

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



**Project achievements and policy recommendations
for
Vietnam**



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 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 is dragging a cone-shaped net over the sea bed (sometimes also through the water column, i.e. 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 amount 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 Vietnam

Up to September 2015, there were about 20,000 fishing vessels using trawling gears in Vietnam accounting for a large percentage (about 20%) of total vessel numbers. Of those, about 7,600 were fishing in coastal areas, and trawlers operating in the offshore areas about 12,500. In general, there has been a large change in the fishing fleet structure over the years. The number of trawl vessels with high capacity has increased over the past few years. Provinces where trawl fishery has developed include Quang Ninh, Thanh Hoa, Nghe An, Khanh Hoa, Binh Thuan, Ba Ria-Vung Tau, Ben Tre and Kiên Giang.

The shrimp trawl fishery is most important in the Northern, Eastern and Southwestern regions of Vietnam. There are two shrimp trawl-fishing fleets: the shrimp otter trawl and shrimp beam trawl fleet. Normally, the shrimp beam trawl vessels have small engine capacity of around 20-90 HP. The main target species of the shrimp beam trawl fishery are shrimp, crab and some small demersal fishes. Shrimp otter trawl vessels are smaller with the engine capacity of 40-60 HP and the key target species are shrimp and small demersal fishes. In general, the shrimp trawling vessels are operating individually without teaming with each other. Professional ability of these vessel operations is not very high and thus it is difficult to manage these fleets.

Bycatch

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

The capture of large number of non-targeted species and juveniles (bycatch) has a range of potential negative impacts. It is contributing 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.

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 Vietnam together with other participating countries of Indonesia, Papua New Guinea, Philippines and Thailand aiming to address some challenges on trawl fisheries management in Vietnam by promoting sustainable fishing practices and improving trawl management. The project has contributed to more sustainable use of fisheries resources and healthier marine ecosystems in Vietnamese waters by reducing bycatch, discards and 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* works towards the establishment of national or area specific trawl fisheries by catch management plans and the building of institutional capacity for their implementation.
2. The *Resource management and fishing operations component* is leading 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 gathering other necessary information for development of trawl fisheries management plan.
3. The *Information management and communication component* includes by establishing standardized data collection methods and implementing data collection at landing sites and onboard vessels.
4. The *Awareness and knowledge component* is addressing awareness and knowledge of trawl fisheries by catch 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 also 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 also 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 Vietnam, 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.

REBYC-II CTI Project components and main achievements in Vietnam

Component 1: *Policy, legal and institutional frameworks*: The International Guidelines on Bycatch Management and Reduction of Discards were translated into Vietnamese and its contents was also reflected in national and local policies such as development of a provincial trawl fisheries management plan in Kien Giang. The project support was considered also on approval of freezing regulation of trawling vessel by an official document No 9443/BNN-TCTS dated 18 November 2015. This document is a basic legal framework for all coastal provinces to freeze fishing effort of trawl fisheries (MARD 2015). It also supported a series of meetings and workshops including technical advice to develop a Provincial Trawl Fisheries Management Plan in Kien Giang. This plan was officially approved by Decision No 2011 dated 6 September 2016 by the Chairman of the Provincial People's Committee of Kien Giang.

Component 2: *Resource management and fishing operations*: The project supported a review of gear selectivity studies which were conducted in Vietnam in the past. This was done to assess the results and outcomes of earlier selectivity trials, identify potential gear modifications, and draw up the work plan for further actions and designs, taking into account the likely acceptance of the bycatch reduction devices (BRDs) and increased mesh sizes by local fishing communities. It also looked into the livelihood impacts of these technologies being adopted in the longer term and transferred to other locations in Vietnam. In addition, the project's study on gear selectivity recommended that the square mesh size should be selected as plausible approach and used for reducing bycatch of trawl fisheries. The project also made recommendations for demarcating fishing zones and areas for spatial-temporal closures as part of the trawl fisheries management plan in Kien Giang.

Component 3: *Information management and communication*: Prior to the start of the project the Kien Giang trawl fisheries data collection systems did not specifically cover bycatch data. The project supported development of a guideline to collect data on trawl fisheries including port sampling, logbook and biological data, and it also supported Kien Giang in collecting and compiling baseline data on bycatch and discards, including species composition from sampling at fish landing sites. Total catch data of trawl fisheries and estimation of bycatch was done as a first attempt in Kien Giang province to feed into the provincial trawl fisheries management plan. A socio-economic survey was also conducted in Kien Giang province and workshops held to analyze the data at national level. The results of the socio-economic study on the trawl fisheries provided inputs for the development of the fisheries management plan in Kien Giang.

Component 4: *Awareness and knowledge*: A notable achievement of the project in Vietnam was the promotion of the ecosystem approach to fisheries management through two EAFM workshops (i.e. ESSENTIAL EAFM for fisheries managers and other officials and EAFM LEAD for policy and decision makers). With many local and central level participants, this was their first exposure to EAFM principles. The familiarity of stakeholders at all levels (government and private sector) with EAFM was enhanced. Improved understanding about socio-economic aspects of the trawl fisheries and their importance in management was generated. For example, previously existing fisheries management plans had not explicitly covered management of bycatch. The project was a catalyst in getting national and local management agencies to realistically look at bycatch and explore options on how to address this issue.

Recommendations on trawl fisheries management:

1. **Enhancing the legal framework** - current policy and legal frameworks on trawl fisheries need to be strengthened with stronger measures for conservation and monitoring; e.g. vessel monitoring system, harvest control rules, and traceability rules, especially important in nearshore waters and near marine protected areas.
2. **Fishing capacity management** - priority should be given to measures that substantially and effectively reduce excessive fishing effort, e.g. freezing regulatory implementation of trawlers in the entire country (i.e. the official document No 9443) as well as a limited partial reallocation of fishing effort to vessels using passive gear having low levels of by-catch and discards. Ensure that all financial incentives in trawl fisheries reward sustainable fishing practices.
3. **Effective monitoring, control and surveillance system** - satellite-based VMS on all large trawl fishing vessels, and clear, individual markings for all trawlers that are visible from a distance; supported by an improved data collection system and reporting scheme.
4. **Gear modifications** – less impacting and lighter gear components and minimum codend mesh sizes; 28-40 mm for fish trawlers and 20-30 mm for shrimp trawlers depending on vessel engine power; the use of square mesh openings and/or bycatch reduction devices and reduced towing durations should be considered.
5. **Spatial/time/habitat management measures** – review existing habitat protection policies and measures, conduct research and improve design and implementation, in particular enforcement to protect critical habitats such as spawning and nursery areas.
6. **Improve management effectiveness of Marine Protected Areas and MPA networks** – generate improved baseline information, identify goals, objectives and criteria to evaluate effectiveness, to maintain diversity, abundance and productivity, complemented by restoration schemes to enhance recovery of substantially degraded sea bed environments.
7. **Trawl exclusion zones** – ban trawling in nearshore areas and in critical habitats (coral reefs, seagrass beds) and nursery grounds.
8. **Improved institutional processes to strengthen management** – develop provincial fisheries management plans for trawl fisheries in all concerned coastal provinces, based on the REBYC-II CTI Project’s case study of Kien Giang Province, overseen by dedicated Steering Committees, as vehicles for developing management capacity and for introduction of the EAFM at local levels, using consultative processes that engage with fishers, the fishing industry and other stakeholders. Coordinate issues for trawl fisheries management at national, district and local levels.

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Project summary and policy recommendations for Vietnam

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