student joining TD “Open House” and observing Tuna on-board the M.V. SEAFDEC. (above)



The university students practicing fishing operation on M.V. Plalung



The participants in the tailor made training course visiting a fish processing factory

with the specific objective of providing information to young students on the concept of fishery technology and sustainable fishery. The Open House was participated in by over 2,000 students from 11 schools around the vicinity of TD. The Open House exhibited TD projects’ implementation, oceanographic equipment, fishing gear technology, and marine engine technology. The occasion was envisaged to be a good chance for the young students to have a good glimpse of the modern facilities onboard the M.V. SEAFDEC.

In the year 2007, In addition to promotional publications, promotional plastic bags and cotton bags were also produced by TD to raise public awareness on global warming crisis. These promotion materials were disseminated to the public via exhibitions, training courses, seminars, and workshops, etc. During the year, nine VCDs were produced to support relevant TD projects and activities and to meet the requirements from SEAFDEC Member Countries, and five are still in the process of production. The VCDs were distributed to target groups, i.e. participants at SEAFDEC meetings, fisherman, etc. Four series of research papers, one special publication and six reports of activities implemented by TD were also published and distributed to both SEAFDEC Member and non-Member Countries.

The TD Homepage (<http://td.seafdec.org>), emphasizing on the movements within the department, particularly the TD activities and events including forthcoming training activities, workshops and meetings, was frequently updated. Interested parties can apply for some training programs through the TD website. Fishery Information Warehouse, containing knowledge and information on fishery-related fields and information collected through TD research projects, was regularly updated and published through the website.

Under this program, TD also conducted tailor-made training courses and study tour programs upon request from SEAFDEC partner organizations and non-member countries. The duration, structure and content of the course were designed in response to the specific objectives and requirements as well as level of participants. During 2007, a total of 18 different tailor-made activities were conducted, such as the study tour programs, i.e. on Tilapia Aquaculture in Thailand and Lake and River Basin Management in Thailand, the short term training courses for University students, the regional training course on larval fish identification and fish early life-history science, etc. These tailor-made programs were participated in by approximately 170 students in Thailand, as well as government officials of different levels, functions and responsibilities.

## Integrated Mollusc Production

Under this program, experiments aimed at improving the techniques for broodstock maturation, larval management and transport protocols of the donkey ear abalone, *Haliotis asinina* were continued by AQD in 2007. In the improvement of hatchery techniques for seed production of *H. asinina*, holding the larvae within 6 hours in the incubation tanks attained higher settlement and survival than those larvae held for 12 or 18 hours. The survival rate of veligers stocked directly upon retrieval from incubators or delayed stocking for 6 hours was higher when crustose coralline algae plus algae were present on settlement plates



Donkey ear abalone, *H. asinina* (top) Abalone broodstock in conditioning cages (above)

(1.46-2.1%) than when plates were devoid of algal food (0.94-1.24%).

Simulated abalone larval transport experiments showed that survival was better when the trochophore larvae were loaded at 50,000/liter and transported within 6 hours in oxygenated plastic bags at temperature of 20-22°C. Transporting the juveniles at 3-3.5 cm shell length and within 24 hours with UV-treated seawater gave a 100% survival. The effects of light intensity and photoperiodicity on the settlement rate, feeding behaviour, growth and survival of abalone larvae were also assessed. Results







*Abalone juveniles in diatom plate (top) Abalone juveniles ready for transport (above)*

indicated that increasing the light intensity (increased number of bulbs) did not significantly affect the number of settled larvae either at day 3, day 4, day 5, day 10 or day 15. In both experiments, the presence of food in the gut was detected starting at day 3.

A major milestone in the Integrated Mollusc Program was the formal agreement made between the Bureau of Fisheries and Aquatic Resources of the Department of Agriculture (DA-BFAR) and SEAFDEC/AQD for the establishment of a 5-year National Breeding and Culture Program on Abalone in strategic areas of the Philippines. The program is expected to introduce and demonstrate tropical abalone farming as an alternative means of livelihood for coastal communities and facilitate adoption of the abalone technologies developed by AQD.

## Mud Crab and Shrimp Domestication

The Program aims to develop a technology for sustainable production of quality seeds and captive broodstocks of mud crab and native shrimp species, particularly *P. monodon*, *P. indicus*, and *P. merguensis* that can be genetically selected for desired heritable characteristics. For mud crab, the activities focused on domestication, refinement of broodstock management and seed production techniques, and improving the culture techniques during nursery and grow-out phases and in different production systems. AQD collected sample stocks of mud crab (*Scylla serrata*) from Cagayan (northern Philippines), Camarines Norte (northeastern Philippines), Northern Samar (central



*Hanging net substrates for juvenile mud crab culture in brackishwater nursery pond*

eastern Philippines) and Surigao (southern Philippines) and assessed their genetic diversity and screened for the presence of viral diseases. Results indicated that the stocks from all sites were negative for viruses but some stocks from Cagayan were found to be positive for IHNV (Infectious Hypodermal Hematopoietic Necrosis Virus).

Experiments were also conducted to compare the commercial, SEAFDEC-developed probiotic, and with antibiotic (control) in crab larviculture. Results showed that mass larval mortality occurred in commercial and SEAFDEC developed probiotic. The survival from zoea to megalopa was 3.8% in probiotic with antibiotic. The use of several levels of formulated feed in nursery culture of mud crab in net cages was also evaluated. After 30 days, highest survival was noted at 6 g/ton/day feeding. Highest survival was obtained in crabs fed mussel + formulated diet and lowest, in crabs fed trash fish + formulated diet.

Another milestone in the mud crab program is the renewed collaboration between AQD and the Australian Centre for International Agricultural Research (ACIAR) in 2007 for the implementation of the project on Enhancing Adoption



*Signing of MOA for a 5-year Collaborative Program on Abalone Breeding and Culture: Seated L-R DA Undersecretary Jesus Emmanuel Paras, BFAR Director Malcolm Sarmiento, DA Secretary Arthur Yap, AQD Chief Joebert Toledo and AQD Deputy Chief Hiroshi Ogata*



*P. indicus juvenile*

of Mud Crab Production Technologies in Samar (central eastern Philippines). The project includes on-farm demonstration and assessment of nursery techniques and grow-out management. Stock assessment will also be done under the project to provide better guidance for the strengthening of local ordinances regarding crablet collection.

For the shrimps program, AQD conducted a number of studies that include the genetic characterization of *Penaeus monodon* broodstock where pleopod samples from *P. monodon* collected from Bohol (central Philippines), Roxas and Bacolod (western Philippines) were processed for genetic quality; improvement of maturation of pond-reared *P. monodon* broodstock; and refinement of broodstock management; and larval rearing of *P. indicus/merguiensis* where the effects of SEAFDEC-developed probiotics with antibiotics and other commercial water treatments in shrimp larval rearing were compared. An economic assessment of the viability of *P. indicus* hatchery and a verification study of *P. indicus* grow-out diets in ponds using environment-friendly scheme, were also carried out.

## Marine Fish

In 2007, AQD continued to improve the technologies for broodstock management, seed production, nursery, and grow-out culture of marine fishes such as groupers (*Epinephelus coioides* and *E. fuscoguttatus*), the Asian sea bass (*Lates calcarifer*), mangrove red snapper (*Lutjanus argentimaculatus*), rabbitfish (*Siganus guttatus*)

and milkfish (*Chanos chanos*). The development of breeding and seed production technologies for pompano (*Trachinotus blochii*) was also carried out in 2007.

Studies on seed production focused on improving the larval production and reducing the cost of production of the marine fish species using SEAFDEC-AQD formulated larval feeds. A SEAFDEC AQD formulated diet was also used to feed milkfish and other marine fish broodstock to make them mature and spawn spontaneously in broodstock tanks and in floating marine net cages.

Nursery rearing systems in nets/cages in ponds were also tried for sea bass, grouper, and red snapper making use of the presence of zooplankton in the ponds as the main food of the fry to replace the use of brine shrimp and trash fish during nursery rearing. Samples of wild mysids from earthen brackish water ponds were also evaluated for its nutritional quality.

Verification on the use of SEAFDEC AQD diets for the grow-out culture of milkfish, sea bass, groupers, snappers and rabbitfish in brackishwater ponds and net cages in the pond, and in floating marine net cages was continued. Specifically, milkfish given SEAFDEC diet consistently gave higher final weight, specific growth rate, overall production and better FCR than milkfish fed commercial diet. The effective control of snails (*Cerithidea cingulata*) in milkfish ponds was also assessed which indicated that the efficacy of molluscicides to eliminate pest snails in ponds depends on weather conditions.

Grouper (*E. fuscoguttatus*) juveniles fed SEAFDEC-AQD diet and reared for 36 days in net cages using two stocking densities (600 and 1000 individuals/cage) had no significant difference in growth. Similarly, the groupers stocked in ponds and fed SEAFDEC AQD diet (45-47% CP) at 3.5-5% of biomass per day indicated wastage of feeds as these were not converted into biomass by the fishes. Results suggest the need for AQD to improve the feed quality (slow sinking type) and feeding technique for greater efficiency.

As part of its technology verification and dissemination activities, AQD provided technical assistance in the construction of a multi-species hatchery in Tawi-Tawi (southwestern Philippines) in the Autonomous Region of Muslim Mindanao (ARMM). The hatchery is expected to meet the fry and fingerling requirements of growers of high-value marine fishes as well as boost the agri-business program implemented in ARMM by the Philippine Government through BFAR. AQD also provided experts and technicians during the on-site training that ensued to build up the capacity of the beneficiaries.



Grouper *fuscoguttatus* harvest in Igang

## Small-holder Freshwater Aquaculture

The Program aims to improve the seed production and grow-out technologies for commercially important freshwater commodities (tilapia, catfishes, carps, and freshwater prawn) and promote freshwater aquaculture for livelihood, particularly among the landless in inland rural areas.

In an experiment that evaluated the growth and survival of the native catfish (*Clarias macrocephalus*) fry in net cages with and without supplemental feeding in Laguna de Bay, the results indicated that the growth of the fry given artificial diet was higher than those fed exclusively with natural food available in the lake. Moreover, seed production studies and induced spawning trials for the native catfish were also continued while pond demonstration project was also conducted for grow-out rearing of fingerlings using formulated diet.

Studies on the giant freshwater prawn (*Macrobrachium rosenbergii*) were continued including the experimental production of larvae tolerant to reduced salinities where the results indicated consistent production of fully metamorphosed larvae both in 12 and 6 ppt salinity levels. Results of the study which evaluated the effect of horizontally oriented shelters on growth and survival of freshwater prawn showed that those reared in cages provided with shelters had significantly better growth.



Stocking of catfish fingerlings in ponds



Culled out freshwater prawn berried females from experimental cages

production using two culture systems (either green water or clear water), the results indicated that the larvae reared in green water had higher survival and took shorter time to reach the post larval stage.

## Seaweed Strain Improvement

The following studies were continued in 2007: a) Propagation of *Kappaphycus* plantlets from callus-like structures by tissue culture; b) Seed production of *Kappaphycus* and *Gracilaria* from spores; and c) Determination of ammonium uptake of *Gracilariopsis bailinae* and its impact on the culture of abalone *H. asinina*, and *G. bailinae* in a recirculating system.

Significant progress has been made on the seed production of seaweeds from spores. Plantlets of *Kappaphycus* generated from spores are now being grown in tanks while plantlets of *Gracilaria* generated from spores are now being grown in aquaria and being adapted to different salinities (15, 20, 25 ppt). Protoplast isolation was also attempted in *Kappaphycus*. Bacteria associated with the "ice-ice" disease were also isolated from four strains of *Kappaphycus* from Zamboanga (southern Philippines).

## Aquatic Ecology

The program focuses on (a) institutional arrangement in local governance in selected municipalities in Western Visayas, Philippines, (b) determination of environmental capacity of Igang Bay and other aquaculture sites, and (c) ecological studies for sustainable aquaculture. In 2007, AQD initiated two studies: (i) Environmental capacity of Humaron Cove, Igang, Guimaras and Bugang River, Pandan, Antique (all in western Philippines); and (ii) Tangab fishery in Iloilo Strait. Operations, catch volume and species composition, economic importance and ecological impact. For the study on environmental capacity, the sites selected were Humaron Cove in Igang, Guimaras and Bugang River in Pandan, Antique, covering areas of 29 and 8.8 ha, respectively. High levels of water quality variables (phosphate, ammonia, chlorophyll-a, total suspended solids, dissolved oxygen, salinity and temperature) were observed in the study areas during certain periods; however the occurrence of high nutrient concentration was not persistent suggesting that the environmental capacity of the sites may not have been reached yet. The study on tangab showed that the operations were concentrated and the catch were landed at four sites in Iloilo Strait namely: Morobuan, Guimaras; Calumpang, Iloilo City; Arevalo, Iloilo City; and Atabayan, Tigbauan. About 200 species of fishes, crustaceans, molluscs and other invertebrates have been identified from the tangab catch in these four sites.

## Programs under the ASEAN-SEAFDEC FCG Mechanism

### Regionalization of the Code of Conduct for Responsible Fisheries

SEAFDEC implemented the program on Regionalization of the Code of Conduct for Responsible Fisheries (RCCRF) since 1998. The program initially focused on the regionalization of the CCRF, followed by supporting implementation of the CCRF at national level. Starting in 2003, SEAFDEC implemented a new phase of the RCCRF program which build upon the existing SEAFDEC momentum on CCRF, and further promote implementation of sustainable fisheries management in the context of the RCCRF through the required human resource development activities as identified by the Member Countries. Activities were formulated with the objectives to: 1) support the establishment of a regional fisheries management body/mechanism in Southeast Asia; 2) improve capacity for the management of fisheries and important coastal fisheries (refugia) and the protection against natural hazards; and 3) understand the size and structure of large-scale (or industrial) fisheries, and strengthen the capacity to monitor and record active fishing effort in coastal fisheries as a basis for development and implementation of coordinated plans for management action on fishing capacity among ASEAN-SEAFDEC Member Countries (both for large and small scale fisheries).

In line with the program objectives, from 6 to 8 November 2007, SEAFDEC organized a “Regional Technical Consultation and Workshop on the Concept of the Establishment of an ASEAN Fisheries Development and Management Mechanism”. The Consultation recommended that SEAFDEC should take a leading role, and work together with the ASEAN Member Countries, to clarify the concept and scope of the Regional Fisheries Management Mechanism, as well as the required establishment process.



*The Regional Consultation and Workshop on the Concept of the Establishment of an ASEAN Fisheries Development and Management Mechanism*

To promote integration of fisheries management and habitat management, relevant activities were initiated with particular emphasis on Cambodia, Vietnam and the border provinces of Thailand. In 2007, the criteria to determine size of national, sub-regional and trans-boundary areas of the significance were developed. From 6-9 August 2007, an “On-site training/workshop on the Integration of Fisheries Management into Habitat Management” was organized in Koh Kong Province, Cambodia, where the idea on larger management areas and boundaries was discussed. To follow-up the workshop, information, i.e. available maps, location and size of management areas, etc. was collected, starting from Cambodia and Thailand. In addition information on the status of important nursery grounds, spawning areas and coastal habitats in Koh Kong, Kampot, Trat was also collected (through the UNEP/GEF/SCS project).





*The RCCRF Seminar (left) and its participants (right)*

In 2007, activities were also initiated to explore on the Incentive for sustainable fisheries through promotion of eco-labelling. Three major candidates of products for eco-labelling were identified, i.e. 1) mangrove crabs in Trat Province (Thailand), Koh Kong and Kampot (Cambodia); 2) mackerel and other species in Chumphon Province (Thailand) and Eastern Gulf of Thailand; and 3) Prara/Prahok (fermented fish) in Cambodia, Lao PDR and Thailand. The critical elements in the certifying body, the role of the government, and the appropriate certification schemes for the region have also been discussed.

It is also envisaged that information, particularly on the fishing capacity, is necessary for effective fisheries management and combating of IUU Fishing. Currently, there is no reliable or aggregated information on the size and structure of large-scale fisheries especially in the Southeast Asian region. SEAFDEC through this project would therefore review the available information, and assess the status of large-scale fisheries over time, in relation to small-scale fisheries. In addition to large-scale fisheries, information on small-scale coastal fisheries would also be monitored and recorded, and based on that,

the recording system would be reviewed and verified. This activity would be conducted in Koh Kong, Kampot (Cambodia), Trat Province (Thailand), Kien Giang, Quang Binh, and Haiphong (Vietnam).

To review the overall achievement of SEAFDEC and the Member Countries in the implementation of the CCRF, on 22 October 2007, SEAFDEC organized the “Seminar on Implementation of the Code of Conduct for Responsible Fisheries in Southeast Asia”. In addition to the report on the progress in the implementation of the CCRF, the Member Countries identified priority needs for the future implementation of CCRF in Southeast Asia and requested SEAFDEC to continue providing support to further implementation of CCRF in the region. The Seminar also suggested particular areas for SEAFDEC to provide support to Member Countries in the future. The progress in implementation of the CCRF by SEAFDEC and Member Countries, as well as the priority needs and recommendations for future implementation of the CCRF as identified at the Seminar, were reported to the 30<sup>th</sup> Meeting of SEAFDEC Program Committee (26-28 November 2007, the Philippines), and subsequently to the 10<sup>th</sup> Meeting of the ASEAN-SEAFDEC Fisheries Consultative Group (FCG) (29-30 November 2007, the Philippines).



## **Assistance of Capacity Building in the Region to Address International Trade Related Issues**

In order to enhance and strengthen competitiveness, cooperation and joint approaches of the ASEAN-SEAFDEC Member Countries in addressing international/regional issues affecting the trade of fish and fishery products in the region, the program on Assistance of Capacity Building in the Region to Address International Trade Related Issues was initiated (original title: Fish Trade and Environment), since 1999. The activities emphasized on monitoring and reviewing potential international fish trade-related issues; identifying and analyzing potential impacts the issues on sustainable fisheries development in Southeast Asia; and developing regional policy recommendations for consideration by Member Countries.

From 5 to 7 February 2007, the ASEAN-SEAFDEC Regional Technical Consultation (RTC) on International Fisheries Related Issues was organized in Thailand to: 1) review and discuss important international fisheries related issues relevant to the region, 2) develop coordinated/common positions on each respective issue among the Member Countries, and 3) discuss the proposed new modality for regional cooperation in addressing international fisheries issues. ASEAN and SEAFDEC Member Countries agreed with the conclusion on regional direction towards the issues on Code of Conduct for Responsible Fisheries (CCRF); Small-scale Fisheries Related Issues; Fish Trade Related Issues; Aquaculture Related Issues; Issues Related to Commercially-Exploited Aquatic Species and CITES CoP-14; Fisheries Subsidies under WTO; as well as coordinated positions and point of views of ASEAN-SEAFDEC Member Countries at the forthcoming 27<sup>th</sup> Session of FAO Committee on Fisheries (COFI). In addition, the RTC also discussed on the “Draft Proposed New Modality for Regional Cooperation in Addressing International Fisheries Related Issues” which

was subsequently proposed and endorsed by the SEAFDEC Council.

In March 2007, SEAFDEC dispatched senior officials to the 27<sup>th</sup> Session of FAO Committee on Fisheries (COFI) which was taken place in Rome, Italy from 5-9 March. SEAFDEC participation helped facilitate the confirmation and consolidation of coordinated positions among the Member Countries. In addition to the FAO COFI, a Senior Official of SEAFDEC Secretariat also attended the First Meeting of the Regional Fishery Bodies - Secretariats Network (RSN) from 12 to 13 March 2007, organized by FAO in Rome, Italy. The SEAFDEC representative was appointed as a vice-chair to coordinate with other RFBs, which share similar concerns on small-scale fisheries and requirements of developing countries.

Subsequent to the COFI and RSN Meetings, SEAFDEC Secretariat prepared the ‘Executive Summary of International Fisheries Related Issues 2006-2007 and submitted to the 39<sup>th</sup> Meeting of SEAFDEC Council organized in April 2007 for consideration and endorsement.

Throughout the year, all international issues which are envisaged to have implication to fisheries in the region, i.e. Fisheries Subsidies, Endangered Aquatic Species, Port State Measures, Traceability, Certification and Labeling, and Climate Change, Welfare of Fishing Crew and Fishing Labour, Emerging Fish Diseases, ASEAN Shrimp Alliance, EU Catch Documentation Scheme for Importation of Capture Fisheries Products from Foreign Countries, and Small-scale Fisheries, have been regularly monitored. And before the year end, the status of these issues has been summarized by the SEAFDEC Secretariat and reported to the 10<sup>th</sup> ASEAN-SEAFDEC FCG Meeting in November 2007. During the FCG Meeting, the Secretariat was requested to conduct an in-depth review of the issues and prepare information





*The RTC on International Fisheries-related Issues (2007)*

papers, outlining the proposed common/coordinated positions and policy recommendations on relevant issues for discussion at the RTC on International Fisheries-related Issues to be organized in February 2008, before submission to the SEAFDEC Council and ASWGF in 2008 for policy consideration.

