Conclusions

This final chapter presents overall estimates of the catch, number of vessels, and the ex-vessel value of the catch in high seas bottom fisheries worldwide. An analysis of the information presented in this chapter shows that in 2006, 285 vessels were involved in high seas bottom fisheries, catching 252 000 tonnes. This catch had an estimated landed value of EUR 447 million. These numbers must be taken as indicative and possibly minimum estimates due to the factors described in detail below and in the regional chapters of the report. No attempt was made to derive maximum estimates. However, the information provided in the regional chapters indicates that the range between a minimum and a maximum estimate is likely to be limited. This chapter also discusses the various challenges to be addressed in order to gain an improved understanding of these fisheries in future reviews.

GLOBAL ESTIMATES OF THE CATCH AND NUMBER OF VESSELS IN 2006

An overview of the catch and number of vessels involved in high seas bottom fisheries in 2006 is presented in Table 1. The numbers in this table have been estimated based on the information provided in the regional reviews in this document and thus these should be referred to for more details regarding sources of information.

The following considerations must also be taken into account:

- information collected through the 2007 FAO Questionnaire on High Seas Deep-sea Fisheries is incomplete, especially with regard to the level of detail required;
- some vessels fishing in different fisheries within a region or fishing in more than one region may have been counted more than once;
- information about illegal, unreported and unregulated (IUU) fishing and IUU vessels has not been included in the table;
- vessels and catch in the Mediterranean and Central Atlantic have not been included in this table;
- there are discrepancies in the information available on catch and numbers of vessels in some regions depending on the source of information used although there has been a steady improvement in the information available in a number of regions as states and regional fisheries management organizations/arrangements (RFMOs/As) have undertaken efforts to implement the United Nations General Assembly (UNGA) Resolution 61/105; and
- the catch estimates do not include estimates of discards, with discards likely to constitute a substantial portion of the catch in at least some high seas bottom fisheries.

With regard to the number of fishing vessels, it is recognized that many of the vessels engaged in high seas bottom fisheries in 2006 were not doing so on a full-time basis. For example, some bottom fishing vessels operating on the high seas in the North Atlantic also operate within exclusive economic zones (EEZs) during the course of the year. The bottom trawl fisheries for hake and squid in the South West Atlantic represent approximately 40 percent of the catch of high seas bottom fisheries globally. Similarly, many of the vessels involved in this fishery also fish within the zones of neighbouring states within the same year.

Answers to the FAO Questionnaire provided insufficient information to fully estimate the extent to which high seas bottom fishing vessels also fish within EEZs and the relative amount of time spent fishing in both areas.

TABLE 1
Summary of total catch and number of vessels per region in 2006

Region	Principal target species	Total catch (tonnes)	Total number of vessels
North East Atlantic	Roundnose grenadier, Baird's slickhead, black scabbardfish, leafscale gulper shark, Portuguese dogfish, deepwater sharks, Greenland halibut, ling, tusk, beaked redfish, golden redfish, haddock, hake, monkfish, deep-water red crabs, orange roughy and blue ling	59 978	66–70
North West Atlantic	Northern shrimp, Greenland halibut, redfish and skates	56 523	67
South East Atlantic	Orange roughy, alfonsino, Patagonian toothfish and deep-sea red crabs	747.3	6
South West Atlantic	Argentine hake and Argentine short-fin squid	110 983	55
North Pacific	Alfonsino and slender armourhead	10 331	16
South Pacific	Orange roughy and alfonsino	3 369	52
Indian Ocean	Alfonsino, orange roughy, deepwater longtail red snapper	5 000–6 000	20–22
Southern Ocean	Toothfish	4 582	20

The total global catch of bottom fisheries, based on the total catch of approximately 60 species, on the high seas is estimated to be circa 252 000 tonnes for 2006. This represents 0.31 percent of the total marine capture (including fish, crustaceans, molluscs, etc.) that year. Although this total is indicative only, it still constitutes only a minor share portion of the global catch in marine capture fisheries. The sum of the vessels fishing on a region-by-region basis is in the range of 302-308 (Table 1). However, as noted, some vessels fish in more than one region.

