

FISH *for the* PEOPLE

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

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**Decentralization of Fisheries Management
Rights-based Fisheries in the ASEAN Region**



Southeast Asian Fisheries Development Center

EDITORIAL

Through its various activities, SEAFDEC continuously promotes issues relevant to regional fisheries. The particular interests of ours are fisheries, aquaculture and fish processing – the small-scale sub-sectors that ensure food security and alleviate poverty for many people in the region. As these sub-sectors nowadays are so important to the achievement of rural development goals, they are all in great need of further development and improved management. Government agencies need to be closer to stakeholders in small-scale operations, so as to actively provide timely and appropriate support for rural livelihoods and to assist their contribution to sustainable national fisheries.

With globalization, an increasing numbers of issues are being discussed at various international levels, many of which are of limited relevance and application to small-scale fisheries in developing countries. “The Strategy for Increasing the Sustainable Contribution of Small Scale Fisheries to Food Security and Poverty Alleviation,” proposed by FAO during the 25th Committee on Fisheries (COFI) held in February 2003, was widely appreciated by countries in the developing world. For the first time in at least a decade, small-scale fisheries’ issues were raised and addressed at an important international forum.

If the achievement of sustainable fisheries is one of the major objectives of such international fora, the problems faced by small-scale fisheries in developing countries have to be discussed and analyzed appropriately. As more than 70 percent



Salted fish, one of the famous way to preserve the catch in Thailand, here in one of the eastern province of the country (courtesy of TD/ Audio-Visual Section).

of world fisheries production is harvested in developing countries, neglecting this important sector from the global perspective will certainly widen the gaps between developed and developing nations, and industrial and small-scale fisheries. This, in turn, may eventually have a devastating impact on the sustainability of the world fisheries.

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In this second issue of *Fish for the People*, we are delighted to extend an invitation to all authors interested in promoting the achievement of sustainable fisheries in the ASEAN Region, and in tropical fisheries in general. We believe that wider participation in *Fish for the People* from contributors outside SEAFDEC will greatly enrich the quality of this publication and its relevance to stakeholders in the region.

This issue of *Fish for the People* focuses on various fisheries management issues, including decentralization and rights-based fisheries, fisheries statistics, and shark fisheries management. We present important regional policies discussed and agreed at recent regional meetings organized under collaborative ASEAN-SEAFDEC programs. On this note, we wish you a pleasant reading, and hope that this issue gives you clearer insights into some of the many challenges facing fisheries in countries in Southeast Asia.

The Editors



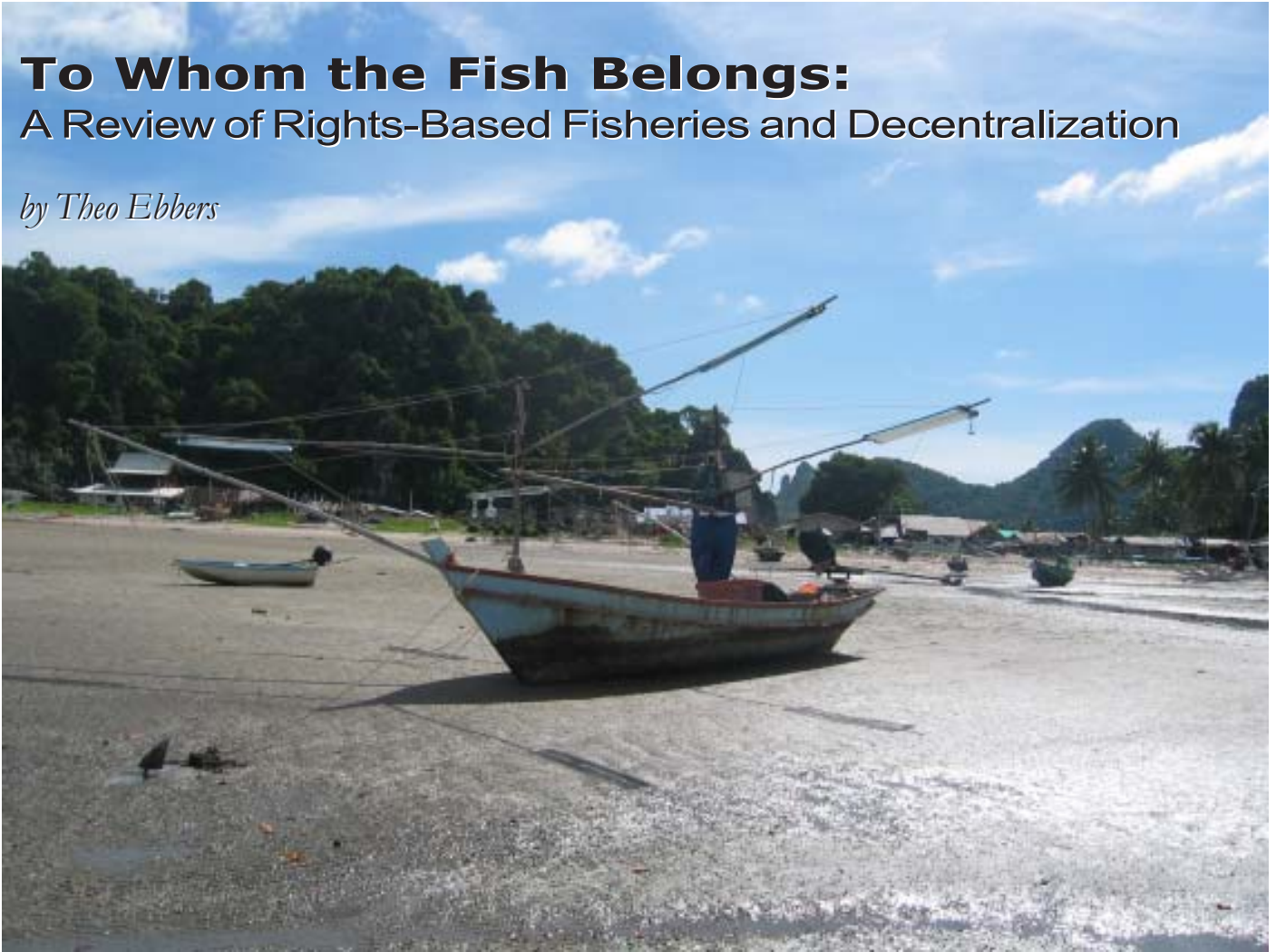
FISH *for the* PEOPLE is a special publication produced by the Southeast Asian Fisheries Development Center (SEAFDEC) every four months as part of the ASEAN-SEAFDEC Special 5-year Program to promote sustainable fisheries for food security in the ASEAN region.

Anyone wishing to submit an article for the publication is requested to send it to the Editors in Chief at the SEAFDEC Secretariat. The Editors reserve the rights to accept and/or abridge articles to the available space.

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of SEAFDEC concerning the legal status of any country, territory, city or area of its authorities, or concerning the legal status of fisheries, marine and aquatic resource uses and the delimitation of territorial waters.

To Whom the Fish Belongs: A Review of Rights-Based Fisheries and Decentralization

by Theo Ebbers



Introduction

Open access is widely seen as the single most important cause of overfishing, resulting in the widespread decline and degradation of fish stocks and marine resources in the Southeast Asian region. Acknowledging this, ASEAN-SEAFDEC Member Countries have committed themselves to gradually introduce rights-based fisheries management systems for regulating access to coastal and marine resources. This process is supposed to go hand-in-hand with the decentralization of fisheries management authority and functions to sub-national administrative levels. It is assumed that the closer small-scale coastal fisheries management authorities are to resource users, the better they can accommodate specific socio-economic, political and ecological local characteristics into their particular management systems. This commitment is the result of the ASEAN-SEAFDEC Millennium Conference, as expressed in the Resolution and Plan of Action formulated during this conference.

This article presents a brief overview of the current status of decentralization and rights-based fisheries management in ASEAN-SEAFDEC Member Countries and is based on a paper presented at the *SEAFDEC Regional Workshop on Innovative Fisheries Management Approaches in Southeast Asia: Rights-Based Fisheries and Decentralization*, held in Phuket, Thailand, from 6 to 9 May, 2003.

As a snapshot of the current situation in these countries, the article is more descriptive than analytical in nature. The underlying assumption is that all countries are serious in their efforts to improve their respective fisheries management systems. The statements in this article are intended to be neutral; no judgments are presented as to whether some countries' efforts and fisheries management approaches are more effective or advanced than others'. However, the article will highlight key issues and problems that pose obstacles to the

establishment of responsible fisheries management systems. Potential approaches and actions to promote such fisheries management systems, characterized by functioning fishing and user rights arrangements, and governed by a decentralized management structure, will also be put forward.

If this article can somehow contribute to a better common understanding among stakeholders on the concepts of decentralization and rights-based fisheries in the region, it will achieve one of its major goals.

“ASEAN-SEAFDEC Member Countries have committed themselves to gradually introducing rights-based fisheries management systems”

This article is based on individual country reviews prepared by members of the SEAFDEC Working Group on Regional Fishery Policy (WGRFP). Thus, only those ASEAN-SEAFDEC Member Countries represented in the WGRFP are included in this review (Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand and Vietnam). Taking the recommendations of the Millennium Conference as the framework for the review, working group members developed a list of guiding questions, which were used for interviews with key informants in their respective countries during a two-week study tour. Each working group member interviewed senior-level fisheries policymakers and managers as well as resource-user representatives to draw a picture of the current situation of decentralization and rights-based fisheries in their respective countries.

Small-scale coastal fisheries: a case for decentralization

The fisheries sector in almost all ASEAN-SEAFDEC Member Countries is dominated by small-scale, coastal fishing operations, with more than 75 percent of the total fish catch attributed to these fisheries. While the term ‘small-scale’ needs to be defined within the particular socio-economic context of each country, it is usually used to distinguish between capital-intensive commercial and industrial fishing operations on the one hand, and labor-intensive fishing activities, usually carried out as one of several income-

generating activities, on the other. It is characterized by a wide range of fishing gear and target species. It is the multi-gear, multi-species nature of such fisheries that poses one of the greatest challenges to fisheries managers using ‘traditional’ management tools.

Such tools were developed for single-species fisheries and are unsuitable for Southeast Asia’s small-scale fisheries. Fishing operations in this sub-sector are usually carried out from a wide range of landing points, often distributed widely along shorelines, with few clearly defined landing sites. This “decentralized” nature of small-scale fisheries and its high level of diversity require a management structure that is closer to local socio-economic, cultural and biophysical conditions. A fisheries management system unable to adapt to often-unique local characteristics is assumed to be less effective than a decentralized system, in which the management authority is more familiar with the local conditions.

The tragedy of open access: the case for rights-based fisheries

In ASEAN-SEAFDEC Member Countries, the fisheries sector is widely considered to be open access in nature, which means that anybody who wants to engage in fishing can do so. Usually this means fishers have freedom to decide where to fish, how many hours to fish, how to fish and what to fish. The impacts of such open-access regimes on natural resources are well known, and have been discussed extensively in the literature since Garrett Hardin published his famous article on “The Tragedy of the Commons” in 1968. The continuing debate makes clear that the inherent danger of resource degradation and over-exploitation under an open-access regime requires the introduction of user and property rights to restrict and regulate access to the resources.

