

# Fisheries Management in Southeast Asia: Where Indicators Come in

by Yasubisa Kato



*(Photo: courtesy of Theo Ebberts)*

## Introduction

Essential actions for the sustainable management of fisheries have yet to be effectively implemented by relevant government authorities. In light of this, international fisheries societies are increasingly stressing the importance of developing indicators as a basis for further appropriate management actions. There are many reasons why essential fisheries management actions have not yet been effectively promoted, despite concerned government management authorities fully recognizing the seriousness of existing problems, including the decline of fisheries resources and the unregulated character of the fisheries industries.

One main reason for the lack of progress is socio-economic: critical management actions that must be imposed will certainly have a negative impact on fishers in the short term. This is particularly so in the

case of one of the most serious problems, namely excess fishing capacity. With too many people in competition to catch declining fisheries resources, one necessary action is to reduce the numbers of fishers and fishing boats corresponding to available resources. Although such action will have a very serious effect on some fishers, it is essential for the long-term sustainability of fisheries.

**“International fisheries societies are increasingly stressing the importance of developing indicators”**

Because of the probable negative socio-economic impacts, government agencies usually adopt a cautious approach, and avoid such large-scale drastic social problems along their coast. Although the need to manage fisheries is not a new issue, government agencies in ASEAN and in other parts of the world have neglected

to take actions to build mechanisms necessary for the systematic management of their fisheries. These agencies are in any case reluctant to take preventive management measures to avoid future and long-term fisheries problems. Only in cases where severe management problems and social conflicts have achieved prominence have government agencies eventually been forced into taking action, and carrying out management interventions to solve none but the most immediate problems.

**“Critical management actions that must be imposed will certainly have a negative impact on fishers in the short term ... particularly so in the case of excess fishing capacity”**

## **Underneath fisheries management**

One of the main reasons for the current attitude of governmental agencies dealing with fisheries management can be attributed to the fact that the required scientific information on fisheries is not always readily available, and in most instances a system to monitor and assess the status and trends of fisheries does not even exist in the government structure. One existing mechanism for collecting information on fisheries is fishery statistics. But such a system was created long before management requirements were placed on national agendas, and existing fishery statistics frameworks are often inadequate for the requirements of current fisheries management objectives. Fisheries statistics provide information on the general outlook and status of the fisheries sector at the national level, mainly as a historical record. But for management interventions, government agencies need precise and timely information for each respective fishery (such as shrimp trawl or mackerel purse seine fisheries), in specific localities, in order to properly assess a given fisheries situation.

**“For management interventions, government agencies need precise and timely information for each respective fishery”**

Another central source of information for fisheries management is research. The limitation here is that research is normally dictated by the scientific interests of individual researchers, not strategically guided by government policy to meet management requirements. In light of the urgent needs of government agencies to solve emerging fisheries problems, there are prospects for creating special task forces mobilizing researchers, but these are often on a temporary basis. Government requirements, on the other hand, are for a stable mechanism for dealing with fisheries management.

Considering the general situation and the lack of appropriate systems in government structures to provide the required information, the proposal to develop and use indicators for fisheries management can be considered as a temporary initiative to meet the most urgent information gaps. This should hold true until the mechanism and concepts, which are being developed by respective government agencies, can be implemented to establish preventive management measures and ensure the long-term sustainability of fisheries in each country.

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## **Using indicators in Southeast Asia**

SEAFDEC recently organized the Second Regional Technical Consultation on the Use of Indicators for the Sustainable Development and Management of Capture Fisheries. The consultation was held in Kuala Lumpur during 9-11 March 2004, with participants including government experts invited from both ASEAN Member Countries and relevant international organizations, such as FAO. The objectives of the meeting were to review the progress of case studies using indicators in selected ASEAN Member Countries (see Box 1), and to discuss how to further promote their use as a basis for establishing an appropriate fisheries management framework in Southeast Asia.

The outcomes of the discussion which took place in the meeting are summarized in Box 2. The main issues are elaborated upon in the following paragraphs.