Number of vessels involved in bottom fisheries in the high seas, 2006

Figure 1 provides an overview of the number of vessels, as well as the types of vessels, operating in the different regions. Trawlers, including both mid-water and bottom trawlers, make up the majority of the global vessel total, as well as in many of the regions. A notable exception is the Southern Ocean, where fishing for toothfish by bottom longliners constitutes the main high seas bottom fishery.

Figure 2 presents an estimate of vessels per flag state operating in bottom fisheries in the high seas; 285 vessels from 27 flag states were operating in 2006. The European Community (EC) as a whole has the largest number of vessels (103), with the majority

FIGURE 1
Number of vessels involved in high seas bottom fisheries per region in 2006

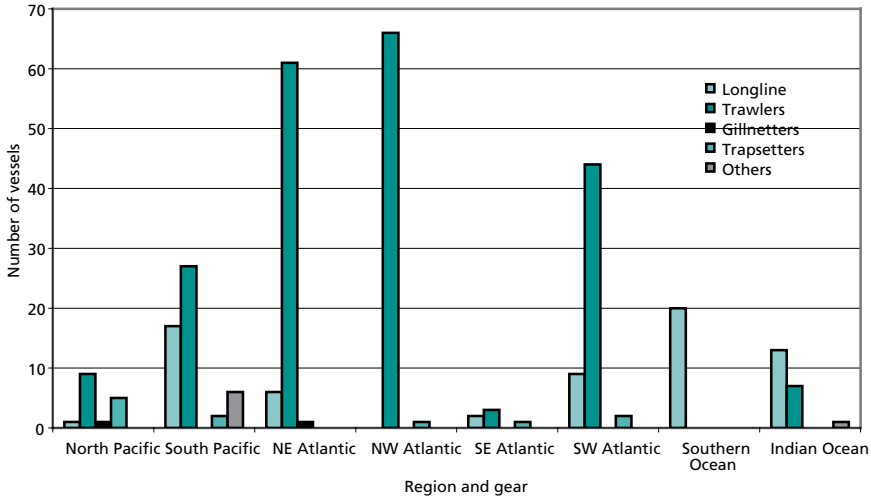
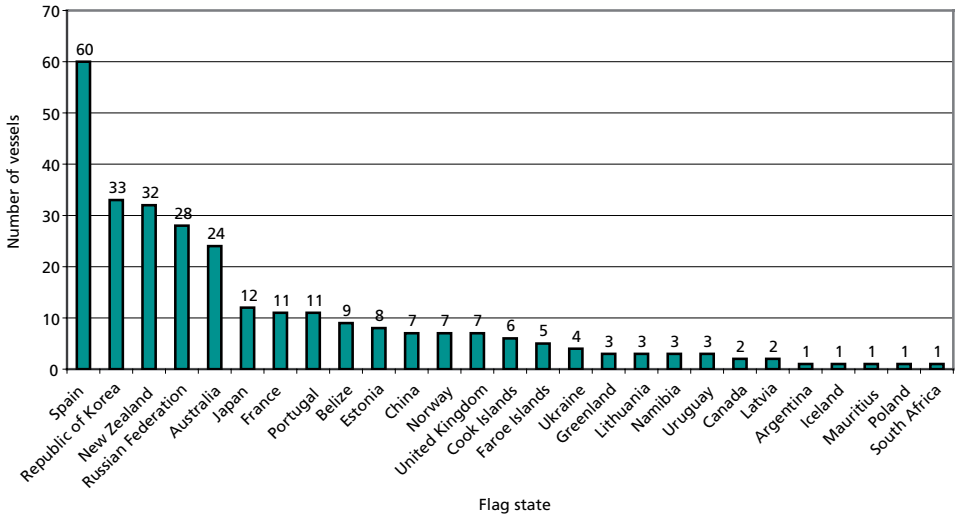


