

# Worldwide review of bottom fisheries in the high seas



**Cover photos:**

*Background:* Image of vessel courtesy of Tarvo Roose.

*Left to right:* Oreo dory (*Neocyttus helgae*) with *Lophelia* and *Acanthogorgia* spp., gorgonian fan (*Paragorgia* spp.) and morid cod (*Lepidion guentheri*). Images courtesy of Peter Auster and the Deep Atlantic Stepping Stones Science Party, the Institute for Exploration (IFE), University of Rhode Island - Institute for Archaeological Oceanography (URI-IAO) and the National Oceanic and Atmospheric Administration (NOAA).

# Worldwide review of bottom fisheries in the high seas

FAO  
FISHERIES AND  
AQUACULTURE  
TECHNICAL  
PAPER

522

Rev. 1

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ISBN 978-92-5-106403-0

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## Preparation of this document

This document, the *Worldwide review of bottom fisheries in the high seas*, was prepared in response to the request by the twenty-sixth session of the Food and Agriculture Organization of the United Nations (FAO) Committee on Fisheries (COFI), the subsequent consideration of the issue of bottom fisheries in the high seas by the United Nations General Assembly (UNGA) in its Resolution 61/105 on Sustainable Fisheries adopted in December 2006, and the twenty-seventh session of COFI in 2007. It is intended to provide states and other interested parties with a summary of the current status of high seas bottom fisheries worldwide based on the best information available, including responses to an FAO questionnaire sent to high seas fishing states, the European Community and relevant regional fisheries management organizations. It also highlights gaps in the available information to effectively assess the extent to which these fisheries are managed, consistent with the FAO *International Guidelines for the Management of Deep-sea Fisheries in the High Seas* (as adopted on 29 August 2008) and the approach agreed by the UNGA in Resolution 61/105.

Reviews of bottom fisheries in the high seas were carried out in the following nine regions: the North East and North West Atlantic, the Mediterranean, the South East and South West Atlantic, the North and South Pacific, the Indian Ocean and the Southern Ocean. Fisheries are described in terms of fleets, catch and effort, and main species caught, with due consideration being given to the location of fishing activities.

These reviews were prepared based on a range of information collected through a desktop study, a questionnaire and numerous contacts with fisheries managers and researchers. The questionnaire was addressed in January 2007 to 40 countries and the EC – the flag states of vessels identified as potentially involved in high seas bottom fishing in recent years (from 2003 to 2006). A modified version of the questionnaire was also addressed to regional organizations with a mandate to manage high seas bottom fisheries. The objective of the questionnaire was to assist in identifying the main high-seas bottom fisheries, and to assess the importance of these fisheries in terms of number of vessels, catch and fishing effort during the period covered by the review.

Funding for the preparation of this document was generously provided by the Government of Japan through the “Promotion of sustainable fisheries: support for the Plan of Implementation of the World Summit on Sustainable Development” project (GCP/INT/942/JPN).

Contribution by states and regional fisheries management organizations that provided substantial information for this review is noted with appreciation.

All FAO maps presented in this review were created by Fabio Carocci, Fisheries Management and Conservation Service, Fisheries and Aquaculture Department, FAO. Other contributors and reviewers are acknowledged in the individual regional chapters.

This document was revised and updated on the basis of new information provided by FAO Members, pursuant to the request made the Committee on Fisheries (COFI) at its twenty-eighth session in March 2009.

## Abstract

The *Worldwide review of bottom fisheries in the high seas* provides states and other interested parties with a summary of the current status of high seas bottom fisheries worldwide based on the best information available, including responses to an FAO questionnaire sent to high seas fishing states, the European Community and relevant regional fisheries management organizations. It contains reviews of bottom fisheries in the high seas in the following regions: the North East and North West Atlantic, the Mediterranean, the South East and South West Atlantic, the North and South Pacific, the Indian Ocean and the Southern Ocean. Fisheries are described in terms of fleets, catch and effort, and main species caught, with due consideration being given to the location of fishing activities.

This document was prepared in response to the request by the FAO Committee on Fisheries (COFI) and related consideration of the issue of bottom fisheries on the high seas by the United Nations General Assembly in Resolution 61/105 on Sustainable Fisheries adopted in December 2006. It also aims at assisting in the implementation of the *FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas* by providing background information and highlighting gaps in the available data.