For further reading, see for example:

1. Baden, John A., Douglas S. Noonan and William D. Ruckelshaus (eds.) (1998). *Managing the Commons*. Indiana University Press, Bloomington.
2. Hanna, Susan S., Carl Folke and Karl-Göran Mäler (1996). *Rights to Nature : Ecological Economic Cultural and Political Principles of Institutions for the Environment*. Island Press, Washington DC.

There is general agreement that a management system for small-scale fisheries has to:

- Clearly define users (individuals or groups) with rights to harvest (coastal) marine resources
- Clearly specify limits on the amount of harvest or catch allowed under local conditions
- Clearly define the “total allowable effort” in terms of technical and labor inputs
- Have affordable mechanisms for monitoring user behavior and the condition of resources, and
- Have enforceable sanctions against violation of rules.

Rights-based fisheries, decentralization and SEAFDEC

The need to improve fisheries management through the introduction of rights-based fisheries and the decentralization of fisheries management is generally understood. This is reflected in the outcomes of the Millennium Conference. In the Resolution on Sustainable Fisheries for Food Security for the ASEAN Region, Ministers responsible for fisheries in ASEAN-SEAFDEC Member Countries agreed “...to progressively replace ‘open access’ to fisheries resources with ‘limited access regimes’, through the introduction of rights-based fisheries which may also facilitate the management of fishing capacity...,” and to “encourage effective management of fisheries through delegation of selected management functions to the local level.” Following this resolution, the Conference formulated a Plan of Action, one aim of which is to “establish and implement comprehensive policies for innovative fisheries management, such as the decentralization of selected fisheries management functions to the local level, the progressive introduction of rights-based fisheries management through licensing and community fishing rights....”

“SEAFDEC has developed Regional Guidelines for the Code of Conduct for Responsible Fisheries in Southeast Asia which further develop and promote these two concepts of innovative fisheries management”

Given the mandate to promote these concepts in the region, SEAFDEC, in close cooperation with its Member Countries, has developed Regional Guidelines for the Code of Conduct for Responsible Fisheries in Southeast Asia: Fisheries Management, which further develop and promote these two concepts of innovative fisheries management. In an effort to promote a common understanding of ‘decentralization’ and ‘rights-based’ fisheries, these Regional Guidelines include some broad definitions of important terms (see Box). The definitions are necessarily broad, since they try to accommodate the different interpretations and understandings of these terms in the various countries of the region. They are seen as a starting point from which the regional understanding of the concepts can develop further, enabling all ASEAN-SEAFDEC Member Countries to pursue appropriate fisheries



management policies within their respective political, cultural and economic frameworks.

This diversity in understanding and interpreting the concepts of rights-based fisheries and decentralization makes it difficult, if not impossible, to compare the progress and success of different fisheries management approaches employed in the region. Achievements and accomplishments in the implementation of decentralized and rights-based fisheries management systems have to be assessed on the basis of each country's understanding and interpretation of the concepts. Each national fishery agency has to ask itself what progress has been made towards the implementation of these fisheries management approaches.



Definitions according to the Regional Guidelines for the Code of Conduct for Responsible Fisheries in Southeast Asia

- **Coastal fisheries** – Fisheries by fishing ground or area. Some countries, such as Indonesia (12nm), Malaysia (30nm), Philippines (15km), and Thailand (12nm), set a wider fishing range. Others use different definitions, such as water depth (Cambodia; 20m).
- **Co-management (CM)** – An approach to management in which the government shares certain authority, responsibilities and functions of managing fisheries with resource users as partners.
- **Decentralization** – involves the delegation and sharing of selected fisheries management authority to the local level, either to the local government institution or local people.
- **Fishing license** – is an authorization given to individuals or companies to enable them to do fishing.
- **Fishing right** – A kind of right, by which fishers may have exclusive use of a designated area or resources. It is an authorization given to fishing communities to enable them to do fishing.
- **Innovative Fisheries Management** – Decentralization of selected fisheries management functions to the local level and progressive introduction of rights-based fisheries management through licensing and community fishing rights, the improvement of vessel registration systems and the development of supporting legal and institutional frameworks.
- **Rights-based fisheries** – Fisheries where the right to fish or use the fisheries resources is licensed or permitted by the competent government authority, giving licensed fishers access and rights to use a fishing ground. Such rights are accompanied by obligations to comply with the rules and regulations of the right-based regime.

Review framework

For a regional review and assessment of moves to improve small-scale fisheries management in the region, the outcomes and the recommendations of the Millennium Conference can be used as a general framework. For both concepts, the conference identified a number of key issues and formulated recommendations on how ASEAN-SEAFDEC Member Countries should proceed in their efforts to establish sustainable and responsible fisheries management systems. Using this framework, each country will have to answer the question: “Which recommendations of

the Millennium Conference have been taken up and promoted within the national fisheries management framework?”

In seeking answers to this question, we can identify factors and issues that either support or hinder fisheries management changes towards decentralization and rights-based fisheries.

These recommendations are aimed at providing ASEAN-SEAFDEC Member Countries with broad initial guidance for the establishment of small-scale fisheries management systems. The recommendations are governed by efforts to regulate and limit access to resources through a decentralized management system, in which local fisheries management authorities formulate management measures, establish mechanisms

to limit the number of resource users and identify sustainable levels of resource use.

For a better understanding of the underlying principles of these recommendations, the flowchart below is used to visualize them. This chart represents a generic model for small-scale fisheries management suitable and recommended for all ASEAN-SEAFDEC Member Countries.

Key Questions

Following this broad framework and the recommendations of the Millennium Conference, the review seeks to address certain key questions. These were used as guidelines in compiling the individual country reports and formed the basis for this article:

RIGHTS-BASED FISHERIES	
Key issues	Recommendations
<ul style="list-style-type: none"> The will to phase out open access and gradually limit access for all fisheries 'Ownership' of fish resources and water bodies Nature and conditions of fishing rights Criteria for allocating fishing rights among communities and individuals Administration and control of fishing rights Licensing and vessel registration. 	<ul style="list-style-type: none"> Introduce gradual input control management systems to replace open access Formulate appropriate policy and fisheries management framework for industrial and coastal fisheries Formulate guidelines to promote rights-based fisheries Formulate appropriate legal framework and provisions Identify appropriate system of user rights, and try them out in pilot projects.

DECENTRALIZATION	
Key issues	Recommendations
<ul style="list-style-type: none"> Policy implications Level of decentralization Decentralization process 	<ul style="list-style-type: none"> Formulate national policy on decentralization in collaboration with relevant agencies Determine management functions, authority and functions to be delegated to local level Determine appropriate local institutions that can be authorized and can accept management mandate Determine the need for human resource development at the local level Develop local consensus through coordination Develop comprehensive national fisheries program with detailed Terms of Reference for all institutions involved in fisheries management Develop appropriate legal frameworks.

- Do ASEAN-SEAFDEC Member Countries have comprehensive national fisheries management programs?
- Do national fisheries programs address the issues of decentralization and rights-based fisheries?
- Do existing legal frameworks support or hinder decentralization and fishing rights systems?
- What progress has been made towards the decentralization of fisheries management and the introduction of rights-based management systems?
- What mechanisms exist to limit entry into fisheries and marine/aquatic resource use?



Community planning and the establishment of local institutions are important aspect of innovative fisheries management systems

On Decentralization

- What administrative levels are considered appropriate for the management of different types of fishing?
- Which management functions and authorities have been delegated to local levels of administration?
- Which institutions have mandates and authority in local fisheries management?
- How do these institutions cooperate?

On Rights-based Fisheries

- Who has the right to fish?
- Who has the authority to allocate this right?
- Is it possible to exclude some from the right to fish?
- How are rights specified, what are the rules under which rights are exercised, and what are the duties and responsibilities that accompany those rights?
- How are rights allocated among different user groups?
- What processes and criteria are used to determine the optimal number of resource users?

Fisheries Policies

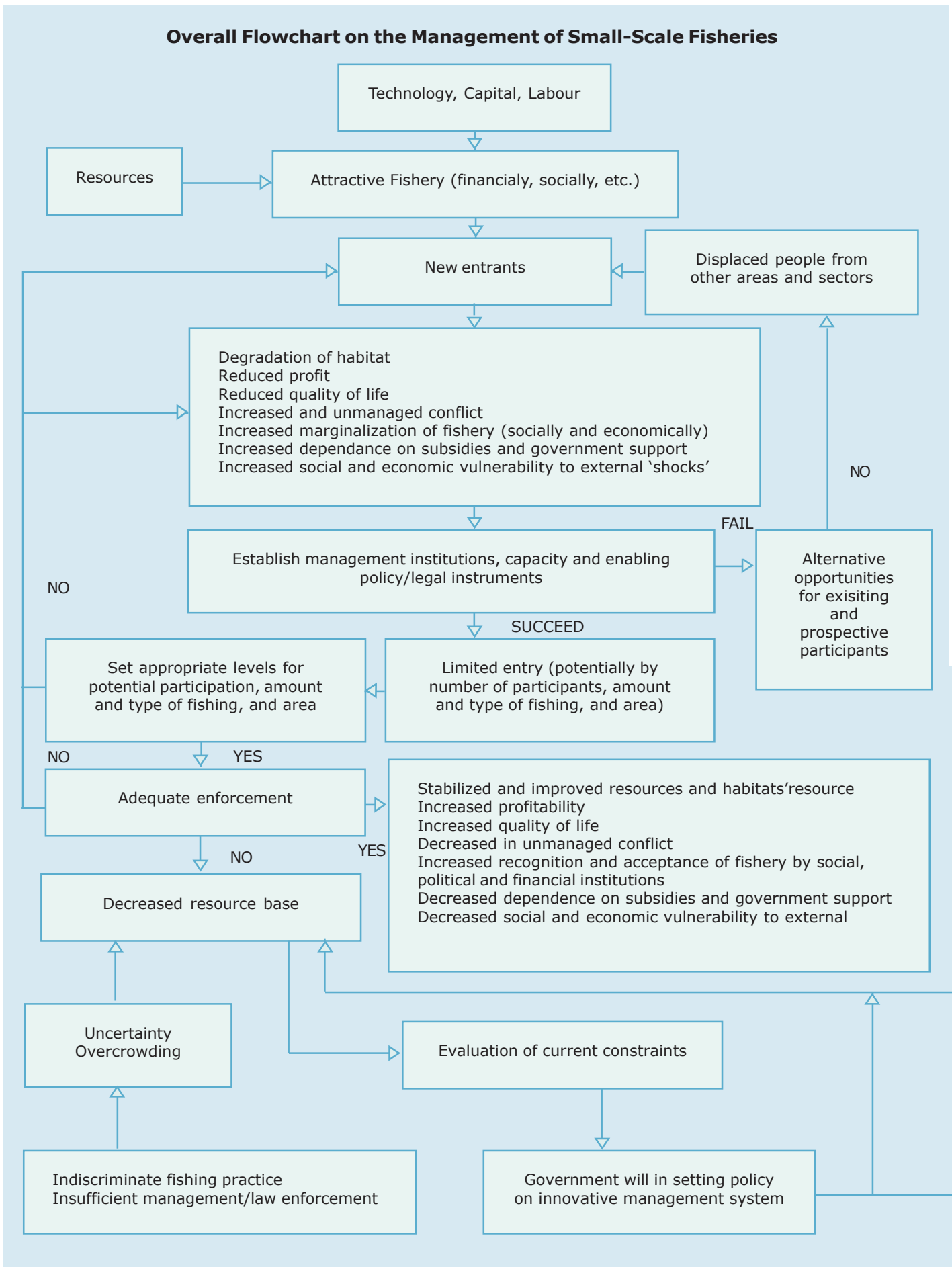
The Millennium Conference recommended that Member Countries formulate national policies on fisheries management decentralization and rights-based fisheries management systems. A brief look at the national fisheries policies as cited in the individual country papers shows that, in most countries, the focus

of fisheries management and development is on offshore and deep-sea fisheries.