### Box 1. Pilot projects using indicators in ASEAN-SEAFDEC Member Countries

During the first Regional Technical Consultation organized in September 2002, five pilot projects to promote the use of indicators for the sustainable development and management of capture fisheries were accepted for implementation in ASEAN-SEAFDEC Member Countries.

Since September 2003, **Brunei Darussalam** has been studying the use of indicators for the management of its trawl fishery. Existing data on the fishery selected are being compiled, and regular sampling programs are planned.

In July 2003, **Indonesia** initiated a study on a traditional demersal fishery in Pekalongan, Central Java. Existing data on the selected fishery are being compiled, and regular sampling programs are scheduled.

In early 2003, **Malaysia** started a pilot project, focusing on trawl fisheries (covering vessels of <40 GRT) in the States of Kedah and Perlis on the north-west coast of Peninsular Malaysia. Fleet, socio-economic and environmental indicators have been selected, and agreed upon following a series of meetings, discussions and workshops with stakeholders.

In December 2002, **the Philippines** started a project on the ring net fishery operating from Danao City, Cebu. This pilot project focuses on the small pelagic fishery. Resource and biological indicators have been selected. Existing data on this fishery are being compiled, and new data collected under an already initiated regular sampling program.

In July 2003, **Thailand** started a pilot study on the trawl fishery in Pranburi, Prachuab Khiri Khan Province. A meeting with stakeholders has already been held. Stakeholders including fishers are actively involved in this project. Existing data are being compiled, and new data collected through a regular sampling program. Resource, fleet, and socio-economic indicators have been included in the study.

## Indicators: a working definition for the region

'Indicators' are not special technical issues, but general conceptual tools for indicating and understanding the status and trends of particular fisheries. FAO did in fact develop both a definition and a set of guidelines for indicators, taking into consideration their wider application for various governmental actions, with a special consideration for fisheries management. But such clarification at the global level is sometimes too theoretical, since it is intentionally conceived to be as broad as possible. Consequently, it lacks practical relevance for specific fisheries of Southeast Asian countries, where fisheries are mostly small-scale, use a diversity of fishing gear, and target multiple fish species.

**“...developing a set of Guidelines on the Use of Indicators for Improved Marine and Inland Fisheries Management in the ASEAN Region”**

The meeting therefore concluded by developing a set of Guidelines on the Use of Indicators for Improved Marine and Inland Fisheries Management in the ASEAN Region. These will support various types of promotional work and the application of the indicators in ASEAN fisheries.





**Box 2. The 2<sup>nd</sup> RTC on the Use of Indicators for the Sustainable Development and Management of Capture Fisheries in the ASEAN Region – Conclusions and Recommendations\***

1. Indicators should be used as effective planning, communication, monitoring and evaluation tools in fisheries management.
2. Use of indicators should be integrated into fisheries management plans. There should be clear linkages between indicators and management objectives, with special consideration to the reduction of excess fishing capacity.
3. In using indicators for fisheries management, due consideration should be made to linkages, relationships and combinations of various indicators and groups of indicators in order to provide better understanding of management problems and solutions.
4. The active involvement of stakeholders (meaning those contributing to or influenced by the outcome of fisheries management process) should be promoted, as should close consultation and communication among stakeholders. This is necessary in order to ensure their common understanding, awareness, consensus building and cooperation in selecting and using indicators, thereby enhancing their compliance in fisheries management.
5. Close coordination between a long-term routine data collection system and scientific research as well as cooperation with stakeholders in the provision of data and information should be promoted in order to develop indicators in sustainable manner.
6. Capacity building to enhance understanding of stakeholders as well as to develop the capacity of fishery officers, researchers and managers to facilitate the use of indicators for fisheries management should be conducted.
7. Guidelines on the use of indicators for improved marine and inland fisheries management in the ASEAN region should be developed, to support future promotion in the development and use of indicators.
8. While appreciating the progress of pilot projects in Brunei Darussalam, Indonesia, Malaysia, the Philippines and Thailand, all Member Countries are encouraged to further promote the implementation of pilot projects. The results of pilot projects will be useful for the formulation of the guidelines.
9. The complete work plan for 2004 and 2005 was adopted for future implementation, in order to ensure the successful implementation of the Special 5-year Project on the Use of Indicators for the Sustainable Development and Management of Capture Fisheries in the ASEAN Region.
10. There should be closer collaboration and cooperation among actors to promote the use of indicators for improved fisheries management in the ASEAN region. Actors include SEAFDEC Member Countries, and national and international bodies such as Assessment of Living Marine Resources of Vietnam (ALMRV), World Fish Center (WFC) and the Food and Agriculture Organization of the United Nations (FAO).
11. Considering the close correlation between the use of indicators and reduction of excess fishing capacity, Member Countries are encouraged to participate in the Technical Consultation on the International Plan of Action for the Management of Fishing Capacity (IPOA-Capacity), to be conducted by FAO in June 2004.