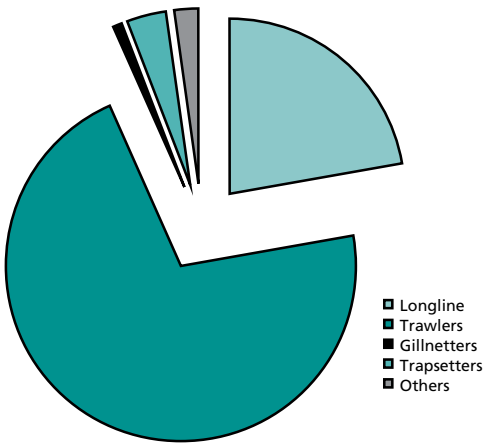
FIGURE 2
Number of vessels per flag state involved in high seas bottom fisheries in 2006



of these being flagged to Spain, which has vessels fishing primarily in the North East Atlantic, North West Atlantic and the South West Atlantic. The Spanish fleet makes up 21 percent of the global high seas bottom fisheries fleet and 58 percent of the EC fleet. Of the EC fleet, Spain is followed by France and Portugal in terms of number of vessels. Non-EC flag states with a relatively large number of vessels are New Zealand, fishing primarily in the South Pacific and Southern Ocean; the Republic of Korea, fishing primarily in the South West Atlantic; the Russian Federation, fishing primarily in the North East and North West Atlantic; and Australia, fishing primarily in the South Pacific and the Indian Ocean.

The majority of the vessels operating in the bottom fisheries in the high seas are trawlers (mid-water and bottom trawlers). This is shown in Figure 3. Bottom longliners are the second most common type of vessel in these fisheries. In total, 285 vessels were reported to operate in bottom fisheries in the high seas in 2006. This figure is lower than the sum of the vessels fishing on a region-by-region basis (302-308) as some vessels fish in more than one region (e.g. many Spanish vessels fish in both the North East and North West Atlantic).

FIGURE 3
Global overview of vessel types used in high seas bottom fisheries, 2006



Global catch in bottom fisheries in the high seas

The scope of this report must be taken into consideration when examining total catch. Although this report focuses primarily on fisheries that target demersal and benthic species, other fisheries have been included, where appropriate, such as those conducted with deep-sea pelagic gears that may or are likely to have occasional contact with the sea floor; those targeting species mainly distributed in shallow waters, but where bycatch includes deep-sea species; or those with fishing grounds mainly located within national jurisdictions, but potentially overlapping the high seas.

FIGURE 4
Global total catch of main species (>500 tonnes), 2006

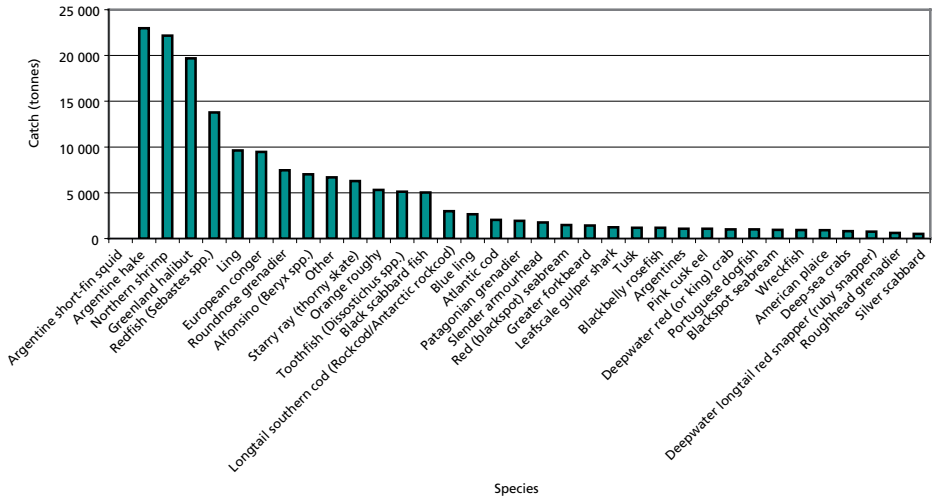


FIGURE 5
"Deep-sea" species (> 500 tonnes catch)

