

# **FISH** for the **PEOPLE**

A Special Publication for the Promotion of Sustainable Fisheries for Food Security in the ASEAN Region

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## **Assisting People Affected by the TSUNAMI**



**Rehabilitation Strategies  
for the Fishery Sectors in  
Thailand and Indonesia**

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*A fishing boat stranded dry after the tsunami in southern Thailand. Courtesy of DOF of Thailand.*

# EDITORIAL

During a recent SEAFDEC mission to Banda Aceh, Indonesia, one had to bear with the desolate landscapes left by the tsunami. We could not fail to notice that even if the rehabilitation work has been progressing steadily, thanks to the efforts of many, progress has nonetheless been unutterably slow. People affected by the disaster expressed their concerns about the lengthy delay in receiving further assistance. Emergency relief has been made readily available, and most immediate needs have been fulfilled, as people are keen to recognize. But there is little patience left in waiting for the crucial aid that would help them to rebuild their livelihoods. It is so understandable that people cannot just stay idle once the emergency situation is over.

When we were talking of tsunami-related issues at meetings organized outside the affected areas, such as in Bangkok, concerns were often expressed about the risks that uncoordinated external assistance to affected fishers would recreate the previous over fishing condition. Quite often, international and regional fisheries organizations, such as SEAFDEC, used to say that we should be cautious to provide these needed commodities in a hasty manner. Yet, once on the site of the disaster, when we are discussing with fisherfolks desperately waiting for the arrival of new fishing boats and gear, we cannot help but get willingly involved in discussing with them how to expedite the process for them to receive these needed provisions. This ambivalence between two opposite attitudes, each rational in its way, is making decision-making about what must be done next a sore experience.

One visit during the mission might have shown a possible way to go. We had the opportunity to discuss with representatives of the *Panglima Laot*, which is a long established, local indigenous



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**FISH** for the **PEOPLE** is a special publication produced by the Southeast Asian Fisheries Development Center (SEAFDEC) every four months as part of the ASEAN-SEAFDEC Special 5-year Program to promote sustainable fisheries for food security in the ASEAN region.

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organization based on customary law in Aceh Province. *Panglima Laot*, which translates as ‘sea admiral’, can be considered as a local fisheries management institution that has in the past played an effective role in resolving local conflicts over fisheries resource exploitation. One of the most significant lessons mission members learned was the important role of *Panglima Laot* in helping the rehabilitation of local fisheries, following the ravages made by the tsunami. We should recognize that such local fisheries institutions, established at the community level, can play an effective role in helping to achieve sustainable fishing, not only in ordinary times but also in emergency circumstances.

One of the ASEAN-SEAFDEC collaborative programs aims to promote rights-based fisheries and co-management through various activities. A recent meeting organized under the program took place in Jakarta, Indonesia, in July. Representatives of each ASEAN Member Countries and those of *Panglima Laot* were invited to discuss two issues considered critical when promoting a co-management system in Southeast Asian Countries: the endeavor to build local institutions for fishery management, and the formulation of an appropriate national policy on the matter.

When we were discussing the provision of fishing boats with fishers, it was also recognized that there were needs not only for boats but also for the provision of goods and services, such as fishing gears, ice, fuel, and means of transportation to the market. To effectively restore people’s livelihoods, the process of rebuilding an appropriate support system in Banda Aceh for fisherfolks and their trade will be the main concern. And addressing that will certainly take time.

*Yasuhisa Kato*



A young boy in a dark green shirt and bright blue shorts walks across a beach covered in debris. In the background, several boats are damaged and partially submerged. One boat has Thai script on its side. The scene is set against a backdrop of palm trees and a clear blue sky.

# Assis

## Affected

the ASEAN-SEA



# Disaster-Stricken People

by the Tsunami  
FDEC Collaborative Framework

Yasuhisa Kato

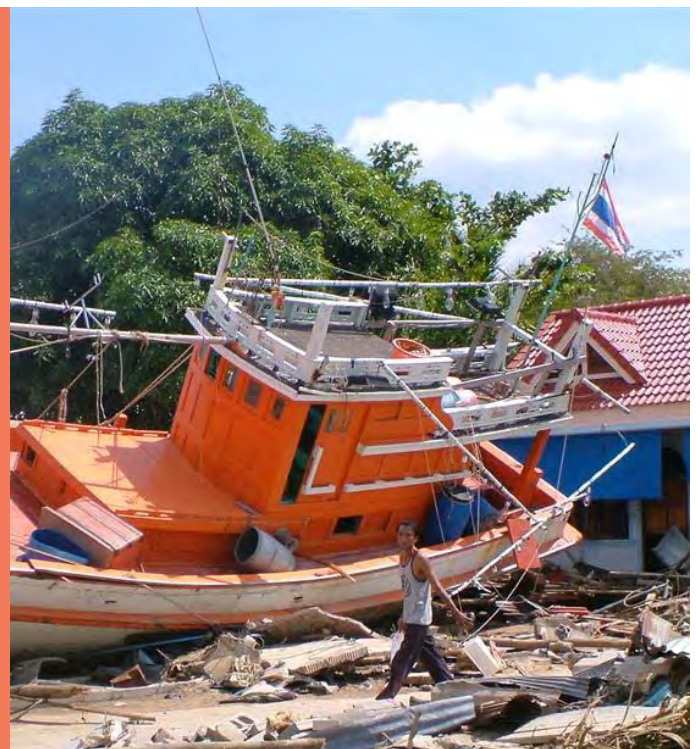
**The exceptional scale of the earthquake on 26 December 2004 and the tsunami that followed caused tremendous damage to people and communities living along the coastal areas in various parts of the Indian Ocean. Huge efforts have been made to provide for the affected people by governments, international donors groups and other institutions, including non-governmental organizations, in order to support urgent humanitarian needs and to re-build survivors' livelihoods. Such large-scale support, in terms of mobilization of human and financial resources, is steadily helping people to recover from the disaster.**

The fisheries sector is the largest sector affected by the tsunami. In addition to the loss of family members, a large number of people have lost the means of their livelihoods, such as fishing boats, fishing gears, aquaculture facilities and required supporting facilities like jetties and hatcheries. Although the concerned government agencies managing the fisheries sector initiated relief activities

fisheries is not appropriate considering the short-term negative socio-economic impacts on people living by the sea. As a consequence, comprehensive fisheries management programs have not, therefore, been targeted at the small-scale sector in Southeast Asia. Yet the number of fishers has continued to increase as a result of the continuous inflow of people to coastal areas. At the same time, technology has vastly improved, building an unsustainable pressure on fisheries resources.

**“While the immediate requirement is to rebuild their livelihoods as quickly as possible, the issue of over-capacity must be recognized and any planning of relief efforts should take this into account”**

**“The fisheries sector is the largest sector affected by the tsunami. In addition to the loss of family members, a large number of people have lost the means of their livelihoods”**



immediately after the disaster, it is likely that such rehabilitation efforts may be more effectively conducted after emergency humanitarian needs have been appropriately fulfilled, giving first a chance for people to recuperate from the trauma and losses endured as a consequence of the disaster.

It is often believed that the implementation of stringent fisheries management measures for small-scale

As a result, there has been a drastic deterioration of coastal fisheries resources and a subsequent sharp decline in the income of small-scale fishers. Such vicious cycles of resource reduction and devastating poverty are the current paramount problem for small-scale fishers. Now these same small-scale fishers have been radically affected by the tsunami. While the immediate requirement is to rebuild their livelihoods as quickly as possible, the issue

of over-capacity must be recognized and any planning of relief efforts should take this into account, by aiming to avoid rebuilding this excessive pressure on fisheries. Overwhelming external support has been promised, which includes the provision of fishing boats, fishing gear and other necessary goods. Although these have been promised based on goodwill, it is a serious issue that such provisions may unfortunately undermine the long-term sustainability of coastal fisheries, since there is no appropriate regulating system in place for the sub-sector. There lies the real challenge, in compromising between short-term humanitarian assistance programs which support social welfare of the affected people, and the long-term sustainability of fisheries.

**“There lies the real challenge, in compromising between short-term humanitarian assistance programs which support social welfare of the affected people, and the long-term sustainability of fisheries”**



**“a Consortium to Restore Shattered Livelihoods in Tsunami-Devastated Nations (CONSRN) was inaugurated at a Regional Workshop on the Rehabilitation of Fisheries and Aquaculture in Coastal Communities of Tsunami Affected Countries in Asia”**



A few months after the disaster, the long-term rehabilitation program supporting the fisheries sector and the people involved in fisheries has started in each affected country, in many cases with the support of external assistance. Within the international and regional framework to assist the sector and the people, a Consortium to Restore Shattered Livelihoods in Tsunami-Devastated Nations (CONSRN) was inaugurated at a Regional Workshop on

the Rehabilitation of Fisheries and Aquaculture in Coastal Communities of Tsunami Affected Countries in Asia, held from 28 February to 1 March 2005 in Bangkok, Thailand. The Consortium is based on an inter-agency coordination mechanism that includes the Bay of Bengal Intergovernmental Organization (BOB-IGO), the Food and Agriculture Organization of the United Nation (FAO), the Network of Aquaculture Centres in Asia-Pacific (NACA), the Southeast Asian Fisheries Development Center (SEAFDEC) and the WorldFish Center (WFC). CONSRN aims at coordinating and harmonizing the individual partners’ assistance to tsunami-affected areas in the Indian Ocean. Since then, the CONSRN has periodically exchanged experience and information on the assistance provided by the individual partners, and plans to develop flagship programs that will jointly support the tsunami-affected countries on a regional basis.

At the Ministerial Meeting after the 26<sup>th</sup> Session of the Committee on Fisheries (COFI) organized by FAO, the Rome Declaration on Fisheries and the Tsunami was

**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), express 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 policies 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,<sup>1</sup>

Recognizing the direction for rehabilitation and restoration of fisheries given in the 2005 Rome Declaration on Fisheries and the Tsunami<sup>2</sup> as well as the initiatives of the Consortium to Restore Shattered Livelihoods in Tsunami Devastated Nations<sup>3</sup> (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 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 support 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 programme, identifying the appropriate scope of work and work plan in consultation with ASEAN and affected Member Countries.
5. To coordinate the activities with programmes developed by other organizations in the same areas on the required regional programme.
6. To mobilize technical resources from SEAFDEC Departments and from 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 and programme of the Consortium to Restore Shattered Livelihoods in Tsunami Devastated Nations (CONSRN).
9. To periodically evaluate the progress and impact of the regional programmes and report the outcomes to ASEAN and the Member Countries, and to incorporate the regional programmes into the national sustainable fisheries development.

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

<sup>1</sup> Adopted by the Special ASEAN Leaders' Meeting on Aftermath of Earthquake and Tsunami held in Jakarta, Indonesia on 6 January 2005

<sup>2</sup> Adopted by the FAO Ministerial Meeting on Fisheries held in Rome, Italy on 12 March 2005

<sup>3</sup> Comprises 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 Centre (SEAFDEC), and the WorldFish Center (WorldFish).



adopted as the international policy framework and as guidelines to support fisheries rehabilitation and restoration activities for the tsunami-affected countries.

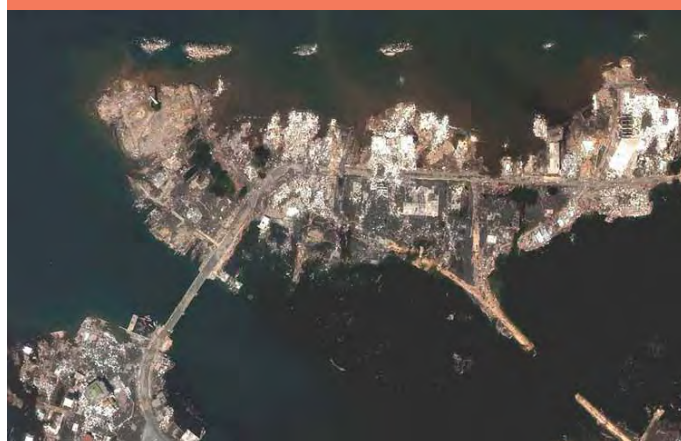
At the regional level, an informal consultation on the tsunami issue was organized by SEAFDEC in early April in Hanoi, Vietnam. The consultation aimed to clarify regional needs and priorities, and to prepare a plan of action. This was done in conjunction with the ASEAN-SEAFDEC Fisheries Consultative Group Meeting and the 37<sup>th</sup> Meeting of SEAFDEC Council, thus involving the participation of high rank officials of ASEAN-SEAFDEC Member Countries. The consultation recognized the importance of the various initiatives started in each tsunami-affected country, as well as the value of the assistance provided by various sources. It also reviewed the various national, regional and international frameworks and mechanisms already set in place.