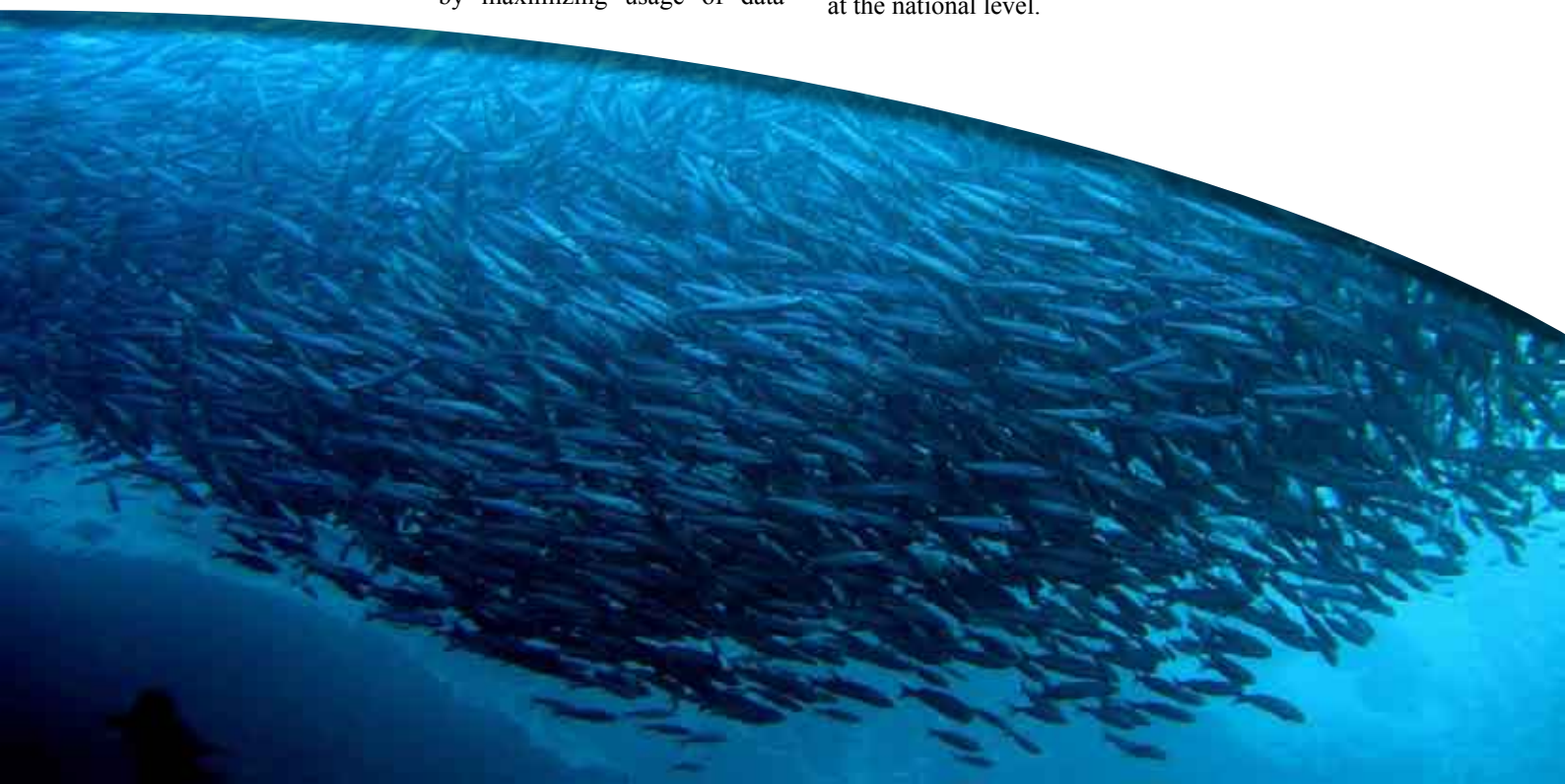
### **Improvement of Fishery Statistics and Information for Planning and Management of Fisheries in the ASEAN Region**

The project on Improvement of Fishery Statistics and Information for Planning and Management of Fisheries in the ASEAN Region was implemented by SEAFDEC Secretariat to support Member Countries in achieving sustainable fisheries based on sound fisheries policies and management strategies derived from quality statistics, data and information. The overall objective of the project is to improve better understanding and knowledge of fisheries and aquaculture in the region by maximizing usage of data

and information for fisheries management. This can be achieved through development of the status and trends of fisheries and aquaculture in the region based on effective utilization and harmonization of information for fisheries management at national level under the harmonized definitions, standards and classification of fishery statistics at regional level.

### **Streamlined Reporting of Fishery Statistics from the Member Countries to FAO and SEAFDEC**

From 12-14 December 2007, SEAFDEC organized the Regional Technical Consultation on Fishery Statistics and Information. The RTC discussed and revised the new framework of SEAFDEC Fishery Statistical Bulletin, the harmonized questionnaires, as well as the streamlined reporting of fishery statistics from Member Countries to FAO and SEAFDEC. The new framework and questionnaire are envisaged to be used in 2008 for Fishery Statistics reporting of 2006 as a trial year. The new framework would also be used as a guidelines for collection of fishery statistics in Southeast Asia as well as to facilitate long-term improvement of fishery statistics at the national level.





*The RTC on Fishery Statistics, 12-14 December 2007*

### **Harmonization of Standards/Norms, Classification and Definition of Fishery Statistics and Information**

To reflect the situation and specificity of the Southeast Asian region's small-scale tropical, multi species, multi gear fisheries in the development of standards/norms, classification and definition of fishery statistics and information, SEAFDEC participated in the 22<sup>nd</sup> Session of the Coordinating Working Party on Fishery Statistics (CWP), and the 4<sup>th</sup> Session of the Fisheries Resources Monitoring System (FIRMS) Steering Committee Meeting conducted at FAO, Rome, Italy from 26 February to 2 March 2007.

From 13-15 June 2007, SEAFDEC also participated in the APFIC Regional Consultative Workshop on Managing Fishing Capacity and IUU in Asia, to monitor and coordinate the issues related to fishery statistics and information for fisheries development planning and management; and from 21-22 August 2007, SEAFDEC participated in the Technical Consultation Meeting on Fishery Information Gathering for Fishery Policy and Management Project, organized from 21-22 August 2007 in, Bangkok, Thailand, as collaborating agency with FAO in the implementation of the project of DOF Thailand (2007-2009) to improve fishery information for planning and management in line with SEAFDEC activities.

### **Status and Trends of Fisheries and Aquaculture in Southeast Asia**

To develop the Status and Trends of Capture Fisheries and Aquaculture in Southeast Asia, SEAFDEC made a consultation visit to the Philippines as a project pilot country from 5 to 7 June 2007. Based on the consultation, a Proposal on Development of National Status and Trend of Fisheries (STF) in the Philippines has been prepared, and a consultation has been conducted among the national agencies to discuss the required inputs, process and

responsibilities in preparation of a national STF report. It is planned that the National Consultation to discuss and conclude the national STF Report of the Philippines would be conducted in early 2008.

## **Responsible Fishing Technologies and Practices (Fishing in Harmony with Nature)**

### **Research and Promotion for Responsible Fishing Technologies and Practices in the Region**

TD in collaboration with the relevant national agencies in Malaysia and the Philippines conducted surveys to assess the use of Juvenile and Trash Excluder Devices (JTEDs) and the cost-effectiveness in its actual implementation. The assessment was conducted in Malaysia from 16 to 20 July 2007 and from 6 to 16 August 2007; and in the Philippines from 15 to 20 October 2007.

Moreover, the promotion and demonstration of the use JTEDs were also implemented. In Malaysia promotional events were conducted from 16-20 July and from 14 to 17 August 2007; while in Thailand the project staff as technical assistant promoted the use JTEDs to Thai



*Survey and data collection to assess the application of JTEDs in the Philippines*



*The exhibition organized in Malaysia where the SEAFDEC activities in promotion of JTEDs was also exhibited*



fishermen and fishery officers from 29 to 31 October 2007, and in Indonesia from 3 to 7 December 2007.

### **Interaction between the Threatened Species of International Concern and Fisheries**

To monitor the interaction between the threatened aquatic species of international concerns and fisheries, TD carried out activities to collect information on sea turtle by-catch from purse seine and other fishing gears. From 19 to 23 March 2007, TD in collaboration with FAO organized the “SEAFDEC-FAO Workshop on Assessing the Relative Importance of Sea Turtle Mortality Due to Fisheries in Southeast Asia” in Bangkok, Thailand; and in order to further exchange experiences and information with other organizations and countries outside SEAFDEC to improve the project implementation, TD staff participated in several international meetings and forum and made presentations on SEAFDEC activities on responsible fishing and practices conducted in Southeast Asian countries. These international forums include the International Project Steering Committee (IPSC) Meeting for the project on “Reduction of Environmental Impact from Tropical Shrimp Trawling, through the Introduction of By-catch Reduction Technologies and Change of Management” organized in Nigeria (14-16 February 2007) and the Workshop in Cameroon (13-18 February 2007), the American Fisheries Society (AFS) Annual Meeting in San Francisco, USA (2-8 September 2007), etc.

### **Compilation of Fishing Gear and Methods for Marine and Inland Capture Fisheries in the Region**

Under this component, the field survey on fishing gear and methods of marine capture in Myanmar was conducted from 3 to 6 September 2007, and the outcomes are being finalized. The publications on Fishing Gears and Methods in Cambodia and Brunei Darussalam were published and distributed to Member Countries. Moreover, CD-ROMs containing information on fishing gear and methods in the Philippines and Vietnam were produced and is accessible through the TD website.

### **Study/promotion on fishing that affects ecosystems**

The experiment on luring light fishing was carried out in Rayong Province, Thailand in collaboration with the Department of Fisheries on 5 February 2007 and from 19 to 23 February 2007, respectively. The experiments focused on the light intensity and its efficiency for squid luring. This experiment is still on-going and will be continued in 2008. In addition, the study on wind energy for propelling fishing boats was also undertaken. A sail like spinnaker was designed suitable for installation on a medium-size fishing boat. A kite for sailing is also

considered an alternative propulsion method for small fishing boat.

### **Production and dissemination of information packages**

Through the year 2007, six promotional materials aimed to disseminate information and raise awareness on responsible fishing and practices were produced:

1. VCD on The study of luring light affecting squid behavior
2. VCD on Promotion of JTEDs in Perak, Malaysia
3. Publication on Guidelines for Trawl Fishery
4. Publication on JTEDs in Vietnam
5. Publication on JTEDs in Cambodia
6. Poster of the overview concept of responsible fishing technology and practices

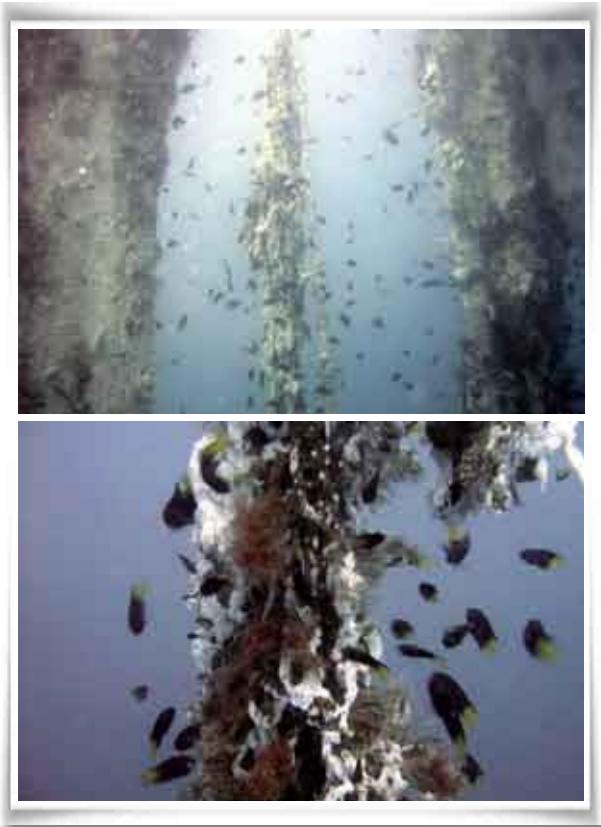


*Fishing gear and methods publications and CD-ROMs produced in 2007*

### **Rehabilitation of Fisheries Resources and Habitats/Fishing Grounds through Resource Enhancement**

In order to promote the rehabilitation of fisheries resources and habitats/fishing ground through resources enhancement, in 2007, TD designed the second version of permanent Fish Aggregating Devices (FADs), or the so called “Fish Enhancing Devices (FEDs)”, which could be used both in coastal and offshore water. A series of training/demonstration on FEDs construction was conducted for local fishermen in Malaysia, Thailand and the Philippines.

For Malaysia, the training course was conducted on 19 March 2007 in Kuala Teriang, Langkawi in close coordination with the project on Integrated Coastal Resource Management in Pulau Langkawi (ICRM-PL). After the training/demonstration, the KENs, Kuala Teriang completed the construction of 10 units of FED and installed them in the project area. For Thailand, the training /demonstration of FEDs was conducted on 21 August 2007 in Phuket in close cooperation with Department of Marine and Coastal Resources of Thailand. For the Philippines, the demonstration/training and



*Fish abundance around FEDs*

installation of Fish Aggregating Device (FADs) and Fish Enhancing Devices (FEDs) was conducted from 22 to 27 February 2007 in the Coral Garden Area of Tangalan, Aklan, Panay Island in collaboration with the Bureau of Fisheries and Aquatic Resources (BFAR), and 10 units of FEDs were installed in the area.

The monitoring survey on the performance of FEDs was conducted in Tangalan from 8 to 10 October 2007. The survey focused on species composition observation by underwater camera/VDO record, fish abundance observation by echo-sounder and underwater observation, catching record by hand-line fishing operation, and interview with local fishermen on FEDs

utilization. The preliminary result indicated that local fishermen highly appreciated the installation of FEDs and FADs in the area.

## **Sustainable Utilization of Potential Fisheries Resources and Reduction of Post-harvest Losses**

This project was implemented by TD to investigate and assess potential fisheries resources as alternative resources in the Southeast Asian region. Through the use of the M.V. SEAFDEC 2, an experimental survey was conducted, and the potential resources of demersal resources on the continental shelf slopes in the Southeast Asian waters particularly the Andaman Sea and South China Sea, was explored. Collapsible fish trap, eel trap and modified bottom vertical longline gears were constructed and used during the survey. Based on the outcomes from the survey, as well as the outcomes from the project on “Information Collection for Economical Important Species: as Surimi Raw Materials” also implemented by TD, the status of demersal resources in the region was evaluated and presented at the “Regional Workshop on the Potential Demersal Fisheries Resources” organized by TD from 18 to 20 December 2007.

In addition to resources survey, this project also aims to develop appropriate fish handling and preservation techniques at sea in order to reduce the post harvest losses and achieve food safety requirement. Use of ice, chilled sea water system and chilled refrigerated sea water system at sea were promoted as the appropriate techniques. TD conducted training workshops in Rayong Province, Thailand to train fishers and government officers on fish handling and preservation techniques focusing on squid; and in Sihanoukville, focusing on all fish products. For medium- and large-scale fisheries, TD introduced a new technology from Japan called liquid ice/ surly ice, and conducted the first experiment on the application of this system onboard the M.V. SEAFDEC 2.



*Fisheries resources survey in SEAFDEC Member Countries using the M.V. SEAFDEC 2 (left)  
Training Workshop on fish handling and preservation technology in Rayong Province, Thailand. (right)*

## Development of Technologies and Human Capacity Building for Sustainable Aquaculture

In 2007, AQD continued to implement the project on Promotion of Sustainable Aquaculture in the ASEAN Region, comprising activities on the development of technologies and human capacity building for sustainable aquaculture, which were implemented under the Aquaculture Component of the Special 5-year Program until 2006. The activities included promotion of: freshwater aquaculture of indigenous species, e.g. giant freshwater prawn aquaculture; integrated aquaculture system, e.g. rice-fish aquaculture (in Cambodia); coastal aquaculture and mariculture, e.g. development of strategies to extend the spawning season of sea bass *Lates calcarifer* under captivity; and captive broodstock development and seed production, e.g. domestication of mud crab *Scylla serrata*.

Growth performance of *Macrobrachium rosenbergii* post-larvae from local broodstock (Calumpit, Bulacan, Philippines) was assessed. The results showed that those reared in hapa cage had significantly higher growth and survival than those in B-net, although the feed type and presence or absence of shelter failed to affect the performance. The genetic characterization of *M. rosenbergii* aimed at improving its seed stock was also carried out using DNA markers. A compendium of results from the Collaborative Research on Prawn Genetic Improvement and Seed Production under the Special 5-Year Program was published in October 2007. Included in the publication are technologies developed in Thailand, Indonesia and the Philippines. This publication is considered useful since giant freshwater prawn aquaculture is now being considered as an alternative to marine shrimp culture.

In another development, rice-fish (silver barb, silver carp and common carp) integrated culture system has been disseminated to selected farmers in Cambodia. This system will be useful not only in increasing rice production



*International Training Course on Abalone Hatchery and Grow-out*

but also in providing fish as foods and generating income to the poor households in the rural areas of Cambodia.

As part of the efforts of AQD in promoting HRD in the region, the International Training Course on Marine Fish Hatchery was conducted from 22 May to 28 June 2007 with nine participants from Thailand, Cambodia, Singapore and Philippines. The 37-day training course provided the participants with basic technical knowledge and skills in operating marine fish hatcheries, especially in the larval rearing of milkfish, grouper, snapper, sea bass and rabbitfish.

The International Training Course on Abalone Hatchery and Grow-out was also conducted from 6 to 25 September 2007 with 18 participants from Indonesia, Malaysia,



*International Training Course on Marine Fish Hatchery*

Myanmar, and the Philippines. The participants conducted actual hatchery activities from broodstock management, larval rearing to harvest and transport of veligers, the results of which were presented to a panel of AQD researchers before the end of the training.

## Quality Assurance Systems for Small and Medium-sized Fish Processing Establishments in ASEAN Member Countries

In Southeast Asia, traditional fish products represent a significantly large part of total fish utilization and are a major source of animal protein. These products are therefore vitally important to food security, particularly for the marginalized and poorer segments of the population. However, many small and medium-sized fish processing establishments in ASEAN member countries have difficulty in implementing quality assurance systems due to economic and technical constraints. The program was therefore implemented by the MFRD with objective of developing quality assurance systems for traditional fish products processing establishments (TPEs) and pre-processing establishments (PPEs), which represent the significant large part of total fish utilization and are a major source of animal protein in the in Southeast Asian region. The quality system to be promoted under this program would incorporate Good Manufacturing Practices (GMP) and Standard Sanitation Operating Procedure (SSOP), as the first step towards the implementation of HACCP in order to help these SMEs meet necessary safety and quality assurance requirements.

A Regional Planning Meeting was conducted from 20 to 21 June 2007, and concluded that seven countries, with the total of 10 pre-processing products (PPE) – Cambodia (Crab meat (picking)), Indonesia (Fish fillet for Surimi), Malaysia (shrimp peeling, fish head/degut (for Surimi/otoshimi)), Myanmar (shrimp peeling/deheading/sizing), Philippines (Shrimp salting (for shrimp paste), crab meat (picking)), Thailand (Shrimp peeling), and Vietnam (Shrimp deheading, Cuttle fish/squid preparation



*A regional program planning meeting held in June 2007*

(degutting, deskinning, and semi dried) – would develop the GMP/SSOP in 2007; while in 2008 ten countries with a total of 19 products will develop the GMP/SSOP for TPEs. Based on this agreement, the GMP/SSOP program for the PPE was developed, and national projects were implemented from June to December 2007 to develop the GMP guidelines for their respective PPE. The guidelines from GMP/SSPO program for PPE are still under development process.

## Environmental Related Tasks in Southeast Asia

The program on Environmental Related Tasks in Southeast Asia aims to assist Member Countries in monitoring the important environmental issues which may have implication to fisheries of the region, i.e. issues on sharks and sea cucumbers, at international level, providing necessary information on concerned aquatic species of under the Convention on International Trade in Endanger Species (CITES), and mobilizing regional experts for the development of future action plan and policy recommendation on the issues. In 2007, SEAFDEC participated in the 5th ASEAN Expert Group (AEG) on CITES from 9-11 May in Singapore, and the Conference of Parties (CoP14) of CITES from 13 to 15 June 2007 in the Netherlands to continue monitoring the progress of the above two issues. In addition, possible listing of the other aquatic species which may have impact to fisheries activities of Member Countries was also monitored. The existing initiatives undertaken by SEAFDEC and the Member Countries in the conservation and management of aquatic species have been promoted through the arrangement of exhibition booths and dissemination of relevant information materials.