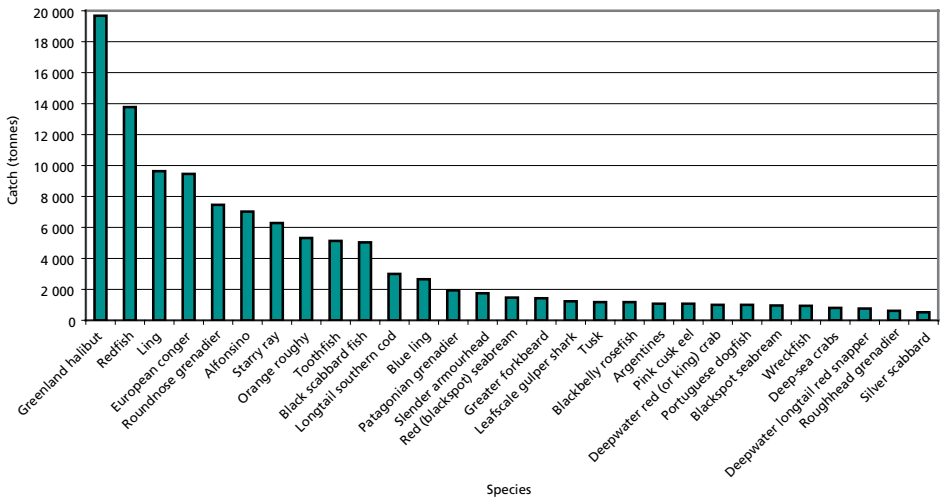


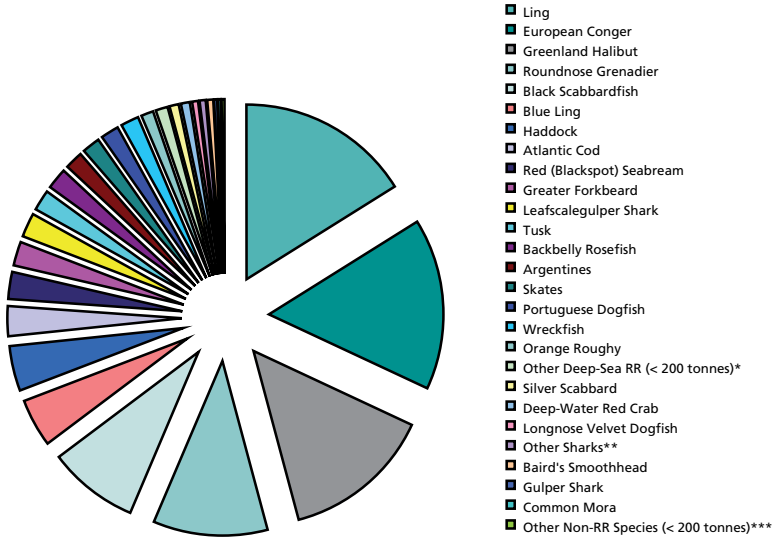
Figure 4 presents the total catch of the main species caught globally in high seas bottom fisheries in 2006. Species with more than 500 tonnes of total catch in 2006 are represented in the graph, but more than 60 species are included in the total figure presented above. Argentine short-fin squid represents the highest catch in terms of weight (79 742 tonnes in 2006), with other higher productivity species following at more than 20 000 tonnes including Argentine hake and Northern shrimp.

There are no internationally agreed definitions of deep-sea species or clear definitions and categorical distinctions between high, medium and low productivity species. Nevertheless Figure 5 presents the total catch of species generally categorized as "deep-sea" (i.e. those with lower productivity levels) in 2006.

Regional catch composition

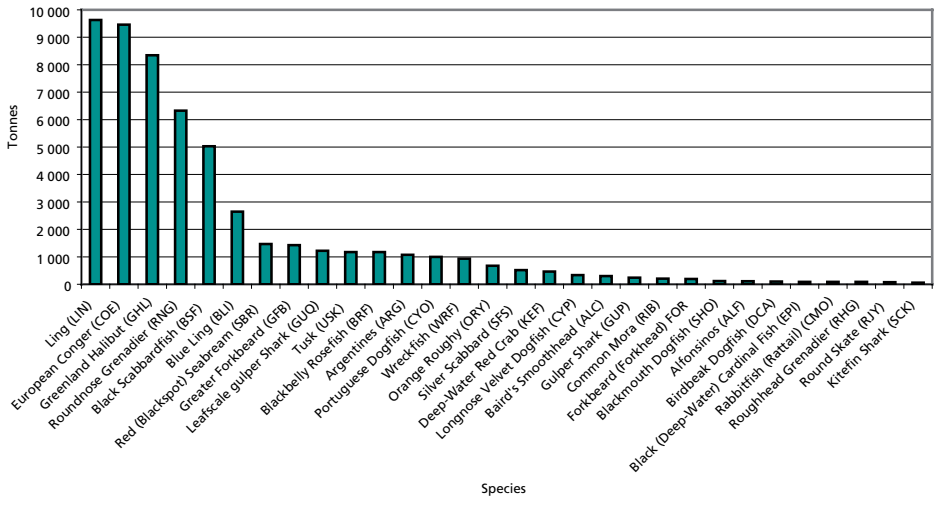
Figures 6 to 12 provide the species composition of the 2006 catch in the North East and North West Atlantic as well as in the North and South Pacific.