According to the findings of this review, 285 vessels were active in the high seas bottom fisheries worldwide in 2006. The total catch of this fleet has been estimated to about 250 000 tonnes valued at EUR 450 million (landed value). For various reasons discussed in the report, these are to be considered minimal estimates.

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Worldwide review of bottom fisheries in the high seas.

*FAO Fisheries and Aquaculture Technical Paper*. No. 522, Rev.1. Rome, FAO. 2009. 145p.

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# Introduction

This report, the *Worldwide review of bottom fisheries in the high seas*, was prepared in response to the request by the twenty-sixth session of the Food and Agriculture Organization of the United Nations (FAO) Committee on Fisheries (COFI), the subsequent consideration of the issue of bottom fisheries on the high seas by the United Nations General Assembly (UNGA) in its Resolution 61/105 on Sustainable Fisheries adopted in December 2006, and the twenty-seventh session of COFI in 2007. It is intended to provide states and other interested parties with a summary of the current status of high seas bottom fisheries worldwide, based on the best information available, including responses to an FAO questionnaire<sup>1</sup> sent to high seas fishing states and relevant regional fisheries management organizations (RFMOs). It also highlights gaps in the available information to assess effectively the extent to which these fisheries are managed in conformity with the approach agreed by UNGA in Resolution 61/105, and the *FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas* (adopted on 29 August 2008).

## POLICY BACKGROUND

The management of bottom fisheries and the protection of ecosystems in the high seas have been high on the priority list of the international community, and have been discussed at fora ranging from the UNGA to high level meetings organized by FAO and the Convention on Biological Diversity, to many conferences and workshops organized by specialised inter-governmental and non-governmental organizations (IGOs and NGOs).

The issue of high seas bottom fisheries and their impacts on vulnerable marine ecosystems (VMEs) has been the subject of extensive negotiation by UNGA over the course of the past several years. Resolution 61/105 on Sustainable Fisheries, adopted by UNGA in December 2006, calls on flag states and RFMOs to take action immediately, both individually and through RFMOs/Arrangements, to manage fish stocks sustainably and protect VMEs, including seamounts, hydrothermal vents and cold-water corals, from destructive fishing practices. Furthermore, the Resolution calls on states and RFMOs/Arrangements to manage bottom fisheries on the high seas through assessing the impacts of individual bottom fishing activities; by preventing significant adverse impacts on VMEs, closing areas of the high seas to bottom fishing where VMEs are known or likely to occur, unless fisheries in these areas can be managed to prevent significant adverse impacts; and ensuring the long-term sustainability of deep-sea fish stocks.<sup>2</sup>

The approach outlined in the Resolution is broadly consistent with currently accepted international principles and standards for the management of fisheries on the high seas in conformity with international law as reflected in the United Nations Convention on the Law of the Sea of 10 December 1982 as well those established in international instruments such as the 1995 UN Agreement for the Implementation of the Provisions of the United Nations Convention on the Law

<sup>1</sup> The 2007 FAO Questionnaire on High Seas Deep-sea Fisheries (hereinafter referred to as the FAO Questionnaire: see Appendix A).

<sup>2</sup> United Nations General Assembly Resolution 61/105. Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments, paras 80–91.

of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (the Fish Stocks Agreement) and the FAO Code of Conduct for Responsible Fisheries. Among the most relevant provisions of these instruments are those that call on states to prevent overfishing; assess the impacts of fishing on associated and dependent species and species belonging to the same ecosystem; minimize impacts on associated and dependent species and ensure their conservation; protect habitats of particular concern; and apply the precautionary approach widely to protect and preserve fish stocks and the marine environment. In addition, UNGA called on FAO to enhance data collection and dissemination; promote information exchange and increase knowledge on bottom fishing activities; and collect and disseminate information on fisheries-related issues, including the protection of VMEs from the impacts of fishing.

FAO is actively involved in issues related to the management of bottom fisheries in the high seas and in the conservation of marine resources and habitats, consistent with the Code of Conduct for Responsible Fisheries, as well as in the protection of VMEs and marine biodiversity. The *FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas* were developed in response to the concern expressed by states and organizations regarding the sustainable utilization of marine resources in bottom fisheries in the high seas and the protection of VMEs. This report initiates efforts to enhance knowledge on bottom fisheries in the high seas. This information is vital for the FAO Guidelines since it provides an initial overview of the status of fisheries in these areas, which is important for the understanding and implementation of the Guidelines and other relevant international instruments, as well as providing background information for management decisions to support the above-mentioned instruments.