## Managing Sharks Fisheries

Since 2002, SEAFDEC has started the implementation of activities on conservation and management of sharks; and in 2003 and 2004, the efforts have been intensified with the conduct of a regional study on Shark Production, Utilization and Management in the ASEAN Region. After completion of the regional study, SEAFDEC continued to support the conservation and management of sharks by the Member Countries, particularly on the establishment of the National Plan of Action for Conservation and Management of Shark (NPOA-Sharks) and the monitoring of proposals for listing of shark species under the CITES appendices.

In 2007, the ASEAN Countries have continued to put their efforts in formulating the NPOA-Sharks. In addition to Malaysia of which the establishment of the NPOA-Sharks had already been completed; Brunei Darussalam, Myanmar, Indonesia, and Thailand have also finished



*The ASEAN Expert Group on CITES Meeting (left) Deputy Secretary-General at the COP14 of CITES (right)*

their draft NPOA, while the other Member Countries are still under the development process. In November 2007, SEAFDEC also supported the conduct of the National Action Planning Workshop for the Conservation and Management of Sharks in the Philippines from 14 to 16 November 2007, where the outline of NPOA-Sharks including strategies for the each NPOA component has been discussed and agreed upon.

During the participation of SEAFDEC in the CoP14 of CITES, the increased new listing of sharks species under CITES appendices has been observed. This concern has been reported to the Member Countries during the 30<sup>th</sup> SEAFDEC Program Committee and 10<sup>th</sup> ASEAN-SEAFDEC FCG Meetings in November 2007 in order to prepare them on the situation.

### **Understanding Sea Cucumber Fisheries**

In addition to shark, the concern on sea cucumbers, particularly the Holothuriidae and Stichopodidae families, has also been taken into consideration under this program as the species has frequently been raised for discussion during international fora, i.e. at the CoP13 of CITES held in 2004 in Thailand, and the CoP14 of CITES held in 2007 in the Netherlands. At these fora, a concern was expressed that commercially exploited sea cucumber



*National Workshop for the conservation and management of sharks in the Philippines*

species should be included in the CITES Appendices. However, it is envisaged that listing of such species may give the negative impact on sea cucumber fisheries of the ASEAN and SEAFDEC Member Countries.

In order to prepare the Member Countries on this issue, during the 8<sup>th</sup> Meeting of ASEAN- SEAFDEC FCG and the 38<sup>th</sup> Meeting of SEAFDEC Council held in April 2006 in Brunei Darussalam, the meetings strongly supported that a regional comprehensive study on existing available data and information on sea cucumbers should be conducted, and the management of sea cucumber resources should be under the purview of the relevant national fisheries competent agency. In September 2006, the ASEAN-SEAFDEC Regional Technical Consultation on International Fisheries Related Issues was organized; and the consultation reaffirmed the directions given by the 38<sup>th</sup> Council Meeting and support the conduct of a regional study on sea cucumber fisheries, utilization and trade in Southeast Asian Region.

Along line with the previous initiatives and policy directions made by the SEAFDEC Council, SEAFDEC Secretariat in 2007 continued its effort in executing activities related to the regional study on sea cucumber fisheries in Southeast Asia. Meantime, an Ad-hoc Regional Working Group on Sea Cucumber Fisheries was also established to further analyze the sea cucumber situation and develop policy recommendation, to be properly integrated into a regional plan. It is expected that the outcomes of the regional study on sea cucumber fisheries, utilization and trade will be finalized and submitted to the 40<sup>th</sup> Meeting of SEAFDEC Council and the 16<sup>th</sup> Meeting of the ASWGFi (in 2008) for their consideration and support.

### **Establishment of Disease Surveillance System of Aquatic Animals**

This project focuses on the establishment of resources and facilities for fish health diagnosis and human capacity building in Southeast Asia. In 2007, the following activities were undertaken:

## **Research and Development on refinement of diagnostic methods and development of new prevention methods for aquatic animal diseases**

White spot syndrome virus (WSSV) has been a big problem to the shrimp industry. Under the auspices of the Regional Fish Disease Project, AQD has developed immunological preventive methods for WSSV of *Penaeus monodon* via immersion techniques with immunostimulants and vaccine. To determine how pond management affects the disease prevalence, the relationship between the prevalence of WSSV positive shrimp in ponds and environmental factors has been epidemiologically assessed, suggesting that exposure to more stress factors in the presence of WSSV contamination could lead to an outbreak. In addition, preventive measures against viral nervous necrosis (VNN), the most serious infectious disease of marine fish, have also been assessed by studying the mechanism of transmission and vaccination techniques. Under this activity, the Research Institute for Aquaculture No. 2 of Vietnam reported that it has identified the pathogen agents of a new emerging hemorrhagic disease in freshwater catfish (*Pangasianodon hypophthalmus*). Some infectious bacteria: *Aeromonas*, *Edwardsiella* and *Clostridium* were so far detected from the diseased samples of the catfish.

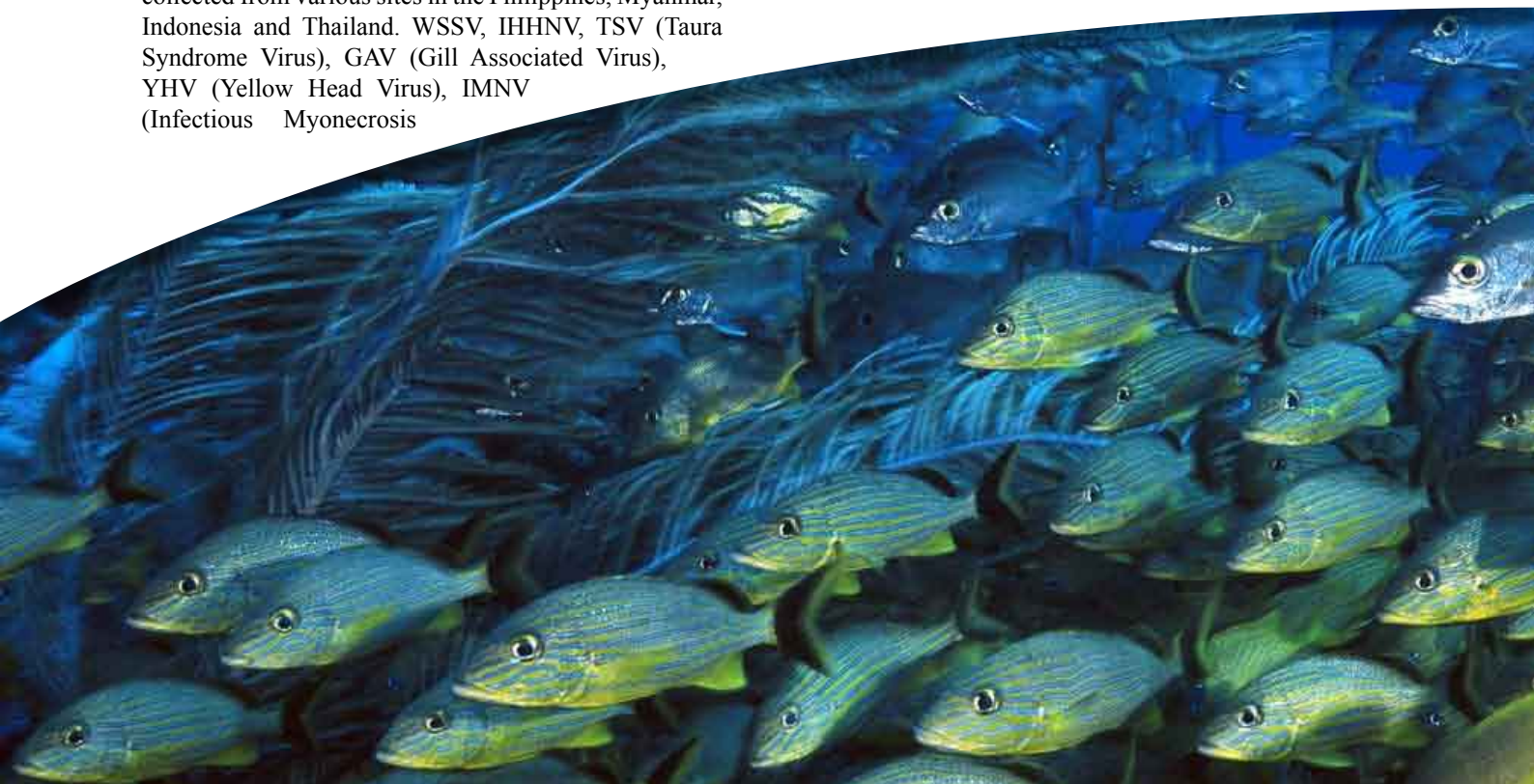
## **Surveillance for important viral diseases of fish and shrimps in the region, and mobile clinics**

Surveillance activities for diseases of shrimps, prawns and crabs were also pursued. Samples of *Penaeus monodon*, *P. indicus*, *P. merguensis*, *P. vannamei*, freshwater prawn *Macrobrachium rosenbergii*, *Scylla serrata* were collected from various sites in the Philippines, Myanmar, Indonesia and Thailand. WSSV, IHNV, TSV (Taura Syndrome Virus), GAV (Gill Associated Virus), YHV (Yellow Head Virus), IMNV (Infectious Myonecrosis

Virus), and MBV (Monodon Baculovirus) were monitored by PCR or histopathology among marine shrimps/mud crab samples from the Philippines and Myanmar. In the Philippines, WSSV infection is still widespread in shrimp culture facilities affecting *P. monodon*, *P. indicus* and *P. vannamei*. The most significant disease of crustaceans found in the Philippines is IHNV infecting 23% of the total samples. Of the 8 viruses in the surveillance list, TSV, IMNV and WTD (White Tail Disease) are still presumed exotic to the Philippines. IHNV was also detected in one of the 12 shrimp samples from Myanmar. The prevalence of TSV, WSSV, IHNV and IMNV were surveyed in *P. vannamei* cultured in Indonesia. TSV, WSSV and IHNV have been found in cultured white shrimp and more likely to be wide-spread in all of the areas surveyed. Meanwhile, the spread of IMNV remains limited in the possible controlled areas.

Freshwater prawn samples collected in the Philippines were monitored for WTD and WSSV, and were found negative for both viruses. The causative agents, *Macrobrachium rosenbergii* nodavirus (MrNV) and extra small virus (XSV) of WTD were tested in wild/cultured freshwater prawn samples in Thailand. These two viruses were negative in wild prawn samples except those from Ubon Rachathani Province in northeastern Thailand however the viruses were instead detected in the cultured prawn samples.

Surveillance of emerging fish viral pathogens of KHV (Koi Herpes Virus), SVCV (Spring Viremia of Carp Virus) and GCHV (Grass Carp Hemorrhage Virus) was conducted in native fish and PCR/RT-PCR tests for samples of koi carp, common carp, grass carp, and silver carp collected in Cambodia, Lao PDR, Myanmar, Philippines, and Vietnam, but these fish viruses were not detected from the samples. In order to strengthen the surveillance effort, a flyer on Spring Viremia of Carp was published. As part of the mobile clinic





*on site training workshop on shrimp and prawn health management in Myanmar, -9 Feb.'07*



*Hands on training on detection of Koi herpes virus and Spring Viremia of Carp Virus*

services, the epizootics in two farms in Myanmar for tilapia (*Oreochromis niloticus*) and rohu were investigated during the sampling activity. No significant bacterial or parasitic diseases were detected.

### **E-learning and Hands-On Training**

In 2007, AQD also conducted training courses focused on the basic and advanced diagnostic methods for shrimp and fish diseases in Myanmar and Vietnam. With sufficient skills, the participants are expected to serve as national trainers or core persons in the diagnosis of important diseases in their respective countries. The training included:

1. On-site training on fish health management in Myanmar (29 January-4 February 2007) with 10 participants
2. On-site training-workshop on shrimp and prawn health management in Myanmar (5-9 February 2007) with 23 participants
3. Training on Health Management and Disease Diagnosis of Shrimp and Prawn in Vietnam (20-25 August 2007) with 19 participants
4. Hands-on Training on Detection of Koi Herpes Virus and Spring Viremia of Carp Virus in Vietnam (27 August-5 September 2007) with 16 participants

### **Annual progress and planning meeting, and International Workshop**

The SEAFDEC International Workshop on Emerging Fish Diseases was convened in Bangkok, Thailand on 6-7 December 2007 in order to: 1) update on emerging fish and shellfish microbial diseases in Southeast and East Asia; 2) keep abreast on advances in the pathogenesis, diagnosis, epidemiology and surveillance of emerging microbial diseases of said aquatic animals; and 3) identify research gaps. Attended by 71 participants from 17 countries including all SEAFDEC Member Countries, the Workshop reviewed the status of emerging fish diseases and discussed the future orientation of fish disease studies. The results of the discussion will be reflected in



*Group picture of SEAFDEC Workshop on Emerging Fish Disease in Bangkok*

the future research thrust under Regional Fish Disease Project implemented by SEAFDEC.

The Annual Progress and Planning Meetings of 2006 and 2007 were convened in SEAFDEC/AQD, Iloilo, Philippines on 16 March 2007 and in Bangkok, Thailand on 5 December 2007, respectively. Study leaders from Thailand, Indonesia, Vietnam and AQD as well as representatives from the National Research Institute of Aquaculture of the Fisheries Research Agency, Japan and SEAFDEC Secretariat, attended the meetings.

## Chemical and Drug Residues in Fish and Fish Products in Southeast Asia

The presence of chemical contaminants and drug residues in fish and fish products has serious implications to trade and on human health. As such, there is a need to gain an understanding of current levels of such chemical and drug residues in fish and fish products. The project therefore proposed to build up the capacity for detection of these residues in the region. Only with this science-based knowledge and capability, can respective countries take appropriate action to manage the safety of fish and fish products. The project original objectives are to obtain an understanding of the levels of chemical contaminants in marine and freshwater aquaculture fish and fish products, to transfer technology in chemical contaminant testing to Member Countries in the region, and to obtain an understanding of the retention of antibiotics in the body and the rate of discharge from aquaculture organisms in order to ascertain appropriate withdrawal periods.

With its original title of “Research and Analysis of Chemical Residues and Contamination in Fish, Fish Products and the Environment such as Fishing Ground and Aquaculture Field”, the project has been implemented by MFRD since 2004 with Singapore as a Lead Country; and Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand and Vietnam as participating countries. However, in 2007, the project scope was changed and the



*The Vietnam Trainer together with MFRD staff during the Seafood Safety for Laboratory Personnel Training Course*

aquaculture component was no longer included. From 7-9 March 2007, MFRD therefore organized a Mid-Term Review Meeting to announce the new project scope, clarify the sampling methods and identify the training requirements with participating countries. The progress of activities has also been updated.

Throughout 2007, four regional surveys were conducted for : 1) heavy metals (in Cambodia, Indonesia, Malaysia, Myanmar, Thailand and Vietnam), 2) pesticide residues (in Cambodia, Malaysia, Myanmar, Philippines, Thailand and Vietnam), 3) histamine (in Cambodia, Indonesia, Myanmar, Philippines, Thailand and Vietnam) and 4) drug residues (in Indonesia, Malaysia, Myanmar, Philippines,



*Group Picture of Participants at the Regional Workshop in Seafood Safety for Laboratory Personnel*



*The Project Mid-Term Review Meeting*



Thailand and Vietnam). From 2-5 October 2007, MFRD also jointly organized the “Regional Workshop in Seafood Safety for Laboratory Personnel” with the National Fisheries Quality Assurance & Veterinary Directorate (NAFIQAVED) of Vietnam. Lectures on contamination problems of chemotherapeutic drugs and practical sessions on the analysis of Chloramphenicol, Nitrofurantoin and Malachite Green using the LC-MS-MS were provided. The participants were also introduced to the principles of LC-MS-MS and had some hands-on practice on the software.

## Research and Development (R&D) of Stock Enhancement for Species under International Concerns

Guided by the list of priority threatened aquatic species identified during the 2005 Regional Technical Consultation on Stock Enhancement of Threatened Species of International Concern (i.e., sea horses, giant clams, abalone, and sea cucumbers), AQD continued to implement the approved plans of action that include research and development, technology verification, and capacity building for such species. Specifically, in 2007 AQD continued to conduct studies on the behavior of juvenile abalone under laboratory conditions for developing release techniques. Results of another experiment on bottom-substrate preference of juvenile abalone with a combination of sand, gravel, coralline rubble and coral skeletons showed that juveniles tend to move to and stay on coral skeleton after release.

Releasing of SEAFDEC-bred abalone *Haliotis asinina* juveniles into the Philippine seas was conducted in 2007 in Carbin Reef, Negros Island; and in Nogas Island, Anini-y in Antique (both in western Philippines). Prior to release, a resource survey was conducted to determine



SEAFDEC-bred abalone juveniles were released into the Philippine seas (Nogas Is., Anini-y Antique).

most importantly the available food sources and bottom characteristics of the reef which will serve as abalone habitat. An evaluation of the status of the released abalone indicated that only a few number were recaptured during the survey after the release. This indicates the need for AQD to further improve its strategies with consideration of the suitable size, stocking density and time/season of release, etc. Another lesson learned was the importance of involving the municipal residents in the dissemination of the concept of stock enhancement through lectures, seminars and poster campaigns.

AQD also refined the technologies on seed production and hatchery operation of seahorse (*Hippocampus barbouri*, *H. comes*, *H. kuda*), angelwing clam (*Pholas orientalis*) and sea cucumber (*Holothuria scabra*). For the sea cucumber activity, AQD collaborated with the Research Institute for Aquaculture, No. 3 (Vietnam) for the production of juvenile sea cucumbers which were released into a marine protected area in Nha Trang Bay (central Vietnam) in 2007.

In addition, monitoring of the survival and growth of the giant clam (*Tridacna gigas*) was continued in Sagay Marine Reserve (Negros Island), Malalison Island (Antique) and Igang Marine





*Collection and analysis of DNA sample from sea turtles*

Substation (Guimaras). A significantly higher growth rate was observed in clams grown in Igang Marine Substation than in Sagay Marine Reserve and Malalison Island. No significant differences were observed in temperature, salinity and total suspended solids between sites. Depth is the only factor that differs between sites with Igang as the shallowest. In a related development and with the cooperation of the University of the Philippines-Marine Science Institute (UP-MSI), AQD published the “Manual on Giant Clam Hatchery, Ocean Nursery and Stock Enhancement” in 2007.

## Research for Stock Enhancement of Sea Turtles

Activities under the program on Research for Stock Enhancement of Sea Turtles have been implemented by MFRDMD since 2005. In 2007, 300 tissue samples of green turtles from 13 sampling sites in the Southeast Asian region were analyzed. In addition, tissue samples of hawksbill turtles from 15 selected sampling sites are in collection progress; and 100 tissue samples of hawksbill turtles from Melaka, (Malaysia) and Segamat/Belitung (Indonesia) had been analyzed.

Study on Detection of Multiple Paternities of Male Green Turtles in a Mak Kepit Beach, Terengganu was also being conducted. A total of 300 tissue samples of hatchlings green turtle from 10 nesters in Mak Kepit beach, Redang Island of Terengganu, Malaysia are being analyzed. The initial findings showed that most of the female mating with only one adult males green turtles.

Under the Tagging and Satellite Telemetry Study, tagging activities of sea turtles using inconel tags had also been done in participating Member Countries. PIT tagging activity is being implemented at Mak Kepit beach of Redang Island, Terengganu, Malaysia. In addition, Study on Satellite Tracking of Sea Turtle was also conducted in collaboration with the Department of Fisheries, Malaysia at Kerachut nesting beach, Pulau Pinang.