As coastal fisheries are seen as not having much growth potential, most fisheries development and management agencies focus their attention on the exploitation of off-shore fisheries resources, which generally are considered to be under-exploited. Typical expressions used in individual country review papers to describe national policy priorities are “developing deep-sea fisheries progressively,” “deep-sea fisheries, aquaculture and inland fisheries would be encouraged,” “off-shore fishing will be stepped up,” “the development of the fishing industry towards a modern and fully commercialized industry,” “increase fish production,” “more foreign exchange earnings,” “contribute to national food security at all times,” and “optimize utilization of off-shore fisheries and deep-sea resources.”

“The Millennium Conference recommended that Member Countries formulate national policies on fisheries management decentralization and rights-based fisheries management systems”

Overall Flowchart on the Management of Small-Scale Fisheries





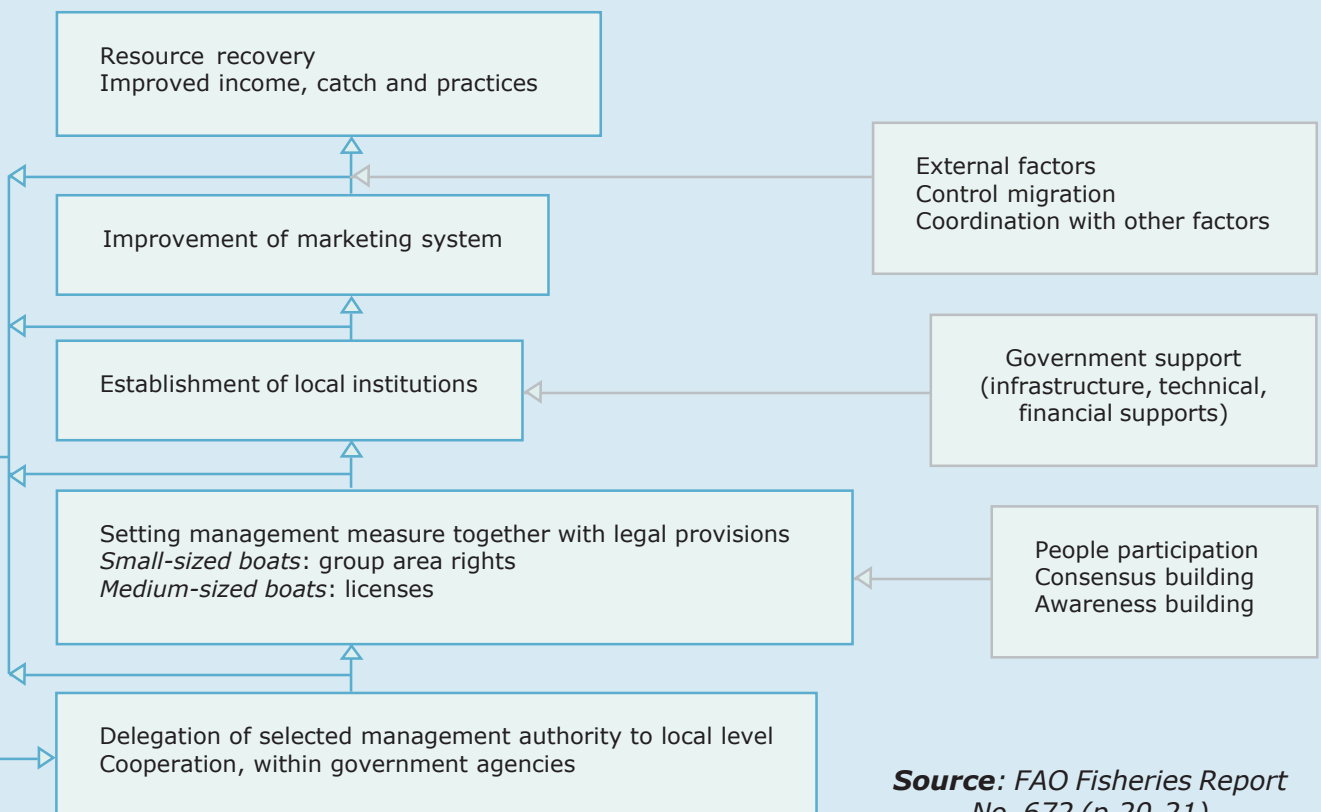
All national policies, as described in the individual papers, include access limitations to the country's fisheries resources and restrictions on the number of resource users. Strict implementation and enforcement of licensing and vessel registration systems are seen as priority areas to achieve such access control. As will be seen later, small-scale fisheries are exempted from such regulations in almost all countries in the region.

With regards to decentralization, meaning the delegation of management functions and authorities to local level institutions or resource-user communities, only few countries, notably the Philippines, Thailand and Cambodia, seem to have included these in their national policies.

This does not mean that there are no mentions to rights-based fisheries and decentralization in national fisheries policies and strategies as described in the individual country papers. They are referred to "promoting fisherfolk and fisherfolk's organizations," "achieve sustainable coastal fisheries," "protect the rights of fisherfolk, especially local communities" and "empower local government." However, such references are scarce, and mentioned as priority areas only by the Philippines, and, with restrictions, by Thailand.

Legal Frameworks for Fisheries Management

No country under review has a unified, integrated legal framework for fisheries management. All countries have a multitude of laws, ordinances and regulations, addressing different aspects of fisheries management and development. Malaysia, for example, lists 14 laws and regulations that address fisheries issues; Myanmar lists four main fisheries laws, and two amendments;



Source: FAO Fisheries Report No. 672 (p.20-21)

Country-wise fishery policy focus area

Country	Policy Goals	Strategies
Cambodia	<ul style="list-style-type: none"> Reduction of conflicts between commercial and small-scale fisherfolk Protection and conservation of fish resources Improving living standards of fisherfolk 	<ul style="list-style-type: none"> Revision of fishing lot system and fishing domain system Organization and support of fishing communities Co-management, and strengthening of local government
Indonesia	<ul style="list-style-type: none"> Foreign exchange earnings Employment generation Increasing incomes of fisherfolk Resource sustainability. 	<ul style="list-style-type: none"> Co-management Local government involvement Regulation of access Strengthening of MCS, law enforcement
Malaysia	<ul style="list-style-type: none"> Full commercialization of sector, with emphasis on deep-sea fishing and aquaculture 	<ul style="list-style-type: none"> Limitation of fishing rights through licensing Identification and protection of nursery areas Increase in research efforts Strict enforcement Resource rehabilitation through artificial reefs (ARs) and coral replanting
Myanmar	<ul style="list-style-type: none"> 'All-round' development of fisheries sector Increase fish production Expansion of aquaculture Increase socio-economic status of fishing communities 	<ul style="list-style-type: none"> Access control through licensing Promotion of responsible fishing technology Enforcement of regulations
Philippines	<ul style="list-style-type: none"> Safeguarding national food security Sustainable development, conservation of fish and aquatic resources Poverty alleviation in coastal areas People's empowerment Protection of rights of local fisherfolk Optimized utilization of offshore and deep-sea fisheries resources Increased investment in the sector and its global competitiveness 	<ul style="list-style-type: none"> Development of broodstock, seeds and fingerlings Increased productivity within ecological limits Local government empowerment Conservation and protection Trade and fiscal incentives
Thailand	<ul style="list-style-type: none"> Promotion of fisherfolk and fisherfolk's organizations Resource sustainability Increased fishery production for income generation for fisherfolk and processors Development of deep sea-fisheries 	<ul style="list-style-type: none"> Public awareness creation Public participation in fisheries and environmental management Resource rehabilitation Protection of bio-diversity Technology development
Vietnam	<ul style="list-style-type: none"> Protection of fisheries resources Promotion of community-based coastal management Effort control Promotion of aquaculture Promotion of off-shore fisheries Export-promotion 	

Indonesia has at least four laws addressing rights-based fisheries and decentralization issues. These include only those laws that directly address fisheries management issues, but not other sectoral laws that impact on fisheries management issues. For example, in the context of decentralization and rights-based fisheries, these could include laws affecting property rights, laws and regulations on establishing community organizations

and cooperatives, and laws regarding coastal development.

Laws and regulations concerning fisheries management, as quoted by WGRFP-members in their individual country paper reports, support the regulation of fisheries through licensing; all include some form of gear regulation, provisions for closed seasons and areas,

and the delineation of fishing grounds by respective management authorities. Each country has legal provisions prohibiting fishing gear and methods considered destructive and harmful to the marine environment.

“No country under review has a unified, integrated legal framework for fisheries management”

Countries that actively pursue a general decentralization policy and aim to strengthen sub-national administrative units at provincial, state or district levels, usually try to harmonize their fisheries management with these efforts by formulating relevant legal provisions.

A few countries actively pursue a policy of strengthening fisheries management institutions at sub-national levels by “delegating selected management functions to the local level,” but no existing legal framework supports the devolution or delegation of management authority to local communities or resource users, as formulated in the regional definition of the term ‘decentralization.’ However, two countries – Cambodia and Thailand – at least are in the process of preparing such legislation, with provisions to enable fishing communities to take an active part in the management of fisheries resources.

Management Institutions

Currently, in all countries, the state alone is responsible for fisheries management. The lead agency for fisheries management is usually the department or ministry of fisheries (the Bureau of Fisheries and Aquatic Resources, or BFAR, in the Philippines) and their respective departments and divisions. However, responsibilities for different aspects of fisheries management are usually divided between other departments or ministries, often without a clear demarcation of responsibilities and authorities. Often the Navy, Coast Guard and Marine Police

share the responsibilities for law enforcement; conservation issues and environmental protection are addressed by the ministry or department for environment or natural resources; economic development, employment generation, community development and other issues are entrusted to respective government institutions and agencies, which usually have their own agenda and do not concern themselves with fishery management issues. Usually no formal mechanisms exist to coordinate the activities of these different agencies.

Rights-based fisheries

All countries reviewed have a system of state ownership of fish and aquatic resources and marine water bodies. All states reserve the right to allocate fishing rights to individuals, corporations or (rarely) communities through the appropriate authority; in all countries, this is the ministry or department in charge of fisheries. These fishing rights are usually given through licensing systems of varying degrees of complexity, which often include vessel and gear licensing in combination with the delineation of fishing areas and Exclusive Economic Zones (EEZ). Usually an EEZ is divided into several fishing zones, allocated to specific boat classes or sizes. Zones closer to the coastline are usually reserved for smaller vessels, to which larger fishing boats have no access. Variations of this system can be found in all countries under review.