## DEFINITION

The FAO Fisheries Glossary defines a fishery as “an activity leading to the harvesting of fish, within the boundaries of a defined area. The fishery concept fundamentally gathers indication of human fishing activity, including from economic, management, biological/environmental and technological viewpoints”.

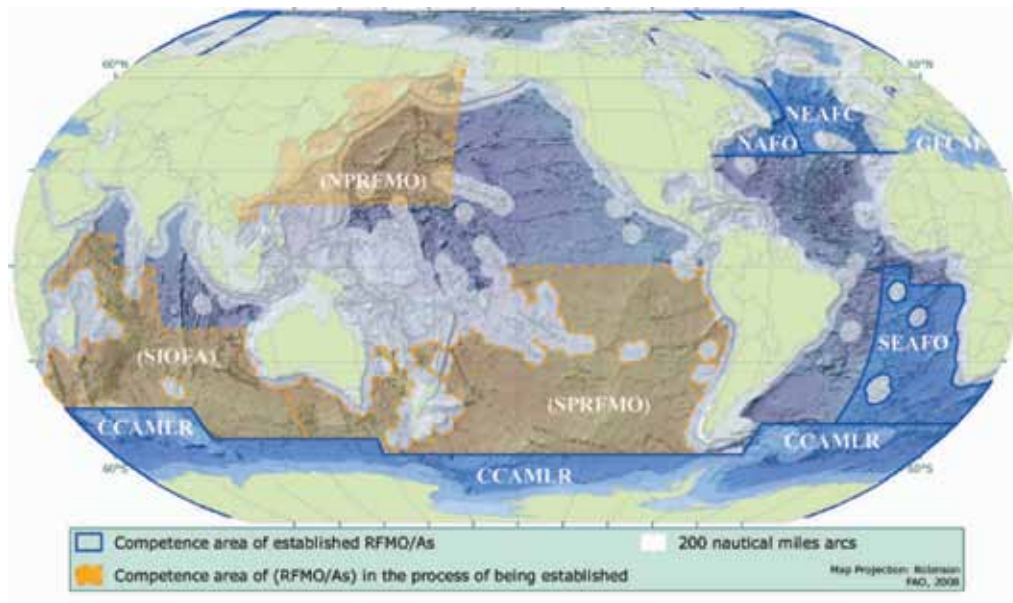
For the purpose of this review, the multidisciplinary viewpoint considered in identifying the different fisheries encompasses four main criteria:

- jurisdictional – high seas;
- geographic/topographic – the location and characteristics of the fishing ground;
- biological – the species or group of species targeted; and
- technological – the fishing gear used to harvest the resources.

Therefore, the definition of a fishery adopted here is an activity leading to the harvesting of fish, conducted by vessels using the same type of fishing gear and targeting the same species or group of species on a specific fishing ground. As considered in the scope of the review detailed in the next section, the fishing ground of each fishery inventoried is located, at least partially, in the high seas. It is usually characterized by a specific topographic feature (e.g. seamounts, banks, ridge and slope of the continental shelf).

## SCOPE

The fisheries that are the subject of this review are those occurring in areas beyond national jurisdictions and conducted using fishing gears that either contact or are likely to contact the sea floor during the course of the fishing operation. These fisheries typically target demersal and benthic species. Many, but not all, of the species targeted or incidentally caught in these fisheries are long-lived, slow growing or late maturing species that can sustain only low exploitation rates. Fishing depth has not been considered as a primary criterion, although most of the fisheries considered in the review are conducted at depths below 200 metres (m), on continental slopes or isolated oceanic topographic structures such as seamounts, ridge systems and banks.



MAP 1  
Global high seas areas and coverage of relevant RFMOs

Some fisheries that do not fulfil these characteristics have also been included, where appropriate. For example, the report cites some fisheries conducted with deep-sea pelagic gears that may or are likely to have occasional contact with the sea floor, fisheries targeting species mainly distributed in shallow waters, but where bycatch includes deep-sea species, or fisheries with a fishing ground mainly located within national jurisdictions, but somewhat overlapping the high seas.

## METHODOLOGY

### Regional approach

This report has been split into regional reviews. The limits of the different regions correspond to the Convention Areas of existing RFMOs with the legal competence to manage these fisheries. Where no RFMO exists, ongoing regional arrangements or negotiations for the establishment of such RFMOs have been considered for the breakdown of the review by region, as well as regions where there are gaps in the management regime for high seas bottom fisheries.