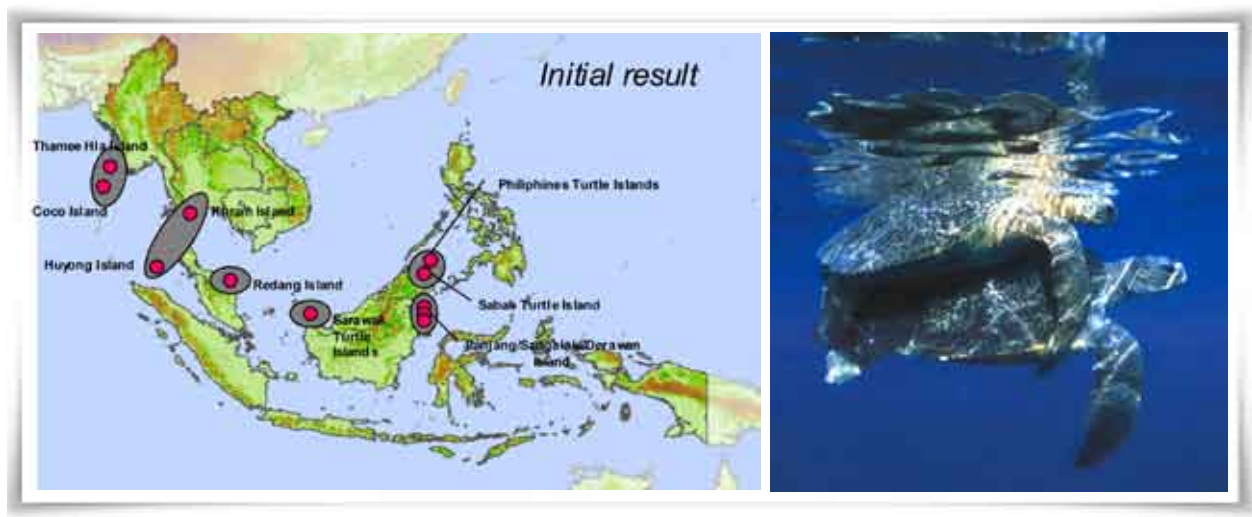
*Tagging with Inconel and PIT tags*



*The Regional Core Group Meeting on 4 June 2007*



*The Second RTC on the Process of Research for Stock Enhancement of Sea Turtles*



The initial results from the DNA tissue sampling of green turtles in Southeast Asia (left) Sea turtle mating (right)

The Regional Core Group Meeting on tagging and satellite telemetry research was conducted on 4 June 2007 in Kuala Lumpur. It was organized such as a mini-symposium to collect and reviews of all regional tagging and satellite telemetry studies that have been carried out in Southeast Asia. Compilation of regional information on migration routes and foraging habitat of sea turtles with reference to sea turtles-fisheries interaction were compiled base on oral papers that were presented

by SEAFDEC participating Member Countries and Technical Coordinators. Following the Regional Core Group Meeting, MFRDMD has conducted The Second Technical Consultation Meeting on Research for Stock Enhancement of Sea Turtles from 5 to 7 June in Kuala Lumpur. The objective of the meeting is to discuss the results and findings of project activities conducted from 2005 to 2006. Thirty participants had attended the meeting including the Responsible Technical Officers from SEAFDEC participating Member Countries, Technical Coordinators and Resource Persons as well as well observers.



Installation of Sea-ranching tarpaulin posters (in Anini-y town proper and AQD premises) as part of the information dissemination drive (left); and "Manual on Giant Clam Hatchery, Ocean Nursery and Stock Enhancement" published by AQD in collaboration with UP-MIS (right)

MFRDMD in collaboration with TD also conducted studies on interaction between sea turtles and fisheries, where data on sea turtle mortality in fishing operations was collected in Vietnam and Indonesia. A comparative study on the efficiency of the circle hook and J-hook in longline fishing was continued, and the preliminary report on the comparative study is being prepared. Through the results of these studies, SEAFDEC would further promote reduction of sea turtle mortality in fishing operation in Member Countries; and Circle Hook could be introduced and promoted to replace the use of J-hook.

## Capacity Improvement of Fisheries Community for Fisheries Management and Alleviation of Poverty

### Integrated Coastal Resources Management in Pathew District in Thailand (ICRM-PD)

Although the involvement of TD in implementation of the project activities in coastal resources management in Pathew District, Chumphon Province, Thailand was terminated after the completion of the first phase of the Special 5-year Program at the end of 2006, it was decided that the project activities would be carried over by the Department of Fisheries, Thailand for another three years



*The participants from Coastal Fisheries Management for Fishery Manager interviewed the fisherman in LBCFM-PD project area.*

with the financial support from the Royal Project and the Pakklong Sub-District Administration Office. In 2007, project activities were therefore implemented by the Chumphon Marine Fisheries Research and Development Centre (CMDEC) with emphasis given to human and institutional capacity development, especially for the newly established Pakklong Fishermen's Group (PFG). In July 2007, a regional seminar was jointly organized by TD and the Department of Fisheries, Thailand to review the project impacts to the community and the coastal fishery resources management system, taking into consideration the efforts made in disseminating the applicability of the coastal fishery resources management concept to the Member Countries. In addition, attempts were also pursued to monitor the progress of the sound structure and function of the PFG through occasional participation in their activities such as fish releasing and crab bank. Although TD is fading out from being an implementing agency, TD is still regularly involved in the project's operations in a capacity as observer, and continues monitoring the project's progress.

### **Integrated Coastal Resources Management in Pulau Langkawi in Malaysia (ICRM-PL)**

In the wake of the devastating tsunami in December 2004 that affected the project operational area, the major efforts exerted by the project were combined with some rehabilitation works. It was because of the sizable contribution from the Malaysian authorities and aid agencies that fishing activities in the area resumed to an extent similar to that of the pre-tsunami conditions. By the end of 2007, the involvement of SEAFDEC in the project has been terminated after four and a half years tenure with an expectation of achieving the pre-set targets. Therefore, emphasis on a step-by-step phasing-out process was put in place during the project operation in 2007. Meanwhile, since the DOF Malaysia has committed to continue the project operation from 2008 onwards and

in order to realize a smooth take-over, an Internal Project Implementation Committee was formed within the structure of DOF Malaysia. Also, the Fishery Resources Management Community (KPSP), a local institute was organized in place of the existing Fishermen Economic Group (KEN) as a core body to pursue the adoption of the community-based fishery resources management approach. Although the project would be continued by DOF and the newly organized KPSP in 2008 and onwards, TD is still expected to participate in the project operation in a capacity as observer, particularly during the project Coordination Committee meetings and in pursuing some on-going activities such as the Crab Bank, Mangrove Reforestation, etc. Further, a regional seminar to wrap-up the project would be jointly organized by TD and DOF Malaysia, to review the overall project achievement. Representatives from SEAFDEC Member Countries are expected to participate in the workshop and the resulting outcome would be disseminated in the region.

### **Integrated Coastal Resources Management in Sihanoukville in Cambodia (ICRM-SV)**

The project which has been in full swing since 2006, initiated the formulation of a Community Fisheries Area Management Plan (CFAMP) and other related documents, and some community development works



*A fisherman who participated in ICRM-SV project putting a mark on the crab carapace for crab bank activity*



*Participants in the Coastal Fisheries Management and Extension Methodology Training Course discussing the collapsible crab trap model*

such as mushroom production by the women's group, etc. The conduct of the activities also put more emphasis on human and institutional capacity building for community fisheries. In order to off-set a shortage of necessary funds for the project operations, funds from the Grassroots Aid of the Japanese Embassy in Phnom Penh were brought in for the project activities in 2007, particularly in mud crab fattening. The mushroom production activity which came into a sound management provided some incomes for the women fishers. The main and featured outcomes in 2007 include the embodiment of the Community Fisheries Area Agreement (CFAA) combined with CFAMP, By-Law (BL) and Internal Law (IL), and Map of Community Fishing Area (MCFA) including the establishment and management of the crab bank and fish refugia, further development of local business in mushroom production by the women's sub-group and mud-crab and tilapia/sea-bass culture by the aquaculture sub-group, and strengthening the managerial capacity of the community fisheries in the project operational area. Since it is expected that the involvement of SEAFDEC in the project operation will terminate towards the end of 2008, a step-by-step phasing out process of the project operation would be promoted to ensure a smooth handing-over of the project to FiA Cambodia.

#### **International training course on coastal resources management, at SEAFDEC/TD**

Referring to the Millennium Conference "Fish for the people" organized by SEAFDEC in 2001, the issue on the emerging co-management concept for fisheries as the new policy thrust for the region has been confirmed and addressed by SEAFDEC. Establishing such co-management systems and making them functional requires capacity building efforts for all key players, to take up their respective responsibilities under such systems. In this regard, TD has conducted the two regional training courses in order to build up the capacity

of all key players: 1) the international training course on coastal fisheries management for fishery managers, which focuses on sharing experiences and lessons from various pilot projects in co-management for policy formulation and designing fishery management plans addressing locally specific management needs; and 2) the international training course on coastal fisheries management and extension methodology, designed to familiarize the participants with co-management principles for small scale fisheries and the necessary extension skills for establishing and supporting participatory fisheries. The conduct of the training courses was a mixture of lectures, innovative classroom activities, and extensive field practices to promote active learning. The participants learned to understand the need for local level participatory fisheries management approaches, then they are familiarized with the approaches and tool that can help them facilitate community and stakeholder dialogues for analyzing local resource use patterns and livelihood issues, as well as in formulating solutions for these issues.

#### **Fisheries Resource Survey and Operational Plan for M.V. SEAFDEC 2**

Based on the requests from SEAFDEC Member Countries under the cost-sharing policy, in 2007, fisheries resources surveys utilizing the M.V. SEAFDEC 2 were conducted in the Andaman Sea in the EEZ of Thailand, Myanmar with particular focus on assessing the demersal fishery resources on the continental shelf slopes; and in the Celebes Sea of the Philippines with particular focus on the inventory survey of the tuna FADs deployed by the fishermen.

In addition, TD also conducted a 2-day shipboard training on larval fish collection on board the M.V. SEAFDEC 2 as part of the Regional Training Workshop on Larval Fish Identification and Fish Early Life History Science, with funding support from the UNEP/GEF/South China Sea Project and the Japanese Trust Fund.



## Deep Sea Fisheries Resources Exploration in the Southeast Asia

This project was initiated in 2007 with the main objective of investigating the deep sea fisheries resources in the Southeast Asian waters, and to study the deep sea ecosystems and the impact caused by deep sea trawling. In 2007, the main activities focused on reviewing information and basic data collection of the deep sea researches from the Member Countries and SEAFDEC Departments. Under the project, fishing trials on deep sea bottom trawl at the depth of 150 to 250 meter were conducted in the Andaman Sea using M.V. SEAFDEC 2 from 14 to 18 April 2007.

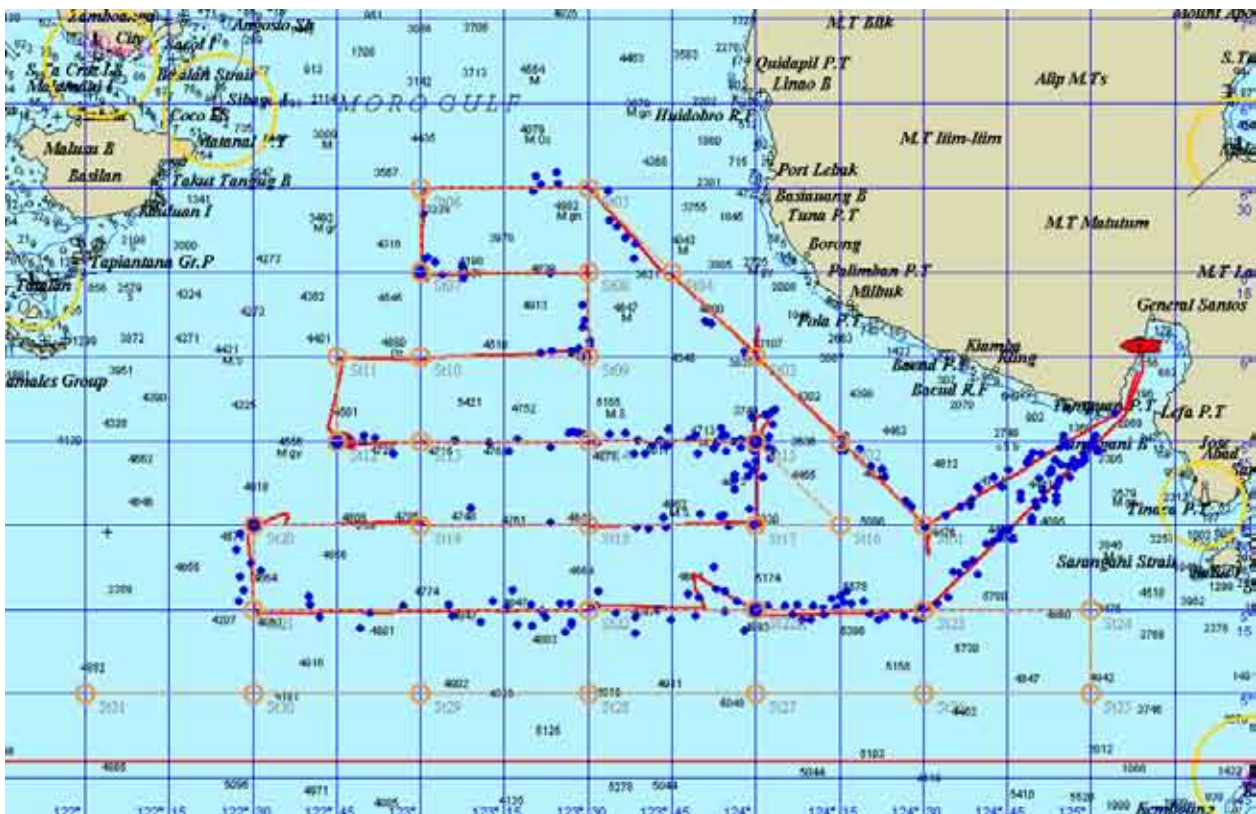
Based on the trials, it was decided that the appropriate deep sea sampling gears should be designed for the M.V. SEAFDEC 2. In response to this, deep sea sampling gears, such as deep the sea beam trawl, Isaacs-Kidd Midwater Trawl (IKMT) for deep scattering layer sampling nets, and collapsible traps, were developed to support the data collection/survey. In addition, to study the impact from bottom trawl to deep sea ecosystems, the underwater observation system was also developed.



Preparation of trawl net to study its impact on the deep sea ecosystem

## Tagging Program for Economically Important Pelagic Species in the South China Sea and Andaman Sea

The “Tagging Program for Economically Important Pelagic Species in the South China Sea and Andaman Sea” has been implemented by MFRDMD in collaboration with TD since 2007, and expected to be completed in 2011. The program aims to complement the outcomes from the previous program on “Information Collection for Sustainable Pelagic Fisheries in the South China Sea” implemented from 2002 to 2006, particularly on the study on sub-population of the pelagic species; while the study area has also been expanded to cover the



Location of Tuna FADs along the Cruise Track of M.V. SEAFDEC 2 in the Mindanao Sea, the Philippines

Andaman Sea. The program's participating countries included Brunei Darussalam, Cambodia, Indonesia, Malaysia, Myanmar, the Philippines, Thailand and Vietnam.

In 2007, the activities conducted under the program were the "Demonstration of Tagging Procedures/Practices" (1 May 2007, Samut Sakorn Province, Thailand) and the "First Core Expert Meeting" (2- 3 May 2007, Samut Sakorn Province, Thailand). The Demonstration and the Core Expert Meeting were attended by technical officers representing the participating countries, the resources persons as well as officers and representatives from SEAFDEC Secretariat, TD and MFRDMD.

"On-site Trainings for Tagging" were also organized in the participating countries by the technical officers of MFRDMD and TD together with the country technical officers: from 1 to 2 November 2007 in Muara Baru, Indonesia; from 19 to 20 November 2007 in Muara, Brunei Darussalam; from 22 to 23 November 2007 in Semporna, Malaysia; from 26 to 27 November 2007 in Rayong Province Thailand; and from 10 to 11 December 2007 in Manila Bay, the Philippines. However, for Cambodia, Myanmar and Vietnam, the training is planned to be conducted in early 2008. The Standard Operating



*Demonstration on tagging procedures and practices by the staff of MFRDMD and TD*

Procedures for Tagging has been prepared based on the on-site training conducted in 2007.

In addition to the technical part, this program also aims to create public awareness on the program implementation, i.e. through development of standard posters (in English). Posters were presented to the participating countries during the on-site training, and would be translated to national languages by respective countries for publication and dissemination.

## Other Programs/Activities

### Institutional Capacity Development on Sustainable Aquaculture

Through its collaborative program, AQD intends to institutionalize the practice of sustainable and responsible aquaculture through capacity building of local government units and community-based organizations in the Philippines. The collaborating partners are the SEAFDEC team; the NGO-partners who undertake the social preparation through community organizing, values formation, enterprise development, and other activities; and the local government units (LGUs) and donors (ACIAR, Petron) providing the financial and logistical support. The basic strategies used are: community-based approach, co-management approach and networking and partnerships.

During 2007, the following activities were implemented in Antique, Capiz, Samar and Guimaras provinces:

#### Antique

- Sea bass culture in ponds (Hamtik)
- Cage culture of sea bass (Pandan River)
- Abalone sea-ranching and socio-economic survey (Anini-y)



*Nursery demonstration pond in Northern Samar for rearing of mud crab*

#### Capiz

- Season-long training on mud crab and grouper culture in brackishwater ponds
- Consultation with rural community on freshwater aquaculture livelihood and seeding of carp (Dumarao)
- Season-long training course on freshwater aquaculture (Dumarao)



*Retrieval of crabs using bamboo traps in stock assessment activity in Northern Samar*

- Farm demonstration of brackishwater pond culture of mud crab and grouper (Capiz State University) and cage culture of freshwater species (Dumarao River)
- Research on breeding of angel wings (diwal) for stock resources management in the near future

### **Northern Samar**

- Season-long training course on mud crab nursery and grow-out (for fisherfolk from the municipalities of Lao-ang, Pambujan, Lavezares, and Rosario)
- Training for NGO-partners on stock assessment of mud crab seed stock in the wild
- Farm demonstration on mud crab pond nursery and grow-out and farm-based feed formulation for mud crab fattening
- Research on stock assessment of mud crab seed stock and market study of mud crab in Northern Samar
- Social preparation activities by NGO-partner

### **ABOT Aquaculture Technology**

Implemented by AQD, the ABOT (Agree-Build-Operate-Transfer) AquaNegosyo Project aims to prepare aquaculture business packages and provides technical assistance to interested aquaculture farmers and investors in the Philippines. It showcases complete packages of sustainable aquaculture technologies that are basic inputs to businesses in hatchery, nursery and grow-out of various economically important aquatic species. In 2007, the Project conducted aquaculture farm sites assessment for ten clients from various provinces in the Philippines. Two of these ten clients have signed formal agreements with SEAFDEC AQD to avail of aquaculture business packages. The Project also convened the Aquaculture Technology Forum on 16-17 October 2007 in Quezon City, Philippines where the latest technologies and business opportunities in aquaculture were presented through 27 multidisciplinary lectures by AQD scientists, award-winning aquaculture entrepreneurs and invited experts from various agencies with support systems for fish farmers.



*The ABOT forum attended by approximately 200 participants from private and government sectors*

Another accomplishment during the year was the effort made by AQD in expanding and enhancing collaborations. To make sure that many will benefit from the products of AQD, R&D activities as well as new collaborative arrangements were made with various stakeholder groups (i.e. government agencies, local government units, international organizations, private companies, private sector entrepreneurs). For 2007, AQD signed 17 new formal Agreements with various partners.

### **Promotion of Set-Net: an Eco-friendly Fishing Gear of Sustainable Coastal Fisheries Management**

The project has the objective of introducing Set-Net fishing technology as a tool to promote sustainable coastal fisheries management. After completion of the project's first phase in Rayong Province, Thailand, implemented from 2003-2005, the "Follow-up Activities and Improvement of Set-Net Technology Transfer for Sustainable Coastal Fisheries Management" was continuously carried out from 2006 to 2007. Both fishing techniques and fishermen skill have been drastically improved; while the gear design and operation techniques, as well as fishers' group management have also been enhanced.





*Fishermen in a set net fishing activity (left); and Some of the harvests from set net operation (right)*

In the project site in Thailand, the fishermen were able to carry out the set-net fishing activity under their own management, and obtain better income from the catch. The average income of the group was improved from THB 2,000 per day in 2004 to THB 6,500 per day in 2007. Moreover, the Set-Net fishers' group with 16 members has been registered with the "Micro Enterprise Corporation" of Local Government (Rayong Province) with an operating budget over THB 200,000.

The use of set-net for sustainable coastal fisheries management has also been expanded to Indonesia. The project was carried out in South Sulawesi in Bone, where training was conducted in October 2007 for local fishermen. The project duration is three years, with support from JICA; while the project implementation would be undertaken in collaboration with the Tokyo University of Marine Science and Technology, the Hasanuddin University, the Pallettee Fisheries High School, and the Indonesian local fishermen of Palette, Bone.

### **Information Collection for Economically Important Species: as Surimi Raw Materials**

The project has been implemented by TD since 2006, with the objective of investigating the status of surimi industry in the Southeast Asian Region in comparison with the existing surimi raw materials. Based on the outcomes from the consultation visit to surimi processing plants and questionnaires sent to

concerned Member Countries; there are 67 surimi processing plants located in 5 Member Countries: 26 plants in Thailand, 15 in Vietnam, 3 in Myanmar, 8 in Indonesia and 15 in Malaysia. Surimi production in the Southeast Asian Countries is primarily utilizing demersal species, such as Threadfin bream (*Nemipterus* spp), Big eye (*Priacanthus* spp) and Lizardfish (*Saurida* spp), due to their abundance as raw materials, and their characteristics which are suitable for production of export-quality surimi. In addition to these species, Barracuda is found to be one of the main raw materials, but only for Malaysia.