On this basis, the meeting identified the necessity to formulate an ASEAN framework to assist, in a collaborative manner, the rehabilitation and restoration of fisheries for the people in the four affected countries of the region. It was also understood that such a collaborative framework was required as a specific follow-up action on fisheries based on the ASEAN Declaration on Action to Strengthen Emergency Relief, Rehabilitation, Reconstruction and Prevention in the Aftermath of Earthquake and Tsunami Disaster of 26 December 2004, as adopted by the Special ASEAN Leaders' Meeting held in Jakarta, Indonesia, shortly after the tragedy.

**“...support should be provided in the long run, even after public interest in the issue has faded”**

The Member Countries thus adopted an ASEAN-SEAFDEC plan of action on regional cooperation for the rehabilitation and restoration of fisheries in the ASEAN tsunami-affected areas, as presented in the box below. This plan of action was adopted during the ASEAN Sectoral Working Group on Fisheries held in May 2005 in Yangon, Myanmar. It will eventually be submitted to ASEAN senior officials for their consideration, as the plan of action can be considered as an ASEAN policy guideline and as opening the door for wider implementation of such collaborative frameworks among ASEAN Member Countries.

**“The Member Countries thus adopted an ASEAN-SEAFDEC plan of action on regional cooperation for the rehabilitation and restoration of fisheries in the ASEAN tsunami-affected areas...”**



As mentioned above, assistance to fisherfolks and other people whose livelihood are linked to fishery resources may not be straightforward. Special emphasis has been given to short-term relief. But the long-term sustainability of fisheries must also now be considered as part of the rehabilitation of the sector, especially considering the pre-existing overcapacity. In addition, as learned from other large-scale natural disasters, support should be provided in the long run, even after public interest in the issue has faded. It is therefore important to develop an appropriate policy and strategy to support long-term rehabilitation while continuing to work for the achievement of more sustainable fisheries.



#### ABOUT THE AUTHOR

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# Strategy and Program

for the Rehabilitation and Reconstruction  
of the Fishery Sector in Aceh and Nias,  
Indonesia, following **the Tsunami**

*Saut Hutagalung*



**“Before 26 December 2004,**  
Aceh like the rest of Northern Sumatra,  
which includes Nias Island, had a vibrant  
fisheries sector..... The fisheries sector  
accounted for 3% of Aceh’s GDP.”



## INTRODUCTION

During the informal SEAFDEC consultation on Support to Fisheries Relief Program for Tsunami Affected Countries of ASEAN, held in Hanoi in April 2005, the Indonesian delegation presented a strategy and program for the rehabilitation and reconstruction of the fishery sector in the areas affected by the 26 December 2004 tsunami. This article builds directly on the paper presented at the consultation, providing information about the rehabilitation strategy to be implemented in Indonesia.

This strategy was prepared by the Ministry of Marine Affairs and Fisheries (MMAF), with the assistance of the United Nations Food and Agriculture Organization (FAO), the Asian Development Bank (ADB) and the World Bank (WB). This paper does not represent the final position of agencies or donors, but instead presents an overview of actions to be undertaken, aimed at providing a platform for discussion. In particular, it has been prepared with special attention to consulting and involving local-level stakeholders, particularly the affected communities and local government, in order to ensure that activities will address actual needs and are properly implemented. In the meantime, other key government agencies and donors at the national level have also been consulted in order to maximize the efficiency and effectiveness in the use of resources.

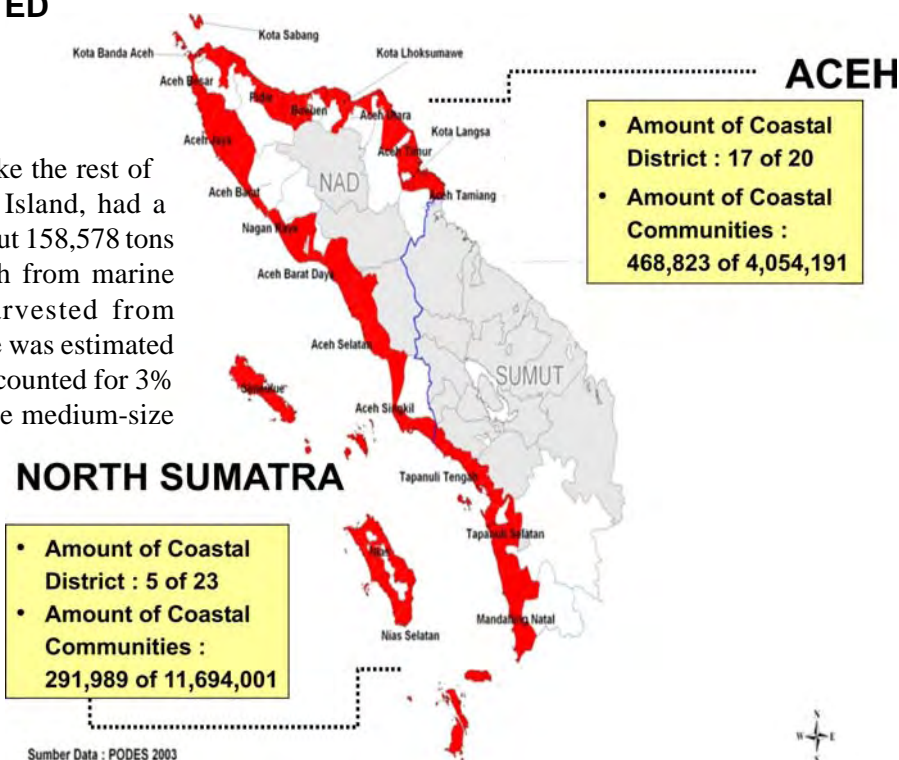
## FISHERIES IN TSUNAMI-AFFECTED AREAS<sup>1</sup>

### Before the Tsunami

Before 26 December 2004, Aceh like the rest of Northern Sumatra, which includes Nias Island, had a vibrant fisheries sector with an annual output 158,578 tons in 2003, comprising 133,976 tons of fish from marine capture fisheries and 24,602 tons harvested from aquaculture. The total value of the produce was estimated at Rp 1.59 trillion<sup>2</sup>. The fisheries sector accounted for 3% of Aceh's GDP. The province had only one medium-size fish canning facility, and most of the fish caught and harvested in the province were either consumed locally or exported unprocessed to other countries or to other parts of the country. Similarly, the fisheries sector also used to play an important role in the economy of Nias Island.

The fisheries sector provided employment for about 89,300 persons, or 16% of the total coastal population of 558,641 in the disaster affected areas of Aceh Province and Nias Island. Of these, some 58,000 were full-time fishers. Of the 18 districts (*kabupatens*), and municipalities (*kotas*), affected by the tsunami, five had relatively high coastal populations: Simeulue (93% of total population), Kota Sabang (87%), Aceh Selatan (35%), Nias (24%) and Aceh Jaya (23%).

Most members of the fishing communities were artisan fishers fishing inshore waters. Almost 15,000 canoes and small plank built boats, and about 5,600 inboard motor fishing boats were found along the coast. Commercial fleets were located on the north and east coast in Aceh Utara (Lhok Seumawe), Aceh Timur (Langsa) and Bireuen, and on the west coast in Aceh Barat (Meulaboh) and Aceh Selatan



<sup>1</sup> This material has been updated from MMAF material used for CGI Preliminary Damage and Loss Assessment, 19-20 January 2005, some of it from FAO and MMAF ongoing observations. The data cannot be considered fully validated. Updating of information is still ongoing.

<sup>2</sup> USD 1 = Rp 9,300

(Tapaktuan). The production of marine fisheries is pretty much evenly distributed between the Malacca Strait and the Indian Ocean *kabupatens* and *kotas*.

The infrastructure and facilities developed to support the fisheries sector in the disaster affected area included two large fishing ports in Banda Aceh and Nias, 49 small fishing harbours, and a large number of community-managed fish landing facilities. MMAF manages an aquaculture training centre, a demonstration hatchery, and fish and fishery product quality and hygiene control laboratories, as well as a training vessel. Each province and district has a number of field service offices (*dinas*) established by local governments.

About 36,600 ha of brackish water shrimp and fish ponds (*tambaks*) were used for less intensive aquaculture, mostly owned by individual operators. The development of aquaculture is mainly located on the northern and eastern coast of Aceh (Aceh Utara, Aceh Timur, Biereun and Pidie).



## After the Tsunami

MMAF has initiated a systematic survey of damage and losses in each *kabupatens* but a comprehensive assessment will take time to be completed. In the meantime a preliminary assessment was made jointly by BAPPENAS (National Development Planning Agency), MMAF and the donor agencies. The information in this section is largely based on the initial findings of MMAF surveys, satellite imageries, reports received from local governments, and best estimates of MMAF staff and experts familiar with the physical features of the area and the fisheries sector activities in the localities. FAO has been working with local counterparts, and is in the process of

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....A large number of fishers have been killed: based on initial rapid surveys and calculations, it was estimated that **between 15-20% of the fishers in the 18 kabupatens died**....It is anticipated that almost two thirds of the fishing boats and gears have been fully or partially destroyed.....  
”



compiling additional and complementary information through rapid and in-depth appraisals focusing on operational support to be provided.

The fisheries sector has been heavily affected by the disaster. A large number of fishers have been killed: based on initial rapid surveys and calculations, it was estimated that between 15-20% of the fishers in the 18 *kabupatens* died. Most of the infrastructure and other facilities have been destroyed or damaged, and many of the community members have lost their housing, fishing boat, engine and gear. Many boats not lost have been damaged beyond repair. It is anticipated that almost two thirds of the fishing boats and gears have been fully or partially destroyed, and only the *kabupatens* south of Lhok Seumawe have been spared. Boats destroyed or missing have been valued at about Rp 250 billion. There are some reports of larger boats resuming or continuing fishing on the east coast and in the southern part of the west coast.

In general, it can be stated that the extent of damage and losses in each *kabupaten* varies depending on the location; with the southern parts of both coastlines less damaged than the northern parts. The west coast was particularly heavily damaged: in some cases whole coastal fishing villages have been almost wiped out.

Regarding physical infrastructure, such as fishing ports and harbours, the most affected areas were

the *kabupatens* in the northern part of Aceh, both on the western and eastern coasts. Strangely, in Sabang (which is located on the northernmost island of Aceh), it was reported that none of

**“...the recovery period to pre-tsunami production in aquaculture will take about 5 years...”**

the ports were damaged. Overall, it is estimated that 55% of the fishing harbours and ports were damaged.

MMAF lost almost 90% of its assets, which were mostly located in the areas hit hardest by the tsunami (around Banda Aceh, and the hatchery research stations in Simelue and Nias). The government hatchery in Ujung Batee alone lost its entire broodstock of tiger prawn (*Penaeus monodon*), milkfish and groupers, worth in total close to Rp 8.5 billion.

The damage to the brackish water culture ponds was relatively disseminated in most areas of Aceh. Even in the areas where the tsunami was not significant, such as in the southern part of Aceh, floods have partially damaged the infrastructure. In total, the damage is valued at Rp 466 billion, which accounts for about 50% of the total damage value to the fisheries sector.

Although only employing a small number of people, Aceh provided a large proportion of the wild caught broodstock for hatcheries throughout Indonesia. A fuller assessment of



**“Rehabilitation and reconstruction efforts offers an opportunity for not just restoring livelihoods and rehabilitating ecosystems to the pre-tsunami situation, but also for creating conditions to overcome some previous weaknesses and create better livelihoods.”**

broodstock supply and demand is to be made with FAO assistance, as it remains unclear how many of the collectors survived, or what impact the interruption of these networks will have on the provision of fry for the shrimp farms throughout Indonesia.