It includes four regional reviews in the Atlantic Ocean: North East Atlantic, North West Atlantic, South East Atlantic and South West Atlantic. No review was undertaken for the Eastern and Western Central Atlantic regions as little information was available regarding high seas bottom fishing grounds in these two regions. The information found regarding fisheries in these areas includes the activity of two deep-sea trawlers in FAO Area 34, reported by the Cook Islands in their answer to the FAO Questionnaire. In addition, two high seas deep-sea fishing grounds overlap the Western Central Atlantic (FAO Statistical Area 31) and the Eastern Central Atlantic (FAO Statistical Area 34) and have been mentioned in the respective regional reviews: the South Azores area in the North East Atlantic and the Corner Rise Seamounts complex in the North West Atlantic. These two fishing grounds seem to be the main fishing grounds in the Central Atlantic (Clark *et al.*, 2007)<sup>3</sup>.

<sup>3</sup> Clark, M.R., Vinnichenko, V.I., Gordon, J.D.M, Beck-Bulat, G.Z., Kukharev, N.N. & Kakora, A.F. 2007. Large-scale distant-water trawl fisheries on seamounts. Chapter 17. In Pitcher, T.J., Morato, T., Hart, P.J.B., Clark, M.R., Haggan, N. & Santos, R.S. (eds). *Seamounts: ecology, fisheries and conservation*. Fish and Aquatic Resources Series. Oxford, United Kingdom, Blackwell.

A specific regional review has been prepared for the Mediterranean. Considering the general absence of 200 nautical miles national jurisdictions in this region, many of the bottom fisheries operating beyond the territorial waters can be considered as high seas fisheries. Therefore, the scope of the Mediterranean review has been reduced to the high seas bottom fisheries targeting resources outside the continental shelf, at depths greater than 400 m.

In the Pacific Ocean, two reviews are presented: the North and South Pacific Ocean. A single review covers the Indian Ocean, and the last regional review concerns the Southern Ocean.

### Temporal coverage

The primary objective of this report is to present the “current picture” of high seas bottom fisheries. In general, data related to the period 2003–2006 have been reported. Where no information was available for that period, information related to previous periods was considered. In addition, each regional review includes a brief summary on the history of high seas deep-sea resources in the region.

### THE QUESTIONNAIRE

The identification of documents describing the high seas bottom fisheries in each region was a preliminary task for the review. Following a desktop study, a questionnaire (as mentioned above, see Appendix A) was developed and addressed in January 2007 to 40 countries (see Appendix B), the flag states of vessels identified as potentially involved in high seas bottom fishing in recent years (from 2003 to 2006). Because of the specific case of the Mediterranean Sea, the questionnaire was not sent to the countries with a bottom fishing fleet exclusively fishing in that region. The regional review for the Mediterranean Sea was undertaken through a desktop study.

The objective of the questionnaire was to assist in identifying the main high seas bottom fisheries, and to assess the importance of these fisheries in terms of number of vessels, catch and fishing effort during the period covered by the review. The following information was requested:

- the list of fishing vessels involved in high seas bottom fisheries;
- the number of vessels and total gross tonnage by type of vessel and reporting year;
- the number of vessels by vessel type, main fishing ground and reporting year;
- the total catch by main fishing ground, with the percentage captured in the high seas for fishing grounds corresponding to straddling stocks;
- the catch by main species, with the percentage captured in the high seas for fishing grounds corresponding to straddling stocks;
- the number of fishing days by main fishing ground, with the percentage captured in the high seas for fishing grounds corresponding to straddling stocks; and
- the number of fishing days by type of fishing gear, with the percentage captured in the high seas for fishing grounds corresponding to straddling stocks.

Some of the countries to which the questionnaire was sent did not reply. Four countries replied with no mention of a fleet active in high seas bottom fisheries. Some countries did not reply officially to the questionnaire, but some information was obtained through direct contact with staff of the national fisheries administration or with scientists.

A modified version of the questionnaire was also addressed to regional organizations/institutions with a mandate to manage high seas bottom fisheries:

- North East Atlantic Fisheries Commission (NEAFC)
- Northwest Atlantic Fisheries Organization (NAFO)
- South East Atlantic Fisheries Organisation (SEAFO)

- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- EU – Directorate-General for Maritime Affairs and Fisheries (DG MARE) (former DG FISH)

Additional information was obtained from direct contact with national authorities, secretariats of regional organizations and deep-sea fisheries experts.