FIGURE 6
Catch composition of bottom species in the North East Atlantic, 2006



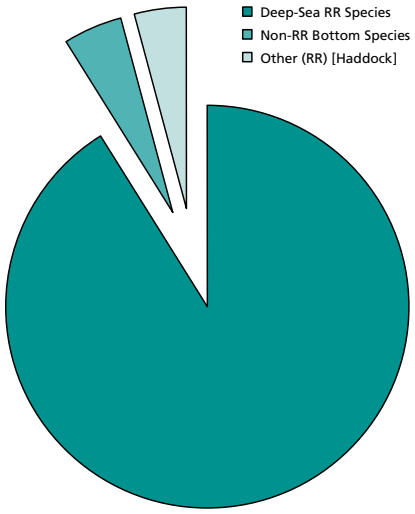
* Other Deep-Sea RR (< 200 tonnes) = Alfonsino, Rabbitfish (Rattail), Cardinal Fish, Forkbeard (Forkhead), Roughhead Grenadier, Round Skate, Small Redfish (Norw.Hadd.), Spiny (Deep-Sea) Scorpionfish
** Other sharks = Black Dogfish, Birdbeak Dogfish, Greenland Shark, Blondnose Six-Gilled Shark, Kitefin Shark, Blackmouth Dogfish, Knifetooth Dogfish
*** Other Non-RR Species (< 200 tonnes) = Wolffish, Altlantic Halibut, American Plaice, Northern Prawn

FIGURE 7
Catch of "deep-sea" species in the North East Atlantic, 2006



The North East Atlantic region is one of the most diverse in terms of the variety of species taken in bottom fisheries. In the North East Atlantic (Figure 6) when considering all species caught with bottom gear in the high seas, ling, European conger, Greenland halibut, roundnose grenadier, black scabbardfish, blue ling, haddock, and Atlantic cod constitute the largest amounts of catch (> 1 500 tonnes). The largest amount of catch for deep-sea species in the bottom fisheries of the high seas (Figure 7) represents nearly the same group of species with the first six species mentioned above remain the top catch, but are followed by slightly smaller catches (> 1 000 tonnes) of red (blackspot) seabream, greater forkbeard, leafscale gulper shark, tusk, blackbelly rosefish and argentines.

FIGURE 8
Catch of NEAFC Regulated and Non-Regulated species in 2006



RR= Regulated species; Non-RR = Unregulated species

Figure 8 shows the relative catch of "deep-sea" species regulated by the North East Atlantic Fisheries Commission (NEAFC), other regulated species that are not categorized as "deep-sea", and those bottom species that are not regulated by this RFMO.

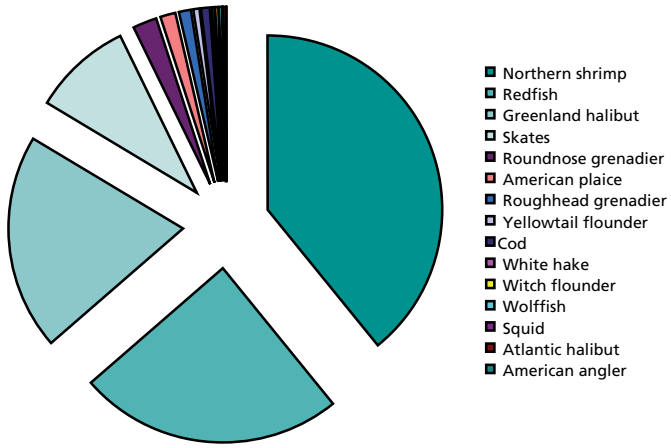
In the North West Atlantic, the four main target species in the bottom fisheries – Northern shrimp, redfish, Greenland halibut and skates – made up the majority of the catch in 2006, in terms of weight (Figure 9–10). Grenadiers and flat fishes represent smaller catches and are usually bycatch in these fisheries.

