

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



**Project achievements and policy recommendations
for
The Philippines**



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 drags 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 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 the Philippines

Commercial trawlers in the Philippines are classified as (1) small-commercial (3.1 to 20 GT); (2) medium-commercial (20.1 to 150 GT); and (3) large-commercial (>150 GT). There are 494 registered commercial trawlers in the Philippines of which 156 are medium sized and 338 are small. There are also unregistered commercial trawlers but the numbers are not known. The overall length of these vessels usually exceeds 12 meters and they are driven by 80 500 horsepower diesel engines. In general, these boats are mechanized where winches and pulleys are rigged for hauling. Furthermore, there are small-scale trawlers classified as 'municipal trawlers' which are usually 3 GT or less, and are made as wooden dugout design with outriggers. Popularly called 'banca' these municipal trawlers commonly are about 5 to 12 meters in length, powered by inboard gasoline engines, and fishing is manually operated.

The main trawl fishing grounds of the Philippines are Samar Sea, Lingayen Gulf, and Visayan Sea (Northern Cebu, Guimaras Strait), and with secondary importance San Miguel Bay, Ragay Gulf, Carigara Bay, Manila Bay, as well as Sibuguey Bay. In 1992-1995, the last years that separate fisheries statistics were collected, the trawl fisheries contributed an average of 83,000t or 11% of the commercial fisheries production and 32,000t or 4.3% of the municipal fisheries production. Main species caught are slipmouths, threadfin breams, lizard fish, hairtail, goatfish and small groupers/snappers. Production of trawl fishing has remained stagnant, with increasing effort and insufficient law enforcement and compliance.

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 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.

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.

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Strategies for trawl fisheries bycatch management project

Project overview

The Strategies for Trawl Fisheries Bycatch Management (REBYC-II CTI) Project was implemented in the Philippines together with other participating countries, Indonesia, Papua New Guinea, Thailand, 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 Philippine 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 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 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

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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.

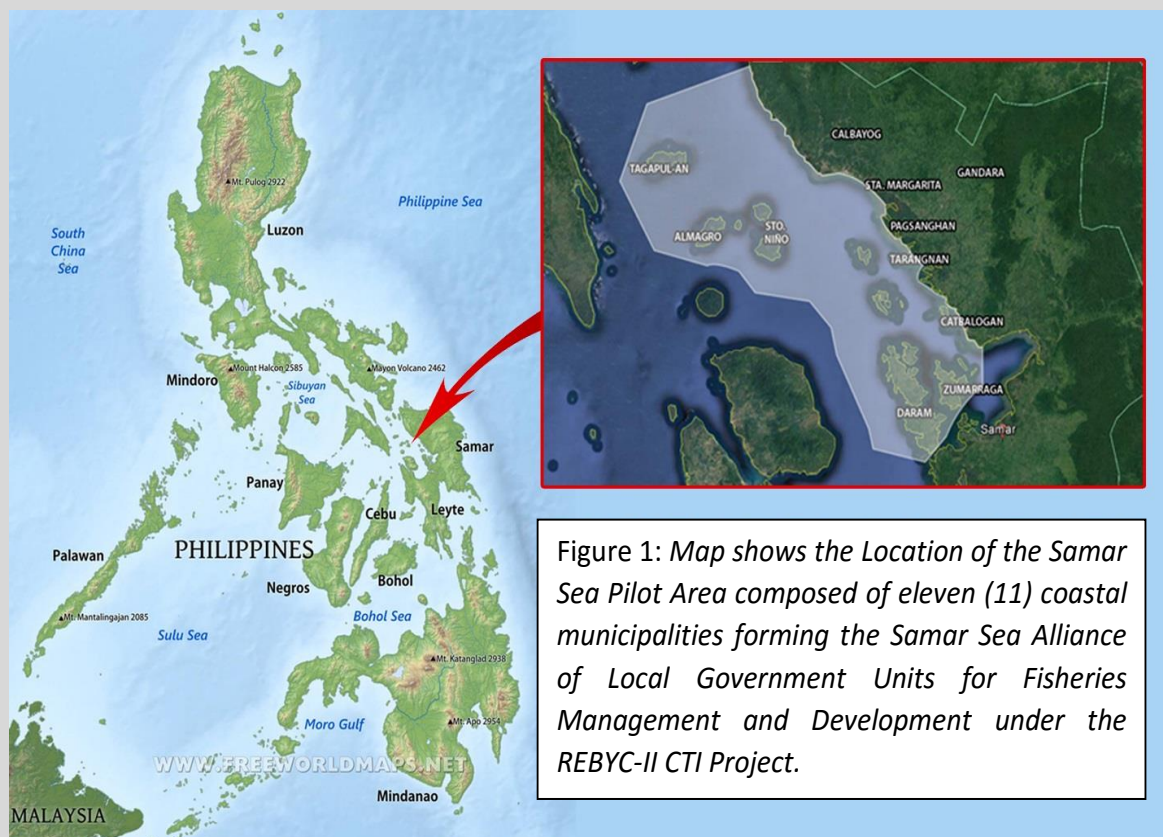
In the Philippines, these considerations include the following:

- 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, research and management of the trawl fisheries;
- Improve knowledge about the trawl fisheries and the resources on which it relies.

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REBYC-II CTI Project components and main achievements in the Philippines

The REBYC-II CTI Project pilot area was the Samar Sea, composed of eleven coastal municipalities and cities of the Province of Western Samar. The spatial scope was about 170 km² which is about 85 % of the total area of Samar Sea (Figure 1). The Samar Sea is an important traditional fishing ground for both demersal and pelagic fishes in the Philippines. Municipal (< 3 GT) and commercial fishing boats (>3 GT) operate in the area. Municipal fishing gears are small trawls, gillnets, hook and line, bottom set longlines and traps while commercial fishing gears are trawls and ringnets. The major fish species are slipmouths, lizardfish, threadfin breams, goatfish, shrimps, jacks, scads, sardines and mackerels. However, due to overfishing, Samar Sea fishery resources have declined to <3t/km² and are in need of management, given a reduction of average daily catch and in species diversity.



The Samar Sea Fisheries Management Plan is the most significant result of the REBYC-II CTI Project in the Philippines. It was supported by scientific studies, inclusion of the socio-economic studies on trawls, and the Ecosystem Approach to Fisheries Management. The Plan was accepted and adopted by the Samar Sea Alliance of Local Government Units for Fisheries Management and Development (SASAFMD) and BFAR Regional Field Office No. 8 for inclusion in their annual programs and its integration in the Samar Sea Fisheries Roadmap. The major provision for the management of the fisheries resources is the 4-month closed season (April-May, and July-August) in the Samar Sea Pilot Area to protect the spawners and juveniles of pelagic and demersal fishes for the sustainability of fishing operations of the fisherfolks, and sustainability of the fisheries resources in the long term.

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The Bureau of Fisheries and Aquatic Resources (BFAR) in collaboration with the stakeholders and the National Advisory Group identified the list of activities which were implemented in the Philippines.

Component 1: Policy, legal and institutional frameworks:

- Formulation of the Samar Sea Fisheries Management Plan (SSFMP)
- Adoption of the SSFMP by the Samar Sea Alliance of Local Government Units for Fisheries Management and Development (SASAFMD) and the BFAR Regional Field Office under the Samar Sea Roadmap Program
- Establishment of the Project National Advisory Group (NAG), the Technical Working Group (TWG) and the SASAFMD-TWG for sustainability
- Establishment/Integration of Local Management Council of the SSFMP
- Organized various consultative groups and encouraged stakeholders in planning, coordination and monitoring of project activities

Component 2: Resource management and fishing operations:

- Fishing grounds and critical habitats in Samar Sea mapped
- Inventory of fishing gears and boats of Samar Sea
- Trawl bycatch, ichthyoplankton, and fish larvae studies
- Demonstration of alternative fishing gears such as bag net for small pelagic fish and accordion trap for shrimps
- Studies on trawl square and diamond mesh shapes
- Trawl socio-economic studies to support SSFMP
- Establishment of monitoring scheme for the SSFMP
- Provision of alternative livelihood projects
- Training of fishing gears and boats operations in the 11 municipalities

Component 3: Information management and communication:

- Establishment of a website for the project
- Seminar/consultations among stakeholders, the Alliance, BFAR on project planning and implementation
- Printing of the catalogue of fishing gears of Samar Sea
- Printing of the SSFMP for distribution
- Preparation of a technical paper for the trawl socio-economic study