In 2005, the total surimi production in the Southeast Asian region was estimated to be 347,000 MT. The largest surimi producer is Thailand, followed by Malaysia and Vietnam. The total Surimi production from each country was 150,000 MT, 100,000 MT and 84,000 MT, respectively. For Thailand, the amount of raw materials supply to the surimi industry was 530,000 MT in 2005. However, due to the decline of the fishery resources in Thai waters, 80% of those raw materials has been derived from Myanmar and Indonesia under a licensing arrangement.

In order to investigate the existing under-utilized fisheries resources as raw materials for Surimi in the Southeast Asian region, a review was conducted to investigate

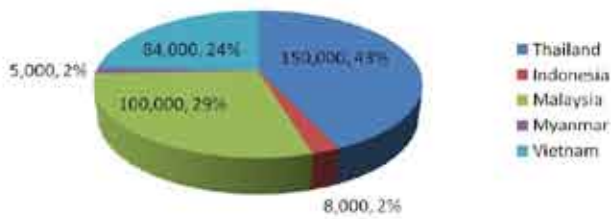


*One of the processing plants where data on surimi raw materials was collected*



*The Regional Workshops on Information Collection of Demersal Resources as Surimi Raw Materials in Southeast Asian Waters and on the Findings of Demersal Resources from M.V. SEAFDEC 2*

**Total Surimi products in 2005**



the status of resources based on each fishing ground. In addition, fisheries resources surveys using the M.V. SEAFDEC 2 were also conducted, e.g. for the bottom trawl ground in the South China Sea in the EEZ of Indonesia, the continental shelf of Brunei Darussalam, the Andaman Sea in the EEZ of Myanmar and Thai waters.

### Collection of Information about International Support in the Region

Implemented by TD, this program collects information on international supports in the region through the Internet, and a questionnaire was designed to collect information about international support in the region. Eighty sets of questionnaires were distributed to Member Countries and other institutions network. The returned questionnaires were analyzed, and the outcomes were publicized through the TD website. Moreover, TD has also established new network and communicated with donor agencies and other organizations. In particular, TD visited international donors, i.e. the WWF Thailand, for a consultative meeting, and sharing/exchanging information between the two organizations.

### Promotion of Sustainable Freshwater Aquaculture for Rural Communities

Recognizing the importance of aquaculture for food security and development of rural communities particularly in the inland areas, SEAFDEC Secretariat undertook a project on Promotion of Sustainable Freshwater Aquaculture for Rural Communities with support from the Japanese Trust Fund. Coordination with various organizations in the region, such as the Asian Institute of Technology (AIT), the SEAFDEC/AQD, the Department of Fisheries Thailand, the Mekong River Commission (MRC) and the World Wildlife Fund (WWF), has been strengthened to mobilize the existing capacity and experiences of these organizations and ensure the effective implementation of activities.



*Joint Regional Training on Community-based Aquaculture for Rural Development in Southeast Asia*



*Fish cage culture in the rural area of Southeast Asia*

In January 2007, a Preparatory Meeting on Promotion of Community-based Fish Farming in Remote Rural Areas of Southeast Asia was organized in order to discuss and prepare a curriculum for training on freshwater aquaculture, and identify appropriate resources persons. SEAFDEC in collaboration with the resources persons then developed a draft Handbook and Reference Materials for Community-based Aquaculture for Rural Development in Southeast Asia. Making use of the draft handbook, from 2-15 July 2007, SEAFDEC organized a two-week Joint Regional Training on Community-based Aquaculture for Remote Rural Areas of Southeast Asia, in Lao PDR. The training participants, while expressing their satisfaction to the training arrangement, commended the mobilization of expertise from various organizations as a very effective way of learning and sharing of information.

Considering that the activity has provided tremendous benefit to the region, the training participants requested that the activities should be regularly conducted in the future. SEAFDEC plans to finalize and publish the draft handbook to be further used in the future training course under this program as well as other activities to promote sustainable freshwater aquaculture in the rural areas of Member Countries in the region.

# **SEAFDEC**

## Future Activities





# SEAFDEC Future Activities

## List of SEAFDEC Programs in the Year 2008

Departmental Programs	
<p><b>1. Center-wide Information Network</b></p> <p>For 2008, activities under the program on Center-wide Information Network will continue to focus on promoting the activities and visibility of SEAFDEC, e.g. through production of promotional publications, meeting reports, website, etc.; and providing fisheries information to support decision-making, management and development of fisheries sector, e.g. fishery statistics and information and other relevant information, etc. Implementation of such activities will be in-line with the objectives and framework indicated in the Information Strategies for Enhancing SEAFDEC Visibility and Communication.</p>	Secretariat
<p><b>2. Information and Communications Technology</b></p> <p>In 2008, the information and communication technology program will emphasize on enhancing the organization's visibilities worldwide. Four main activities are proposed. The first is public relations to promote TD's activities via multimedia equipment such as website, publications and active participation in fisheries events and exhibitions at both national and international levels. The second is ICT development to cover updating, reviews and improvement of TD's online website, online library, TD's news as well as producing and disseminating TD's electronic newsletter to its network and the public. The third is to continue the design and production of multi audio-visual materials and brochures in the forms of print and other media for dissemination to member/non-member countries. The fourth is human capacity building for the improvement of the skills and experience of staff concerned.</p>	TD
<p><b>3. Tailor-made Training and Study Tour</b></p> <p>In the year 2008, at least five tailor-made training courses and study tour programs would be conducted by TD. The subject, objective, scope, duration and content of the training course and study tour programs would be defined by the organizations/countries that request a program. The programs may be combined with the existing TD's training program where possible. But for the new subject, a specific new program could also be developed.</p>	TD
<p><b>4. Integrated Mollusc Production</b></p> <p>Studies to improve hatchery production efficiency of mollusk species, i.e. abalone, will be continued specifically in terms of improving the quality of eggs and larvae through environmental manipulation, feeding scheme or diet manipulation. Studies on the use of probiotics will be tried to determine its effects on larval survival during incubation, settlement and metamorphosis. The reaction of larvae to various disinfection procedures like chlorination will also be tested to improve larval survival and metamorphosis. Grow-out culture techniques will be developed in terms of cage design and feeding schemes in view of the long culture period of abalone until the marketable size. Various cage materials will be tried to come up with cost-effective designs. Selective or cross-breeding techniques will be tested to improve growth rates or meat quality.</p>	AQD
<p><b>5. Mud Crab and Shrimp Domestication</b></p> <p>Concerning shrimps, activities will be continued to domesticate the broodstock of indigenous species of shrimps (<i>P. monodon</i> and <i>P. indicus</i> and <i>P. merguensis</i>), refine the broodstock management and larval rearing techniques of <i>P. indicus</i> and <i>P. merguensis</i>, and adopt environment-friendly techniques and nutritionally efficient diets in aquaculture systems. Efforts will also be made to enhance the capacity of national partners in the region on animal health through the geographic information system. An additional study will also be conducted to assess the nutritional quality of feeds and feedstuffs and their effects on growth, health conditions, immune response, aquaculture production, and environmental degradation of marine invertebrates commonly cultured in the Philippines. The other activities on shrimp include revision of broodstock management and hatchery manual; and preparation of flyers to identify different white shrimp species.</p> <p>Activities on mud crab will focus on domestication of good quality broodstocks, formulation of diets for nursery, grow-out and fattening phases, developing strategies to reduce cannibalism, and verification of nursery technology. As part of the effort to enhance the adoption of mud crab technology, stock assessment and marketing studies of mud crabs in Northern Samar (Philippines) will be conducted. The other activities include revision of hatchery manual; preparation of nursery manual and flyer for the identification of different mud crab species.</p>	AQD

**6. Marine Fish**

AQD

All present studies will continue in 2008. The major proposed activity in the grow-out culture of milkfish, sea bass, grouper, and snapper will be the testing of phased diets (starter, grower, and finisher) to improve the FCR of the present formulated diets. Boosting milkfish broodstock diets with antioxidant vitamins and other nutrients (perhaps HUFAs) for off-season spawning will also be done. Various means to reduce the cost of larval diets for marine fishes will also be pursued. On snail control, the integrated pest management approach to reduce the cost of treating infested milkfish ponds should be tried. The dynamics of zooplankton populations in brackish water ponds for nursery rearing of marine fishes will also be studied in greater depth.

**7. Small-holder Freshwater Aquaculture**

AQD

AQD will continue the studies to refine the broodstock and hatchery management methods for the commercial production of freshwater prawn *Macrobrachium rosenbergii*. Studies to evaluate the reproductive performance and genetic quality of commercially important Philippine stocks of freshwater prawn using DNA markers will also be conducted. Concerning the tilapias, studies to improve the fillet yield will be continued in 2008. New studies on the culture of indigenous freshwater species will also be started. Training modules, and on-the job-training for students and industry practitioners, as well as participation in fairs and exhibits will also be continued. A manual on catfish and the cage culture of *Macrobrachium rosenbergii* is also planned for publication in 2008.

**8. Seaweed Strain Improvement**

AQD

The following activities will be continued in 2008: (1) Propagation of *Kappaphycus* plantlets from callus-like structures by tissue culture, and (2) Seed production of *Kappaphycus*: Sporulation and protoplast isolation. With regard to activity 1, land-sea based based cultivar nursery bank will be established in order to mass produce the regenerants. Any accumulated volume of 'new strains' from the sea-based cultivar nursery bank will be dispersed to DA-BFAR for sea-based nursery bank and finally for distribution to farmers association. Concerning activity 2, mature *Kappaphycus* collected from the wild and allowed to sporulate in the laboratory. This will be grown in the laboratory until enough biomass will be acquired and transferred to the grow-out. Protoplast will also be isolated in *Kappaphycus* to produce young plants.

**9. Aquatic Ecology**

AQD

The Program will continue the following studies initiated in 2007: (1) environmental capacity of Humaron Cove, Igang, Guimaras, and the (2) tangab fishery in Iloilo Strait: Operations, catch volume and species composition, economic importance and ecological impact. With regard to the first study, activities will be expanded to include monitoring of sediment quality parameters. The effects of aquaculture activity on the status of coral reef health will also be looked into. Concerning the 2nd study, activities will also include training workshop for identification of larval and juvenile stages of fishes and other marine organisms; seminar workshop for tangab operators, buyers, beneficiaries, local government regulatory officers and other stakeholders on the economic importance and ecological impact of the tangab fishery; publication of leaflet about the tangab fishery; and formulation of policy recommendation(s) on regulation of tangab fishery.

**ASEAN-SEAFDEC FCG Programs**

**1. Support to the Implementation of the Code of Conduct for Responsible Fisheries in the ASEAN Region**

Secretariat

During 2008 there will be a continued push for the process to establish a Regional Fisheries Management Mechanism by ASEAN Ministers, and in support of the SEAFDEC-Sida Project, individual countries (especially Cambodia) and trans-boundary regions will be given further emphasis for the promotion of integration of fisheries management into habitat management focusing on trans-boundary areas such as the Gulf of Thailand, the Andaman Sea, the Sulu Sulawesi Seas, the Mekong, etc – while the process ensures that the poverty focus is maintained and common understanding are reached between countries and institutions in each of the countries. A number of events are planned for the region to support improved cooperation and mutual understanding among ASEAN-SEAFDEC Member Countries, thereby paving the way for the Regional Fisheries Management Mechanism.

**2. Assistance of Capacity Building in the Region to Address International Trade Related Issues**

Secretariat

In 2008, SEAFDEC plans to continue monitoring international fisheries trade related issues emerging at the international fora, e.g. the Meetings of FAO/COFI and the Sub-Committee on Fish Trade, etc. SEAFDEC will also organize a Regional Technical Consultation on International Fisheries Related Issues (2008) in February 2008 to provide forum for Member Countries to discuss and come up with regional common/coordinated positions on important issues.

### 3. Promotion of Rights-based Fisheries and Co-management Towards Institutional Building and Participatory Mechanism for Coastal Fisheries Management TD

The program comprises two phases. The first phase is the Strengthening Small-scale Fisheries Management through the Promotion of Rights-based Fisheries and Co-management” which was completed in 2006. To further strengthen the institutional building of stakeholders particularly using group user rights and improve coastal fisheries resources in the Southeast Asian region, activities was carried on in 2008 under the second phase on the “Promotion of Rights-based Fisheries and Co-management Towards Institutional Building and Participatory Mechanism for Coastal Fisheries Management” in order to advance the use of rights-based fisheries and co-management using group-user rights for coastal fisheries management. The Project Inception meeting will be organized in April 2008 to discuss and finalize the project activities.

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### 4. Improvement of Fishery Statistics and Information for Planning and Management of Fisheries in the ASEAN Region Secretariat

The primary aim of the project is to improve better understanding and knowledge of fisheries and aquaculture in the region as basis for development planning and management through improved statistics and information systems. To achieve this objective, the project would focus on the improvement of national fishery statistical systems in line with the minimum requirements and the regionally standardized definitions and classifications for fishery statistics to facilitate regional compilation, analysis and data exchange, as well as ways and means to present information in user-friendly manner for management and decision-making. In 2008, the Philippines, and Thailand will continue implementation of activities to develop their Status and Trends of Capture Fisheries and Aquaculture (STF).

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### 5. Responsible Fishing Technologies and Practices (Reduction of Discards and By-catch (Juvenile and Trash) and Negative Impacts of Fishing Practices on Fisheries Resources and Ecosystem in Southeast Asia) TD

Responsible Fisheries Technology and Practice project will emphasize on research and development of selective fishing gears and devices to reduce discards and by-catch of juvenile and trash. Activities also include the promotion of the use of selective fishing gears and selective devices via multi-media packages. Research and study to assess the impacts of various kinds of fishing gear and practices on fisheries resources, sea beds, environment and ecosystem, i.e. impacts from light fishing on fisheries resources, and impacts from bottom trawl net, dredges, traps and others to the ecosystem. Interaction between threatened species of international concern and fisheries would be investigated. Participation of project staff in international meetings to promote activities implemented in the region, and exchange information with other organizations is also proposed as part of this project.

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### 6. Sustainable Utilization of Potential Fisheries Resources and Reduction of Post-harvest Losses TD

Evaluation of the potential resources of some economically species in the un-trawlable grounds in the Andaman Sea will be implemented in Indonesia, Thailand and Myanmar through the collaborative research program using the M.V. SEAFDEC 2 and other research vessels. The project will develop and promote the appropriate/responsible fishing gears and practices to harvest fisheries resources in the un-trawlable grounds, such as trap and bottom longline, etc. Appropriate fish handling techniques at sea to reduce the post-harvest losses would also be studied. In addition, the workshop on potential resources of some economically species on the un-trawlable grounds in the Andaman Sea will also be organized.

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### 7. Development of Technologies and Human Capacity Building for Sustainable Aquaculture AQD

The program is intended to address relevant technologies for sustainable aquaculture in the region. The problem areas focus on broodstock development, genetic improvement, seed production, and culture systems of various priority species for aquaculture, through research and human capacity building. Aside from the initiation of the new project activities such as : 1) Development of tissue culture techniques for mass production of plantlets of new and improved strains of *Kappaphycus*, and 2) Socioeconomic impact on the adoption of sustainable aquaculture technologies in fisherfolk communities, the following activities will be continued in 2008: 1) Improvement for better seed production traits and grow-out characteristics of *M. rosenbergii*, 2) Publication of manual for the determination of commercially important freshwater prawns, 3) Rice-fish aquaculture: Economic study on the fish culture production in rice fields (in Cambodia), 4) Development of strategies to extend the spawning season of sea bass *Lates calcarifer* under captivity, 5) International training courses on marine fish and abalone hatchery, 7) Technical assistance for pilot demonstration on mud crab grow-out culture in Myanmar, 8) Development of Specific Pathogen-Free (SPF) shrimp (*P. monodon*, *P. vannamei*) broodstock, and 9) Domestication of mud crab *S. serrata*.

<p><b>8. Quality Assurance Systems for Small and Medium-sized Fish Processing Establishments in ASEAN Member Countries</b></p>	<p>MFRD</p>
<p>The project involves the development and implementation of GMP/SSOP programs for pre-processing fish products establishments (PPEs) and traditional fish products establishments (TPEs) through pilot projects in participating member countries. It is expected that the activity on GMP/SSOP for PPEs implemented in 2007 would be finalized in 2008. A GMP/SSOP manual will be published, and the End-of-Activity Seminar will be organized. The program on GMP/SSOP for TPEs would also be implemented by participating countries in 2008.</p>	
<p><b>9. Environmental Related Tasks in Southeast Asia</b></p>	<p>Secretariat</p>
<p>Activities to be undertaken in 2008 would mainly focus on the provision of support to Member Countries in the formulation of NPOA-Shark, and the conduct of a regional study on sea cucumbers including species, utilization and trade, especially the possibility in the development of country's initiative or action plan and policy recommendation. A Regional Expert Meeting on Sea Cucumbers will be organized in March 2008. The outcomes from the Expert Meeting and the synthesis of regional study as well as the policy recommendations will be submitted the 40<sup>th</sup> Meeting of SEAFDEC Council and the 16<sup>th</sup> Meeting of the ASWGF<sub>i</sub> for consideration and support.</p>	
<p><b>10. Establishment of Disease Surveillance System of Aquatic Animals</b></p>	<p>AQD</p>
<p>AQD will continue the activities for developing and disseminating a surveillance system for economically-important, emerging diseases of aquatic animals in Southeast Asia together with activities on research and development of new preventive methods for aquatic animal diseases suitable to the region. In addition, the following new activities will be implemented in 2008: 1) Research and analysis of chemical residue in aquaculture product, 2) E-learning course (renewal), and 3) Publication of the Proceedings of the International Workshop on Fish Disease (6-7 December 2007, Bangkok, Thailand) and manuals on fish and shrimp diseases.</p>	
<p><b>11. Chemical and Drug Residues in Fish and Fish Products in Southeast Asia</b></p>	<p>MFRD</p>
<p>The program aims to obtain an understanding on levels of chemical contaminants (heavy metals, pesticide residue, histamine, Chloramphenicol, Nitrofurantoin and Malachite Green) in marine fish and fish products in Southeast Asia and transfer of technology in chemical contaminant testing to Member Countries. In 2008, it is expected that the surveys in all participating countries will be completed and the final report would be submitted to MFRD for collation. An End-of-Activity Seminar would also be organized to report on the program since its implementation in 2004 and to identify the challenges ahead and future plans</p>	
<p><b>12. Research and Development (R&amp;D) of Stock Enhancement for Species under International Concerns</b></p>	<p>AQD</p>
<p>The objectives of the Project are to: (1) develop ecologically sound strategies for stock enhancement including hatchery production and release of genetically diverse and disease-free juveniles; (2) encourage participation of local communities in stock enhancement; (3) develop methods and criteria for monitoring and evaluation of stock enhancement and conservation success; and transfer the stock enhancement technologies and social strategies to the countries in the region; and (4) review past and present stock enhancement programs to conserve threatened species in Southeast Asia. The Project will prioritize the following activities: (1) Research on strategies for sea ranching and stock enhancement of abalone, seahorse, sea cucumber (in Vietnam), angelwing clam and Napoleon wrasse; (2) Verification of developed and established technologies of giant clam; and (3) Training, lecture/seminar and information dissemination on stock enhancement.</p>	
<p><b>13. Research for Stock Enhancement of Sea Turtles</b></p>	<p>MFRDMD</p>
<p>The objectives of this program are: 1) to determine the stock/population of sea turtles in the Southeast Asian region; 2) to provide a guideline for genetic study of sea turtle management in the region; 3) to determine migration pattern of sea turtles and location of foraging habitats; 4) to determine reproduction biology and growth rates of sea turtles; and 5) investigate interaction between sea turtles mortality and fishing activities. In 2008, it is expected that the Third Technical Consultation Meeting will be organized, and the Terminal Report for Stock Enhancement of Sea Turtles would be published.</p>	
<p><b>14. Capacity Improvement of Fisheries Community for Fisheries Management and Alleviation of Poverty</b></p>	<p>TD</p>
<p>Capacity Building of Human Resources and Participation in Integrated Coastal Resources Management in 2008 will include the follow-up works of the Integrated Coastal Resources Management in Pathew District (ICRM-PD), Pulau Langkawi (ICRM-PL) and implement project in Sihanoukville (ICRM-SV) through the conduct of the International training course on coastal fisheries management.</p>	



**15. Support to Tsunami Rehabilitation of Affected Countries in the ASEAN Region**

Secretariat

The process of implementing the basic strategy is to build upon the expressed needs and in the wake of the tsunami, to improve management of fisheries, fishing capacity and to better manage coastal environments, including coastal restoration as needed, as a protection against future hazards while at the same time provide an important element to the sustainability of the fisheries by securing important habitats. Throughout the process of implementation, training sessions will be organized. The general approach to be taken is to pay attention to the interface in moving from restoration and rehabilitation to longer-term management responses. Coordination among regional, international and local organizations is another pillar of the project strategy, including institutions that are concerned with environment and conservation issues, as well as those mandated to consider the production and sustainable use of the natural resources and fisheries in the affected countries.