In the North and South Pacific, deep-sea species represent the main species in the catch reported. In the North Pacific, alfonsino and slender armourhead make up the largest individual amounts of catch in 2006 (Figure 11), and orange roughy constituted the majority of the catches in the South Pacific in the same year (Figure 12).

Estimates of value of catch of high seas bottom fisheries in 2006

A recent report[1] prepared for the European Commission estimated that the total high seas catch by EC vessels using bottom gears averaged around 71 000 tonnes per year from 2004 to 2006. The average value of the catch was approximately EUR 126 million per year – with an average ex-vessel price of EUR 1 775 per tonne. An IUCN report[2], published in 2004, reviewed bottom trawl fisheries in the high seas for the year 2001. The report estimated that the total high seas bottom trawl catch in 2001 was in the range of 175 000–210 000

FIGURE 9
Species composition of bottom fisheries in the North West Atlantic, 2006



[1] MRAG, MG Otero & PolEM. 2008. *Analysis of the economic and social importance of Community fishing fleet using bottom gears in the high seas*. London: MRAG Ltd. 250p. Table 80.

[2] Gianni, M. 2004. *High seas bottom trawl fisheries and their impacts on the biodiversity of vulnerable deep-sea ecosystems: options for international action*. International Union for the Conservation of Nature (IUCN), Gland, Switzerland.

FIGURE 10
Catch composition of four main species in the North West Atlantic, 2006

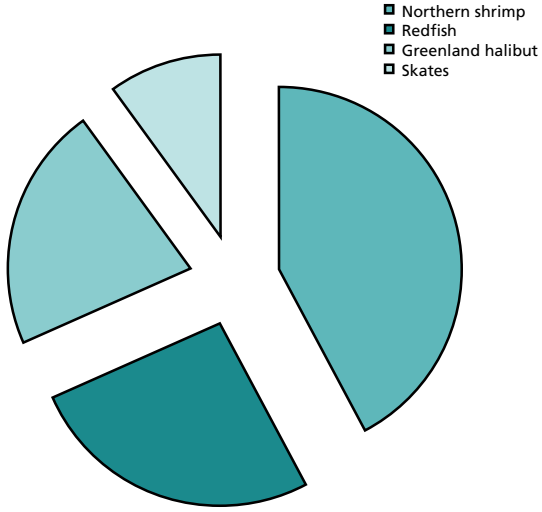


FIGURE 11
Catch composition in the North Pacific, 2006

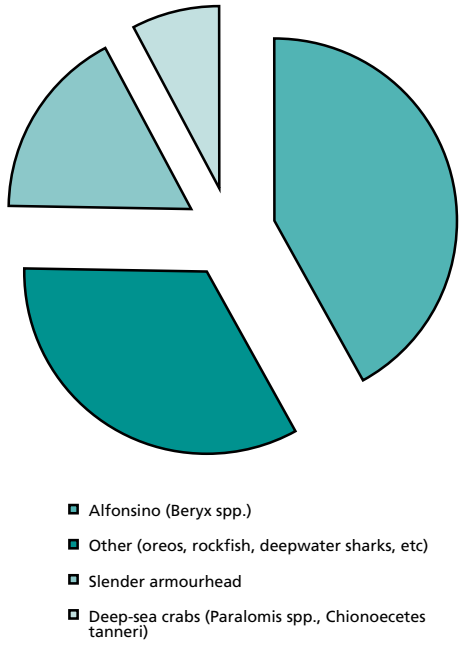
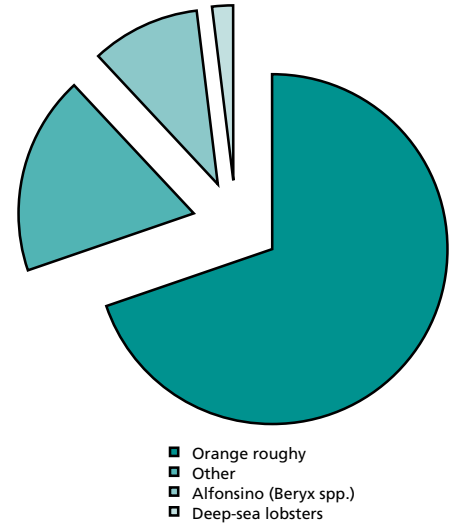