The total damage to the sector is estimated at Rp 1,200 billion (over half of the industry’s total assets). In addition, there are losses to the economy which relate to the destruction of Aceh’s fisheries assets, in other words, revenue lost from fishing and aquaculture. It is estimated that outputs of Aceh’s fishing industry will fall by 60% due to the disaster. It has also been estimated that the recovery period to pre-tsunami production in aquaculture will take about 5 years, although this will mostly depend on the recovery rate of the private sector in the region. In capture or marine fisheries, however, the recovery rate will be much longer, estimated to be as long as 10 years. Considering that 65% of boats and equipment were lost and that 15-20% of the fishers died, the capacity to catch and land fish has been very significantly lowered. Prior to the disaster, fisheries yields were relatively stable despite increasing fishing effort, highlighting the fact that fisheries were operating at or beyond their optimum level. Further investigation will be needed to understand the disaster’s long-term impact on fisheries production. Based on the above assumptions, the total loss of revenue until recovery to the pre-disaster production level is estimated to be Rp 3.8 trillion.

### **Guiding Principles for the Rehabilitation and Reconstruction of the Coastal Area of Aceh and Nias Island**

Rehabilitation and reconstruction efforts offers an opportunity for not just restoring livelihoods and rehabilitating ecosystems to the pre-tsunami situation, but also for creating conditions to overcome some previous weaknesses and create better livelihoods. To do so will require adherence to a set of principles which build on extensive Indonesian and international experience in

fisheries development and coastal management. These principles are:

- **Focus on poverty alleviation:** this includes promoting equitable access to land, capital and natural resources; addressing the patron-client relationship; focusing on technologies which can assist in creating sustained employment-intensive activities, which can benefit the most vulnerable and marginalized people.
- **Be market-led and economically sustainable:** so as to ensure the responsiveness and efficiency of the fishery rehabilitation efforts to the reality of local supply and demand in fishery products, inputs and markets. Only this can provide real incentives and opportunities for people in coastal communities to build up fishery-related economic activities into strong livelihoods, which will also enhance the local economy on a long-term basis.





- **Consider environmental sustainability throughout:** the health of fisheries-related ecosystems such as mangroves, coral reef and seagrass beds by protection will be ensured through zonation (e.g. restricted-use and non-use) and through fisheries management tools to prevent overfishing. Certain types of mariculture which support sustainable resources-use will be encouraged (fish and shellfish pen and cage culture, and seaweed culture), as well as fishing gears with a minimal negative impact on long-term fisheries production.
- **Be integrated and holistic, as such approaches are particularly important in the coastal zone and for poorer coastal communities:** Coastal areas tend to be fragile with a complex set of ecological interactions taking place. The economic well-being of communities depends on maintaining a variety of ecosystems around them.
- **Need to be participatory and consider the real needs and capabilities of local people:** Community members of coastal villages, in general the most heavily affected, should be at the forefront of all discussions on future activities. Full participation also implies transparency and accountability in the relationship between the community and the partners to maximize the effectiveness and efficiency of activities. Acehnese leaders and the *Panglima Laut* fishers' organization should be engaged to facilitate information gathering and discussing options for rehabilitation and reconstruction activities. Similarly activities need to be community-led, and implemented by communities themselves when possible. This will give a greater sense of ownership to local communities and reinforce their ability to solve problems as they arise as well as strengthening community skills and building up their assets.

The rehabilitation and reconstruction efforts, in short, offer opportunities for realizing an Integrated Coastal Zone and Sustainable Fisheries Management on a provincial scale.

## Strategies for Rehabilitation and Reconstruction

Rehabilitation and reconstruction strategies are needed to assist people and communities to rebuild their assets and restart economic activity. These must not repeat

**“...Community members of coastal villages, in general the most heavily affected, should be at the forefront of all discussions on future activities...”**



the mistake of the past by recreating poverty and unsustainable activities. Instead they should:

- **Restore private assets:**
  - Build up assets of coastal community members and households, including boats, gears, seeds and ponds
  - Introduce appropriate new technologies, such as mariculture, and
  - Give communities a leading role in management of resource and implementation of activities.
- **Rebuild public goods:**
  - Improve support services
  - Create efficient and transparent regulatory mechanisms, and
  - Rehabilitate and protect environmental resources with community ownership (coral reefs, mangroves).

## REHABILITATION AND RECONSTRUCTION ACTIVITIES

### Short-term Rehabilitation Activities

During 2005-2006, a number of short-term activities need to be started, aimed at providing immediate livelihood support through cash-for-work where possible, getting fishers to resume going to sea and also providing (temporary) alternatives. Aquaculture must be restarted, essential support and regulatory services re-established, and detailed assessments of preparations of long-term recovery plans and projects continued. These aims will be achieved through the following activities:

#### **Assist Communities to Restart Productive Activities**

##### *Priority support to fishing activities*

Local people should be provided support (possibly through cash for work) to recover and repair damaged boats. Similarly, local boat building should be supported to get underway, with training if necessary, and access to raw materials and equipment supported.

Fishers will not go back to fishing unless they can sell their fish. At present, there is a reluctance to eat fish captured near Aceh due to the concern that the fish are feeding on human corpses. However this fear is likely to be relatively short-lived and fishers may well soon experience strong demand, and high prices, for their catches. Provision of ice and fish boxes will be essential to get fish to markets with minimal waste and these should be provided as soon as possible. In the case of ice factories, mini-plants of some 10t/day can be set up relatively quickly and, in the short term, could be managed jointly by the private sector (who

would be expected to provide the land). Given their limited cost and high benefits, fish boxes should be provided free to the fishers.

##### *Rehabilitating aquaculture*

Most fishponds (*tambaks*) are located on the eastern coast of Aceh. Although some ponds have been completely destroyed, most suffered only minor damage but have been heavily silted. Cleaning out the ponds and repairing embankments would be relatively quick and easy, and much of the work could be done by local people under cash for work programmes. Repair work should include sheds, stores and other building used by the fish farmers.

For ponds which are not affected and for ponds that have been cleared and repaired, there is also a need for feed and fish seed, most of the hatcheries and feed making units having been damaged and needing to be repaired. In the short term, there may be a need to import these items from other provinces and the government would have to support private traders to bring in feed and fry, possibly by subsidizing their travel. As in the case of capture fisheries, the provision of ice and fish boxes would be important for proper handling and transport of fish.

Some of the local infrastructure would need cleaning and repair. This includes pumps, local supply channels, on-farm roads, stores, sheds and waste disposal units. Although much of this repair work may be accomplished using local labour, more equipment may need to be purchased outside the province. Local government, particularly the local fisheries staff, should help this process by bringing equipment dealers or subsidizing transport costs of local fish-farmers.



“Aceh may focus on developing a midwater pelagic fleet and chose to refrain from developing fishing methods that have proven to reduce the regenerative capacity of the coasts”

### **Rehabilitate public services and infrastructure to support communities and longer term activities**

#### *Small landing site rehabilitation*

Surveys carried out by government staff and FAO indicate that many ports have suffered damage or are silted up. Minor repair and dredging will allow these ports to become functional again in the short term. Local capacity is sufficient to carry out minor repairs, but building materials and tools need to be provided. Repair work should include the provision of toilets and tap water, among other facilities and utilities. Some dredging work can be done manually, but the main part will require heavy machinery, brought in from other parts of Sumatra.

#### *Re-establishment of essential support services*

Some support services need to be quickly restored as they are essential to productive activity. These include water quality testing stations in the fish culture areas and fish disease surveillance and control measures. Many of the public service facilities located on the east coast suffered relatively minor damage, and can be quickly repaired and re-equipped to answer these needs.

In the case of capture fisheries, essential services would include search-and-rescue teams, radio relay stations and the like. Community-based enforcement should be used where possible to ensure that the marine resources assets of the coastal people of Aceh and Nias are sustained.

#### *Assessments and detailed programme preparations*

It has been accepted that bringing the economy back to pre-tsunami levels and restoring growth will take at least 4-5 years. Detailed planning of longer-term interventions requires certain critical information which needs to be collected and processed as soon as possible. The potential for restoring production will rely on a good understanding of what the damage has been and what is needed. Detailed fisheries and coastal management assessment, including spatial and coastal zone planning are needed to provide an

overall framework, a master plan, for the diverse agencies taking apart into the rebuilding and relief efforts.

Further surveys on boats must be done, estimating the replacements and major repairs needed in conjunction with the assessments on the biological capacity of the fisheries resources in the regional waters. At the same time, many of the ports located in the western part of Aceh suffered severe damage, with much of their infrastructure completely washed away.

Since the shape and topography of the coastline have changed, it may not be even advisable or possible to reconstruct the ports at the same sites. In that regard, a detailed survey needs to be initiated, to recommend about where repair are needed and where relocation and reconstruction of ports is a better option. Similarly, there is a need to assess the capacity of the remaining service facilities, such as markets, extension offices and laboratories, in order to make proposals for future reconstruction and development.

In the case of aquaculture, surveys need to be conducted focusing on the claims made for key facilities, including protective dikes, ice plants and pumps. Detailed design and prioritisation of purchases and building will need to be done to maximise the benefits to coastal communities.

Because of the huge casualties, land and other assets have sometimes been left without owners. A process needs to be established for managing these assets. Land titles and records held by families or *kabupaten* offices may also have been destroyed. There is a need to find out what records are still available, and whether copies of lost files are available in provincial offices.

Finally, there is a need to estimate how local farmers and fishers institutions can survive in the post-tsunami period, and to what extent these are capable of getting involved in reconstruction planning and regulation.

### **Indicative Long-term Reconstruction Activities**

Starting in 2005, and continuing for the next 5 to 8 years, reconstruction activities will build on communities' capacities, assets and infrastructure services. These will primarily cover the following:

- Building up community livelihoods management skills
- Strengthening credit, marketing and post-harvest services

- Supporting the development of appropriate new technologies
- Strengthening the physical infrastructure
- Rehabilitating the environment
- Managing and enforcing sustainable fisheries
- Education and awareness raising

All of these would be implemented through crosscutting activities to strengthen community organizations, which should be involved in decision-making and the management of the activities as much as possible. The government, the private sectors and NGOs will be targeted to support communities in these endeavours.

### 1. Strengthening communities and their productive activities

#### *Reviving and strengthening coastal communities' economic activities*

Marketing and post-harvest systems need to be stimulated and opportunities must be created, by providing government infrastructure and supporting initiatives by the private sector. Specific training would be provided to communities on a demand basis to fit their readiness for addressing more complex organizational and business activities.

As key infrastructure is repaired, business opportunities for local and inter-local fish trade will begin to emerge. MMAF is committed to re-establishing an integrated fisheries industry that is equitable for all stakeholders. It will support shrimp hatcheries, brackish water ponds, fish processing, ice plants, marketing development, and of course the capture fisheries sector.



“

**The next generation – children who survived the tsunami – should be given specific educational materials on coastal ecology, tsunami response, sustainable fisheries and aquaculture**

”

Such work must be implemented carefully, working in partnership with the local businesses, NGOs and international agencies.

Initial surveys will assess the status of informal financial arrangements, levels of indebtedness and patron client relationships. Most fishers are likely to be indebted to a middle man, who can transfer debt to surviving family members. An assessment of patron-client relationships should be attempted in order to quantify assets, remaining financial capacity, and the financial services provided. In areas where traditional moneylenders play an important role, microfinancing and small and medium-scale business financing support would be provided, and ongoing programs on empowerment such as PEMP, Opti, BMT or cooperatives would be continued.

#### *Support for development of appropriate new technologies*

Aceh may focus on developing a midwater pelagic fleet and chose to refrain from developing fishing methods that have proven to reduce the regenerative capacity of the coasts. At the same time, it must be ensured that the overall pressure on fishery resources in inshore areas by small-scale fishers does not increase further above the local stock capacity, and that there are local employment benefits from this midwater industry. Trawls, fyke nets, explosive fishing and poisons all generate high catches in the short term, but their long-term effects have generally been assessed as reducing fisheries production, and current legislation limits or even prohibits them. The legislation should be strongly enforced, together with the necessary limitations on large-scale fishing inshore.

