

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.

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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.

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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



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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.

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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

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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.

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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.