**16. Fisheries Resource Survey and Operational Plan for M.V. SEAFDEC 2  
Proposed Operational Plan of MV SEAFDEC2 for 2008 (endorsed in the PCM)**

TD

No.	Item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Requested by	Main Activity	Remarks
1	Stock Assessments on demersal and pelagic, northern part of Makassar Straits													Indonesia, RCCF	Bottom Trawl and mid water trawl, acoustic survey, oceano	Postponed from 2007
2	Fishery resource (demersal) survey on continental shelf and deep water in the VISAYA sea, the Philippines													Philippines, BFAR	Bottom Trawl, acoustic survey, oceano	In collaboration with DA/BFAR
3	HYDROBIOLOGICAL SURVEY IN THE DEEP WATERS OF BRUNEI DARUSSALAM													Brunei, DOF	Bottom Trawl, acoustic survey, oceano	
4	Fishery resources survey on the Continental shelf and slopes in the Andaman Sea													Thailand, DOF	Bottom Trawl, acoustic survey, oceano	
5	Fishery resources survey on the Continental shelf slopes in the Andaman Sea, Myanmar													Myanmar	Bottom Vertical Longline, and Acoustic survey	Waiting for confirmation

**17. Deep Sea Fisheries Resources Exploration in the Southeast Asia**

TD

The project will implement activities base on the deep sea fisheries resources survey using the M.V. SEAFDEC 2, deep sea ecosystem and its impact from fisheries, development/improvement of the deep sea fish sampling gears and HRD Program on deep sea research and sampling/ eco-system via training, and organize workshop as well as produce information multi media for dissemination to member countries.

**18. Tagging Program for Economically Important Pelagic Species in the South China Sea and Andaman Sea**

MFRDMD

The program is expected to be implemented from 2007 to 2011 in response to the requirements for information on "migratory shared stock" for stock assessment and fisheries management. In 2008, tagging operation will be conducted in the South China Sea and the Andaman Sea. Information on number of fish tagged and recaptured will be collected; and supplementary information on status of FADs operation and Sardine catch will be compiled and analyzed. The Second Core Expert Meeting will also be organized to discuss the project progress and formulate final research plan for 2009 and onwards.

**19. Promotion of "One Village, One Fisheries Products (FOVOP)" System to Improve the Livelihood for the Fisheries Communities in ASEAN Region**

Secretariat

Implementation of the project is expected to start in 2008. Activities will begin with the first RTC on the Promotion of FOVOP to discuss among the regional participants the project objectives, policy and activities, share the experience from Japan and Thailand in development of local products, and identify required financial resources for the conduct of activities. Based on the RTC outcomes, training materials would be developed and HRD activities would be conducted to motivate local community to take leading role in FOVOP development; and case studies would be implemented in selected sites of the Member Countries.

**20. Information Collection of Highly Migratory Species in Southeast Asia Waters** TD

Information Collection of Highly Migratory Species in Southeast Asia Waters project for 2008 will focus on the information gathering of tuna species in the South China Sea and the West Central Pacific Ocean whereas the areas include many sea areas in the EEZ of SEAFDEC member countries particularly the Philippines, Vietnam and Indonesia that have high potentials for tuna harvesting. The main objectives of the project are to clarify and assess status of tuna fisheries in the mentioned areas through various methods of information gathering in close collaboration with the concerned member countries. Through the assistance of national focal point and closed collaborative work with the member countries, long term tuna fisheries management plan would be discussed and developed in the later stage.

**21. Development of Regional Database for Fishery Management** TD

One of the best fisheries management tools is to have their own database management system in data collection whether fishery statistic system or database for actual fishing activity. In the project make use of our expertise by developing the Regional database and introduce to member countries especially less developed countries will be implemented. In directly, this will facilitate the present and future data collection in long term. In addition, the project will also focus on the database for tagging program under the “Tagging program for Economically Important Species in the SCS and Andaman Sea” managed by MFRDMD in collaboration with TD.

### Other Programs/Activities

**1. Promotion of Set-Net: and Eco-friendly Fishing Gear of Sustainable Coastal Fisheries Management** TD

The Set-Net Project in 2008 will give technical assistance to the Indonesian set-net project; introduce the shallow water type set-net “Choko-ami” to manage the fisheries resources in mariculture farming sites in the coastal areas. One regional training course on Set-Net fishing technology transfer for Sustainable Coastal Fisheries Management will be organized for two weeks.

**2. Information Collection for Economical Important Species: as Surimi Raw Materials** TD

In cooperation with the technical working group on data/information gathering, the observation program on commercial fishing boats in different fishing grounds of member countries will be conducted under the project in 2008.

**3. Promotion of Sustainable Freshwater Aquaculture for Rural Communities** Sec

Based on experience in conducting the 1<sup>st</sup> Joint Regional Training on Community-based Aquaculture in Remote Rural Areas of Southeast Asia in 2007, a preparatory meeting among various organization and resource persons will be organized in 2008 to discuss the plan for the 2nd Joint Regional Training. Training will be conducted for the extension staff from each member country, and field work practice and visits to communities will be organized. The Training Handbook as a major output from the 1st training would also be published and used as key training materials and reference for the second training.

# **Collaboration** with Non-member Governments and other Organizations





## Collaboration with Non-member Governments and other Organizations

### Action for Community Empowerment Association Inc. (Philippines)

SEAFDEC AQD and a non-government organization, Action for Community Empowerment Association Inc (ACE) have mutually agreed last 14 June 2007 to implement the Community Agricultural Technologies Project on 'Enhancing Adoption of Mud Crab Production Technologies in Northern Samar. The project which has a duration of 2.5 years is expected to extend technologies developed during the ACIAR-funded project: Development of improved mud crab culture systems in the Philippines and Australia to 325 fisherfolk households in four municipalities in Northern Samar.

### ASEAN Foundation

Since 2005, SEAFDEC has received financial support from the ASEAN foundation through the ASEAN-Japan Solidarity Fund for implementation of a project entitled "Human Resource Development for Sustainable Fisheries in BIMP-EAGA Region". The project has been implemented from 2005 to 2007, aiming to develop human resource capacity of the relevant government staff by mobilizing existing sub-regional works and exchange of experiences among the target countries in planning and conduct of HRD activities particularly targeting SME sector in three main areas: 1.) marine capture fisheries, 2.) aquaculture, and 3.) post-harvest technology.

In October 2007, SEAFDEC was informed by the ASEAN Foundation of the approved new project on "Promotion of One village, One Fisheries Products (FOVOP) system to Improve the Livelihood of Fisheries Communities in ASEAN Region" to be executed by SEAFDEC for 24 months starting in October 2007 with financial support from the ASEAN Foundation. Under this new project, since the lack of livelihood in the fishing communities has been identified as one of the major constraints in achieving sustainable fisheries, the current overcapacity situation that will lead to rural poverty can only be alleviated if rural economy is practically activated and improve at community level. The project therefore aims to promote FOVOP through the mobilization of women's groups in the communities to improve the fisheries livelihood.

In addition to this, two projects have been submitted by SEAFDEC for consideration by the ASEAN Foundation: 1) Human Resource Development (HRD) on Poverty Alleviation and Food Security by Fisheries Intervention

in the ASEAN Region (2008-2010), and 2) Awareness Building on Sustainable Development of Fisheries in the ASEAN Region (2008). For the first project, emphasis would be given to the rural areas and fishery communities in the ASEAN region. The project aims to provide support to alleviate poverty by fisheries intervention by mobilizing regional experiences and information exchange. HRD on various thematic fisheries areas would be identified and provided based on the local needs. For the second project, activities would be conducted to raise the profile of ASEAN in promoting sustainable fisheries development and commemorate the 40<sup>th</sup> years of collaboration between ASEAN and SEAFDEC, i.e. through production and dissemination of publications, posters, and video documentary in relation to sustainable fisheries development in the ASEAN.

### Asia-Pacific Fisheries Commission (APFIC)

SEAFDEC joined the APFIC Regional Workshop on Managing Fishing Capacity and IUU Fishing in the Asian Region, in June 2007. The workshop aimed at promoting increased awareness, understanding and action on the one of most fundamental tenets of fishing – ensuring that fishing efforts are commensurate with the productive capacity of the fishery resource and their sustainable utilization. Subsequently, SEAFDEC participated in the workshop to support the implementation of the RPOA to promote responsible fishing practice including combating IUU fishing in the region, in November 2007.

SEAFDEC took active part in the regional workshop on Certification arranged by the APFIC Secretariat in Ho Chi Minh City, 18-20 September 2007. The SEAFDEC-Sida Project presented a paper regarding their current work on labelling in small-scale fisheries together with a poster on the same theme. The issues for discussion and of concern for the region were: Regional involvement in Certification; Small-scale fisheries and farmers; Harmonization and equivalence of Certification schemes; Costs and benefits of Certification schemes; Governance and stakeholder involvement; and Capacity building at both regional and national levels.

Since 2005, SEAFDEC joined the Consortium to Restore Shattered Livelihoods in Tsunami-Devastated Nations (CONSRN) partners, which was initiated by FAO/RAP. The partners are committed to assist in the delivery of information for the assessment of impact and delivery of assistance for rehabilitation.



*The regional workshop on Certification arranged by the APFIC Secretariat in Ho Chi Minh: plenary session (top); and group discussion (above)*

At the important event for the ASEAN-SEAFDEC Member Countries to move towards the establishment of a regional fisheries management mechanism/body, APFIC introduced a model for the ASEAN Fisheries Management Mechanism at the ASEAN-SEAFDEC Regional Technical Consultation/Workshop on the Concept of an ASEAN Fisheries Development and Management Mechanism held in Bangkok 2007.

## Association of the Southeast Asian Nations (ASEAN)

Since 1998, SEAFDEC has established collaboration with ASEAN through the ASEAN-SEAFDEC Fisheries Consultative Group (FCG) Mechanism, and various collaborative activities have been implemented under the FCG programs. In November 2007, during the 29<sup>th</sup> Meeting of the ASEAN Ministers for Agriculture and Forestry, collaboration between ASEAN and SEAFDEC has been formalized through the signing of the Letter of Understanding on the ASEAN-SEAFDEC Strategic Partnership (ASSP). The ASEAN-SEAFDEC collaboration is envisaged to enhance closer collaboration between ASEAN and SEAFDEC in the promotion of sustainable fisheries development in Southeast Asia.

Through the establishment of ASSP, SEAFDEC would act as an executing body for ASEAN regional fisheries programs. SEAFDEC would also assist the ASEAN Sectoral Working Group on Fisheries (ASWGF) in formulating program proposals for the subjects required and proposing them to relevant donor agencies for their consideration. Currently, in addition to the ASEAN-SEAFDEC FCG programs, two proposals have been proposed under the ASSP framework: 1) ASEAN-SEAFDEC Cooperation in the Implementation of the ASEAN Roadmap for Integration of the Fisheries Sector, and 2) Concept for the Establishment of a Regional Fisheries Development and Management Mechanism for Southeast Asia.

The Regional Consultation and Workshop on the Concept for the establishment of an ASEAN Fisheries Development and Management Mechanism” was convened in Bangkok, Thailand from 6 to 8 November 2007; while the ASEAN-SEAFDEC Regional Workshop on Cooperation in the Implementation of the ASEAN Roadmap for Integration of the Fisheries Sector is planned to be organized in Bangkok, Thailand from 16 to 18 January 2008.





*The Secretary-Generals of SEAFDEC and ASEAN are signing the Letter of Understanding on ASSP*



*SEAFDEC senior officials at the SEAFDEC exhibition at the 29<sup>th</sup> AMAF*

## **Australian Maritime College (AMC)**

The cooperation between SEAFDEC and Australian Maritime College (AMC) started in 2000, with the MOU between the two institutions signed on 17 November 2000. The cooperation focuses on cooperative programme promoting education, training and applied research in aquaculture, fisheries and post-harvest technology. In 2007, SEAFDEC and AMC agreed to collaborate on Human

Capacity Building through the program of “Master of Applied Science in Living Marine Resources”. ASEAN student are the target of this program. The course will take 1.6 years in 3 semesters duration. For the first and the third semesters, students will take courses at AMC. SEAFDEC will be responsible for the practical session/ on the study training for the students during the second semester of the program.

## **Chinese Academy of Fishery Sciences**

SEAFDEC AQD and the Freshwater Fisheries Research Center (FFRC) of the Chinese Academy of Fishery Sciences, Wuxi, China signed a Memorandum of Understanding on 26 April 2007 to collaborate on the following areas of common interests: (i) feed development and disease control, particularly on the use of herbal extracts as feed additives or as immunostimulants, (ii) breeding of freshwater prawn and tilapia, (iii) manipulation of the water environment through the use of probiotics, (iv) socio-economic impact of aquaculture in the lakes of both countries, (v) training of one or two nominees from AQD in China, and (vi) exchange visit of staff.

## **Coordinating Working Party on Fishery Statistics (CWP)**

Under the collaborative framework between SEAFDEC and CWP, the capacity of the Member Countries in implementing activities related to statistics compilation has been strengthened. This collaboration also paves the way for the improvement of the quality of fishery statistics as this has enhanced the development and harmonization of common definitions, classifications and standards in the region.

From 27 February to 2 March 2007, SEAFDEC participated in the 22<sup>nd</sup> Session of the Coordinating Working Party on Fishery Statistics (CWP22) in order to present the uniqueness of fishery statistics and information development and requirements of the ASEAN region. A major issue proposed by SEAFDEC for the CWP22 was the proposed adjustment of the geographical areas for reporting fishery statistics under the



new framework of the SEAFDEC Fishery Statistical Bulletin (areas 57 and 71 between border of Indonesia and Malaysia). Other issues were the termination of MoU (between SEAFDEC and FAO) for collation of Tuna Statistics in Southeast Asian Region (FAO Statistical Area 71 adjacent to Brunei Darussalam, Malaysia, the Philippines, Singapore, Thailand, Vietnam, Indonesia, and Australia); development of aquaculture statistics and its standards; and the collaboration in FishCode-STF Partnership. SEAFDEC also presented to the CWP22 the newly approved project on “Towards Better Utilization and Harmonized Information for Fisheries Management in Southeast Asia (2007-2009)”. The project will be used as basis for collaborative activities with CWP, FAO and other RFBs on issues relating to fishery statistics and information.

## Fisheries Resources Monitoring System (FIRMS)

Since December 2004, the collaboration between SEAFDEC and FIRMS in the promotion of management for sustainable fisheries in the ASEAN Region has been continued. Following FIRMS mechanism, the cooperation has facilitated the collection of fisheries status and trend information, as important tools to support planning and management of fisheries.

Under the partnership arrangement, a representative from SEAFDEC Secretariat as member of the FIRMS Steering Committee participated in the Fourth Session of FIRMS Steering Committee Meeting (FSC4) in February 2007. The FSC4 reviewed the past FIRMS activities including reports on the case studies/prototypes, training or skills development, promotional activities, etc., and the results would be used as a basis for SEAFDEC to make steps forward in fulfilling the collaborative arrangement.

In December 2007, a representative from FIRMS participated in the Regional Technical Consultation on Fishery Statistics and Information in Southeast Asia organized in Bangkok, Thailand, and provided inputs on the fishery statistics and information collected by the ASEAN Member Countries and compiled by SEAFDEC to be harmonized with international standards, and the collection of statistics by Member Countries for submission to SEAFDEC to be streamlined with that for the FAO.

## Food and Agriculture Organization of the United Nations (FAO)

TD collaborated with FAO for the organization of the SEAFDEC-FAO Workshop on Assessing the Relative Importance of Sea Turtle Mortality Due to Fisheries in Southeast Asia at Bangkok, Thailand during 19-23 March 2008. The workshop was aimed at reviewing the conservation status of the main sea turtle stocks

in Southeast Asia; reviewing the regional situation of sea turtle by-catch in coastal and offshore fisheries; reviewing fisheries management actions and tools to reduce sea turtle mortality; collating sea turtle population data, including distribution, main sources of man-made and natural mortality; estimating the relative importance of fishery-related mortality through modelling and identifying data gaps; and providing guidance on existing sampling programmes to improve the information base

## Hokkaido University, Japan

A Collaborative Arrangement between SEAFDEC and the Faculty of Fisheries Science, Hokkaido University (FFS-HU) was established in February 2006 in the field of research, training and related areas of mutual interest. On 7 February 2007 in Chiangmai, Thailand, SEAFDEC hosted the first discussion to identify the possible areas of cooperation and collaboration mechanism between the two institutions, and exchange information on background and scope of activities of each institution, with the participation of SEAFDEC Secretary-General and senior officials of the Secretariat and Departments as well as representatives from the Member Countries.

To facilitate further discussion in greater details, the second meeting was organized on 19 March 2007 in Bangkok, Thailand. As major outcomes, the Meeting identified



The first and second meetings on SEAFDEC collaboration with Hokkaido University, held in Chiangmai (top) and Bangkok, Thailand (above)





*The visit of intern from Hokkaido University to a surimi factory in Thailand*



*Discussion to identify possible areas of collaboration between SEAFDEC and Maejo University at SEAFDEC Secretariat*

various scopes and areas of potential collaboration. These include participation of FFS-HU to training courses and technical meetings organized by SEAFDEC, HU's graduate school for SEAFDEC researchers, cooperation and technical assistance from FFS-HU in hydroacoustic survey and remote sensing technology, fish taxonomy and species identification, genetic study of species for stock enhancement, technology for Surimi production, as well as development and transfer of technologies, e.g. automated vaccination machine for resource enhancement, shark fin identification, remote camera for deep sea, and surrogate aquaculture concept and technology, etc., to enhance the existing SEAFDEC activities.

During the year, from 22 August to 19 September, a graduate student from Hokkaido University also joined SEAFDEC Training Department as an intern. He participated in TD project activities, collected information from surimi companies in Thailand, and the data obtained from the activities would form part of his thesis on trade of surimi resources in Southeast Asia

## **Maejo University, Thailand**

In May 2007, SEAFDEC Secretary-General signed a Memorandum of Understanding with the Maejo University to develop a joint program promoting education, training and applied research in fisheries sector. In a broader scope, it is envisaged that the collaboration between the two institutions would enhance human resources development, research activities, and information development and sharing among the two institutions.

To follow-up the MoU, on 14 June 2007, a mission from Maejo University, comprising seven faculty members, made a brief visit to SEAFDEC Secretariat to discuss the current activities of both institutions, and identify potential areas of collaboration. These includes: joint development of curriculum for university students, participation in SEAFDEC activities of interest including on-the-job training and training courses organized by SEAFDEC Departments, co-organizing technical

meeting/seminar (i.e. Maejo annual technical seminar to be organized end of 2007, and other regional meetings). In addition, the two institutions would also explore the possibility of also enhancing the collaboration between Maejo University with other institutions/organizations currently collaborating with SEAFDEC.

## **Petron Foundation Inc. (Philippines)**

SEAFDEC AQD forged on 13 June 2007 a one year agreement with the Petron Foundation, to collaborate on a demonstration project on milkfish cage culture as livelihood option for communities in Guimaras Province (Western Philippines) affected by the oil spill. Under the terms of agreement, Petron Foundation will provide funds for the construction and operation of fish cages and operational costs for milkfish culture. AQD, on its part, will, among other things, provide an area in its Igang Marine Substation for the project, provide on-site training and administer the technical, administrative and financial aspects of the project.

## **Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA)**

The Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), an international organization duly organized under the Southeast Asian Ministers of Education and Organization (SEAMED) and SEAFDEC AQD have entered into institutional cooperation for another 3 years. The two institutions have agreed to cooperate in a number of areas to pursue common education, training, and research objectives. Under the new partnership agreement, the two institutions have agreed to jointly undertake programs, projects and other related activities of mutual interest, exchange scientific information, publications and execute separate agreements for any particular undertaking that will be jointly implemented. The MoU was signed last 11 April 2007.

## **Swedish Board of Fisheries (SBF)**

With the financial support from Sida through SBF since 2003, SEAFDEC Secretariat has implemented the project on “Human Resource Development on the Support of Implementation of the Code of Conduct for Responsible Fisheries Management for the ASEAN Region” under ASEAN-SEAFDEC Fisheries Consultative Group Mechanism.

The focus of the activities in 2007 was on: promotion of regional fisheries management body, integration of fisheries and habitat management, supporting sustainable fishing/eco-labels, understanding size and structure of large-scale fisheries in the region, and promotion of a system for monitoring and recording of coastal fisheries activities in the region.