Seaweed production could be attempted in the sheltered bays of Simeulue and Sabang, while MMAF and donor communities may facilitate the establishment of marketing channels for the product. The fast growing cycle

of seaweed produces reliable revenue. The possibility of cage mariculture should be explored for the future.

#### *Education and awareness building*

The next generation – children who survived the tsunami – should be given specific educational materials on coastal ecology, tsunami response, sustainable fisheries and aquaculture. Existing materials (e.g. COREMAP books) developed and tested in Sumatra could be modified to address these needs.

## **2. Strengthening public services, rehabilitation efforts, and protecting public goods**

#### *Strengthening physical infrastructure*

Reconstruction of fishing ports and facilities (including TPI, PPP and mini ice-plants) will be needed once the fishing industry starts growing beyond production for local needs. Communities should be involved in the selection of suitable locations for the rebuilding of fisheries infrastructure. In addition, some aquaculture facilities under the responsibility of the public sector, such as mains water supply and drainage canals for aquaculture ponds, as well as destroyed government fishery research facilities and laboratories, will need to be progressively reconstructed.

#### *Sustainable fisheries management and enforcement*

To reduce the influx of fishers from outside Aceh, simple registration of Acehnese fishing boats, perhaps with on-hull numbering and clear procedures for licensing of vessels fishing in Acehnese waters, should be developed. With a commitment to training Acehnese fishers in simple procedures such as Community Surveillance (*Siswasmas*), the fishing effort can be controlled whilst fisheries recovery and monitoring protocols are developed.

#### *Environmental rehabilitation*

After initial civil reconstruction of damaged towns has been undertaken, national or international financial aid should be solicited if any major environmental rehabilitation is required. Such rehabilitation should be taken into consideration during the planning of a town's reconstruction. Food-for-planting of mangroves and species of trees used for boat construction may be organized, together with the resolution of tenure and user rights, and clear agreement on sustainable harvesting mechanisms of these new plantations.

#### *Supplementation arrangements*

The government of Indonesia has finalised its Rehabilitation and Reconstruction Plan (the "blueprint")

and established the Agency for Rehabilitation and Reconstruction of Aceh and Nias, North Sumatra that coordinates the necessary detailed plans and works. For implementation, the Agency works closely with the Ministry and Marine Affairs and Fisheries.

## **MONITORING AND EVALUATION**

A more in-depth set of objectives and indicators will be developed during the rehabilitation phase arising from detailed assessments and iterative planning. This will help in keeping work plans updated. This is especially important during the first year of rehabilitation and reconstruction, as changes on the ground will be very fast and unpredictable. A simple working log-frame or a results-based framework should be developed as a discussion tool, capturing key indicators and requested deliverables from the different agencies.

It is recommended that a national coordination office, based in MMAF, coordinates the implementation of M&E, getting regular feedback from the field through reports, field visits, special events and monthly meeting with stakeholders. In addition to monitoring and evaluation efforts, partners should provide a basis for realizing the commitment for transparency to communities and partners.

## **CONCLUSION**

The required rehabilitation and reconstruction work are a great challenge not only for the government but for all stakeholders, including to the various donors. As partnership is very much needed to face such a huge task, close coordination and collaboration with donors and stakeholders should be promoted. Consultations with local communities and local governments need to be carried out before detailed plans are finalized. That being said, survey and research on stocks and the state-of-the-environment also need to be continued.



### **ABOUT THE AUTHOR**

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**Rehabilitation Strategy for  
Fisheries Resources and Tsunami Victims  
among Fishing Communities of Thailand**

Waraporn Prompoj





## BACKGROUND

**On 26 December 2004, a massive earthquake near the coast of the island of Sumatra in Indonesia triggered a tsunami that caused massive damage to communities around the Indian Ocean, including many along the Andaman Sea coast of Thailand. Many fishing communities in the six coastal provinces of Ranong, Phang-gna, Krabi, Phuket, Trang and Satun were devastated, with severe damage inflicted on fisheries and aquaculture. The Thai Department of Fisheries (DOF) conducted a preliminary assessment of the damage, and concluded that the damage to fisheries-related activities accounted for at least THB 2.5 billion<sup>1</sup> (USD 62.5 million).**

The preliminary assessment showed that 422 fishing villages along the Andaman Sea were affected by the tsunami, with Phang-nga the most severely affected province. Among these 422 villages, 40 fishing villages were severely damaged, with a further 200 experiencing significant damage. Some 700 fishers died, most of whom were small-scale.

### Impact on Fisheries

Some 6,100 fishing boats were damaged by the tsunami, of which 76 % were smaller than 10 meters long. The total damage caused to the fishing fleet was estimated at THB 687.4 million, THB 331.9 million to large boats and THB 355.5 million to small boats. Of the 6,100 boats damaged, around 550 boats could be salvaged, mostly larger fishing vessels worth an estimated THB 112 million.

Fishing gear lost included bamboo stake traps, nets, crab traps, squid traps, and fish traps, and was estimated to be worth around THB 160 million.

### Impact on Aquaculture

From the DOF's preliminary assessment, 27,000 fish cage culture operators along the Andaman coastline in the six provinces were affected by the tsunami. Most if not all of their fish cages were lost.

Marine shrimp culture in the six Andaman provinces was also seriously affected. 342 rai (about 55 ha) of shrimp ponds and more than 15 million square meters of hatcheries were destroyed by the tsunami. The six affected provinces being the main areas producing marine shrimp seeds in Thailand, the damage to these hatcheries has resulted in vast losses for Thailand's marine shrimp culture industry. Nearly 300 hatcheries were damaged, accounting for a 30% fall in seed production capacity nationwide, causing a reduction in shrimp production of 70,000 metric tons per crop of production. Losses to the sector will continue for many years, until seed production capacity is restored to its previous level.

Reserved fisheries were also damaged by the tsunami, with more than 2,000 square meters affected. Reserved fisheries are areas in which a person has been permitted to fish, including the use of trapping ponds, or to cultivate aquatic animals. Most farmers in these areas culture bivalves.

The total estimated value of tsunami damage to aquaculture in Thailand is THB 600 million.

<sup>1</sup> USD 1 ≅ THB 40

## TACKLING TSUNAMI DAMAGE TO FISHERIES

### Establishing a rescue centre and units

Since December 26 2004, the DOF has provided immediate assistance to the victims of the tsunami. During the first week, patrol vessels, including the Mahidol Research Vessel, and DOF staff rescued 1,583 survivors and collected 518 bodies. The DOF Rescue Centre was established on December 27, 2004 at the Andaman Marine Research and Development Centre in Phuket to enable victims, mainly fishers, to report their losses and damages. Five Rescue Units were also established in Phang-nga, Satun, Krabi, Ranong, and Trang. Like the DOF Rescue Centre, these units were equipped with a communication system and computers, and were manned by DOF staff for data collection.

### Preliminary damage assessments and provision of government relief fund

Early urgent data collection was carried out by the various rescue centres and units, and preliminary damage assessments of affected areas were completed by the DOF by 11 January. Approximately THB 1.3 billion had been provided by the government as a relief and compensation fund for fishing communities, of which THB 235 million had already been distributed among 422 villages in line with the government's financial regulations. This fund was only sufficient to partially compensate people for their losses. Many people were unregistered at the time of the tsunami, and have not been able to access compensation at all.

### Development of a Fisheries Rehabilitation Plan Needs

In the weeks after the tsunami, the DOF consulted widely, conducted surveys and made a preliminary need assessment, in order to understand the needs of fishing villages in affected areas. These included requirements, both immediate/short term and medium/long term, for direct support with equipment and infrastructure, and indirect support such as training, counselling and capacity building to assist recovery and the gradual rebuilding of livelihoods.

In addition, coastal habitats and the environment were significantly altered after the tsunami. In many coastal areas, coral reefs, which are critical fish habitats, were either severely damaged or destroyed. This created a direct long-term impact to fisheries resources which, in turn, will most likely seriously affect fishing communities' livelihoods. The DOF preliminary assessment in early January 2005 concluded that, in some areas, fisheries resources have declined by half since the tsunami.

As a result of the DOF's preliminary needs assessment, it is important that DOF develops a fisheries rehabilitation plan to deal with the damage caused by the tsunami, both to coastal resources and to the victims among fishing communities. To this end, DOF in February, 2005 organized a workshop on 'Fishing Communities and their Livelihoods in the Tsunami Aftermath' in Phuket, in collaboration with the EU/RTG CHARM Project and with the support of FAO, NACA and SEAFDEC. The purpose of the workshop was not only to collate damages assessment but also to assess needs and facilitate dialogue between the communities, NGOs, local authorities and international

*"A number of activities for rehabilitating fishing communities' livelihoods were identified, mostly with a focus on immediate/short term occupations, while mid-to-long term activities were also addressed, such as unemployment or occupation development."*





and national donors. A number of activities for rehabilitating fishing communities' livelihoods were identified, mostly with a focus on immediate/short term occupations, while mid-to-long term activities were also addressed, such as unemployment or occupation development. The main concern for fishing activities was nonetheless on the immediate requirements for boat repair and replacement, provision of fishing gears, revolving funds or micro finance. This will enable both small- and large-scale fishers and aquaculturists to restart their occupation and earn income for their family as soon as possible.

The Fisheries Rehabilitation Plan contains two schemes: *Livelihood Rehabilitation* and *Coastal and Fisheries Resource Rehabilitation*. The two schemes have been broken into phases covering immediate needs (3 months), short-term rehabilitation (4-6 months), medium-term rehabilitation (6-12 months) and long-term rehabilitation (1-2 years onwards). The needs for support were also split between the household/village level and the institutional level.

## LIVELIHOOD REHABILITATION

### Household/Village Level

Direct immediate/short-term support needs identified so far include items such as:

- Replacing and repairing fishing equipment and gear (such as boats, engines, engine parts, nets and traps)
- Replacing and repairing fishing boat and shipyard buildings
- Providing communication equipment and systems for fishing operations, both for small- and large-scale fishermen
- Rebuilding and repairing fish landing areas and piers
- Providing minor equipment and facilities for fish handling such as buckets, insulated boxes, cold storage at fishing piers
- Rebuilding major non-fishing items, such as houses
- Re-establishing access to aquaculture inputs, such as fish seed, cage reconstruction materials
- Setting up access to flexible forms of low interest credit/micro finance, particularly for large scale fishermen, shrimp hatchery operators, fish landing operators, and fish handling operators.

**“While substantial support has been mobilised in a short period of time, through the government, NGOs and the private sector, this remains inadequate and poorly coordinated for the longer term.”**

Medium-term and long-term counselling and capacity building needs among fishers and their organisations identified so far include:

- Training in natural disaster and sea safety for fishing communities' members, including the development of demonstrations for early warning systems for natural disasters, such as radio warning, evacuation/escape procedures, etc.
- Training fishers in boat building and repairing
- Capacity building for village-based fishermen organisations in micro-credit and revolving fund management
- Training in alternative marine-based livelihoods, such as sea farming or offshore fish cage culture
- Planning for recovery among village fishermen organisations, particularly targeting an improvement of the quality of life

### Institutional Level

Medium-term and long-term capacity building is also required among supporting institutions, including government and NGOs, including:

- Training of DOF personnel on food safety, particularly on toxicology analysis techniques to address concerns of the public about the safety of seafood that have depressed local markets, and for longer term monitoring
- Training of trainers (DOF and TAO officers) on natural disaster and sea safety
- Participatory planning and co-management of coastal zone and fisheries resources management
- Responsible fisheries and aquaculture management.

**“The Thai Department of preliminary assessme concluded that the dam activities accounted for**



**of Fisheries conducted a  
ent of the damage, and  
amage to fisheries-related  
at least THB 2.5 billion”**





*“To support an effective matching of needs with available support, a coordinating body needs to be established. The coordinating body has to have the confidence of all actors, and has to be accountable to the government, communities and donors.”*

sharing of information on needs are important for ensuring that work is accomplished efficiently. To support effective sharing and to help coordination, DOF has been gathering existing information on needs in the form of a database organized at the household level, with a focus mainly on fishing communities.