FIGURE 12
Catch composition in the South Pacific, 2006



tonnes (excluding the South West Atlantic and Mediterranean Sea) with a total value of USD 280–320 million and an ex-vessel price of USD 1 540 (or EUR 1 720) per tonne.[3]

Using an average ex-vessel price of EUR 1 775 per tonne for the catch in high seas bottom fisheries, the value of the global high seas bottom catch in 2006 would be about EUR 447 million (for the estimated total catch of 252 000 tonnes).

[3] www.oanda.com Average rate 2001: USD 1 = EUR 1.11691. www.oanda.com/convert/fxhistory

ASSESSMENT AND SUMMARY OF INFORMATION GAPS PRESENTED IN EACH REGION

Gaps in data and information concerning target and bycatch stock status

This section summarizes gaps in data and information identified in the regional chapters. In terms of basic fisheries data – volume of catch, species composition of catch, number of vessels involved in high seas bottom fisheries – there are numerous discrepancies between the information sent by countries in response to the FAO Questionnaire, the information in the FAO FishStat database and information publicly available from RFMOs, their Scientific Committee or Science Working Groups reports and other information publicly available. More accurate and consistent reporting of information on high seas bottom fishing activities is needed.

Further work needs to be done in assessing the status of target species in high seas bottom fisheries in many regions. Often the most basic information on the total catch and life history of target species taken in deep-water fisheries on the high seas is not sufficient to establish conservation and management measures. It is essential that such assessments be conducted if fisheries management is to be effective in ensuring the long-term sustainability of fish stocks.

Similarly, much more work needs to be done to assess the status of bycatch species, including those of non-commercial value. There are indeed indications, in at least some regions, that significant numbers of species may be taken as bycatch.

Furthermore, for better analysis of data, reporting must be on a finer scale; for example, more frequent reporting intervals of vessel monitoring system (VMS) data would greatly enhance data quality. In many cases, fishing activity in the high seas is not clearly distinguished from that taking place in the EEZs, whereas a distinction is essential for an analysis of fishing activities in the high seas. Efforts to resolve this issue have been initiated in some regions (e.g. NEAFC and the South East Atlantic Fisheries Organisation [SEAFO]) but, in many cases, it is difficult to separate catch and vessel activity data from the two jurisdictions.

Collection of historical and other currently unpublished or unavailable data will be important for the assessment of the status of target and bycatch stocks, as well as the overall impact of deep-sea fisheries on vulnerable habitats and ecosystems.

Gaps in data and information concerning impacts on, and location of, vulnerable marine ecosystems (VMEs)

In terms of data and information concerning impacts on, and location of, VMEs for the various regions, the situation ranges from little knowledge and no systematic assessments having been carried out on the impact of fishing on such ecosystems, nor on the location of these ecosystems, to measures being implemented (e.g. areas being closed) to mitigate impact. The latter is taking place as part of a precautionary management approach as well as following on from identified impacts.

However, overall, more precise information on the location of fishing in relation to underwater features is needed, in particular to better assess the potential impact of fishing activities on VMEs. The most precise information in this regard has been collected from fisheries conducted by New Zealand vessels fishing on the high seas in the South West Pacific and the Tasman Sea.

There is also a need to better map locations of VMEs on the high seas and to consolidate this information into a single global database accessible to states and RFMOs. Work of this nature, in particular the mapping of locations of cold-water corals, is already under way in some regions (e.g. the Hatton and Rockall Bank areas in the North East Atlantic), but greater effort is required to determine the locations of such areas effectively in order to assess the extent to which bottom fisheries may be impacting VMEs.