Individual country reviews, prepared by members of the SEAFDEC Working Group on Regional Fishery Policy, have provided first hand information on the status of innovative fisheries management in the ASEAN, such as here in Cambodia

“Thailand and Cambodia are currently experimenting with community user-rights systems”

Licensing is usually required only for fishing vessels which exceed a specified size, with smaller boats being exempted. Only two countries (Myanmar and Malaysia) require licensing for all vessels, regardless of size and fishing capacity. In all other countries, small-scale, coastal fisheries are largely unregulated. Generally, licensing is seen as the best and most effective way to allocate fishing rights. Present fisheries laws generally do not provide for common or communal property rights, in which resource user groups and communities hold the right to use fishery resources. Thailand and Cambodia are currently experimenting with community user-rights systems, but have yet to put in place the necessary legal frameworks.

Every country in the region has realized the need to limit entry into their fisheries, as seen from each country’s licensing efforts. However, most have yet to develop mechanisms to determine the total number of vessels and fishers to be allowed to fish in delineated zones. Countries like Indonesia and Myanmar are trying to apply systems for determining something like Maximum Sustainable Yield as criteria for limiting the number of fishing boats in specified areas.

The effectiveness of existing licensing and permit systems needs to be assessed, as all countries, without

exception, report a high degree of illegal fishing and violations of fishing regulations.

Decentralization of Fisheries Management

Most countries have a national policy of decentralization. These generally aim to give more responsibilities to provincial, district or municipality administrative levels. These efforts at establishing decentralized administrative government structures are usually reflected in the organization of fisheries management, though in most countries these processes are still so recent that relevant legal frameworks have yet to be put in place.

“...efforts at establishing decentralized administrative government structures are usually reflected in the organization of fisheries management”

Not even the most centralized forms of government can function without administrative structures at the local level, and all countries have organized their respective fisheries management agencies according to the general administrative structure, with fisheries officers assigned to districts, provinces or even townships. The mandate of these local offices is usually to issue licenses in their respective areas, to implement extension programs for technology transfer, and to monitor the status of fish resources in their area of jurisdiction.

“Rules and regulations for coastal resources and habitats, when formulated by resource users, usually cannot be enforced, as the national legal frameworks do not recognize such community rules and regulations as legally binding”

There is only one country – the Philippines – in which the national fisheries management institution does not have any management mandate and function at the local level, and in which the local administration is responsible for formulating and implementing its own fisheries management policies and plans, within the legal framework set by the national government. In only one

other country – Cambodia – can local communities make and formulate their own rules and regulations for the use and exploitation of fisheries resources, although the relevant legal framework for this has not yet been passed.

In all countries, efforts are under way to involve local communities in the protection and conservation of critical coastal habitats like coral reefs and mangrove forests. However, usually these are not self-regulated management efforts by the community, but rather the community acting as an implementing agency on behalf of the government.

Rules and regulations for the use, conservation, and rehabilitation of fishery and other coastal resources and

Overview of licensing and fishing-rights

Country	Medium- and large-scale (commercial) fisheries	Small-scale fisheries
Cambodia	<ul style="list-style-type: none"> Licensing; Fishing Lot and Marine Fishery Domain systems; DOF delineates fishing areas, for which commercial users have to bid (inland) or get licenses (marine) 	<ul style="list-style-type: none"> No licenses needed; permitted all year, in all areas, but have to follow by-laws of Community Fisheries (CF)
	<ul style="list-style-type: none"> Small and medium scale: DOF can assign fishing lots or domains to CF; CF formulates by-laws for fishing rules 	
Indonesia	<ul style="list-style-type: none"> Licensing, based on boat sizes and engine power; three fishing zones, depending on boat sizes 	<ul style="list-style-type: none"> No licenses for boats < 5 GT / without engines Traditional systems like SASI still practiced in some places
Malaysia	<ul style="list-style-type: none"> Licensing, combined with zoning; currently no issue of new licenses except deep sea fishing (>30nm); 4 zones and respective boat categories 	<ul style="list-style-type: none"> Licensing
	<ul style="list-style-type: none"> All fishing vessels and fishing gear must be registered and licensed to operate in Malaysian waters 	
Myanmar	<ul style="list-style-type: none"> Licensing, combined with zoning Off-shore fisheries > 5 nm or 10nm, depending on region 	<ul style="list-style-type: none"> In-shore fisheries: Boats < 30 ft, in waters < 5 or 10 nm from the shore, depending on region
	<ul style="list-style-type: none"> Everybody who want to take part in fishing or fish processing needs to obtain licenses Fishing gear needs to be licensed by DOF Fishing vessels have to be registered with the nautical authority 	
Philippines	<ul style="list-style-type: none"> Licensing for vessels > 3GT (commercial fisheries) 	<ul style="list-style-type: none"> Municipal fisheries: vessels < 3GT, within 15km of shore need municipal license
	<ul style="list-style-type: none"> No fishing by commercial fishing vessels in municipal waters 	
Thailand	<ul style="list-style-type: none"> Licensing for oversea fishing fleet Licensing for fishing gears Licensing for large fishing vessels Licensing for aquaculture (shrimp farming) 	
Vietnam	<ul style="list-style-type: none"> All fishing vessels need a license Everybody engaged in fishing activities needs a license 	<ul style="list-style-type: none"> Boats < 0.5 GT are exempted from licenses
	<ul style="list-style-type: none"> Government delineates fishing grounds to be used by licensed fishers 	

habitats, when formulated by resource users themselves, usually cannot be enforced, as the national legal frameworks do not recognize such community rules and regulations as legally binding. Violators usually therefore cannot be prosecuted. There are, for example, many projects to manage and protect mangrove forests through community involvement, often called community-based forest management. In other projects, fishing communities try to establish zoning systems for coastal resource use. But unless rules and regulations formulated by the community for this purpose are backed up by national law, such projects are not legally enforceable. Within the context and frameworks of such projects, fisheries management agencies claim to share management functions with resource users, but the ultimate management authority and responsibility is retained by the owner of the resources, namely, the state.

On the other hand, each country has developed and established some form of dialogue with fisher organizations or associations. Although in most countries such dialogues are limited to commercial and industrial fisher organizations, in some cases associations and organizations of small-scale fisherfolk are also included. Such formal and informal modes of communication and consultation provide an opportunity for both government and fisherfolk to express their concerns and to minimize conflicts about different management options.

Issues and problems

A wide range of understandings and interpretations of the concepts of decentralization and rights-based fisheries is evident. But even so, similarities between countries' approaches to regulate and manage fisheries,

and the perceived issues and problems in the implementation of respective management systems are apparent. The rules and regulations that make up legal frameworks for fishery management are usually seen as sufficient for an effective and sustainable use of fishery resources. Problems within the fisheries sector are rarely seen as the results of flaws in the design of fishery management systems, institutions and their respective legal frameworks, but rather in their actual implementation.

“...weaknesses in monitoring, control and surveillance, or law enforcement are the main reasons for shortcomings in the implementation of existing rules and regulations”

All country reports suggest that weaknesses in monitoring, control and surveillance(MCS), or law enforcement are the main reasons for shortcomings in the implementation of existing rules and regulations. There is general agreement that because of insufficient MCS and law enforcement, access to coastal and marine resources in each country is still open to anybody who would like to use and exploit these resources. Increased efforts in law enforcement and MCS would no doubt significantly improve existing fishery management systems throughout the region.

“...extensive information and education campaigns are usually suggested by responsible fisheries managers, aimed at awareness creation for the resource users”

To overcome the lack of compliance with existing rules and regulations, which is seen as the other important factor for the failure of existing fishery management systems, extensive information and education campaigns are usually suggested by responsible fisheries managers, aimed at awareness creation for the resource users. These suggestions assume that fishermen would voluntarily change their fishing practices once they are aware of the need for these rules and regulations.



Overview of Administrative Levels in Fisheries Management

Country	Administrative Level	Mandate and Authority
Cambodia	Currently three levels of fisheries administration: <ul style="list-style-type: none"> Central level: Department of Fisheries Provincial and municipal Commune 	<ul style="list-style-type: none"> The Department of Fisheries (DOF) and the Ministry of Agriculture, Fisheries and Forestry (MAFF) maintain full authority and right to regulate access to fishing grounds Community fisheries can formulate own fishing rules and regulations, known as 'by-laws', within and under national fisheries law Communes formulate rules and regulation under by-laws
Indonesia	<ul style="list-style-type: none"> Central government Provinces Districts Each level is responsible for corresponding fishing zone	<ul style="list-style-type: none"> Licensing for fishing zone > 12 miles: EEZ Licensing for fishing zone 4 –12 miles: through provincial governor Licensing of coastal waters up to 4 miles
Malaysia	<ul style="list-style-type: none"> Central level: Department of Fisheries State-level fisheries offices District and provincial offices 	<ul style="list-style-type: none"> Full authority, but co-management through concepts of Fishermen association and Fishermen Economic Groups Issuance of licenses and technical assistance to license holders
Myanmar	<ul style="list-style-type: none"> Central level: Department of Fisheries State and Divisional Fisheries Offices District Fisheries Officers Township Fisheries Officers 	<ul style="list-style-type: none"> Access control through licensing Promotion of responsible fishing technology Enforcement of regulations
Philippines	<ul style="list-style-type: none"> Central level: BFAR Regional level: BFAR Local government (provinces and municipalities) 	<ul style="list-style-type: none"> Management of commercial fisheries Full responsibility and authority for management of municipal fisheries
Thailand	<ul style="list-style-type: none"> Central level: Department of Fisheries Provincial fisheries offices 	<ul style="list-style-type: none"> Provincial and local authorities are supposed to work together to create local fishery committees responsible for managing coastal fisheries resources
Vietnam	<ul style="list-style-type: none"> Central level: Ministry of Fisheries Provincial fisheries offices in 25 provinces; in three other coastal provinces, fisheries offices are under Department of Agriculture and Rural Development Provincial People's committees 	<ul style="list-style-type: none"> Ministry is responsible for nationwide fisheries management People's Committees monitor and organize the implementation of fisheries legislation

Conclusion

This overview of fisheries management practices in selected ASEAN-SEAFDEC Member Countries is too brief to allow comprehensive and analytical conclusions about the root causes of shortcomings in current fisheries management systems in the region. Further and detailed studies on specific aspects of fisheries management, especially of small-scale fisheries, are needed to deepen our understanding of the issues and problems of the fisheries sector.

Assuming that there is a general consensus that the mandates arising from the Recommendations and Plan of Action of the Millennium Conference envisage, *inter alia*, improving local-level fisheries management through decentralization and the establishment of rights-based fisheries, the current situation in ASEAN-SEAFDEC Member Countries might be summarized as follows:

1. The *de facto* continuation of open-access regimes in Southeast Asian fisheries has meant that no country has yet established a functioning national system to govern a truly localized fisheries management, in which

local authorities have full responsibility for fisheries management.

The Philippines is the only country in the region that has an existing legal and institutional framework for such local-level fisheries management; but even there, small-scale fisheries management remains widely unregulated. The case of the Philippines clearly demonstrates that the effectiveness and success of decentralization policies requires not only the transfer of powers to the local level, but also the provision of human, financial and technical resources needed for local authorities to exercise these powers.