The database identifies each household’s name, address and the extent of fishery related losses and needs (including both fishing and fish farming). Information on inputs or assistance planned and received for a particular household will be included, such as DOF assistance through the relief fund, international donors help with boat replacement or a particular type of fishing gear provision. The DOF database will serve as the backbone of information on livelihoods rehabilitation and will be used to integrate the Thai government work with the NGO-Coordination Network’s (NGO-COD) data.

This ‘core’ information provision by DOF together with NGO-COD is intended to ensure that work is carried out efficiently, avoiding duplication and waste. The compiled information will also enable DOF to develop a dynamic picture of the support requirements, including:

- a. Geographical areas (with a village and community focus)
- b. Village and household level assessments
- c. Most vulnerable households
- d. Specific vulnerable groups that are not covered by household registration
- e. Needs’ aspects of particular villages
- f. Activities required
- g. Actors for particular aspects
- h. Which activities have already been taken care of, by government, NGOs, or donors, and which have not

## COASTAL AND FISHERIES RESOURCES REHABILITATION

### Institutional Level

Medium-term and long-term capacity-building actions would include:

- Assessment and rehabilitation of coastal and fisheries resources
- Mapping of fisheries resources and development of mitigation plans for the restoration of fish habitats, mangrove rehabilitation, and so on.
- Enhancement of the capacity of the Marine Research and Development Centre of the Andaman Sea in Phuket, and the units in Phang-nga and Satun to strengthen their capacity in assessment, monitoring and rehabilitation programs for the fisheries resources in the six affected provinces.

## COLLECTION AND DIVULGATION OF INFORMATION ON NEEDS AND ASSISTANCE

### Database

While substantial support has been mobilised in a short period of time, through the government, NGOs and the private sector, this remains inadequate and poorly coordinated for the longer term. Various international organizations and donors have also shown interest to contribute and assist. Coordination among agencies and

This information can be used to quickly develop a focused picture of the support required in a precise place.

The development of the database has recently been completed, and the information has been shared with the government agencies and NGOs' networks, as well as with international and national donors. The information must be screened to localize gaps, such as geographical information and vulnerabilities. The material included will be updated regularly as information from ongoing work is provided, thus ensuring the ongoing validity and relevance of the database. The important task of updating the database is being coordinated by the Andaman Forum, a coordinating body for tsunami rehabilitation focused on livelihoods aspects, as detailed below.

### Responsibilities of the Andaman Forum

- Coordination of a joint government-NGO-donor programme to support the rebuilding of livelihoods of the tsunami victims
- Facilitation of the matching of needs and available support
- Management of a database and communication system, including updated needs assessments, tracking of interventions and exchange of experiences in tsunami relief and recovery
- Assistance to the management of projects that may be implemented through the joint programme
- Management of funds (only if required – normally funds should go directly to the beneficiaries in the villages)
- Monitoring and evaluation
- Assistance with procurement (as required, according to donor policies and procedures)
- Report to the Sub-Committee on International Cooperation and Task Force 3 on outcomes, particularly on fisheries and related aspects for fishing communities
- Generally facilitate more effective communications and exchange of experiences in tsunami relief and recovery, notably through the organisation of meetings.

### Website

The information contained in the database will also be made available through a web-based database, which can be easily accessed by all and used to facilitate matching of support between the donors and beneficiaries. The website would incorporate a forum to offer a place for discussion and promotion of exchanges of experiences. In that context, the site will be in both Thai and English, in order to ensure that NGOs, donors, local groups and governmental organizations can all interact effectively.

The website is aimed at facilitating the 'tracking' of interventions on a village basis and allowing the identification and targeting of where support and activities must be next directed. It will principally provide updated information on affected villages' households with their identified needs, and past and ongoing support. The outcomes of monitoring and evaluation will be included in order to facilitate a rapid sharing of experiences.

### MECHANISMS FOR SUPPORT AND COORDINATION

To support an effective matching of needs with available support, a coordinating body needs to be established. The coordinating body has to have the confidence of all actors, and has to be accountable to the government, communities and donors. As an outcome of the February Workshop in Phuket, all parties (DOF, NGO-Network, Communities, and the Tambon Administration Organizations, as well as FAO, NACA, SEAFDEC, and the EU-RTG CHARM Consortium) agreed to set up an Andaman Forum as a coordinating network. This will be physically located in the Andaman Marine Research and Development Centre in Phuket.

DOF offered support through office space and some officers. The EU/RTG-CHARM project also supported the establishment of the office, and provided permanent staff for coordination and information updating. Another small office was set up in the DOF's Fisheries Foreign Affairs Division in Bangkok to ensure good coordination between the Andaman Forum and DOF headquarters.



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## *Regional Guidelines Package*



*now available!*

Shortly after completion of the regionalization of the Code of Conduct for Responsible Fisheries (CCRF), SEAFDEC published a 4-set package of the Regional guidelines for Responsible Fisheries in Southeast Asia. The package composes four publications (1) Responsible Fishing Operations; (2) Responsible Aquaculture; (3) Responsible Fisheries Management; and (4) Responsible Post-harvest Practices and Trade.

The CCRF, adopted at the FAO Conference in 1995, provides principles and international standards behavior for responsible practices, taking into account the relevant biological, technology, economic, social, environmental and commercial aspects. The implementation of the CCRF is a very important achievement to ensure sustainable fisheries in Southeast Asia. However, before this can be achieved, clarification in regard with the regional specific situation is required. Regionalization process for the CCRF started in 1998, through the series of preparatory works and regional consultation with the specific social, economic, cultural, ecological and institutional contexts and diversity of the Southeast Asian fisheries, and was completed in early 2005. The package of Regional Guidelines is now available at SEAFDEC Secretariat. Electronic copy can also be downloaded free of charge from [www.seafdec.org](http://www.seafdec.org).

## INVITATION TO CORRESPONDING WRITERS

With six issues of *Fish for the People* already published, and *Fish for the People* celebrating its second birthday, we hope that we have given you a good idea of the aims and general tone of the publication. Recently, we have been publishing more articles from external contributors. We are further inviting contributions from writers interested in promoting relevant issues on fisheries in developing countries. While the publication will continue to focus on the Southeast Asian region, future issues can address relevant issues from other tropical regions.

*Fish for the People* is a policy-orientated publication. It is not a forum for publication of research findings, nor is it intended to provide detailed technical information. The publication targets not only experts or scientists, but also other traditionally less technically-oriented fisheries stakeholders, such as policy-makers, donors, government staff, managers, and more generally, an informed lay public with an interest in how our fisheries are managed.

Readable, accessible articles that address the various issues discussed at the ASEAN-SEAFDEC Millennium Conference are most desired. Articles should focus on newly emerging issues relevant to sustainable regional or tropical fisheries management. They should present important issues with clear regional messages, emphases, thrusts, problem areas, and propositions for improving current situations.

Through *Fish for the People*, we hope that authors will gain the attention and consideration of targeted fisheries stakeholders, and contribute to the future achievement of more sustainable fisheries.

Correspondence related to editorial matters should be sent to [fish@seafdec.org](mailto:fish@seafdec.org)



# IMPROVEMENT OF FISHERY STATISTICS

## IN THE ASEAN REGION:

### *Why? What? How?*

90%

80%

70%

Pouchamarn Wongsanga

### ***Introduction***

**Fishery statistics are widely recognized as an important tool for providing crucial help in determining national fisheries policies, formulating national management frameworks and actions, and understanding the status and trends of fisheries resources. It is nonetheless a fact that national fishery statistics systems of ASEAN member countries are currently not being effectively developed and implemented.**

Strengthening national fishery statistics systems and maximizing their use for fisheries planning and management is one of the priority goals identified during the ASEAN-SEAFDEC Millennium Conference in 2001. This was reflected in the Resolution and Plan of Action adopted at the Conference, with Resolutions 4 and 7 stipulating the importance of *improving the understanding/knowledge of fisheries and aquaculture through harmonization of standards and capacity building, better presentation of statistics and information for various user groups taking into consideration of reduction of disparity among countries.*

Following these policy directives, SEAFDEC has initiated a project aiming at improving fishery statistics systems and related mechanisms in the region, under the Special 5-year programme (2002-2005). Since then, the importance of fishery statistics has been well recognized, not only by SEAFDEC and its Member Countries, but also by ASEAN and FAO,

***“It is a fact that national fishery statistics systems of ASEAN Member Countries are currently not being effectively developed and implemented”***

many joint activities were implemented in collaboration with these institutions. The recent membership of SEAFDEC in the Coordinating Working Party on Fishery Statistics (CWP) and the Fisheries Resources Monitoring Systems (FIRMS) are further steps toward the harmonization of standards both among ASEAN Countries and at the global level.

This article will highlight activities and achievement of the project in improving Fishery Statistics in the Asean Region from 2002 to 2005.

“...human resource development exercises have recently been conducted, notably in the four new ASEAN Member Countries – Cambodia, Lao PDR, Myanmar and Vietnam...”

of the ASEAN Foundation (Japan-ASEAN Solidarity Fund). These activities also aimed to reduce technical disparities among SEAFDEC Member Countries through the mobilization of existing regional experience and skills.

Several activities have been initiated, starting with the first ASEAN-SEAFDEC Regional Technical Consultation (RTC) on Fishery Statistics organized in Chiang Mai, Thailand, in June 2003, in order to develop directions and plan for capacity building of fishery statistics in the region, considering both institutional and human resource aspects. The outcome of the Consultation provided the basis, directions and plan for the forthcoming implementation of the project, including national workshops and two on-site trainings for each of the CLMV Countries.

### *Improving Fishery Statistics Systems in CLMV Countries*

With the goal of strengthening the capacity of fishery statistics systems in the ASEAN region, human resource development exercises have recently been conducted, notably in the four new ASEAN Member Countries – Cambodia, Lao PDR, Myanmar and Vietnam (known as the CLMV Countries). This has been done with the support

Following-up the recommendations made at the first RTC, a national workshop on fishery statistics was thus organized in each of the CLMV Countries, clarifying needs and directions for the improvement of the fishery statistics system in response to national fisheries specificities and existing capacity. The outcomes of each national workshop concluded issues and problem areas as well as directions and approaches for the improvement of each national fishery statistics system.

#### **BOX 1 – Activities Conducted in Cambodia**

The national workshop on Fishery Statistics was held in Phnom Penh, from 8 to 10 September 2003. Its aim was to address the needs and directions for improving fishery statistics at both national and local levels. Special emphasis was placed on building human capacity, through addressing issues such as why statistics are required and the purposes for which they would be used; the types of statistics required and the information required, and means of collecting processing and using statistics.

The first on-site training workshop on Fishery Statistics was organized in Siem Reap province from 17 to 20 December 2003. The training highlighted aspects related to practical approaches for data collection, methodologies and techniques to ensure the quality of statistical data and to improve the national fishery statistical system on a short-term basis. The second on-site training was held in Sihanoukville from 23 to 29 March 2004. The training was conducted as a follow-up action on previous activities aimed at introducing data collection methodology at fish landing sites, focusing this time on marine fisheries.

At the end of the activities, the participants had a clearer understanding of how to improve data systems for fishery statistics in Cambodia, both for inland and marine fisheries. It is expected that the national data system for fishery statistics in the country will soon be comprehensively reformulated, including a revision and elaboration of data types, data items, priority of requirements, purpose, methods for data collection, frequency, and responsible agencies.



## BOX 2 – Activities Conducted in Lao PDR

The national workshop on Fishery Statistics was held in Champasack, from 25 to 28 September 2003. Its objectives were to review the current status of fishery statistics in Lao PDR in order to help stakeholders review, clarify and possibly develop a national fishery statistics system, and the necessary support and underlying mechanisms. Through its proposed follow-up actions, the workshop came up with suggestions for responsible agencies in charge to solve identified problems and ultimately to improve fishery statistics in Lao PDR.

The first on-site training on Fishery Statistics was organized from 29 October to 1 November 2003, in Savannakhet. The training was aimed at improving fishery statistics in Lao PDR, emphasizing the formulation and establishment of data systems for inland fishery statistics in the country. Major outcomes from the training were draft concepts and definition of key terminologies for inland fishery statistics, draft classifications of inland fishery statistics, a minimum data system for inland fishery statistics including data types and items, and future follow-up actions and activities. The second on-site training on Fishery Statistics, organized from 8 to 12 March 2004 in Vientiane, aimed at providing concepts, design and planning as well as appropriate data collecting methodologies and practices for inland capture fisheries, such as landing site surveys and sample surveys.