Component 4: Awareness and knowledge:

- Training on Ecosystem Approach to Fisheries Management (EAFM) and socio-economics for trawl fisheries
- NAG meeting and public consultations on the SSFMP and EAFM
- Livelihood needs assessment and training
- Training on fisheries management and bycatch reduction devices (BRD)
- Seminar on the National/Regional Stock Assessment Program
- Training/workshop on EAFM for Leaders, Executives and Decision makers (LEAD)

Recommendations on trawl fisheries management:

1. On regulatory frameworks:

- 1.1. Intensify the conduct of Monitoring, Control and Surveillance (MCS) in the implementation of the Samar Sea Fisheries Management Plan, specifically on the Trawl Fisheries Bycatch Management.
- 1.2. Improve the fisheries data collection to assess the status of fishery resources (both stocks and production) from various data sources such the National Stock Assessment Program, Fisheries Observer Program and Catch Documentation Schemes.
- 1.3. Continuously provide reliable fisheries information to serve as basis for policy formulation and sound fisheries management.
- 1.4. Establish and maintain a comprehensive record of trawl fishing vessels and historical data on registry, ownership and licensing, to control the overall vessel/boat operations and determine fishing capacity, in support of eradication of Illegal, Unreported and Unregulated Fishing (IUUF).
- 1.5. Formulate and implement applicable and specific regulations, resolutions, ordinances needed for the protection, conservation and management of the fishery resources in the various coastal fishing communities.
- 1.6. Organize and implement a Unified Law Enforcement Program in each coastal municipality, based on secured funding and logistical support, in coordination with the National Government law enforcement agencies, but not limited to BFAR, Philippine National Police - Maritime Police, Philippine Coast Guard.
- 1.7. Conduct MCS activities to assure the protection, security and effective management of the country's fisheries and aquatic resources.
- 1.8. Develop capacity of the fishery law enforcement officers in both technical and regulatory aspects to assure the effective implementation and proper enforcement of fishery laws, rules and regulations.
- 1.9. Implement the regulations on Vessel Monitoring Measures and Vessel Monitoring System at the National, Regional and Municipal Levels for the safety of the stakeholders, vessels tracking and traceability of fish catch.

2. On management measures

- 2.1. Intensify the implementation of rational management policies for trawl fisheries, other types of selective fishing gears and other related fisheries activities.
- 2.2. Implement the Samar Sea Fisheries Management Plan (SSFMP) as one of the most effective initiatives on the proper conservation, protection and management of the resources.
- 2.3. Introduce and replicate the SSFMP in other Special Management Areas / trawl fishing

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grounds, using an integrated approach and proper governance of the respective LGUs in coordination with BFAR at the National level, through active participation of stakeholders and their empowerment to protect, conserve and manage the fisheries and aquatic resources through the Ecosystem Approach to Fisheries Management.

- 2.4. Institutionalize the conduct of various research and development programs in coordination with local and National research institutions and academe in Samar Sea and other trawl fishing grounds in the country.
- 2.5. Based on the results of scientific studies, establish closed seasons in Samar Sea and various Special Management Areas to protect the spawning grounds of target species and avoid the catch of fish juveniles, trash fish and bycatch.
- 2.6. Establish fishing capacity / effort limitation measures to regulate the proliferation of trawl fishing boats/vessels.
- 2.7. Set and implement reference points and harvest control rules for trawl fisheries to establish appropriate measures and regulations on the allowable exploitation of target species.
- 2.8. Intensify the implementation of Fisheries Administrative Order (FAO) 237 which requires the installation of Juvenile and Trashfish Excluder Devices (JTEDs) in all trawl fishing boats to mainly catch the target species and avoid catching of juvenile / trash fish.
- 2.9. Adopt and implement an integrated approach to fisheries management using the Fisheries Management Framework of the Ecosystem Approach to Fisheries Management (EAFM).
- 2.10. Encourage the Alliance of Fisheries Associations/Organizations in coordination with the National and Local Governments, People's Organizations and participating stakeholders to co-manage the fishing grounds and fishery resources.

3. On livelihoods

- 3.1. Both the National Government and Local Government Units must exert utmost efforts to initially provide technical and funding support in the design and awarding of alternative livelihood projects to the stakeholders, in observance of the closed seasons to deter displacement of fisherfolk / fishworkers.

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