Thailand and Cambodia are in the process of passing fisheries laws that give groups and communities of small-scale fishermen greater responsibility in managing their fisheries resources. Time will show whether these new legal and institutional frameworks will actually improve local fisheries management, can prevent overfishing and overexploitation of coastal resources, and can lead to improved living standards for small-scale fisherfolk.

2. Existing licensing and user-rights systems fail to change the open-access nature of fisheries, because everybody who wants a license usually gets one. Problems in changing the open-access nature of the region's fisheries and effectively enforcing existing licensing and user-rights systems arise not only from resource users, but also from the public as they consider marine aquatic resources as public property and, therefore, open to everybody. Education and awareness creation campaigns therefore need to be directed not only at resource users and fishermen, but also at the general public and those who make policy and political decisions.

“Hardly ever is the question asked whether existing rules and regulations are enforceable, and if so, at what cost”

3. Licensing systems can only function if the maximum number of resource users is defined and clear criteria exist as to who is entitled to a license and who is not entitled. Some countries try to address this issue by determining the number of licenses to be issued by estimating Maximum Sustainable Yield (MSY); one

country has a policy of freezing the number of license-holders in small-scale fisheries at current levels.

4. Individual country reports identify shortcomings in monitoring, control and surveillance and law enforcement as the main cause of the failure of current fisheries management systems to limit fisheries effort and regulate fisheries activities. None of the submitted country reports sees flaws in the design of user-rights and licensing systems, or the general design of the fisheries management system in a country as responsible for current problems in coastal fisheries.

Hardly ever is the question asked whether existing rules and regulations are enforceable, and if so, at what cost. Consequently, individual country papers do not consider modifications of existing management systems towards greater fisherfolk participation and greater local



autonomy in fisheries management, nor do they consider simplifications of legal frameworks. The formulation of integrated, unified laws that encompass all aspects of fisheries management, and clearly demarcate mandates and authorities of different government agencies at different administrative levels are not recommended as potential ways to reverse the decline in coastal fisheries.

Challenges

Going beyond the immediate, descriptive scope of this overview of decentralization and rights-based fisheries in selected ASEAN-SEAFDEC Member Countries, several propositions can be made. These will hopefully encourage further studies and discussion on these concepts, which may eventually lead to a deeper common understanding of how decentralization and

rights-based fisheries can contribute to responsible small-scale fisheries management systems in the region:

1. The problem of effectively managing numbers of resource users through the introduction of user-rights systems for small-scale fisheries is a direct result of the policies pursued by fisheries management agencies and institutions. In the majority of countries in the region, the focus of these agencies is on fostering the growth of the sector through commercialization, export promotion and increased production, thereby attempting to maintain the fisheries sector as an attractive economic alternative and creating incentives for people to take up fishing as a livelihood, either as a full-time or a supplementary occupation. While fishing should be economically viable for those already engaged in the sector, the challenge lies in creating attractive economic alternatives outside the fisheries sector. These must have greater appeal to people looking for livelihood opportunities. This certainly goes beyond the mandate of present fisheries management institutions and agencies. The challenge lies in linking local fisheries management with overall local development efforts, by improving coordination among agencies and stakeholders involved in fisheries management and local development.

2. Absolute numbers are impressive and feed the notion of the fisheries sector as being of great economic importance: Annually, the fisheries sector generates billions of US dollars of revenues, involving hundreds of thousands of people, and providing a most important source of animal protein to the general population. But looking at relative numbers reveals why the fisheries sector usually has such low priority in national development agendas and is often neglected by policy makers: on an ASEAN-wide average, the sector contributes not even two percent of regional GDP. The nature of capture fisheries, with their dependence on the biological productivity of aquatic ecosystems, limits the growth potential of the capture fisheries sector. These aquatic resources therefore do not constitute a valuable asset for their 'owners', the state, which accordingly gives the sector too little political attention and protection from irresponsible and unsustainable usage. The challenge lies in drawing more political and public attention to marine and aquatic ecosystems and the fisheries sector, without increasing its attractiveness as an economic opportunity.



3. Many regions and coastal areas are characterized by fishing and related activities. Local economies are often dependent on and centered around the fisheries sector. The challenge lies in balancing national and local development efforts by giving the fisheries sector its due attention, and at the same time, pursuing structural adjustment policies, which reduce local dependencies on the fisheries sector.

4. Countless individual projects and programs are presently being conducted in the ASEAN region. These are generally aimed at responsible small-scale fisheries and coastal resources management. As individual projects, such efforts may be successful in achieving their respective goals and mobilizing different government agencies and resource users for establishing sustainable resource management systems. Often funded by external donor agencies, these initiatives are frequently implemented without any real coordination between them. The lack of clearly specified national policy frameworks and fisheries development plans may lead to confusion and inconsistencies between individual fisheries management initiatives, legal support activities and institutional approaches to local fisheries management enterprises. Establishing coordinating mechanisms between different initiatives at the local level is an important first step in harmonizing such efforts. But the challenge lies in moving beyond thinking in terms of individual projects, and creating consistent national frameworks conducive to locally-based small-scale fisheries management systems.

All this implies that fisheries management agencies have to play a much more pro-active role in local development efforts. Currently, fisheries management agencies withdraw from many important areas that are important for the establishment of responsible fisheries systems, by limiting their mandates to what they consider as 'core' fisheries management tasks, like regulating and monitoring fishing activities and practices. Other equally important mandates and tasks for comprehensive fisheries management are left to non-fisheries agencies and institutions, which often have more political clout than fisheries management agencies. Such important responsibilities include issues such as environmental policies, conservation, trade and fiscal policies. To establish sustainable fisheries regimes in the region, fisheries management agencies need to more actively engage in the public and political dialogues on environmental and development issues affecting the fisheries sector.

About the author

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Country review of innovative fisheries management in Malaysia

INVITATION TO CORRESPONDING WRITERS

The first two issues of *Fish for the People* have now been completed, and we hope that we have given you a good idea of the aims and general tone of the publication. So far, we have relied mostly on contributions by SEAFDEC staff. We are now inviting contributions from other 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.

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The Editors reserve the right to abridge to the space available any article accepted for publication. Typically, articles for *Fish for the People* are between four and eight pages long, including illustrations. Longer articles may be accepted as special features on regional initiatives.

Contributions are accepted on the understanding that authors have the authority to publish. Submission of multi-authored manuscripts implies that all authors have approved submission of the article to *Fish for the People*, have read the article and approved its publication. All submissions of multi-authored manuscripts should indicate the corresponding author. The submission of a manuscript automatically implies that the authors have agreed to assign exclusive copyright to the SEAFDEC Secretariat and to the publisher.

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New Publications

Proceedings of the ASEAN-SEAFDEC Regional Meeting on Fish Trade and Environment

By SEAFDEC/Secretariat, 2003, 129pp

Fishery Statistical Bulletin in the South China Sea Area 1998

By SEAFDEC/Secretariat, 2003, 142pp

Regional Guidelines for Responsible Fisheries in Southeast Asia: Responsible Fisheries Management

By SEAFDEC/MFRDMD, 2003, 69pp

Nutrition in Tropical Aquaculture

By SEAFDEC/AQD, 2003, 221pp

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Collection of Fisheries Data and Information: The Need for Comprehensive National Systems

by Yasubisa Kato

Introduction

At the ASEAN-SEAFDEC Millennium Conference, several priority issues were highlighted in the Resolution on Sustainable Fisheries for Food Security for the ASEAN Region. Among these issues was the importance of strengthening national fisheries statistical systems and of maximizing their use for fisheries planning and management.

“Too often, unreliable or untimely statistical analyses have provided inadequate information to key decision makers”

In implementing this particular resolution, ASEAN Member Countries must consider ways to improve their national statistics systems. This will include how more accurate and more timely data can be collected and analyzed, and how information is utilized in policy formulation and decision making to support governments’ priority issues.

Too often, unreliable or untimely statistical analyses have provided inadequate information to key decision makers. This has led to dwindling support from these important actors for fisheries statistics and data collection systems, causing a vicious cycle affecting production of reliable national fisheries statistics.

“Why are we collecting statistical data and information?”

This highly pertinent question was raised at a regional meeting in 2002 on fisheries statistics. It was met with the stunning answer, “Because the FAO requested us to collect this information”! But such a reply is to be expected from government staff working on fisheries statistics in the region, not least if we replace the word ‘FAO’ with the phrase ‘national requirements.’ This might explain the current situation in which the daily concern of statistical staff is to produce data that will meet deadlines imposed by national statistical systems, rather than considering the utility of the produced statistical data. In other words, within the given terms of reference, most likely defined when government priorities were quite different to those of

today, even if the greatest efforts are made, the data produced are likely to be of little use to fisheries managers.

Studies carried out worldwide have identified dwindling governmental support to fishery statistical systems as the major constraint on the collection and production of reliable national statistical data. If this is so, the solution might be to increase governmental support for national fisheries statistical systems. But in Southeast Asia, it is worth also considering the latter part of the Resolution above, which notes the importance of making the most of the data collected for fisheries planning and management, rather than simply finding ways to increase financial and technical support to the system.

The special situation of the fisheries sector

In sectors such as agriculture, it is easier to collect information than in the fisheries sector. The nature of agriculture, with its clearly defined land tenure system, together with the characteristics of agricultural production can be easily assessed and understood.

“...within the given terms of reference, even if the greatest efforts are made, the data produced are likely to be of little use to fisheries managers”

The fisheries sector, defined by the use of common resources under an open access regime, is inherently more unstable and complex in terms of both physical locations of harvests and associated livelihoods. Fisheries as such have no clear basis for production, such as an area of land. This situation is compounded by the highly migratory nature of the industry, with no defined geographical limitations. The situation is especially complex for tropical fisheries, in which the small-scale sector is dominant. More than 95 percent of fishers in the region belong to this sector, which is widely scattered along the shorelines of Southeast Asia.

The special nature of tropical fisheries makes data and information collection extremely difficult to achieve. The effectiveness of reliable information collection by the government sector, already hindered by the nature of fisheries, is further hindered by the requirement to measure daily catches. In the agricultural



(Courtesy of TD/ Audio-Visual Section)

sector, by contrast, production consists of a limited number of planned harvests.

Further aggravating the situation, government agencies responsible for fisheries have generally much smaller financial and human capacities than the agricultural sector.

The different nature of the fisheries sector and the structure of government agencies has to be understood when national systems to collect fisheries statistical data and information are reviewed. Considering these differences, it may not be fair to expect government agencies responsible for fisheries to collect statistical data of a quality comparable to that produced by the agricultural sector.

Current fisheries statistical systems have been developed using agricultural statistical system as a model. Efforts should therefore be made to reassess the specific requirements of fisheries statistical systems, considering the existing limited human capacity and the particular nature of tropical fisheries.

Challenges

National fisheries statistical systems established in the past have normally not included fisheries management objectives, reflecting the lesser concern on these issues by governments in the past.