## BOX 3 – Activities Conducted in Myanmar

The national workshop on Fishery Statistics was held in Yangon from 1 to 3 October 2003 with the aim of reviewing the current status of fishery statistics in Myanmar in order to improve and develop the fishery statistics system by identifying needs and requirements to be addressed during the two subsequent on-site.

The first on-site training workshop was held in Yangon, from 11 to 14 February 2004. It aimed at improving the fishery statistics system in Myanmar, emphasizing the design and planning of data systems for fishery statistics both in inland and marine fisheries, and in aquaculture. The second on-site training, held at the same place from 25 to 30 May 2004, aimed at introducing methodologies such as fishing community surveys for in-shore fisheries, including their potential application and usage for the management of in-shore fisheries. It also aimed at providing the concepts, processes and basic skills required in the conduct of the fishing community survey for in-shore fisheries through planning, field practice, data collection, processing, analysis and reporting. In sum, the training attempted to clarify potential ways to incorporate fishing community surveys for in-shore fisheries into the national fishery statistics system of Myanmar.

As a result of the activities conducted in the country, a draft conceptual framework for a national fishery data and information management system was formulated. Recommended future activities for the improvement of Myanmar fishery statistics include:

1. To review the terminologies and their definitions and concepts used in the existing system;
2. To undertake studies to verify the accuracy of the existing information; and
3. To emphasize small-scale in-depth studies at a selected site covering the requirements of all sub-sectors of fisheries.

Once the problems and priority issues of each country had been identified, the participants – fishery administrators, managers and statisticians – gained a better understanding of the needs and areas for improvement of their respective national fishery statistics system. The second phase was then to train them on statistical data collection, analysis and reporting of quality fishery statistics in line with the gap identified during two subsequent national on-site trainings. During these exercises, a draft regional handbook

on collecting fishery statistics for inland and coastal fisheries was used as a reference document. The handbook is to be revised accordingly, based on experience gained through the national trainings organized in the CLMV countries and the recommendation made at the second RTC. It will be used in future activities to promote capacity building for the improvement of fishery statistics system in other ASEAN member countries.

## BOX 4 - Activities Conducted in Vietnam

The national workshop on Fishery Statistics was organized in Hanoi from 15 to 17 October 2003. With the goal of promoting a sustainable system for national fishery statistics, the workshop recommended several immediate future actions.

These were 1) to establish a national taskforce for fishery statistics with identified tasks, and 2) to conduct human capacity building through the promotion of cooperation at national as well as regional and international levels on a few identified key areas.

The first on-site training was held in Nha Trang from 26 to 29 February 2004 while the second on-site training was conducted in Ho Chi Minh City from 18 to 21 May 2004. At the end of the on-site training workshops, the following outputs were achieved:

1. A common understanding and knowledge on fishery statistics system among participants from various agencies and provinces concerned
2. Enhanced awareness of participants on policy, strategies and plan for improvement of fishery statistics by relevant agencies
3. concepts and definitions of key terminologies and classifications of national fishery statistics
4. Strengthened practical capacity of officers responsible for the design and planning of fishery statistics data system, including survey design, and
5. Identified immediate future follow-up actions and activities for further improvement of fishery statistics in Vietnam.

Despite these positive outcomes, the improvement of the fishery statistics system in Vietnam is still facing many difficulties. The training concluded by identifying these problems and constraints and also by proving recommendations on future actions to be conducted to improve the system.

The first set of on-site training workshops on fishery statistics was conducted from October 2003 to March 2004, scheduled according to the readiness of each of the four countries. The training methodology used was developed on the basis of issues and problem areas identified, and elaborated upon during the earlier national workshop. The outcomes from the first on-site trainings were used as a framework for the conduct of the second set of trainings. These were organized from March to May 2004, and were primarily aimed at introducing field surveys and practices in line with national requirements (such as fish landing sites surveys and fishing community surveys).

Through the series of activities conducted at both national and regional levels, the project has been able to enhance the understanding of how national fishery statistics systems can be improved through human resource development activities. Although most of the actions have focused on developing the capacity of CLMV countries, the other member countries have been closely and continuously involved in sharing their expertise and experience.

“...the project has been able to enhance the understanding of how national fishery statistics systems can be improved through human resource development activities.”

### *Supporting Sound Statistics Systems in the Region*

The second RTC on Fishery Statistics was conducted from 15 to 18 June 2004. Its aim was to follow up the implementation of capacity-building activities by reviewing and evaluating the results of project implementation. It also aimed at identifying further priority activities to be undertaken for improvement of fishery statistics systems in the ASEAN region.

The Consultation concluded that actions should be further conducted with priority given to the ASEAN region as a whole. It came up with directions and considerations for future implementation as well as priority actions/activities to be undertaken on fishery

## Box 5 Priority Activities on Statistics for Marine Fisheries

### 1. Major statistics issues and requirements

At the National level	
Major national and issues	Needs and requirements
1. Lack of resources	<ul style="list-style-type: none"> <li>Clearly define requirements for statistics and its usage for decision making</li> <li>Cost effective methodologies for data collection</li> </ul>
2. Lack of skills	<ul style="list-style-type: none"> <li>Capacity building at all levels</li> <li>Human resource management</li> </ul>
3. Awareness programme	<ul style="list-style-type: none"> <li>Improve relationships with stakeholders</li> <li>Promote and enhance advocacy</li> <li>Provide awareness programme</li> </ul>
4. Timeliness	<ul style="list-style-type: none"> <li>Management of data collection</li> <li>Widening application of IT</li> </ul>
5. Data accuracy and reliability	<ul style="list-style-type: none"> <li>Validation and verification of data</li> <li>Training on species and gear identification, and units of measurement</li> <li>Correct application of data collection methodology</li> <li>Application of appropriate sampling techniques</li> </ul>
6. Problems obtaining and estimating data	<ul style="list-style-type: none"> <li>Awareness programme with stakeholders</li> <li>Establish good relationships with fishers, boat owners and fishing establishment</li> <li>Proper application of collection methodology</li> </ul>
7. Data analysis to generate useful information for presentation	<ul style="list-style-type: none"> <li>Capacity building; training</li> <li>IT applications</li> </ul>
8. Data management	<ul style="list-style-type: none"> <li>Proper database management system</li> <li>Software development</li> <li>Training</li> </ul>
9. Linkage and coordination between routine and non-routine data collection	<ul style="list-style-type: none"> <li>Coordination among various data providers, agencies and research institutions</li> <li>Incorporation of non-routine data sets into routine data sets</li> </ul>
10. Sustainability in data collection	<ul style="list-style-type: none"> <li>Set minimum requirements</li> <li>Stress the importance of data collection through regular consultations</li> <li>Legislation</li> <li>Fostering and promoting statistician groups</li> </ul>
11. Lack of coordination at national level	<ul style="list-style-type: none"> <li>Coordinating committees among relevant agencies</li> <li>Encourage regular meetings/workshops/dialogues, etc. among relevant agencies</li> </ul>

## Box 5 Priority Activities on Statistics for Marine Fisheries (Cont.)

At the Regional level	
Major national and regional issues	Needs and requirements
1. Disparity of statistics systems	<ul style="list-style-type: none"> <li>• Continue capacity building in the CLMV countries</li> <li>• Sharing of expertise and experiences between Member Countries</li> </ul>
2. Differences in statistics measurement and units	<ul style="list-style-type: none"> <li>• SEAFDEC to play a coordinating role</li> <li>• Improvement of the framework for the Southeast Asian Fisheries Bulletin</li> <li>• Harmonization and standardization of measurement and terminologies</li> </ul>
3. Differences in international and regional reporting formats	<ul style="list-style-type: none"> <li>• SEAFDEC to play a coordinating role</li> </ul>
4. Lack of networking among Member Countries	<ul style="list-style-type: none"> <li>• Regular regional meetings</li> <li>• Regular communications</li> <li>• Establishment of a network of statisticians and personnel</li> </ul>
5. Common statistical information for regional usefulness	<ul style="list-style-type: none"> <li>• Common database and application systems</li> </ul>
6. Unreported trans-boundary landing	<ul style="list-style-type: none"> <li>• Encourage cooperation among Member Countries</li> </ul>

### 2. Proposed Activities

- Pilot projects for data collection in CLMV Countries
- Pilot project for the development of databases and application systems at national levels
- Expert consultation workshop to improve the production of the regional statistics bulletin
- Review and expedite the development of common regional databases and application systems
- Establish a forum for networking among focal points and statisticians in Member Countries, and
- Finalize and translate into national languages the Handbook on collecting fishery statistics for inland and coastal fisheries.

statistics to support effective planning and management for sustainable fisheries in the region. The recommendations would be used as a basis for planning of future activities at both regional and national levels.

### *Elaborating Guidelines for Fishery Statistics*

The importance of quality statistics and information is stressed in the Code of Conduct for Responsible Fisheries as a tool to facilitate development, planning and management of fisheries.

“...as many issues are covered in the regional guidelines for responsible fisheries management in Southeast Asia, the guiding principles given are still broad and in need of further elaboration...”



Yet, as many issues are covered in the regional guidelines for responsible fisheries management in Southeast Asia, the guiding principles given are still broad and in need of further elaboration. The project is trying to fill that gap, especially in regard to actual implementation in order to clarify a clear direction for actions that will improve fishery statistics for the countries in the region.

One of the project's achievements was to develop the Regional Guidelines for Fisheries Statistics in Southeast Asia, which substantiate issues related to fishery statistics as included in the regional guidelines for responsible fisheries management. These regional guidelines are envisaged to provide an important framework for formulation of ASEAN-SEAFDEC collaborative programmes on fishery statistics and information as well as to support cooperation among the countries in Southeast Asia and regional or international organizations.

***Harmonizing Standards: Improving the Compilation and Production of the Fishery Statistical Bulletin of Southeast Asia***

The aim of this exercise was to improve the compilation and production of the Fishery Statistics Bulletin for the South China Sea Area, so that in terms of area coverage the ASEAN region is better represented. The new geographical coverage of *SEAFDEC Fishery Statistical Bulletin*, now know as the *Fishery Statistical Bulletin of Southeast Asia*, will from now on includes areas of relevance for all ASEAN Member Countries. Work has also been accomplished

in terms of scope, timeliness of statistics, and the global framework has been revised, with classifications, formats and definitions reviewed to be consistent with international standards, such as with FAO fishery statistics.

Under the new framework, the minimum requirements for a national statistics system have been set with the aim of providing a target for priority actions and improving national statistics in a cost-effective manner. The adoption of these minimum requirements is a follow-up of the FAO-SEAFDEC regional workshop for the improvement of fishery data and information collection systems, held in February 2005. In addition, there will be a streamlining process of the reporting of fishery statistics by Member Countries to both FAO and SEAFDEC.

***Improving Regional Networking on Fishery Statistics***

The establishment of an ASEAN Network of Fishery Statistics has this year been endorsed by the SEAFDEC Council and ASEAN. The network will be mobilized as a collaborative working mechanism among Member Countries and organizations concerned, so as to enhance cooperation in the development and improvement of fishery statistics and information in the region. The network's responsibilities include supporting the compilation of regional and international fishery statistics as well as being involved in the provision of technical inputs to initiatives related to fishery statistics and information.