SBF supported the participation of Mr. Bengt Kåmark to the ASEAN-SEAFDEC Regional Fisheries Management Mechanism Workshop to share the experiences on establishing such regional management mechanisms in northern Europe. Mr. Martin Bjerner, Associate Expert supported by Sida through SBF has been stationed at SEAFDEC since 2005, taking lead role on issues related to certification and eco-labels, monitoring, control and surveillance (MCS) for fishing vessels. SBF also supported Ms. Ann-Mari ASP from Sweden, as well as the Regional Fisheries Policy Network for Malaysia, Cambodia, Thailand and Indonesia to work with the SEAFDEC-Sida project.

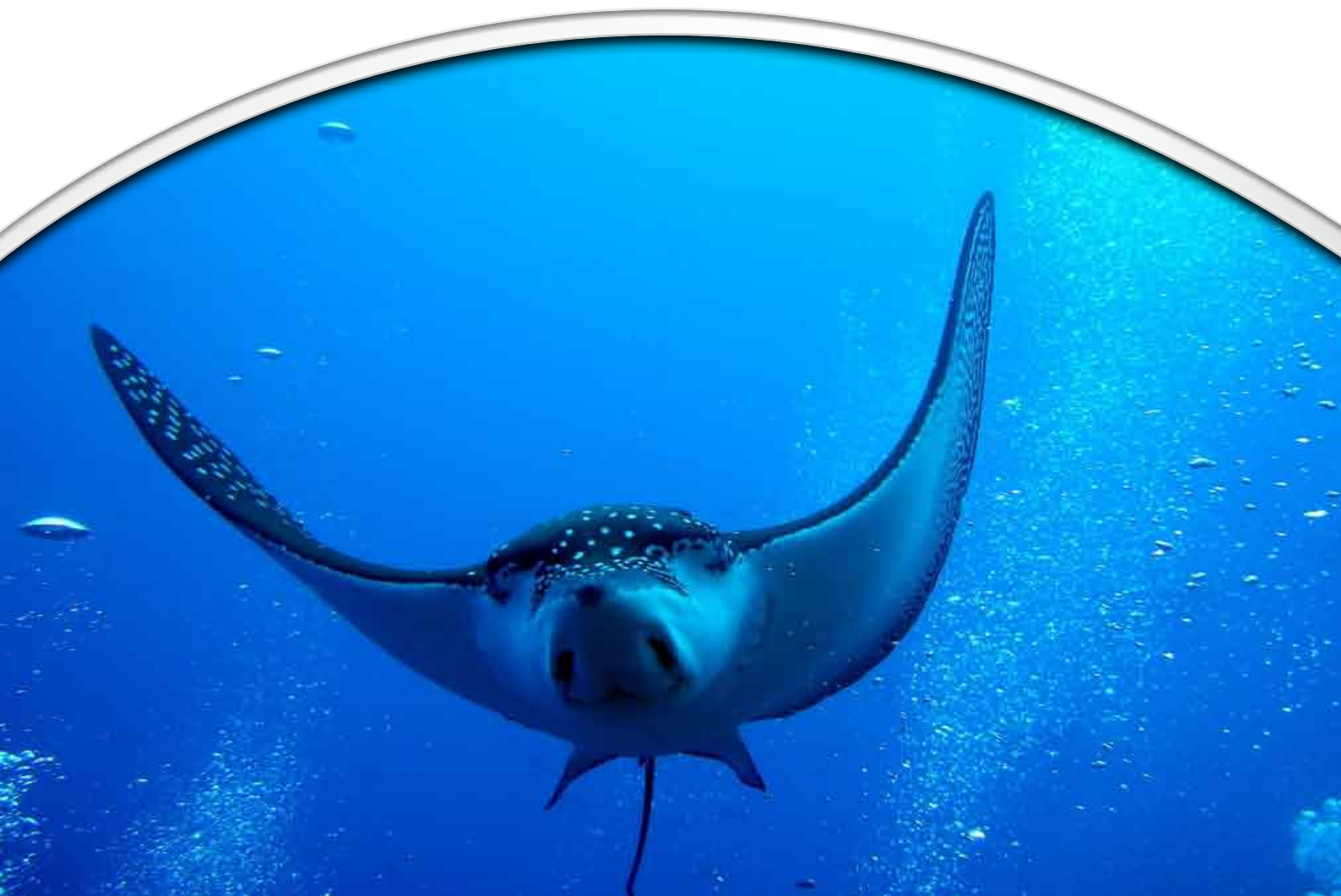
With the future support from Sweden to SEAFDEC from 2008 and onwards, the SEAFDEC-Sida project will

continue supporting the process to establish a regional fisheries management mechanism in Southeast Asia, promoting capacity building for management of fisheries and important coastal habitats (refugia) and protection against natural hazards, understanding on the size and structure of large-scale fisheries, and enhancing capacity to monitor and record active fishing efforts in coastal fisheries.

## **United Nations Environment Programme/ Global Environment Facility (UNEP/GEF)**

In the year 2007, SEAFDEC collaborated with UNEP/GEF in the organization of two training workshops. These are the “Regional Training Course on Larval Fish Identification and Fish Early Life-History Science”, 16-31 May 2007. This joint training workshop aimed to build national teams and a regional network of fisheries practitioners skilled in the collection, processing and identification of larval and juvenile fish. It is expected that these individuals will play an important role in the processing of larval and juvenile fish samples required to enhance the scientific basis for the identification of important fish spawning and nursery areas to be included in a regional system of fisheries refugia. The second is the “Regional Training Workshop on the Establishment and Management of Fisheries Refugia in the South China Sea and Gulf of Thailand”, during 28 October - 7 November 2007. This regional training workshop aimed to build regional capacity for the future development of the regional system of fisheries refugia in the South China Sea and Gulf of Thailand. There are 25 participants from 9 different countries who participated in this workshop.

# Annexes





## Resolution on SEAFDEC Strategic Plan

**We, the Council Directors of SEAFDEC who met in Bandar Seri Begawan, Brunei Darussalam in the Thirtieth Meeting of the Council of SEAFDEC on 17-21 March 1998,**

Recalling the Council's directives given at the Twenty-eighth Meeting, held in Chiang Mai, Thailand from 9 to 12 April 1996 and the Special Consultative Meeting held in Bangkok to mark the 30<sup>th</sup> Anniversary of SEAFDEC establishment;

Also recalling the required set of various international fisheries instruments, including the United Nations Convention on the Law of the Seas (UNCLOS), the FAO Code of Conduct for Responsible Fisheries, and the Kyoto Declaration on the Sustainable Contribution of Fisheries to Food Security;

Noting the broad array of complex and pertinacious problems facing SEAFDEC and other regional and international organizations;

Recognizing the 30<sup>th</sup> Anniversary of SEAFDEC as an opportune time to review its policies and its operation in light of the evolving regional and international scenarios.

Also recognizing the fact that coastal states must mobilize support from other states to effectively safeguard against unfair treatment which may jeopardize the national or regional fishery resources sustainability, particularly in the areas of:

- Responsible fisheries;
- Fish trade and environment;
- Integrated coastal zone management;

Deeply concerned that international fisheries consensus are reached with little or no recognition of the geo-physical, socio-economic and cultural heterogeneity that shape the fisheries resources and the practices in fisheries of all nations in different ways;

Mindful that appropriate action should be taken soon, SEAFDEC will further enhance effectiveness in discharging its required mandate to meet with the evolving fisheries situation;

Affirming that an effective and integrated approach to fisheries management with due emphases on those for coastal fisheries will result in long-term and significant gain in food supply, income and wealth as well as in economic growth;

Also affirming that the question of fishery resources sustainability needs to be addressed adequately because Asia still depends heavily on fish as source of animal protein, and that fisheries development provides a firm

guarantee for the continued availability of a dependable food source, which must be safely secured;

Recognizing that SEAFDEC is ready to play a role as a regional collaborative platform for all its member countries and other Southeast Asian countries;

Reaffirming SEAFDEC's commitment towards closer working relations, collaboration and co-operation with ASEAN for sustainable development;

Also recognizing that SEAFDEC, in its 30 years of existence, has proven to be practical and professional in many tangible aspects of fisheries technology, in its wealth of information about the national fisheries development programs, its familiarity with the problems faced by its Member Countries and other countries in Southeast Asia;

Also recognizing that the multi-disciplinary approach appears to be most effective in solving the fisheries problems;

Aware of the fact that all SEAFDEC member countries are in high and middle levels of economic development can still benefit from some forms of intra-regional collaboration similar to the so-called "South-South Collaboration";

Resolve that the following strategies, could be used as guides to realize the goal set by the SEAFDEC mandate:

### Strategy

- Placing emphasis on regional issues and anticipated external problems.
- Promoting efficient and sustainable uses of fisheries resources
- Facilitating intra-regional exchange of expertise and information.
- Strengthening mechanisms for regional collaboration.
- Avoiding duplication of efforts.
- Increasing visibility of SEAFDEC activities.

### Action Plan of the Resolution on SEAFDEC Strategic Plan

#### PROGRAM FORMULATION

- Taking a regional approach to program formulation in response to anticipated global threats.
- Retaining programming categories in research, training and information.
- Establishment of a SEAFDEC Working Group on Regional Fisheries Policy.
- Strengthening information exchange program.

#### PROGRAM IMPLEMENTATION

- Promoting the exchange of expertise among member countries.
- Preparing a Center wide staff development plan.
- Practising cost effectiveness policy in program implementation.
- Devising program performance monitoring and enhancing program visibility.
- Taking advantage of Information Technology in inter-Department and regional communication.

#### INTERIM MEASURES

- Keeping the 1998-2000 programs as platform for change.
- Identifying capable national and regional institutions for partnership.
- Strengthening collaboration and co-operation with ASEAN
- Proposing program revisions toward a new direction wherever necessary.
- Preparing the 2001-2003 programs for the approval of the Council at its 1999 annual meeting.

## **Resolution on Sustainable Fisheries for Food Security for the ASEAN Region**

**We, the Ministers of ASEAN-SEAFDEC Member Countries who are responsible for fisheries, met in Bangkok, Thailand on the occasion of The ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security in the New Millennium: “Fish for the People”, on 24 November, 2001,**

Recalling the principles of the ASEAN Vision 2020 and the initiatives agreed upon by the ASEAN Member Countries under the Hanoi Plan of Action;

Recognizing the importance of sustainable fisheries for food security and the livelihoods and well-being of the ASEAN people;

Noting the provisions of international declarations and instruments on food security, fisheries, ocean governance, trade, and the aquatic environment;

Conscious of the growing demand for fish and fishery products and the need to secure sustainable fish supply for food security for each ASEAN Member Country;

Aware of the increasing pressures on ASEAN’s aquatic environment and fisheries resources from fisheries and non-fisheries activities, that may negatively impact on the livelihoods of the ASEAN people, in particular the poor and disadvantaged segments of society;

Considering the benefits of current and future fisheries cooperation among ASEAN-SEAFDEC Member Countries to promote sustainable fisheries in ASEAN Member Countries; and,

Deciding that the issues identified through the national and regional participatory processes in preparation for the above Conference and those identified at the Conference should be given priority;

DO HEREBY RESOLVE, without prejudice to the sovereign rights, obligations, and responsibilities of our countries under relevant international laws and arrangements, to:

1. Formulate regional guidelines to implement the Code of Conduct for Responsible Fisheries, taking into account the specific social, economic, cultural, ecological and institutional contexts and diversity of ASEAN fisheries;
2. Cooperate to identify constraints and enhance collaboration among government agencies, which have responsibility for fisheries and fisheries-related issues, in order to harmonize policies, plans and activities which support sustainable fisheries at the national and regional levels;
3. Acknowledge the need for enhanced human resource capabilities at all levels and encourage greater involvement by stakeholders to facilitate consensus and compliance in achieving sustainable fisheries;
4. Mobilize regional technical cooperation to reduce disparities and promote solidarity among ASEAN Member Countries;
5. Encourage effective management of fisheries through delegation of selected management functions to the local level;
6. Recognize the need to progressively replace “open access” to fisheries resources with “limited access regimes” through the introduction of rights-based fisheries which may also facilitate the management of fishing capacity and promote the use of responsible fishing gears and practices;
7. Strengthen national fishery statistical systems and maximize their use for fisheries planning and management and develop standard definitions and classifications to facilitate regional fishery statistics and information exchanges;
8. Emphasize the importance of inland fisheries and aquaculture in planning and policy formulation to improve food security and the livelihoods of rural people;
9. Work towards the conservation and rehabilitation of aquatic habitats essential to enhancing fisheries resources;
10. Mitigate the potential impacts on the environment and biodiversity, including the spreading of aquatic animal diseases, caused by the uncontrolled introduction and transfer of non-indigenous and exotic aquatic species;
11. Promote the maximum utilization of catch, including the reduction of discards and post-harvest losses to increase fish supply and improve economic returns;
12. Increase aquaculture production in a sustainable and environment-friendly manner by ensuring a stable supply of quality seeds and feeds, effectively controlling disease, promoting good farm management and transferring appropriate technology;
13. Promote aquaculture for rural development, which is compatible with the rational use of land and water resources, to increase fish supply and improve the livelihoods of rural people;

14. Improve post-harvest technologies to ensure fish quality assurance and safety management systems, which are appropriate for small and medium-sized enterprises in the region, taking into account the importance of traditional fish products and food security requirements;

15. Strengthen the joint ASEAN approaches and positions on international trade in fish and fishery products indigenous to the region by harmonizing standards, criteria and guidelines; and

16. Increase the participation and involvement of ASEAN Member Countries in international fora to safeguard and promote ASEAN interests;

AND DO HEREBY DECIDE,

That the Resolution be implemented as soon as possible and use the Plan of Action adopted by the ASEAN-SEAFDEC Senior Officials as a result of the ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security in the New Millennium: "Fish for the People", held November 19-24, 2001, in Bangkok, Thailand, as a guideline for formulating and implementing programs, projects, and activities through appropriate ASEAN-SEAFDEC mechanisms.



## Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region

**On the occasion of the ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security in the New Millennium: “Fish for the People”, the Senior Officials of ASEAN-SEAFDEC Member Countries met in Bangkok, Thailand on 24 November 2001.**

Guided by the Resolution on Sustainable Fisheries for Food Security for the ASEAN Region, and the need to formulate regional guidelines for the Code of Conduct for Responsible Fisheries, the Senior Officials adopted the following Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region to be used as a guideline to develop programs, projects and activities for the implementation of the Resolution.

### A. FISHERIES MANAGEMENT

1. Establish and implement comprehensive policies for innovative fisheries management, such as the decentralization of selected fisheries management functions to the local level, the progressive introduction of rights-based fisheries management through licensing and community fishing rights, the improvement of vessel registration systems and the development of supporting legal and institutional frameworks.
2. Ensure local consensus building on innovative management measures through consultative processes and create close monitoring mechanisms to support and implement these measures.
3. Take measures to prevent unauthorized fishing and eliminate the use of illegal and destructive fishing gears and practices by building awareness of their adverse impacts, the development and promotion of responsible and selective fishing gears and practices, enforcing regulations and encouraging alternative means of livelihood.
4. Optimize the use of inshore waters through resource enhancement programs such as promoting the installation of artificial reefs and structures, encouraging coordinated and effective planning for coastal fisheries management programs, undertaking environmental impact assessment studies, restocking of commercially important fish species and developing human resources for the implementation of such programs.
5. Review the issue of excess fishing capacity at the national level and recommend where appropriate, measures to improve the registration of fishing vessels, the introduction of rights-based fisheries and the reduction in the number of fishing boats and level of fishing effort using government incentives.
6. Formulate guidelines to promote the use of practical and simple indicators for multi-species fisheries as a substitute for classical fisheries management models within the national fisheries management framework, with particular regard to facilitating timely local level fisheries management decisions.
7. Investigate the potential of under-utilized fisheries resources and promote their exploitation in a precautionary manner based upon analysis of the best available scientific information under rights-based fisheries regimes.
8. Develop and maintain freshwater fisheries through inter-agency coordination of multiple-use water resources and trans-boundary inland fisheries management, promoting awareness of the importance of freshwater fisheries for local food security, rehabilitating and restoring habitats for migratory freshwater fish, restocking indigenous fish species to enhance productivity and encouraging culture-based freshwater fisheries where appropriate.
9. Coordinate and decentralize the collection and use of fisheries related statistical data between the national fisheries and other authorities including those responsible for food security, trade, vessel registration, aquaculture and rural development.
10. Maximize the use of national fisheries statistical systems by focusing on clear objectives and timely results directly related to fishery management decision-making and planning processes.
11. Apply, where appropriate, regionally standardized definitions and classifications for statistical data to facilitate regional compilation, analysis and data exchange.
12. Develop national statistical mechanisms on inland fisheries and aquaculture in order to provide a basis for their development and the exchange of statistical data and related information, with particular emphasis on the catchment approach in international river basins.

### B. AQUACULTURE

1. Ensure that national policies and regulatory frameworks on aquaculture development are directed toward sustainability and avoidance of conflicts by incorporating consultations with stakeholder groups, implementing aquaculture zoning, considering social and environmental impact, and also regulating rights of access to, and use of, open water sites for mariculture.
2. Ensure production of high quality seeds on a consistent and sustainable basis by providing government support for public and private hatchery development and research, developing domesticated broodstocks and fish reproductive technologies, and promoting responsible collection and use of wild broodstock and seed.

3. Promote good farm management practices that reduce effluent pollution load and comply with relevant effluent standards through appropriate treatment.

4. Reduce the risks of negative environmental impacts, loss of biodiversity, and disease transfer by regulating the introduction and transfer of aquatic organisms in accordance with the Regional Guidelines on the Responsible Movement of Live Aquatic Animals and Plants.

5. Improve the efficient use of aquatic feeds by regulating the quality of manufactured feed and feed ingredients, providing guidelines on farm-level food conversion ratios and levels of aquaculture effluents, and supporting research into developing suitable alternative protein sources to reduce dependence on fish meal and other fish based products.

6. Improve capabilities in the diagnosis and control of fish diseases within the region by developing technology and techniques for disease identification, reliable field-side diagnostics and harmonized diagnostic procedures, and establishing regional and inter-regional referral systems, including designation of reference laboratories and timely access to disease control experts within the region.

7. Formulate guidelines for the use of chemicals in aquaculture, establish quality standards and take measures to reduce or eliminate the use of harmful chemicals.

8. Build human resource capabilities for environment-friendly, healthy, wholesome and sustainable aquaculture through closer public and private sector collaboration in research and development, paying particular attention to the emerging need for skills in biotechnology, and effectively implementing aquaculture education and extension services.

9. Promote aquaculture as an integrated rural development activity within multiple-use of land and water resources available through inter-agency coordination in policy formulation, project planning and implementation, stakeholder consultation, extension services and technology transfer.

#### C. SUSTAINABLE UTILIZATION OF FISH AND FISHERY PRODUCTS

1. Introduce and provide support for the development of technologies to optimize the utilization of catch and reduce post-harvest losses, wastes and discards in industrial and small-scale fisheries and processing operations through improved processing facilities, on-board and on-shore handling, storage and distribution of fish and fishery products.

2. Promote the production and preserve the diversity of traditional fish products by assisting producers to secure stable supplies of quality raw materials, to meet food safety requirements and to improve product identity, nutritive value and marketing.

3. Encourage relevant control agencies to coordinate their activities at all levels in applying appropriate legislation regarding the quality and safety of fish and fishery products.

4. Develop and apply fish quality and safety management systems that ensure food safety and support the competitive position of ASEAN fish products on world markets through the implementation, validation and verification of Hazard Analysis and Critical Control Point (HACCP) based systems and improved laboratory practices, and adapting quality and safety management systems so that they may be applied to small and medium enterprises in the ASEAN region.

5. Promote and conduct training programs to upgrade the technical skills and competencies of personnel in the public sector and the fish processing industry in the ASEAN region.

#### D. FISH TRADE

1. Strengthen ASEAN trade policy on fish and fishery products through regional collaboration by harmonizing product standards and sanitary measures with international standards wherever appropriate, working towards harmonized guidelines for fish inspection and quality control systems among ASEAN Member Countries, strengthening fish inspection and quality control systems with regard to food safety and exchanging information on risk analysis.

2. In collaboration with international technical organizations such as the Food and Agriculture Organization of the United Nations (FAO) and the World Trade Organization (WTO), assess the impact of government subsidies on fisheries, particularly on the needs of small-scale fisheries in the ASEAN region and sustainable fisheries.

3. Anticipate and address the potential impacts of eco-labelling of ASEAN fish and fishery products.

#### E. REGIONAL AND INTERNATIONAL POLICY FORMULATION

1. Enhance regional collaboration by developing guidelines, criteria and standards on important fisheries issues to strengthen ASEAN policies and positions and harmonize them with international initiatives and arrangements.