\* May differ slightly from the formally adopted text



## Identifying appropriate indicators

Based on the findings of the case studies conducted in the ASEAN Member Countries, appropriate applicable indicators or combination of groups of indicators are being identified. Not only scientific data are required to understand each particular fishery in each locality, especially for coastal fisheries. There are also socio-economic and financial implications. In addition, the systematic involvement of a wide range of experts and stakeholders must be considered for the collection and analysis of the data gathered through indicators.

For example, if data and information in a specific locality is limited to the total amount of fish catch for particular fisheries, it will not tell us the status and trend of fisheries or fisheries resources. If time series of such data are available and show that the trend is on increasing, it will not tell us whether the resources are improving or the numbers of fishing boats is increasing. What is needed is a combination of data on the amount of fish catch and the number of fishing boats involved in such fisheries. If both types of data are available, it is then possible to calculate a time series of catch per unit efforts ( $CPUE = \text{Catch:C} / \text{Effort:E}$ ), which will simply indicate the trend of fisheries. On the one hand, if the weight of catch is used for “C”, CPUE will indicate the catch efficiency. On the other hand, if the value of the catch is used for C above, CPUE will then indicate the profitability of the fisheries. In both cases, CPUE will indirectly indicate the level of resource exploitation.

**“The systematic involvement of a wide range of experts and stakeholders must be considered for the collection and analysis of the data gathered through indicators”**

The classic biological indicators, including species composition, maturity, and size frequency data, can assist in improving the understanding of the fisheries. Yet comparative study, especially cost/benefit analysis of the various fishing methods or other livelihoods, will also indicate the relative economic status of the fisheries in the coastal communities.



*Second Regional Technical Consultation on the Use of Indicators for the Sustainable Development and Management of Capture Fisheries, Lumpur, Malaysia, from 9 to 11 March 2004*

## Needs for consultation with stakeholders

The ultimate goal of the use of indicators is to understand individual fisheries, not national fisheries as a whole. Such an understanding will be used as a basis for the necessary management actions to ensure sustainable fisheries and the improvement of the livelihood of fishers in the long-run. To help reaching this objective, the indicators used must be simple enough for a wide range of stakeholders, including





*able Development and Management of Capture Fisheries, held in Kuala*

related to costs and income, which often scare stakeholders away, since the information thus gleaned might be used for taxation purposes. Therefore, full consultation with stakeholders, especially concerning the objectives and use of indicators, will facilitate data collection and support compliance of the management measures to be implemented.

## Conclusion

The ASEAN Member Countries will continue to exert their efforts to achieve the sustainable use of fisheries resources through the implementation of appropriate management frameworks. It should nonetheless be recognized that the basis of these actions, which is to understand the status and trend of individual fisheries, are not simple issues, since the full collaboration of stakeholders throughout the process is required.

### About the author

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fishers, to fully appreciate them. Besides, if the full cooperation with these stakeholders is not achieved, the compliance or enforcement of the management measures will hardly be achievable.

The involvement of and consultation with stakeholders in the collection of information and its analysis is plainly one of the most important prerequisite for the use and application of indicators. Researchers have frequently found some difficulties in collecting socio-economic data and information, especially those