

**Strategies for trawl fisheries bycatch management project  
(REBYC-II CTI)**



**Project achievements and policy recommendations  
for  
Thailand**



## **Purpose of the policy brief**

The purpose of the policy brief is to provide key information and recommendations to policy and decision makers, fisheries managers, fisheries resource users and other relevant stakeholders on issues, challenges and opportunities to improve the management of trawl fisheries. This should in the long run lead to healthier fish stocks and fisheries habitats, increased economic benefits from resource use, and sustainable development.

## **Trawl fisheries**

Fisheries, in particular trawl fisheries, are important in meeting the demand of fish for human consumption, export and as aquaculture feed. Trawling is considered an efficient fishing method where a fishing vessel drags a cone-shaped net over the sea bed (sometimes also through the water column, as in the case of mid-water trawling).

However, excessive amount of bottom trawling in inappropriate locations is for a number of reasons not sustainable due to various potential negative impacts to marine resources and ecosystems. There is a need to minimize those impacts through improved management, and to strengthen compliance with the required management measures.

## **Impacts of trawl fisheries**

Trawl fisheries, when not well managed, has in many regions of the world led to overfishing, as shown by decreases of average size of landed fish and declining catch per unit effort. Moreover, bottom trawling can lead to alteration and degradation of sea bed habitats, thus further reducing biodiversity and productivity. Changes in the structure, function and integrity of ecosystems, including effects on the food web and multispecies predator-prey relationships, are further consequences of unmanaged trawling. Even if targeting only certain economically important fish species, tropical bottom trawling almost invariably leads to large amounts of bycatch due to the highly multispecies nature of the fishing grounds. This constitutes one of the major negative impacts of trawling.

### **Trawl fisheries in Thailand**

In the past three decades, various studies of the demersal and pelagic fish as well as invertebrate resources in the Gulf of Thailand (GoT) have indicated over-exploitation of these resources. Catch composition analysis shows that the stocks of many big sized and high value species have disappeared or at least dramatically reduced, leaving mostly smaller and less valuable species in the fishing grounds, in reduced quantities or of changed species composition. In 2015 there were 42,512 fishing vessels in Thailand of which 4,887 were trawlers. In 2013, the total marine capture from all types of gear in Thai waters was estimated at around 1,614,500 tonnes. The catch from trawlers in 2013 amounted to 513,300 tonnes which was about 24.3% of total Thai catch from GoT. The calculations of Maximum Sustainable Yield (MSY) indicate that the present overall fishing effort is greater than the optimum level by about 333%, and it should therefore be reduced.

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#### Bycatch

Bycatch largely consists of juveniles of economically important fish, non-targeted and unwanted species and sometimes also of endangered, threatened and protected (ETP) species, such as marine turtles and bottom invertebrates (sponges etc.). In many fisheries, at least a part of the bycatch is discarded. However, in many countries some of the bycatch is utilized for aquaculture feed, for direct human consumption, or forms part of the income for fishing crews.

The capture of large number of non-targeted species and juveniles (bycatch) has a range of negative impacts. It contributes to unsustainable resource use, reduction of biodiversity and productivity and therefore – while sometimes producing short-term economic benefits for some – general long-term reduction of economic benefits from resource use. This is clearly evident when fish are caught before they reach marketable size, or before they have spawned at least once.

#### **Bycatch issue in Thailand**

In Thailand, the whole trawl catch is usually retained and landed, and there is very little discarding. Many livelihoods depend on bycatch and low value fish, as there is usually a large proportion of the low value and ‘trash fish’ consisting of juveniles of ecologically important, economically valuable species and true trash fish which are normally small-sized and not marketed or consumed. In Thailand, the whole concept of bycatch is therefore not well recognized. There is a catch where there is a high value component and low value component. All these can be marketed. Fishers do not consider these as bycatch. The only thing they may consider bycatch are juveniles of high value species and ETP species. The major problem may be that some of these species are more vulnerable than the targeted species.

Many countries have issued fisheries regulations and laws aimed at minimizing bycatch through technical or other regulatory measures. The Food and Agriculture Organization of the United Nations (FAO), through funding obtained from the Global Environment Facility (GEF), continues to assist countries in addressing bycatch and other negative impacts of trawl fisheries management through a series of regional projects started in 2004 in West Africa, the Caribbean and Latin America, the Middle East and in Southeast Asia and the Coral Triangle region, and through a range of publications, including the FAO International Guidelines on Bycatch Management and Reduction of Discards.

## **The Strategies for trawl fisheries bycatch management Project**

### ***Project overview***

The Strategies for trawl fisheries Bycatch Management Project (REBYC-II CTI) was implemented in Thailand together with other participating countries, Indonesia, Papua New Guinea, Philippines, and Vietnam, aiming to address some challenges on trawl fisheries management by promoting sustainable fishing practices and improving fisheries management. The Project contributes to more sustainable use of fisheries resources and healthier marine ecosystems in Thailand waters by reducing non-sustainable bycatch and other fishing impacts from trawl fisheries. The Food and Agriculture Organization of the United Nations (FAO) was the Global Environment Facility (GEF) agency for the project that was funded jointly by GEF and the implementing and executing partners. The regional project implementation partner was the Southeast Asian Fisheries Development Center (SEAFDEC) through its Training Department in Thailand.