“To enable effective regulation, the collection of relevant scientific information is increasingly necessary”

However, government agencies for fisheries are increasingly concerned with regulating the industry, considering the current status of fisheries using common resources under an open access regime. To enable effective regulation, the collection of relevant scientific information is increasingly necessary.

As such, fisheries management actions are in most cases focused on resolving immediate and felt resource use problems. Government agencies and policy makers



usually collect needed information by mobilising government researchers rather than using existing national fishery statistic systems.

It is somewhat paradoxical that government agencies have utilized two different mechanisms to collect fisheries-related information, especially considering the limited financial and technical resources available. It might be time to rethink an appropriate policy and overall mechanisms to collect needed information in a more cost effective way.

On the importance of adequate collection of statistic and scientific information

In general, two major kinds of data and information are collected by two different groups of governmental agencies: fisheries statistical data collected by statistical units and scientific information collected by the research units. There is little or no coordination between the two groups.

Fisheries statistical units normally belong to a nationwide network, employing a number of enumerators across the country. Mechanisms for continuous collection of data are considered using an appropriate format. There is relatively little flexibility to accommodate comprehensive modifications of data and information required to be collected in line with national requirements and priorities.

Appropriately collected statistical data provide general information to understand status and trends of all kinds of fisheries at the national level. Unfortunately, under the current statistical framework, it is very difficult to collect information on individual fisheries, especially in terms of fishing grounds or areas.

“Appropriately collected statistical data provide general information to understand status and trends of all kinds of fisheries at the national level”

On the other hand, fisheries management requirements and actions are more locally specific, targeted at the regulation of particular fisheries in identified areas, while national frameworks such as the fisheries management program and plan provide a consistent policy and frame of reference.

In addition to statistical data, governments therefore frequently request researchers to collect scientific information directly from particular targeted fisheries. Such requirements are expected to be enlarged in the future, in accordance with growing fisheries management needs. This kind of data collection tends to be on an *ad hoc* basis, since such exercises are normally conducted when an information gap is identified, to solve an immediate management problem and to formulate policy in answer to the issue.

The SEAFDEC Program on the Collection of Fisheries Information

SEAFDEC has a long history of collecting statistical data on fisheries in the region, and has organized several training courses and workshops to improve national statistical systems.

“...collaborative work with regional actors will be increasingly necessary to collect information and ultimately promote sustainable fisheries in the region”

SEAFDEC has recently started working with its Member Countries to promote the collection of information focusing on various current fisheries concerns. These efforts include collecting scientific information on shark fisheries, fisheries indicators, pelagic species of the South China Sea, the extent of discarded catch, inland fisheries and marine turtle by-catch. The aim in all cases is to enable better understanding of fisheries trends as a basis for fisheries management.

Collection of statistical information in the region will be pursued under the SEAFDEC program. Meanwhile, collaborative work with regional actors will be increasingly necessary to collect information and ultimately promote sustainable fisheries in the region. From this perspective, it might be an appropriate time



Participants to the ASEAN-SEAFDEC Regional Technical Consultation on Fishery Statistics organized in Chiang Mai, Thailand, from 16 to 19 June 2003

Proposed activities for improving fisheries statistical systems in Southeast Asia

A. Continuous strengthening of national networks of fisheries statistical systems

Government fisheries agencies will continue to develop national network systems to effectively collect statistical data with a clearly defined policy and objectives and within an appropriate framework.

B. Strategic planning of government research activities

Government researchers normally select research issues based on their capacity to answer scientific needs defined by government programs. Requirements for fisheries management have recently been identified as urgent priority areas. Meanwhile, in most ASEAN Member Countries, government research programs have not yet been fully restructured to address these issues. In these cases, strategic planning of government research programs is required, reviewing work achieved and planned, in order to provide increased focus on fisheries management.

C. Implementation of research programs

More governmental research work needs to be conducted in response to fisheries management problems, such as resolving resource use conflicts. Unlike collection of statistical data, such research work has clear objectives, usually to clearly understand the status and trends of a named fishery in a specific locality, and information from it will be used as the validated basis for the development of a management plan and actions to solve the immediate problem. Research program are typically conducted within a certain timeframe and on a project basis.

D. Evaluation of research work

Such research work must be evaluated upon completion. In addition to a technical evaluation, policy makers must consider which initiatives should be continuously conducted, at a particular locality or in wider geographical areas. If these topics and kinds of data are to be continuously collected, responsibility to do so could be transferred to the national fishery statistics system, which can carry out the work in a sustainable manner, mobilizing the national network.

E. Formulation of statistical formats

When continuous collection of data is evaluated, its requirements must be translated into a statistical format, such as tabulation, questionnaire, or revised classification. An appropriate format, taking full account of the nature of the statistical system, may be developed jointly by researchers and the statistical unit. As data collection under the statistical system is normally long term but relatively inflexible to carry out, the development of modified statistical formats is indispensable.

F. Financial and Technical Assistance

Appropriate financial and technical assistance (including a human resource development program) should be provided to the fishery statistical system, in order to provide the resources needed to collect new or additional data requirements under the fisheries statistic scheme, either nationwide or at certain localities.

G. Systematic Improvement of Fishery Statistics

Through the above process, together with coordination among policy makers, researchers and staff of statistical units, fishery statistics will gradually improve, accommodating the required data sets for priority assessment and evaluation of fisheries status and trends.

to clarify SEAFDEC activities at the regional level, with respect to the collection of fisheries data and information which may also be relevant at national levels, highlighting a need to coordinate activities with Member Countries.

A conceptual framework for data and information collection

While governmental agencies responsible for fisheries will continue to collect both statistical data

and scientific information to support the formulation of national fisheries policies and to promote the implementation of effective fisheries management programs, coordination between different units implementing these activities has still to be established. The improvement of fishery statistics to accommodate information that will support identified priority issues can obviously not be achieved solely by statistical units increasing their efforts. Coordination between statistical units and government researchers is an important factor that has to be promoted by government policy makers.



(Courtesy of TD/ Audio-Visual Section)

In order to improve coordination, different approaches need to be considered. Further development of a comprehensive framework and its eventual implementation will ultimately help to improve fisheries statistical systems in countries in Southeast Asia. An approach that builds on the present framework is set out in the box below.

“Coordination between statistical units and government researchers is an important factor that has to be promoted by government policy makers”

Pursuing efforts at the regional and national levels may first clarify the needs for statistic data given current government priorities, and may subsequently enable the present system to be developed to gradually accommodate the needs of each national system. This will hopefully maximize the use of statistics for national priority issues, including their use as a basis for fisheries management, as highlighted in the Millennium Conference Resolution.

The ASEAN-SEAFDEC Regional Technical Consultation on Fishery Statistics was organized in Chiang Mai, Thailand, from 16 to 19 June 2003. The purpose of the meeting was to discuss how to improve national fisheries statistics and ways to mobilize other scientific information to support required activities for governments’ priority issues, particularly with regards to fisheries management. After discussion and an exchange of views, conclusions and recommendations were proposed, including guidelines and frameworks. These will strategically harmonize improved fisheries statistics with other information collection activities. All activities will be conducted by government agencies, ultimately improving the overall quality and effectiveness of data and information gathering by ASEAN Member Countries.

About the author

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“Where there are sharks, can there be fishers?”

On the Importance of Shark Fisheries Management in Southeast Asia

by Olivier Delahaye Gamucci

Introduction

The great white shark devouring innocent swimmers is a fading myth from the 70s and 80s. Today, the concern raised in international fora is the excessive catch of sharks around the world. As such, the long overdue recognition of the need for sustainable shark fisheries management has at last been acknowledged in the ASEAN Region, as reported in the first issue of *Fish for the People*.

Shark fishing is a difficult issue to address because of its nature. Around the world, sharks are mostly non-targeted catches. In some countries, they are considered by-catch, and are mostly or completely discarded. Fishers there may even regard them as pests or nuisances. In other regions, such as Southeast Asia, fishermen make good use of sharks, as secondary catches of significant value.

The difficulty in managing shark fishing is caused by the global lack of information on the subject. It is still widely misunderstood, as it is largely both unregulated and unmonitored. The reason for this is the nature of shark fishing itself, shark typically being captured as a non-targeted catch in low quantities in the course of daily fishing operations. But even a small daily shark catch by a fishing unit provides substantial economic return, shark fins being preserved and processed backyard until sold.

In fact, trade in sharks and shark products is vast and, in some cases increasing, as it is often highly profitable. Sharks may be used not only for their meat but also for their fins, skin, cartilage and internal organs. Recent concern about the sustainability of shark fishing has been raised in regard to the increased trade in shark products such as fins, cartilage and liver oil, trade which is likely to have played a significant role in the augmentation of shark harvests in recent years in many regions of the world.

“...trade is likely to have played a significant role in the augmentation of shark harvests in recent years in many regions of the world”

In addition, the market for shark products, particularly the increasing demand for shark fins, does not recognize the product value in term of species, but in terms of size, due to various usages for Chinese cuisine. This further constrains efficient collection of data on the shark trade by fisheries management authorities, and impedes understanding of the nature of shark fishing.

In October 2002, during the Fish Trade and Environment Meeting held in Bangkok, ASEAN-SEAFDEC Member Countries unanimously agreed to incorporate shark fisheries management measures into their respective national fisheries management policies

and framework. The recently developed International Plan of Action (IPOA) for Sharks underlined the need for information on the catch, efforts, landings and trade, as well as on the biological characteristics of sharks and their identification, in order to develop proper management.

“ASEAN-SEAFDEC Member Countries unanimously agreed to incorporate shark fisheries management measures into their respective national fisheries management policies”

Meanwhile, management authorities are also discussed, especially in the context of transboundary issues, since some shark species are highly migratory species that do not respect political boundaries. The effective management of shark fisheries must, therefore, be addressed at the regional level to include all populations throughout their range of distribution. The prevailing ASEAN common position is that the management of commercial fisheries, including sharks, should come under the purview of the FAO.



Unloading of sharks caught using longlines in Sarawak waters (courtesy of MFRDMD/IPP Bintawa)

Recent milestones in shark fisheries management in the region

The sustainability of regional fisheries was comprehensively discussed during the ASEAN-SEAFDEC Millennium Conference in November 2001. During the conference, Member Countries recognized several environment-related issues including shark and sea turtle by-catch, and the need to comprehensively address these fisheries management-related issues. At the same time, it was recognized that international fisheries policies are increasingly being discussed and agreed at the global level. In this regard, the Resolution and the Plan of Action of the Millennium Conference emphasized the importance of increasing the participation and involvement of ASEAN countries at international fora in order to safeguard and promote ASEAN interests. However, this can only be achieved if the region adopts a common stand based on regional policies.

During the past 18 months, the ASEAN position on regional environmental issues has been discussed in various meetings, of which the ASEAN-SEAFDEC Regional Meeting on Fish Trade and Environment, held in Bangkok in October 2002, was specifically focused on sharks. A series of recommendations were concluded, notably concerning the shark issue, which included a common position for regional fisheries management and trade together with measures to improve regional shark fisheries management (a complete description of those can be found in the Proceedings of the Fish Trade and Environment meeting, which can be obtained from SEAFDEC). These recommendations specifically included consideration of the development of National Plans of Action (NPOA) on Sharks, within the framework of IPOA.