## Box 6 - Priority Actions/Activities Covering Statistics for Inland/Coastal Fisheries

Countries	Type of Water Bodies	Proposed Pilot Projects	Rationale for Initiation	Statistical Information to be Collected / Areas for Improvement
1.Brunei Darussalam	Inland	Coastal aquaculture – offshore cages/cage culture Freshwater aquaculture – ponds	1.To speed up data processing. <i>Note: The country encountered few problems when compared with others.</i>	1.Data processing 2.Data analysis
2.Cambodia	Coastal	Coastal capture fishery	1.To build awareness among stakeholders 2.To build capacity for statistical data for coastal capture fisheries 3.To strengthen communication and cooperation 4.To utilize cost effective methodologies 5.To support the planning and management office.	1.Catch and value 2.Fish species 3.Consumption 4.Ecological information 5.Fishing effort 6.Export value 7.Socio-economic survey
3.Indonesia	Inland and Coastal	Capture fishery in inland and coastal areas	1.To develop electronic data processing 2.To change transfer methods from paper-based through mail system to an electronic based system. <i>Note: The country needs capacity building on methodologies/ techniques on data transfer as well as raw data processing.</i>	1.Raw data processing 2.Methodologies and techniques on data transfer
		Freshwater and coastal aquaculture	1.To obtain information on socio-economic conditions for freshwater and coastal aquaculture.	1.Social data 2.Economical data
4.Lao PDR	Inland	Capture inland fishery (reservoir)	1.To study species composition and fishing gear 2.To support planning and management of inland fisheries.	1.Structure data 2.Fish production data 3.Community data 4.Socio-economic
5.Malaysia	Inland and Coastal	Aquaculture project (land based and cage culture in gazetted aquaculture industry zone – coastal, river, reservoir)	1.To achieve target production from the Third Agricultural Policy. 2.To look into the coordination between state and federal administrations 3.To look into differences in terms of production and viability of projects in different water bodies.	1.Production 2.Catch and value

## Box 6 - Priority Actions/Activities Covering Statistics for Inland/Coastal Fisheries (cont.)

Countries	Type of Water Bodies	Proposed Pilot Projects	Rationale for Initiation	Statistical Information to be Collected / Areas for Improvement
6. Myanmar	Inland	Capture inland fisheries (flood plain area – leasable fisheries)	<ol style="list-style-type: none"> <li>1. To develop a data collection system</li> <li>2. To obtain information of flood plain fisheries</li> <li>3. To make a planning programme for flood plain fisheries based on actual data sets</li> <li>4. To support national planning and calculation of GDP.</li> </ol>	<ol style="list-style-type: none"> <li>1. Socio- economic data</li> <li>2. Consumption</li> <li>3. Ecological information</li> <li>4. Market study</li> </ol>
7. Philippines	Inland and Coastal	Aquaculture (in Region 7– Visayas Island)	<ol style="list-style-type: none"> <li>1. To establish and update master sampling frame to generate more accurate and timely results</li> <li>2. To be used as reference by NGOs, government, fisheries federation and associations.</li> <li>3. To establish rapport and strong linkage with fishery federation and associations and stakeholders</li> <li>4. To test a modified survey methodology and survey questionnaires</li> <li>5. To develop data processing system for survey data evaluation and validation.</li> </ol>	<ol style="list-style-type: none"> <li>1. Master sampling frame</li> <li>2. Lists of all aquaculture farms in the Region 7, including seaweed.</li> </ol>
8. Thailand	Inland	Capture inland fisheries - riverine	<ol style="list-style-type: none"> <li>1. To estimate the total annual freshwater production from rivers, by species</li> <li>2. To estimate fishing effort</li> <li>3. To complete the freshwater production survey</li> <li>4. To provide basic information for fisheries management, i.e. maintenance of fish species biodiversity for food security.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fish production</li> <li>2. Catch and value</li> <li>3. Fishing effort</li> </ol>
9. Vietnam	Inland and Coastal	Freshwater and coastal aquaculture	<ol style="list-style-type: none"> <li>1. To enhance the current fishery statistics system to make it more reliable, accurate and timely for policy-making.</li> <li>2. To provide a basis for implementing strategy</li> <li>3. To coordinate fishery statistical data between agencies and institutions</li> <li>4. To monitor aquaculture activities (produce seed, consumption, quality of products).</li> </ol>	<ol style="list-style-type: none"> <li>1. Production</li> <li>2. Fish price</li> <li>3. Species composition</li> <li>4. Market study</li> <li>5. Socio-economic data</li> </ol>

“The new geographical coverage of *SEAFDEC Fishery Statistical Bulletin*, now known as the *Fishery Statistical Bulletin of Southeast Asia*, will from now on include areas of relevance for all ASEAN Member Countries”



### ***Building up Regional and Global Collaborations and Partnerships***

Considering the benefit to Member Countries, namely bringing the quality of their fishery statistics into line with international standards, SEAFDEC became a member of the Coordinating Working Party on Fishery Statistics (CWP) in 2004. Membership of CWP is considered beneficial to Member Countries, as it allows them to reflect requirements from the region when developing global common definitions, classifications and standards for the collection of fishery statistics. Member Countries will also be able to obtain first-class technical advice on fishery statistics matters through this connection with CWP.

2004 was an important year for the region, as SEAFDEC also entered into a partnership with the

Fishery Resources Monitoring System (FIRMS). Such partnerships help in promoting sustainable management of fisheries in the ASEAN region by improving Member Countries data and information systems in line with FIRMS standards, and by

“...the minimum requirements for a national statistics system have been set with the aim of providing a target for priority actions and improving national statistics in a cost-effective manner”

### **BOX 7. FAO-SEAFDEC Regional Workshop for the Improvement of Fishery Data and Information Collection Systems**

In early 2005, SEAFDEC and FAO took progressive steps together, starting with the FAO-SEAFDEC regional workshop for the improvement of fishery data and information collection systems in Southeast Asia in February 2005. During the workshop, a number of important issues were raised to support the implementation of SEAFDEC Resolution and Plan of Action and FAO Strategy for improving information on status and trends of capture fisheries.

As the main input to the event, updates on the current status of fishery statistics collection and reporting systems in the region were given. Based on these, required follow-up actions were suggested with a view to promoting the implementation of Strategy-STF. The most immediate action identified was the needs for capacity building to facilitate the improvement of fishery statistics and information that will in turn support the development and implementation of sound policies and sustainable management in the region.

The outcomes of the workshop reflect the strong mutual interests of FAO and SEAFDEC for the benefit of the countries in the region, on which directions for the development of a programme work and activities of parties concerned have been developed. This includes the formulation of the next phase of the project on the “improvement of fishery statistics systems and mechanisms”.



*“Membership of CWP is considered beneficial to Member Countries, as it allows them to reflect requirements from the region when developing global common definitions, classifications and standards for the collection of fishery statistics”*

providing user-friendly tools and databases that greatly help in actually using the collected data and information. This partnership will also assist in meeting the objectives of the Code of Conduct for Responsible Fisheries (CCRF), including the implementation of international plans of action and the FAO Strategy for improving information on the status and trends of capture fisheries under the FishCode STF Project (Strategy-STF).

### ***Promoting the Regional Uniqueness of Fisheries***

Early 2005, SEAFDEC addressed regional specificities in fishery statistics and information development and requirements, at the biennial meeting of the Twenty-First Session of the Coordinating Working Party on Fishery Statistics (CWP21), and the Second Session of the FIRMS Steering Committee Meeting (FIRMS FSC2).

The major issues raised and discussed were the harmonization of FAO and SEAFDEC statistics reporting in the Southeast Asian region with adjustments for geographical areas, and follow-up to the SEAFDEC contribution to the FIRMS partnership in relation with shark-associated fisheries in Southeast Asia. Collaboration for the promotion of the implementation of Strategy-STF was also discussed further, especially in regard to the next phase of the SEAFDEC project on Fishery Statistics and Information. There was also some exchange of ideas about possible collaboration between the SEAFDEC and FAO for the development of aquaculture statistics in the Southeast Asian region.

### ***Conclusion***

Since the development of the special five-year programme (2002-2005), fishery statistics has been acknowledged by Member Countries, ASEAN and FAO as an issue of great importance, notably through the implementation of a series of activities in the region. SEAFDEC had started a long-term process that will hopefully support the improvement of fishery statistics and information in Southeast Asia. These activities aim to support Member Countries in implementing the Resolution and Plan of Action adopted at the Millennium Conference (i.e. “strengthening national fishery statistics systems and maximizing their use for planning and management, and developing standard definitions and classifications to facilitate regional fishery statistics and information exchange”). Outcomes of the project will help Member Countries to determine directions for the development of programmes and activities that will improve their national fishery statistics and information systems.

SEAFDEC will continue to strengthen the linkages between statistics and information systems and management for the benefit of the people in Southeast Asia. The implementation of the project in collaboration with regional and international will also further improve the quality and relevance of fishery statistics, laying a solid foundation for sound development planning and management of fisheries in the future.



#### ABOUT THE AUTHOR

**Ms. Pouchamarn Wongsanga** started working at the Research Division of SEAFDEC Training Department in 1984. She has vast experience in the fields of coastal fisheries management, fisheries socio-economics and fishery statistics. Her current post is Information Program Coordinator of SEAFDEC Secretariat, based in Bangkok, Thailand.



# Safety at Sea

## for Small Fishing Boats and Other Craft

Rupert Elstow



We pray the Lord to preserve  
all those who go down to the Sea in ships

...and...

do their business in great waters

**S**afety at sea for small fishing vessels and other craft is largely a state of mind, supported by a modicum of common sense and a practical approach to leaving the shore in small boats.

This short article is written with the benefit of hindsight, associate membership of the inshore lifeboat crew at Sheringham in Norfolk, England and some observation of the small-scale fishing boats and other small craft that predominate in the fishing business of Southeast Asia. The benefit of hindsight comes from loving the sea, and during a long lifetime of joining the Royal Navy and owning successively several small sailing boats. Having owned and sailed small boats, it is possible to draw conclusions about the ownership and dedication to ownership of many small craft observed around the world, and more particularly, in Southeast Asia. The ownership and use of small boats is, or should be, a matter of pride to the owner, particularly when the owner's income and livelihood is derived from such humble craft. Equally, the state of the craft should reflect the knowledge that if a craft fails while at sea it puts in jeopardy the lives of any and all that make a rescue attempt.

### A Dedication to Life at Sea

Internationally there are conventions dedicated to life at sea, notably the constantly updated SOLAS Convention<sup>1</sup>, initiated back in 1914, which can guide governments and those responsible for setting regulations and providing infrastructure on what to provide, and on

the maintenance of such provisions. Recognizing this, the SEAFDEC Training Department convened a two-day Safety at Sea workshop in December 2003. This dealt more closely with the specific needs of the small-scale fishermen who are the norm in Southeast Asia. However, the purpose

*"...the state of the craft should reflect the knowledge that if a craft fails while at sea it puts in jeopardy the lives of any and all that make a rescue attempt"*

of this article is not to rehash SOLAS, but to outline some actions that boat owners may undertake to ensure that the emergency rescue provisions available wherever they are not called upon. Even so, small-scale fishing boats even working within three kilometres of the shoreline mark can get into unforeseen difficulties.

### Attention to the Boat

The required actions affecting inshore small-scale fishing vessels and other craft fall into three main categories, the first being unforeseen changes in weather conditions and the need for good design. The second concerns the deterioration of the vessel through natural exposure to salt and sunlight (ultraviolet) attack on the vessel and the gear it carries. The third covers the necessity for additional equipment to be carried to offset danger and to attract attention to a boat in difficulties.