The project was structured around four interrelated components:

1. The *Policy, legal and institutional frameworks component* worked towards the establishment of national or area specific trawl fisheries bycatch management plans and the building of institutional capacity for their implementation.
2. The *Resource management and fishing operations component* lead to the adoption of more selective fishing gear and practices for implementation of the zoning of fishing areas, developing spatial-temporal closure management measures, and for gathering other necessary information for development of trawl fisheries management plan.
3. The *Information management and communication component* included the establishment of standardized data collection methods and implementing data collection at landing sites and onboard vessels.
4. The *Awareness and knowledge component* addressed awareness and knowledge of trawl fisheries bycatch management issues and how they relate to sustainability, and what measures are available to make fishing more responsible.

## **What is Sustainable Fisheries Resources Management?**

The sustainable use of fisheries resources and healthier marine ecosystems requires management systems that deliver ecological and economic benefits. Tropical trawl fisheries management aims to increase the social, environmental and economic benefits from harvesting natural fisheries resources. It attempts to reduce the negative impacts of the many complex issues that affect the sustainable development of fisheries.

## **How to manage sustainably trawl fisheries with the aim to contribute to sustainable development, delivering ecological and economic benefits now and for future generations?**

Sustainable development of fisheries is implemented through the ecosystem approach to fisheries (EAF) management, which has become internationally accepted as a guide to planning and managing human activities in relation to the natural environment. The EAF takes account of the fact that fisheries operate in (and indeed rely on) the ecosystems in which they occur. EAF therefore seeks to manage fisheries holistically, incorporating impacts that the fishery (and various management measures) may have on interacting species and the broader ecosystem, of which human society is part. In order to manage sustainably, fisheries management needs to consider the impact of fisheries on the habitats and other resources, as well as impacts of other economic activities on the fisheries.

In Thailand, these considerations include the following:

- Manage the trawl fisheries in a manner that promotes the conservation of biological diversity in the marine environment;
- Maintain stocks of primary and key secondary species harvested by the trawl fisheries at sustainable levels;
- Promote the conservation of threatened species, populations and ecological communities likely to be impacted by the operation of the trawl fisheries;
- Avoid sensitive fishing grounds;
- Appropriately share the resource and carry out fishing in a manner that minimizes negative social impacts;
- Promote a viable trawl fisheries, consistent with ecological sustainability;
- Facilitate effective and efficient compliance with management and regulatory measures;
- Improve knowledge about the trawl fisheries and the resources on which it relies.

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### ***REBYC-II CTI Project influenced the New Fisheries Policy in Thailand based on the Royal Fisheries Ordinance B.E. 2558 (2015) that came into force on 14 November 2015***

The new legislation amounts to a fundamental and comprehensive reform of the legal framework governing Thai fisheries. The key principles and objectives for fisheries management are as follows:

- establish **good governance in the management of the fisheries sector and the conservation of aquatic resources**
- **combat illegal, unreported and unregulated (IUU) fishing**, as well as **prevent overfishing and overcapacity** of the fishing fleet
- ensure effective **monitoring, control and surveillance** of fishing activities
- bolster the **traceability** system of fisheries products along the whole value chain, from fishing vessels to end consumers
- **eliminate all forms of forced labor** and **improve welfare and working conditions** of workers in the fisheries sector, both in fishing vessels and in seafood processing factories
- introduce proportional and deterrent **administrative and criminal sanctions**
- more effective fisheries management and stakeholders' involvement
- establish a **National Fisheries Committee** and a **Provincial Fisheries Committee**

Accordingly, a number of management measures are proposed, many of them also influenced by the outcome of the REBYC II CTI Project results as shown under component wise achievements below

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The Department of Fisheries, Thailand, in collaboration with other stakeholders, had identified the list of activities which were implemented in Thailand.

#### **Component 1: Policy, legal and institutional frameworks:**

- REBYC-II CTI Project's Thailand representatives participated in the APFIC regional workshop in 2013 to develop regional guidelines on bycatch management and reduction of discards
- The International Guidelines on Bycatch Management and Reduction of Discards were translated into Thai language and the new Marine Fisheries Master Plan and 2015 Fishery Law adheres to the guidelines
- Closed areas for fishing (up to 5 nautical miles) and protection of the pilot sites in Ao Trat were agreed by stakeholders and Provincial Governor, and DoF supported issuing of ordinance by Ministry
- The New Fishery Law includes a 4 cm minimum mesh size for trawl codends (as recommended by research carried out under the Project), pair trawl fishery ban, and limit of Total Allowable Catch (per trawler) for trawlers introduced
- Workshop to discuss the new fishery law in relation to trawl fisheries
- Advisory committee, conservation committee, working group and also provincial committee formed at appropriate levels taking an active role in management measures