The shark issue was extensively discussed at the 12th Meeting of the Conference of Parties to CITES (COP12) in Santiago, Chile, in November 2002. Several controversial issues were raised during the meeting,

especially concerning the identification of a competent agency for the management of aquatic commercial species and the criteria to be used to determine whether a species is endangered.

Managing Shark Fisheries – a new SEAFDEC project

The SEAFDEC project on sharks, called Management of Shark Fisheries and the Utilization of Sharks in the Southeast Asian Region, is under a Component of the Japanese Trust Fund program on Environment-Related Tasks in the Southeast Asian Region, funded for five years, from early 2003 to the end of 2007. Ultimately, the project's goal is to support the formulation of a regional policy and management mechanisms for shark fisheries in Southeast Asia.

“The outcome of the initial study will be used as the basis for the development of policy on shark fisheries and the consideration of the long-term program aimed at sustainable shark fisheries in the region”

The project comprises two phases. The first phase is a one-year study aimed at collecting essential regional baseline information on shark fisheries. This concerns not only the status and trends of shark stocks, but also the usage and trade of sharks in the region. This phase, a practical first step, is to be initiated by a Regional Consultation Meeting on shark fisheries data collection. The outcome of the initial study will be discussed at another Regional Consultation Meeting on Shark Fisheries in 2004 and used as the basis for the development of policy on shark fisheries and the consideration of the long-term program aimed at sustainable shark fisheries in the region. It is hoped that ASEAN Member Countries will consequently be able to get a clearer understanding of their respective shark fisheries, with a common stand in future important international events, such as the 13th Conference of Parties (COP13) of CITES to be held in Bangkok, Thailand in late 2004.

After COP13, the second phase of the project will be initiated to further assist ASEAN Member Countries to formulate their own NPOA on Sharks.

First Regional Technical Consultation on Shark Fisheries

The first Regional Technical Consultation (RTC) on Shark Fisheries was organized in Vientiane, Laos PDR, in May 2003. It was attended by delegates from ASEAN-SEAFDEC Member Countries, namely Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, and Japan, together with representatives of SEAFDEC Departments.

The Consultation was held back-to-back with the meeting of the ASEAN Sectoral Working Group on Fisheries (ASWGF_i) so as to obtain immediate policy support on technical initiatives. This arrangement enabled ASEAN Member Countries to develop the required activities in a harmonized manner, for the interests of both technical staff and policy makers.

The main purpose of the RTC was to provide a technical basis to initiate the 1st phase of the SEAFDEC project on shark fisheries. The Consultation also emphasized the need for commitment and close collaboration in the implementation of the project.



Participants to the first Regional Technical Consultation on Shark Fisheries, organized in Vientiane in May 2003



Fins are the parts of shark commending the highest prices (courtesy of MFRDMD/IPP Bintawa)

Status and trends of shark fisheries

The first critical element for managing regional shark fisheries is to assess the current status of shark stocks. As such, the RTC confirmed that the project would start to collect data on shark catch and fisheries for one year, from July 2003. In the longer term, after the completion of the first phase, trends in shark stocks would be evaluated through the continuation of the survey.

With the support of SEAFDEC, each ASEAN Member Country has agreed to collect three main kinds of information in their selected landing sites (see Box below). The selection of these sites will take into account the regularity and volume of shark catch landed in the area, representatives of the major national ecosystems and types of fisheries. The modalities of access and convenience of communication are practical factors that will have to be jointly considered during the site selection.

Data to be collected by each ASEAN Country on shark catch and fisheries at each selected landing site:

1. General description of shark fisheries, including their socio-economic importance to local communities
2. Landing data (total catch of shark)
3. Research on shark biological data (with parameters such as size by sex, species composition, maturity, etc.)

The RTC also agreed that all shark species commonly caught and landed by fishers in each ASEAN Member

Country would be covered by the project. As the taxonomy and identification of sharks can be an important constraint on the collection of accurate data, SEAFDEC and Member Countries will develop national identification sheets to support data collection on selected species.

Utilization and trade of sharks

The description of the regional utilization of sharks is another important element to understanding shark fisheries. The regional trade of sharks will also be considered, since the utilization of sharks is closely related to markets. All ASEAN Member Countries will provide information collected by their relevant national authorities, especially on the shark trade. The RTC also agreed that if the utilization of sharks will be observed at the selected landing sites, the trade description should first be limited to Singapore, a clearly important shark trade center. Subsequently, the market survey would be expanded to other ASEAN countries where the shark trade is also important, such as Malaysia or Thailand.

“...the completion of the project’s first phase [...] will publicize ASEAN’s seriousness in tackling shark fisheries management issues”

It is expected that the outcomes of the survey will show comprehensively how sharks catches are utilized in the region.

Meanwhile, to support the identification of shark products on the markets, such as fins, SEAFDEC will

develop species identification methods for the region, which could be based on morphological characteristics or on aspects of the denticles on the skins of sharks.

Towards a better understanding of regional shark fisheries

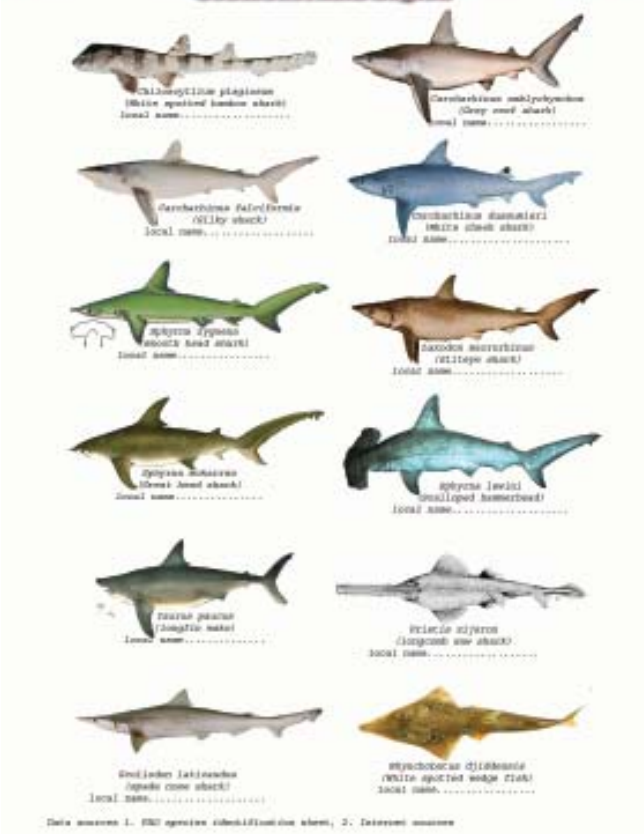
Shortly after the completion of the project's first phase, SEAFDEC will publish a report that will include complete findings, analyses and recommendations in order to develop regional management of shark fisheries. This will publicize ASEAN's seriousness in tackling shark fisheries management issues.

Other means of publications will also be used to inform the public, including the web-based SEAFDEC Digitized Atlas, an issue of "Fish for the People" featuring regional shark fisheries, and a series of leaflets to give snapshots of current national situations.

No more time to delay

The need for serious efforts to achieve sustainable regional fisheries has long been recognized, but still needs to be urgently addressed throughout the region. The issue of sharks harvested without proper monitoring and management has been shown to be a great threat to the sustainability of regional fisheries. Global initiatives such as CITES may soon restrict fishing operations by imposing stringent conservation measures. COP13 is imminent; SEAFDEC and

Species Identification sheet of major species found in Southeast Asia Region



One of the species identification sheets for the most commonly found species in the ASEAN waters, developed for the ASEAN-SEAFDEC study on Shark Fisheries



In the exposed ovaries of 1.3 m female bull shark, eight youngs presenting fully develop features were discovered upon dissection (courtesy of MFRDMD/IPP Bintawa)

ASEAN Member Countries must demonstrate their capacity to tackle this issue at the regional level. This will require ASEAN to seriously initiate work toward achieving sustainable fisheries, considering the well-being of its fishermen, and marking the words: "Where there are sharks, there can be fishermen!"

About the author
Olivier Delahaye Gamucci is Associate Professional Officer at SEAFDEC. Based in the Secretariat, Bangkok, he is notably responsible for the publication of *Fish for the People*. His interest is with coastal resources management and rural development.

Discards and By-Catch in Fisheries: What are the problems in the Southeast Asian Region?

by Bundit Chokesanguan and Yasubisa Kato



By-catch and discards in the ASEAN?

The International Workshop on the Estimation of Discards and Measures to Reduce By-catch in the Indian Ocean and Western Pacific was held at SEAFDEC in May 2003. The workshop was part of the Food and Agriculture Organization (FAO)'s global initiatives under the Global Environment Facility (GEF) project, and was conducted in collaboration with SEAFDEC. Its purpose was to discuss issues relevant to the Southeast Asian region, with participants and resource persons coming from ASEAN Member Countries, Australia, Korea, Japan and South Africa. Similar workshops elsewhere in the world have addressed the same issues in other regions.

“...the use of these terms in tropical areas, including the Southeast Asian region, may encourage misunderstanding about the fisheries”

At the international level, the term ‘discards’ is frequently used as a synonym for ‘by-catch’. By-catch is indeed usually the main sources of discarded catch in many fisheries, especially industrial fisheries in

temperate zones. Discards are generally regarded as an important negative impact of fisheries, and as a result, various attempts have been made around the world to minimize by-catch.

Unfortunately, the use of these terms in the designation of the regional workshops in tropical areas, including the Southeast Asian region, may encourage misunderstanding about the fisheries. The major part of fisheries in the Southeast Asian region can be categorized as small-scale coastal operations, each exploiting a large number of tropical species. Three factors differentiate fisheries in the region from larger-scale temperate fisheries:

1. The small scale of fisheries, with most fisheries' operations lasting from a day to a few days, whatever the economic value of the catch.
2. The tropical characteristics of the ecosystem, with individual species having relatively small stock size compared to those in temperate areas. As a consequence, fishers depend on a larger numbers of species for their livelihoods, with many species wrongly considered as by-catch at the international level.
3. The inherent flexibility of markets, since these are based on a long tradition of consuming a wide



Participants to the FAO-SEAFDEC International Workshop on the Estimation of Discards and Measures to Reduce By-Catch in the Indian Ocean and Western Pacific

range of catch species each with relatively small volumes.

“One of the major issues discussed was the estimation of the scale of discards by fisheries in the region”

The international definition of by-catch may therefore need to be modified to be applicable to fisheries in Southeast Asia. However by-catch is defined for the region, it should not be understood as a source of discards.

Unwanted catches!

This issue had previously been discussed during the development of the Regional Guidelines for Responsible Fisheries in Southeast Asia, one of the achievements under the program of Regionalization of the Code of Conduct for Responsible Fisheries. During the preparatory stage of those activities, a working definition of by-catch was agreed, namely that “by-catch is a term attached to target catch; since target catch is not a useful term in all fisheries in the region, the term ‘by-catch’ will be used for industrial fisheries”. A more appropriate wording for by-catch in the region was ‘unwanted catch’, or ‘trash fish’, which is composed of both low and no value species and under-sized commercially valuable species.