2. Increase participation and involvement of ASEAN Member Countries in international fora and technical committees such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Codex, FAO, Office International des Epizooties (OIE), Regional Fisheries Bodies, and WTO to safeguard and promote ASEAN interests, recognizing that international fisheries policies are increasingly discussed and agreed upon at the global level.

## Statement for the Seminar on ASEAN-Japan Cooperation for Sustainable Fisheries through SEAFDEC

We, Senior Officials responsible for fisheries in ASEAN-SEAFDEC Member Countries, met in Tokyo, Japan on the occasion of “the Seminar on ASEAN-Japan Cooperation for Sustainable Fisheries through SEAFDEC” commemorating ASEAN-Japan Exchange Year 2003, on 5<sup>th</sup> December 2003,

WE HEREBY:

Reiterate our commitment to the policy in achieving sustainable fisheries to support fisheries industries in ASEAN Member Countries;

Confirmed the need for scientific and research based fisheries policies directed towards sustainable fisheries in the ASEAN region;

Expressed our grave concerns on international attempts, including the promotion of anti-fisheries campaigns without supporting scientific evidence, that have negative impacts on the economic and social well being of the people of ASEAN- SEAFDEC Member Countries;

Recognized the importance of the existing ASEAN-SEAFDEC collaborative framework and the role of Japan in the promotion of sustainable fisheries in ASEAN region;

DO HEREBY RECOMMEND:

1. Further strengthening of the role and function of SEAFDEC to support the promotion of sustainable fisheries with particular emphasis on aspects related to human resources development and strengthening of community-based fisheries management in ASEAN Member Countries;

2. Confirming the need to take further actions to implement the “Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region (the Resolution and Plan of Action)” adopted at the ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security in the New Millennium: “Fish for the People” in 2001, and the Regional Guidelines of the Code of Conduct for Responsible Fisheries in Southeast Asia;

3. Conducting a comprehensive review on the progress of the implementation of the “Resolution and Plan of Action” in the ASEAN region by SEAFDEC in consultation with the Member Countries and the ASEAN Sectoral Working Group on Fisheries (ASWGFi), before the next ASEAN-SEAFDEC Fisheries Consultative Meeting (FCG);

4. Enhancing regional technical cooperation among ASEAN-SEAFDEC Member Countries by

involving both government and private sectors through an appropriate framework and logistic arrangement by all possible means with a view to reduce disparities and promote solidarity among the Member Countries, of which priority should be given to the important issues affecting sustainable fisheries development including:

- Human resource development including exchange programs for young scientists;
- Innovative fisheries management;
- Stock assessment and enhancement;
- Disease diagnosis and surveillance on existing highly virulent diseases as well as new emerging diseases such as Koi Herpes Virus (KHV);
- Food safety and quality assurance particularly on analysis and detection of chemical and antibiotic residues; and
- Fishery socio-economics;

5. Strengthening joint ASEAN-SEAFDEC harmonized approaches and common positions on priority issues, including international trade in fish and fishery products, affecting ASEAN-SEAFDEC Member Countries;

6. Increasing the pro-active participation and involvement of ASEAN-SEAFDEC Member Countries through advance formulation of joint fisheries positions and policies to safeguard and promote the interests of ASEAN-SEAFDEC Member Countries in international fora including those of the FAO Committee on Fisheries (COFI), the World Trade Organization (WTO), the Convention on Trade in Endangered Species of Wild Flora and Fauna (CITES), Codex Alimentarius Commission, the World Aquaculture Conference (Indonesia to host the Conference in 2005 in Bali);

7. Formulating joint fisheries positions and policies in close consultation with the ASEAN Expert Group on CITES (AEG-CITES) with the leadership of the Government of Thailand in preparation for the forthcoming 13<sup>th</sup> Meeting of the Conference of Parties of CITES (COP13) to be held in Thailand in October 2004;

8. Enhancing a joint effort in promoting the importance of sustainable fisheries among a wider range of stakeholders of ASEAN-SEAFDEC Member Countries;

9. Considering and adopting “To be the leader in sustainable tropical fisheries for the people” as ASEAN Vision for fisheries development;

AND DO HEREBY DECIDE:

That the above recommendations be submitted to the appropriate ASEAN and SEAFDEC bodies for consideration, endorsement and follow up action.

## **ASEAN-SEAFDEC Plan of Action on Regional Cooperation for the Rehabilitation and Restoration of Fisheries in the ASEAN Tsunami Affected Areas**

**We, the representatives of the fisheries sector of the ASEAN and SEAFDEC Member Countries (the Member Countries), expressed our sincere sympathy to Indonesia, Malaysia, Myanmar and Thailand and their people who are the victims and affected by unprecedented and devastated scale of earthquake and tsunami on 26 December 2004,**

Recognizing the sovereign rights and policy of each affected Member Country and cultural context of coastal community,

Recognizing the different scales of damages of the tsunami impacts in each affected Member Country and their localities,

Acknowledging the importance and guidance given in the ASEAN Declaration on Action to Strengthen Emergency Relief, Rehabilitation, Reconstruction and Prevention on the Aftermath of Earthquake and Tsunami Disaster of 26 December 2004 ,

Recognizing the direction for rehabilitation and restoration of fisheries given in the 2005 Rome Declaration on Fisheries and the Tsunami as well as the initiatives of the Consortium to Restore Shattered Livelihoods in Tsunami Devastated Nations (CONSRN),

Recognizing the major role of SEAFDEC in fisheries development in Southeast Asia and its potential contributions in rehabilitation and restoration of fisheries as well as coastal communities in the Tsunami affected countries in ASEAN region.

Taking into consideration the resource capacity of SEAFDEC and the Member Countries on the scale, timeframe and competency needed for supports to the rehabilitation and restoration of fisheries for the tsunami affected areas,

Hereby agreed the following Plan of Action to assist fishers, fish farmers and their communities on the rehabilitation of their livelihoods and restoration of fisheries:

1. To formulate a regional cooperative framework including strategy and guiding principles to support the affected Member Countries and areas as well as their communities and people.

2. To identify areas of required technical supports based on the assessments made by the respective tsunami affected Member Countries.

3. To identify and mobilize donor supports for the required regional assistance.

4. To develop the required regional program identifying the appropriate scope of work and work plan in consultation with ASEAN and the affected Member Countries.

5. To coordinate the activities with programs developed by other organizations in the same areas on the required regional program.

6. To mobilize technical resources from SEAFDEC Departments and among the Member Countries.

7. To develop a regional information base to monitor the rehabilitation and restoring progress in the affected areas.

8. To continue to collaborate with the activities/ program of the Consortium to Restore Shattered Livelihoods in Tsunami Devastated Nations (CONSRN).

9. To periodically evaluate the progress and impact of the regional programs and report the outcomes to ASEAN and the Member Countries and incorporate the regional programs into the national sustainable fisheries development.

We, further agreed that SEAFDEC implements the above Plan of Action in close consultation with the Member Countries.

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1. Adopted by the Special ASEAN Leaders' Meeting on Aftermath of Earthquake and Tsunami held in Jakarta, Indonesia on 6 January 2005
  2. Adopted by the FAO Ministerial Meeting on Fisheries held in Rome, Italy on 12 March 2005
  3. Comprises of the Bay of Bengal Programme – Intergovernmental Organization (BOBP-IGO), the Food and Agriculture Organization of the United Nations (FAO/RAP), the Network of Aquaculture Centres in Asia-Pacific (NACA), the Southeast Asian Fisheries Development Center (SEAFDEC), and the WorldFish Center (WorldFish).

# Improving SEAFDEC Information Tools and Activities for Enhancing Visibility and Communication

## “Information Strategies for Enhancing SEAFDEC Visibility and Communication”

### I. Background and Rationale

Since its establishment in 1967, SEAFDEC has been supporting Member Countries in the development of fisheries in the region. In 1998, SEAFDEC adopted the “Strategic Plan”, which allows the Centre to embark on new challenges to support Member Countries in response to the new fisheries requirements at international, regional and national levels. Further in 2001, the ASEAN-SEAFDEC Conference on Sustainable Fisheries in the New Millennium: “Fish for the People” adopted the “Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region.” The Resolution and Plan of Action provides the regional policy framework and priority actions in achieving sustainable fisheries in the region. To assist the Member Countries in the implementation of the Resolution and Plan of Action, the Special 5-year Program and other regional programs were initiated under the ASEAN-SEAFDEC Fisheries Consultative Group (FCG) mechanism in collaboration with other international/regional organizations.

Thus, the promotion of effective information and communication has become increasingly important in order to supplement the above directions and efforts. This will come in the form of information exchange and sharing, information dissemination to support/publicize ASEAN-SEAFDEC initiatives as well as common policy and approach on issues of international concern (CCRF, Fish Trade, Conservation, etc.), and raising the SEAFDEC profile at various levels.

Moreover, since the need to formulate Communication and Information Policies aimed at enhancing the visibility of the SEAFDEC was specified in the 1998 Strategic Plan, the 37th Meeting of the Council in April 2005 reiterated that the promotion of SEAFDEC visibility to the public should be incorporated in its programs of activity. Considering the current financial situation, the Council also stressed that raising awareness on SEAFDEC’s roles and its contributions to the development of fisheries in the Member Countries as well as raising the SEAFDEC profile could enhance increased technical cooperation and support from donor countries and funding agencies.

SEAFDEC therefore organized the Sixth Meeting of SEAFDEC Information Staff Exchange Program (ISEP) in December 2005 to discuss ways and means of promoting SEAFDEC visibility and its achievements. The 38<sup>th</sup> Meeting of SEAFDEC Council in April 2006 endorsed the Information Strategies for Enhancing SEAFDEC Visibility and Communication, which was developed during the 6<sup>th</sup> ISEP Meeting to serve as guide for the formulation and implementation of SEAFDEC information activities focused on increasing SEAFDEC

visibility. As recommended at the 38<sup>th</sup> Council Meeting, the subsequent Seventh ISEP Meeting in December 2006 developed the objectives and performance indicators for the Information Strategies, for the consideration of the Council at this meeting.

### II. Objectives

The Information Strategies for Enhancing SEAFDEC Visibility and Communication has the overall objective of providing a common framework for planning information activities by the SEAFDEC Secretariat and the Departments, and promoting cooperation with the Member Countries and other related organizations towards enhancing visibility of SEAFDEC.

Within the overall objective, the specific objectives include:

1. To enhance visibility and public awareness of SEAFDEC at the national, regional and international levels;
2. To strengthen communication within and among SEAFDEC Secretariat and Departments that will enhance SEAFDEC visibility for the benefit of target audience;
3. To continue to provide fisheries information to the public;
4. To promote cooperation with the Member Countries, other fisheries-related organizations in communication, data and information sharing and exchange; and
5. To raise the SEAFDEC profile that will create/increase awareness of donors on SEAFDEC roles and achievements thus drawing them to fund some specific programs and activities of SEAFDEC.

### III. Information Strategies for Enhancing SEAFDEC Visibility and Communication

Based on the Strategic Plan adopted in 1998, the Information Strategies for Enhancing SEAFDEC Visibility and Communication was developed, which envisions that: “SEAFDEC shall be a sustained and unified Centre of Excellence for Tropical Fisheries Information, accessible to all committed to sustainable fisheries development and food security, working for the benefit of its Member Countries, in close collaboration with the ASEAN and fishery related organizations regionally and globally.” Towards this end, the implementation of the Information Strategies for Enhancing SEAFDEC Visibility and Communication is expected to attain immediate and medium-term goals for the benefit of all stakeholders.

### 3.1 Strategic Goals

With the implementation therefore of the Information Strategies for Enhancing SEAFDEC Visibility and Communication, the following goals are expected to be achieved until 2010:

- Increased demand for SEAFDEC information materials by making these materials easily accessible and available to target audience;
- Increased and wide use of SEAFDEC information materials (with clear benefits) by the Member Countries;
- Enhanced partnership among SEAFDEC and other organizations in information development and dissemination;
- Unified outputs and improved organizational image through effective internal and external communications;
- Improved capacity of SEAFDEC information staff meeting professional standards;
- SEAFDEC information activities becoming financially self-reliant; and
- Intensified information dissemination on SEAFDEC role and achievements within and outside the region (stirring increased awareness on SEAFDEC activities) drawing more donors to provide funds for specific SEAFDEC programs.

### 3.2 Strategies

The proposed strategies and required actions (immediate and medium-term) under the Information Strategies for Enhancing SEAFDEC Visibility and Communication are set out below.

Strategy 1: Production of relevant, timely, and useful information materials to meet the requirements of the target audience

Required actions:

- Set up feedback mechanism from target groups
- Streamline the purpose and usage of the existing information tools
- Match the extent of information materials produced with current capacity
- Develop guidelines and standards for quality information materials

Strategy 2: Capacity development of information staff at all levels

Required actions:

- Assess and improve capability of technical and information staff in information development
- Subscribe to relevant information resources and services, and make these available to the staff
- Encourage involvement of information staff in relevant technical work (and vice versa)
- Conduct information staff exchange program among the Secretariat and Departments as well as among other organizations

Strategy 3: Enhance the accessibility of SEAFDEC information to target groups

Required actions:

- Identify target groups, use appropriate information dissemination approaches and categorize information materials in a clear-cut manner (for distribution to specific groups)
- Make use of available SEAFDEC information technology
- Integrated website linking individual Departmental websites maintained by respective Departments
- e-library
- Digitized publications
- Database for exhibition tools/materials (i.e. pictures)
- Facilitate transformation of policy and technical information into layman or popular language
- Promote translation of selected information materials into appropriate languages for wider usage

Strategy 4: Strengthen cooperation and networking with other organizations

Required actions:

- Promote the involvement of other organizations in SEAFDEC activities and keep them updated on their progress
- Support the participation of appropriate SEAFDEC staff in relevant regional/international activities
- Promote partnership to facilitate collaborative work (e.g. MoU), while fully considering information activities
- Promote the development of mechanisms for information exchange between SEAFDEC and the member countries as well as with other organizations (e.g. online workgroup)

Strategy 5: Enhance internal communication and information sharing

Required actions:

- Develop mechanism to document inter-departmental information by linking existing sources and promote close communication among information staff of Secretariat and the Departments (e.g. setting up of a web-based forum)
- Explore the possibility of setting up a unified SEAFDEC e-mail system
- Develop an integrated staff directory (name, position, e-mail, field of work, office telephone)
- Mobilizing Information Officers from the Secretariat and Departments as mechanism to coordinate distribution of SEAFDEC publications

Strategy 6: Raising SEAFDEC image at international, regional and national levels

Required actions:

- Participate in relevant international, regional or national exhibitions
- Promote the outcomes from SEAFDEC efforts through public media (i.e. press statements)
- Produce and widely disseminate SEAFDEC promotional materials (e.g. souvenirs)
- Evaluate the public's awareness about SEAFDEC (e.g. surveys)

Strategy 7: Sustainability of financial support for information and communication activities

Required actions:

- Explore ways to reduce the production and dissemination costs of publications
- Explore the possibility of cost sharing between publications' recipients and SEAFDEC (e.g. cost-recovery, postage)
- Explore the possibility of seeking funds from various sources to support SEAFDEC information and communication activities

Strategy 8: Regular monitoring and evaluation of information activities

Required actions:

- Promote the conduct of annual ISEP meetings as platform for monitoring and assessing the implementation of the strategies as well as for the annual planning of SEAFDEC information programs

### 3.3 Promotion and Implementation

In the implementation of the Information Strategies for Enhancing SEAFDEC Visibility and Communication, the Center-wide Information Network Program (taking into consideration the information and communication programs of respective Departments), serves as inter-departmental platform for planning the SEAFDEC information activities with ISEP as the collaborative mechanism. At the activity level, monitoring of the progress will be conducted on a quarterly basis. At the program level, monitoring of progress and achievements will be conducted on a yearly basis at the annual ISEP meetings. At the strategy level, monitoring and assessment of outcome of the implementation will be conducted every 3 years when areas for improvement will be identified and amendments to the Strategies will be proposed. Thus, the proposed required actions, and roles and responsibilities of parties concerned, which may be undertaken as a whole or in part as deemed necessary, are as follows:

Required Actions and Role of the Secretariat

- Ensure that SEAFDEC information activities are in line with the "Information Strategies for Enhancing SEAFDEC Visibility and Communication"
- Coordinate with SEAFDEC Departments, Member Countries and other regional/international organization in the implementation of SEAFDEC information activities
- Monitor the implementation of SEAFDEC information activities, report to high-level authority of SEAFDEC, and facilitate planning for future activities
- Conduct ISEP Meeting in an annual basis prior to PCM in order that the progress of SEAFDEC information activities as well as the implementation of the "Information Strategies" will be assessed and reported (in a rotation basis)
- Mobilize existing information tool to promote visibility and activities of the Center
- Enhance the promotion of SEAFDEC activities through public media to ensure wider dissemination to the public

- Avail of existing expertise of departments to support information work of other departments, especially in supporting SEAFDEC visibility

Required Actions and Role of the Departments

- Implement information activities in line with the goals and strategies identified in the "Information Strategies for Enhancing SEAFDEC Visibility and Communication"
- Provide required inputs to the Secretariat to support the implementation of SEAFDEC information activities, and enhance SEAFDEC visibility and communication
- Mobilize existing information tool to promote visibility and activities of the Center
- Enhance the promotion of SEAFDEC activities through public media to ensure wider dissemination to the public
- Avail of existing expertise of departments to support information work of other departments, especially in supporting SEAFDEC visibility
- Conduct information promotion activities in host countries

Role of the Member Countries

- Provide required inputs to SEAFDEC as requested to support the implementation of information activities, and enhance SEAFDEC visibility and communication
- Enhance wider dissemination of SEAFDEC information and SEAFDEC visibility, particularly within the Member Countries
- Monitor and provide feedback on SEAFDEC information activities to ensure the effectiveness, relevance and usefulness of the information

Collaboration with Regional/International Organizations

- Promote the exchange information on various aspects, e.g. academic, technical in terms of research and development, fisheries information and statistics, policy planning and management, etc.
- Promote wider dissemination of SEAFDEC information

## IV. Indicators for Enhancing Visibility and Profile of SEAFDEC

Considering the wide range of information and communication activities as well as disparities of capacity and resources at the Secretariat and the Departments, the proposed indicators for enhancing visibility and profile of SEAFDEC are simple and practical to measure. Generic Key Performance Indicators for monitoring and assessment of information and communications include:

- Number of distributed information/access to information by target groups to be measured based on established records (e.g. entries in logbooks)
- Views and responses from and awareness on SEAFDEC of target groups through questionnaire surveys
- Overall assessment by the Member Countries through questionnaire surveys and consultations at SEAFDEC annual meetings





## **Southeast Asian Fisheries Development Center (SEAFDEC)**

### **What is SEAFDEC?**

SEAFDEC is an autonomous intergovernmental body established as a regional treaty organization in 1967 to promote sustainable fisheries development in Southeast Asia.

### **Objectives**

SEAFDEC aims specifically to develop fishery potentials in the region through training, research and information services in order to improve food supply through rational utilization of fisheries resources in the region.

### **Functions**

To achieve its objectives the Center has the following functions:

1. To offer training courses, and to organize workshops and seminars, in fishing technology, marine engineering, extension methodology, post-harvest technology, and aquaculture;
2. To conduct research and development in fishing gear technology, fishing ground surveys, post-harvest technology and aquaculture, to examine problems related to the handling of fish at sea and quality control, and to undertake studies on the fisheries resources in the region; and
3. To arrange for the transfer of technology to the countries in the region and to make available the printed and non-printed media, which include the publication of statistical bulletins for the exchange and dissemination related to fisheries and aquaculture development.

### **Membership**

SEAFDEC members are the ASEAN Member Countries (Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam) and Japan.



## **SEAFDEC Addresses**

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#### ABOUT SEAFDEC

The Southeast Asian Fisheries Development Center (SEAFDEC) is an intergovernmental organization established in December 1967 for the purpose of promoting sustainable fisheries development in the region. Its current Member Countries are Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.

Representing the Member Countries is the Council of Directors, the policy-making body of SEAFDEC. The chief administrator of SEAFDEC is the Secretary-General whose office, the Secretariat is based in Bangkok, Thailand.

SEAFDEC undertakes research on appropriate fishery technologies, trains fisheries technicians, and disseminates fisheries information. Four Departments were established to pursue the objectives of the Center:

- The Training Department (TD) in Samutprakan, Thailand, established in 1967 for marine capture fisheries development;
- The Marine Fisheries Research Department (MFRD) in Singapore, established in 1967 for fishery post-harvest technology;
- The Aquaculture Department (AQD) in Iloilo, the Philippines, established in 1973 for aquaculture research and development; and
- The Marine Fishery Resources Development and Management Department (MFRDMD) in Kuala Terengganu, Malaysia, established in 1992 for the development and management of the marine fishery resources in the exclusive economic zones (EEZs) of SEAFDEC Member Countries.