<sup>1</sup>SOLAS stands for Safety Of Life At Sea. For more about this convention, see [www.imo.org](http://www.imo.org)



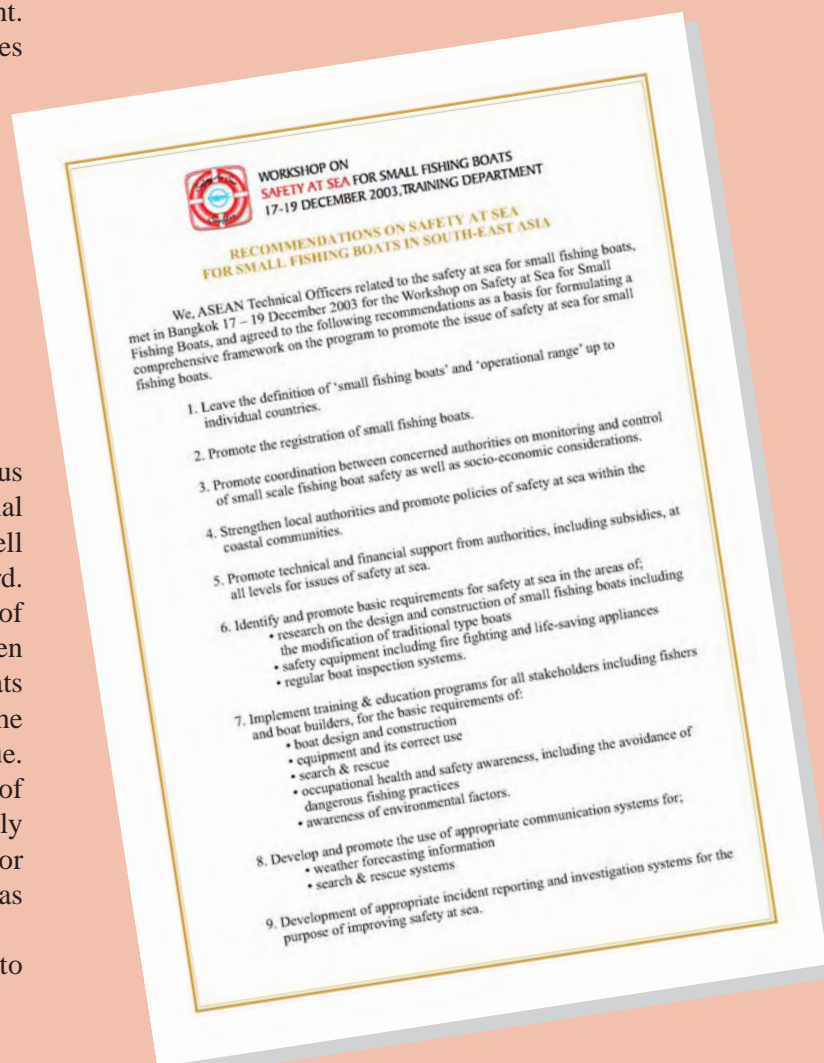
*Qat Fish©2005*

The first condition may be offset by attention to the boat, the type of boat, its design and permanent equipment. As an example of this a flat-bottomed craft, sometimes

*“...SEAFDEC Training Department convened a Safety at Sea workshop in December 2003. This dealt more closely with the specific needs of the small-scale fishermen who are the norm in Southeast Asia.”*

called a ‘punt’, is not seaworthy, and is positively dangerous in any sea conditions. The boat should be of a conventional round bilge design with a good wide beam (width), well built of salt-resistant materials and with plenty of freeboard. It is also a good idea to install bilge keels on the outside of the bilge, as these aid in stability and are of benefit when hauling the boat ashore. Many small-scale fishing boats seen in Southeast Asia are narrow-gutted, and from the point of view of seaworthiness and safety of doubtful value. If the stern or ‘transom’ of the boat is flat, it should be of adequate thickness to allow the top edge to be smoothly rounded such that a net or gear can be pulled inboard or discharged outboard without snagging or hanging up as this may cause dangerous instability to the vessel.

When all the weight to be carried is taken into





account there should be adequate additional buoyancy provided to allow the boat to float even when completely inundated with water. Normally, this extra buoyancy is installed under the seats or ‘thwarts’. It is often the case when such buoyancy is installed that it takes the form of round sealed cans, mounted under the seats. If the cans are big enough, then the objective can be achieved. However, it may be better to have the buoyancy chambers specially made to fit the internal shape of the boat as this acts to reinforce the rigidity of the hull, especially when a net, heavy or otherwise, is out over either beam in any sort of seaway that will cause the boat to ‘wrack’ or twist. In an ideal world, such chambers should be made of fibreglass, brass, copper or stainless steel, but these are expensive. It is very often the case in Southeast Asia that the top ends of the ribs may protrude through the ‘gunwales’, forming snagging points for fish netting.

The use of long-tails or outboard motors is very common in such small craft, but in any sort of weather these are subject to failure. To guard against this, a pair of oars or paddles should be carried permanently, although the bottom-boards of the boat should be easily removable for use as makeshift paddles if all else fails.

Lastly, one important piece of seagoing equipment is a pump of some form to empty flooded bilges. The pump may be permanently installed, or may be portable and hand-held. Above all, it must be serviceable.

### **Avoiding Degradation of Wood and Cordage**

The second required action concerns attack by salt and sunlight. This action is very much in the hands of the boat owner. In the case of wooden boats, which are the majority of boats in Southeast Asia, protection from sunlight’s ultraviolet rays can adequately be dealt with by a good coat of paint. Here again, where local boats are given a coat of paint it is common to use domestic house paint, but this is not good enough, as the ultraviolet resistance is inadequate. Marine paints are specially formulated to give protection, but are consequently rather more expensive.

*A good example of the damage caused by sunlight to unprotected wood*

Marine paint gives protection to the wood by preventing the loss of wood’s integrity through being denatured by ultraviolet light. This denaturing can be seen when wood turns a ‘dead’ grey colour. In a working boat, paint can easily be damaged so regular paint and varnish maintenance is a must. Such maintenance applies to both the outside and to the inside of any small seagoing boat.



*Some small-scale fishing boats in Southeast Asia*

The same degradation is also caused to cordage and rope gear carried. Ropes of natural fibre, nylon, polyurethane, and indeed all forms of plastic, suffer varying degrees of damage and so should be stored out of direct sunlight. This is also true of fish boxes, buckets and any other plastics carried as operational gear. A tarpaulin pulled over the gear can be adequate protection.

### **Personal Survival**

Lastly, there is the question of personal survival and attracting attention from the shore or any other vessel. This principle is known as “to see and be seen”. For example, if night operations are conducted, it makes sense to carry some form of navigational lighting, if only to avoid being run into by other boats. Such lights may be either electric

or fuelled by gas or oil. Some form of light should be visible for 360 degrees around the vessel. In such small boats it is unnecessary to carry green and red lights; a single all-round white light will suffice.

In personal survival, it is sensible to wear, or have immediately available some sort of floatation jacket, preferably not the inflatable type, as these are cumbersome and can easily be damaged in a working environment. Included in the jacket should be a whistle and a small torch for attracting attention. Small survivor kits or packs are available for attracting attention to the boat. As the boats under consideration are small the carrying of distress rockets is probably unnecessary, but red coloured hand-held flares are essential. In the absence of rockets, small

“In conclusion, the equipment given will be considered expensive, but quality does not come cheaply and also raises the question of what a life is worth”

‘pen-flares’ are available that fire a red star a hundred feet or so into the air. These are cheap, very bright and certainly attract attention.

For distant communication of distress, if affordable, it is a good idea to carry a hand-held transmitter/receiver tuned to Channel 16 on VHF (156.8 MHz) and 2.182 MHz on the Medium Band frequency. Other equipment often included in such packs is a short fishing line complete with hook and feathered lure. This is included because a fish when wrung out will provide a little fresh water from the internal juices and some sustenance although uncooked fish (except for some specific species) is not very palatable (canteen, please note!), but it will sustain. The pack also includes a small handheld compass. If these packs are to be assembled by the user, it is wise to include some form of sunglasses protection, as ultraviolet reflected from water can damage the eyes. Although they are not wholly effective, a shark repellent is also included, as they do constitute a little protection.

Even if fishers are well versed in weather lore, it is in their own interest to listen to whatever weather forecasts are available for his area of operation before they set out on a fishing operation.

## Conclusion

In conclusion, the equipment given will be considered expensive, but quality does not come cheaply and also raises the question of what a life is worth, the danger lying not only in the life of the endangered seamen, but also to the lives of their rescuers.

It is also pertinent at this point to draw the attention of the authorities to the SOLAS convention and the provision of coastal rescue coverage, both in terms of zoning and in terms of rescue equipment. Coastguards around the coastlines should be adequately trained in rescue procedures, and should be equipped with adequate and fast rescue boats. As these will operate in a general rescue effort apart from fishing boats, the higher class of hard chine Avon or American Zodiac with outboard engines will work quite well. These are used around the coastlines of the USA, the UK and Australia. However, zoning arrangements should recognize time scales to rescue and the fuel requirements and range of small rescue craft. Governments should also provide an accurately timed and updated radio weather forecasting service, which should take into account identifying areas in whatever zoning arrangement is in place.

In the UK, the lifeboat service is a charity and is maintained wholly by public subscription, including the purchase of boats. The service receives no money from the public purse. The crews are local unpaid volunteers. It is not expected that the same arrangements would be possible in Southeast Asia, so it would be necessary for the governments to underwrite the inauguration of the service, at least initially.

The seakeeping qualities of many inshore lifeboats, such as the Atlantic 75 inshore lifeboat, have been tested many times in rescues in the most violent weather conditions that occur in this part of the North Sea. They would be most adequate in Southeast Asia.



## ABOUT THE AUTHOR

**Mr. W. R. B. Elstow**, M.Sc. From Southampton University, UK, is the Editorial Officer of SEAFDEC Training Department. He started working with SEAFDEC in 1995. In addition to his editorial work, he also has particular interest in responsible fishing technologies, marine engineering, etc., and took part in a number of activities and events organized by TD

# Event Calendar

Date /Venue	Events	Organizer
<b>2005</b>		
28 Feb-4 Mar Thailand	Regional Workshop/Training on the Use of Geographical Information System for Fisheries Management	SEAFDEC/TD
1-2 Mar Philippines	Regional Technical Consultation on the Aquaculture of <i>P. Vannamei</i> and Other Exotic Shrimps in Southeast Asia	SEAFDEC/AQD
7-12 Mar Philippines	Training Course on Detection of Koi Herpes Virus and Taura Syndrome Virus in Fish and Shrimp	SEAFDEC/AQD
14-29 Mar Thailand	International Training Course on Coastal Fisheries Management for Fishery Managers	SEAFDEC/TD
29-30 Mar Malaysia	Regional Training Course on Fish Sampling, Preservation and Identification	SEAFDEC/MFRDMD
31 Mar-1 Apr Malaysia	Training Course on Data Entry using Fish Profile Information System	SEAFDEC/MFRDMD
18-29 Apr Philippines	UNESCO-MAB-SeaBRnet Training Course on Responsible Aquaculture as a Component of Integrated Ecosystems Management	UNESCO-MAB-SeaBRnet-SEAFDEC/AQD
4 May-17 Jul Philippines	Training Course on Marine Fish Hatchery and Nursery	SEAFDEC/AQD
10-19 May Singapore	Regional Training Course in Fish Processing and Packaging (Pelagic Fish)	SEAFDEC/MFRD
23 May-10 Jun Thailand	Regional Training Course on Resources Enhancement Methodology	SEAFDEC/TD
27 Jun-1 Jul Malaysia	Workshop on Data Analysis of Information Collection for Sustainable Pelagic Fisheries in the South China Sea	SEAFDEC/MFRDMD
5 Jul-18 Aug Thailand	International Training Course on Coastal Fisheries Management and Extension Methodologies	SEAFDEC/TD
13-15 Jul Philippines	Regional Technical Consultation on Stock Enhancement for Threatened Species of International Concern	SEAFDEC/AQD
19 Jul –19 Aug Philippines	Training Course on Environment-Friendly Shrimp Farming	SEAFDEC/AQD
1-10 Aug Philippines	Training Course on Tilapia Hatchery and Grow-out	SEAFDEC/AQD
1 Aug –30 Dec (on-line course)	Distance Learning Course, AquaHealth Online	SEAFDEC/AQD
7-14 Aug Philippines	Training Course on Biotech Techniques and Instrumentation	SEAFDEC/AQD
15-19 Aug Thailand	Regional Training Course on Seafood Safety for Laboratory Personnel- Chloramphenicol and Nitrofurantoin Analysis using LC-MS-MS	SEAFDEC/MFRD
19-20 Aug Thailand	Seminar on Pelagic Fisheries Resources Survey in the Andaman Sea	SEAFDEC/TD
14 Sep-14 Oct Philippines	Training Course on Crab Seed Production	SEAFDEC/AQD
10-12 Oct Vietnam	Regional Conference on Adaptive Fisheries Management - the Application of Indicators	SEAFDEC/MFRDMD
13-14 Oct Vietnam	Third Regional Technical Consultation on the Identification of Indicators for Sustainable Development and Management of Capture Fisheries in the ASEAN Region	SEAFDEC/MFRDMD
18-21 Oct Thailand	Regional Technical Consultation on Fishery Statistics and Information	SEAFDEC/Secretariat

## 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.



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In the occasion of the Millennium Conference, a drawing contest was organized for the children among ASEAN-SEAFDEC Member Countries, on the theme of 'Fish and the Culture'. This is the best drawing from Indonesia.