Excluder devices can play an important role to reduce by-catch and unwanted catch

By re-defining terminology, the recent International Workshop at SEAFDEC proceeded to identify related management problems. One of the major issues discussed was the estimation of the scale of discards by fisheries in the region. Participants from ASEAN Member Countries mentioned that the amount of discards may in general be relatively small in Southeast Asia, considering the small-scale nature of fisheries operations. Another regional factor was raised – the increasing demand for aquaculture feed encourages fishers to land non-edible, small-sized catch. It was also mentioned that discards have been observed in fishing industries in the region, for example, in long distance operations such as shrimp trawl fisheries in Indonesia or fisheries operating in remote areas where a flexible market does not exist.

On the importance to estimate discards...

The workshop recognized that the collection of data to estimate the scale of discards might not be a priority issue for the region. Accurate data collection on discards



requires enormous efforts, and might still lead to unreliable results.

“Accurate data collection on discards requires enormous efforts, and might still lead to unreliable results”

Even though discards is often considered a topic of limited importance in the region in terms of volume, the workshop agreed that a more practical and useful approach would be to initiate research activities directed at the development of management actions to reduce discards. A first important step to this approach would be the identification of fisheries which have discards problems. The workshop therefore proposed a research focus on how to reduce unwanted catch, or by-catch.

Responsible fishing technologies and practices

Under the open access of common resources regime, fishers tend to catch as much as possible, irrespective of the use to which they can put the catch. Fishers believe that if they do not catch fish today, remaining fish will be caught by other fishers tomorrow. It is understood that the promotion of responsible and sustainable fisheries is a very difficult task under this regime. The Resolutions and Plans of Action adopted at the ASEAN-SEAFDEC Millennium Conference suggested promoting responsible fishing practices, together with the gradual introduction of rights-based fisheries for the region. ASEAN governments also need to consider long-term policies for the sustainability of regional fisheries, mostly on the use of unwanted catch as a material for aquaculture feeds.

“Fishers believe that if they do not catch fish today, remaining fish will be caught by other fishers tomorrow”

A juvenile and trash fish excluder device (JTED), developed for trawl fisheries in the ASEAN Region

Under the present regime, it is not easy to convince fishers to be responsible, and use fishing gear and devices, namely excluder devices, which are specifically designed to reduce the total catch. But such devices are nonetheless important for the development of practical selective fishing methods which, in conjunction with the implementation of rights-based fisheries, will minimize unwanted catch.

By way of follow-up to the Millennium Conference, SEAFDEC’s Training Department is pursuing a five-year project on responsible fishing technologies and practices to develop juvenile and trash fish excluder devices (JTEDs) for trawl fisheries, to reduce unwanted catch for these operations. This involves the recognition that a continuous catch of under-sized individuals of commercially valuable species has serious negative effects on entire fisheries. The project also promotes the use of Turtle Excluder Devices (TEDs) for trawl fisheries, aiming to reduce the incidental catch of marine turtle species.



Action Plan to Reduce Unwanted Catch in the Region

Fisheries policy and management

- Development of appropriate policy and supporting legislation to reduce unwanted catch, including the promotion of mesh size regulation with the use of larger meshes, or separate licensing of fish and shrimp trawlers to facilitate vessel identification and management.
- Promotion of responsible fishing practices, together with the elimination of illegal and destructive fishing practices.
- Assessment of the dependency on trash fish for aquaculture feed, with development of appropriate policy to address the issue.
- Development of policy to reduce catches of juveniles.
- Appropriate monitoring control and surveillance (MCS) systems to enforce management actions, notably with respect to the reduction of unwanted catch and of illegal and destructive fisheries.

Research policy and priority

- Research work should focus on the development of selective, environmentally friendly, and cost-effective methods or techniques that will reduce the proportion of unwanted catch.
- Three major steps need to be taken in the assessment of potential problems concerning discards:
Step 1: Information gathering from individual fisheries
Step 2: Selecting priority fisheries
Step 3: Assessing the selected fisheries.

Based on these steps, the need to reduce unwanted catch and discard can be made clearer.

- Regional terminology should be further clarified to avoid misunderstandings when working in regional or international collaborations.
- While the major problem of unwanted catch needs to be identified, research activities should not be limited to major fishing gears and methods, but also need to address possible management actions for reducing unwanted catch.
- Required research activities should take into account the issues identified in the outcomes of the Regionalization of the Code of Conducts for Responsible Fisheries (RCCRF) and the Millennium Conference. These research activities should be conducted in line with regional and national priorities.
- Major differences between industrial and small-scale fisheries should be clearly identified in terms of by-catch and use of unwanted catch.
- Mitigation techniques should be developed to avoid catching all endangered species.
- Research and development work should be carried out on techniques to ensure the survival of escapees.

Cooperation of Research with Industries

- Awareness building and promotional activities to fishermen must be promoted. These include sensitization of local communities and other stakeholders to the use of devices to reduce the unwanted catch, with an emphasis on JTEDs and TEDs. Other options for reducing unwanted catch, including reduced or altered fishing times, seasonal and area closures, vessel zonation and targeted fishing, should also be promoted where appropriate.
- Increasing education and awareness building activities with fishing industries, through:
 - promoting of data collection and research to identify sensitive nursery areas and juvenile grounds where fishing should be avoided
 - helping all stakeholders to understand management decisions
 - highlighting the need for quality data collection and associated data collection techniques by fisheries (for example, through observer systems).
- Promoting data exchange and collaboration between countries and industries, in particular those involved in joint venture or charter arrangements.



Although unwanted catches might be significant, discards usually only form a relatively small part of total catches in Southeast Asia

“This involves the recognition that a continuous catch of under-sized individuals of commercially valuable species has serious negative effects on entire fisheries”

A parallel project is being undertaken by the FAO in a regular technical program for The Reduction of Discards and Environmental Impact from Fisheries. Activities under this program focus on the development of proper methodologies for both the estimation of the quantity of discards and for the conception of measures which could reduce unwanted and incidental catch.

SEAFDEC and FAO

Both SEAFDEC and FAO projects are based on the understanding that the global reduction in catches and the perceived decline in many fish stocks are directly attributed to the use of non-selective fishing gears that do not release unwanted and incidental catch alive. Both projects aim to develop and introduce selective fishing technologies by which unwanted and incidental catch can be reduced. The synergies that exist between SEAFDEC and FAO on the issue require good cooperation without duplication of effort in order to bring selective fishing technologies to the ASEAN region.

“...the global reduction in catches and the perceived decline in many fish stocks are directly attributable to the use of non-selective fishing gears...”

After in-depth discussion, the workshop eventually agreed on an Action Plan, as detailed on the opposite page. In close collaboration with the FAO, SEAFDEC's Training Department will further promote research activities following this Action Plan, in order to support ASEAN Member Countries in their efforts to reduce unwanted catch and discards.

About the authors

Bundit Chokesanguan is the Head of Information and Extension Division at SEAFDEC Training Department, Samut Prakarn, Thailand. His field of interest is with fishing gear technologies.

Yasuhisa Kato, Ph.D. in population dynamics and marine ecology, was successively President of Overseas Agrofiseries Consultants Co., Director of the FAO's Operation Services and later on Policy and Planning Division. He is today Special Advisor for SEAFDEC, based at the Secretariat, Bangkok.

[Events Calendar]

Date/Venue	Events	Organizer
2003		
5 May - 15 August (On-line training)	On-line Course on Principles of Health Management in Aquaculture	SEAFDEC/AQD
6-9 May Thailand	ASEAN-SEAFDEC Regional Workshop on Innovative Fisheries Management Approaches in SE Asia: Right-Based Fisheries and Decentralization	SEAFDEC/Secretariat
7 May - 5 June Philippines	Training Course on Management of Sustainable Aquafarming Systems	SEAFDEC/AQD
12-16 May Thailand	Workshop on Estimation of Discards and Measures to Reduce By-catch in the Indian Ocean and Western Pacific	SEAFDEC/TD
26-28 May Lao PDR	ASEAN-SEAFDEC Regional Technical Consultation on Shark Fisheries	SEAFDEC/Secretariat
May-September (On-line training)	On-line Course on Basic Principles of Aquaculture Nutrition	SEAFDEC/AQD
2 June - 16 July Philippines	Training Course on Marine Fish Hatchery	SEAFDEC/AQD
3 June - 17 July Thailand	International Training Course in Coastal Fisheries Management and Extension Methodology	SEAFDEC/TD
9-20 June Singapore	Regional Training Course in Fish Processing and Packaging	SEAFDEC/MFRD
16-19 June Thailand	ASEAN-SEAFDEC Regional Workshop for the Improvement of Fishery Statistics in the ASEAN Region	SEAFDEC/Secretariat
24-27 June Thailand	Regional Seminar-Workshop on Mangrove-Friendly Shrimp Culture	SEAFDEC/AQD
June (on-line training)	On-line Training on "Media Development for Fisheries Extension Officers"	SEAFDEC/TD
28 July - 1 August Thailand	Fourth (final) Regional Workshop on the Implementation of HACCP in the Fish Processing industry in Southeast Asia	SEAFDEC/MFRD
1-15 August Thailand	Training Course in the Use of TEDs (Trash Excluder Devices) and JTEDs (Juvenile and Trash Excluder Devices) for Shrimp Trawling	SEAFDEC/TD
4-6 August Malaysia	ASEAN-SEAFDEC Regional Technical Consultation on Information Gathering for Inland Capture Fisheries in ASEAN Countries	SEAFDEC/MFRDMD
11-23 August Philippines	Training Course on Livelihood Opportunities on Abalone, Seaweeds (<i>Kappaphycus</i> and <i>Gracilaria</i>), and Mudcrab for FARMC Beneficiaries	SEAFDEC/AQD
14-20 September Vietnam	2 nd Regional Workshop on Good Lab Quality Management Practices and Methods Validation in Southeast Asia	SEAFDEC/MFRD
16-18 September Malaysia	ASEAN-SEAFDEC Regional Technical Consultation on the Management and Conservation of Sea Turtles in Southeast Asia	SEAFDEC/MFRDMD
September (tentative) Thailand	Workshop on Artificial Reefs and Stationary Fishing Gear Design and Construction and Marine Protected Area	SEAFDEC/TD
September (tentative) Thailand	Regional Technical Consultation on Fisheries Subsidies	SEAFDEC/Secretariat
September (tentative) Thailand	Training Course in Ecosystem Effects of Fishing	SEAFDEC/TD
Sep-Nov (tentative) Philippines	Third Country Training Program on Responsible Aquaculture Development	SEAFDEC/AQD
13-14 October Vietnam	Technical Training in Data Handling and Analysis: Information Collection for Sustainable Pelagic Fisheries in the South China Sea	SEAFDEC/MFRDMD
15-17 October Vietnam	2 nd Technical Consultation Meeting on Information Collection for Sustainable Pelagic Fisheries in the South China Sea	SEAFDEC/MFRDMD
Oct-Nov (tentative) Thailand	Shipboard Training for Fishermen & Trainers on Appropriate Fishing Technology for Under Exploited Resources	SEAFDEC/TD
November (tentative) Thailand	Workshop on Safety at Sea for Small Fishing Boats	SEAFDEC/TD

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 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-SEA/DEC Member Countries, on the theme of 'Fish and the Culture'. This is the best drawing from Thailand.