#### **Component 2: Resource management and fishing operations:**

- Experiment to enlarge mesh size of codend for otter board and pair trawlers successfully completed and recommended 4 cm codend mesh size
- Fish larvae sampling surveys in Ao Trat, and baseline data surveys on the commercial trawl fisheries in Prachuab Kiri Khan-Chumphon and Trat, completed

#### **Component 3: Information management and communication:**

- Socio-economic survey on the fisheries in Trat Province and Prachuab Kiri Khan – Chumphon Provinces as well as economic analysis of the impact of 'bycatch' reduction on trawl economics carried out
- REBYC-II CTI Thai language site on the official website of the Marine Fisheries Research and Development Division linked to main SEAFDEC REBYC-II CTI website
- Integrated the socio-economic and biological studies into a single document and validation for publication

#### **Component 4: Awareness and knowledge:**

- Stakeholder consultations at Chumphon / Prachuab Kiri Khan and Trat Provinces
- Ecosystem Approach for Fisheries Management (EAFM) training for fishers and local administrators in Trat and Chumphon carried out including translation of material into Thai
- Public hearings in Chumphon and Trat on fisheries management measures
- Final workshops on new fishery law (including trawl fisheries issues) and outcomes from the REBYC-II CTI Thailand project for Prachuab Kiri Khan and Phuket
- Participation in workshop on data collection – trawl fisheries management information and data requirements and participation in regional training course on co-management and locally based approaches for responsible fisheries
- Regular input into the on-going Thai fishmeal round table discussions.
- Participation in M&E course



## **Recommendations on trawl fisheries management:**

### **Component 1: Policy, legal and institutional frameworks**

- Resource management plans must respond to prioritized issues, identified by communities and harmonize with the national and provincial legislation, policy and plans.
- Fisheries management process requires participation of stakeholders in every step for promoting acceptance and strengthening the management plan implementation and compliance.

### **Component 2: Resource management and fishing operations**

- In fisheries management, we are managing fishers who exploit the resources, not the fisheries resources. Therefore, fishers (and other key stakeholders) have to be part of the management planning and implementation process.
- For implementing any fisheries management measures, such as seasonal and area closure, fishing gear restriction, this should be supported by scientific evidence that can be monitored and evaluated regularly.
- Improve information base and determine total allowable effort / catch.
- Decide on area and seasonal closure measures in a participatory manner involving fisher groups in collaboration with government officials.

### **Component 3: Information management and communication**

- Accurate and up-to-date knowledge on number of fishers, gear types, catch quantity, fishing activities, resource mapping, socio-economics of fishers, and law and regulations in fisheries are the key base for management planning.
- Fisheries administration agencies and communities should have a common understanding on fisheries and fisheries resources for improving fisheries management program.
- Foster improved inter-intra relationships among fishing communities, Government agencies and other institutions. Consult stakeholders for obtaining reliable data and information and discussion of study results.
- Gain improved understanding on socio-economic conditions of the fishers as the key factor for success of management.
- Allocate sufficient time for data collection and planning process, including community consultation as well as capacity development, data collection and analysis, for obtaining results.



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#### **Component 4: Awareness and knowledge**

- Enhance the knowledge and skills of fisheries department staff also to include social interactions and facilitation of stakeholder consultation meetings.
- Enhance awareness of the stakeholders through continuous campaigns and wide ranging public hearings.
- Continue to provide knowledge to local fishers and private sector about the present status of marine fisheries, mesh size enlargement for trawlers and area and seasonal closures, the New Fisheries Act, practical implementation of management measures in Thai fisheries corresponding to global situation.

#### **For more information please contact:**

##### **REBYC-II CTI Project Regional Facilitation Unit,**

Southeast Asian Fisheries Development Center (SEAFDEC) Training Department:

P.O.Box 97, Phasamutchedi Samut Prakan 10290, Thailand

Tel: +66 24256100 Fax: +66 24256110, +66 24256111

[td@seafdec.org](mailto:td@seafdec.org)

##### **The Department of Fisheries, Thailand: Director of Marine Fisheries Research and Development,**

Department of Fisheries, Plodprasop Building, 6<sup>th</sup> Floor, Kaset Klang, Jatujak, Bangkok 10900, Thailand

Tel/Fax (662) 562 0542

[marine@dof.in.th](mailto:marine@dof.in.th)

[www.fisheries.go.th/marine](http://www.fisheries.go.th/marine)

##### **FAO Regional Office for Asia and the Pacific**

Maliwan Mansion, Phra Atit Road, Bangkok 10200, Thailand.

Tel: +66 26974000, Fax: +66 26974445

[FAO-RAP@fao.org](mailto:FAO-RAP@fao.org)