Equally important is the need to identify areas where VMEs are *likely* to occur. An example of the type of work needed in this regard is a recent assessment of the likely occurrence of stony corals in relation to large seamounts worldwide conducted by the Census of Marine Life on Seamounts (CenSeam), published by United Nations Environment Programme (UNEP), United Nations Educational, Scientific and Cultural Organization (UNESCO)/Intergovernmental Oceanographic Commission and others in November 2006.[4]

This assessment was the first of its kind to specifically address this need and essentially entails a biogeographic assessment of the likely association of stony, reef building, cold-water corals (such as *Lophelia pertusa*) with large seamounts (defined as those over 1 000 metres (m) from base to peak) throughout the world's oceans, using predictive modelling, based on the best scientific information currently available.

Additionally, similar global biogeographic assessments should be conducted to determine the likely extent and distribution of soft corals, sponges and other species, particularly habitat-forming species, and ecosystems vulnerable to bottom fisheries in relation to large seamounts, as well as in relation to other underwater features such as seamounts of lesser elevations (e.g. hills, knolls and rises), canyons and continental slope/margin areas of the high seas.

All assessments mentioned in the two sections above would be useful to RFMOs and flag states in the implementation of the *FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas* (adopted on 29 August 2008) (the FAO Guidelines) and the UNGA Resolution 61/105.

DATA AND REPORTING RECOMMENDATIONS

Workshop on Data and Knowledge in Deep-Sea Fisheries in the High Seas

A workshop on Data and Knowledge in Deep-Sea Fisheries in the High Seas was held in Rome, Italy (5–7 November 2007) to discuss the current state of knowledge in these fisheries. The recommendations that resulted from the discussions are summarized below. As a preface to the recommendations, the participants first agreed to endorse the following statement:

> *"the obligation to provide data for management purposes must be accepted as non-negotiable on the part of governments of the flag States and the industry itself and that it should be fully implemented as a matter of priority. Governments must provide moral and legal support to ensure that the data needed for management are provided and undertake the necessary coordination to ensure this happens."* (DEEP SEA, 2003)[5]

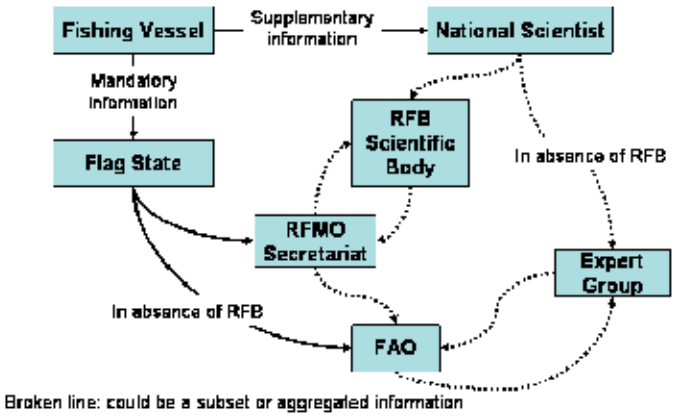
Participants considered the following types of data collection necessary for the management of deep-sea fisheries:

- catch and effort logbooks (including fishing operations, catch, gear and vessel type, effort statistics, fishing locations, depth and date and time fished);
- vessels' position and movements through a satellite-based VMS;
- information from scientific and benthic habitat surveys, in particular surveys that identify areas where VMEs occur or are likely to occur;
- samples of biological characteristics of catch;
- registers of vessels authorized to fish (length, tonnage, gear, areas fished, target species, and

[4] Clark, M.R., Tittensor, D., Rogers, A.D., Brewin, P., Schlacher, T., Rowden, A., Stocks, K. & Consalvey, M. 2006. *Seamounts, deep-sea corals and fisheries: vulnerability of deep-sea corals to fishing on seamounts beyond areas of national jurisdiction.* United Nations Environment Programme (UNEP)–World Conservation Monitoring Centre (WCMC), Cambridge, United Kingdom.

[5] FAO. *Report on DEEP SEA 2003, an International Conference on Governance and Management of Deep-Sea Fisheries*. Queenstown, New Zealand 1–5 December 2003. FAO Fisheries Report 772. Rome. 2005. 84pp.

FIGURE 13
Data reporting schema



- current activities of the vessel);
- vessels' permanent ID numbers (which all vessels in deep-sea fisheries should have);
- socio-economic data.

Furthermore, participants recommended that standardized and consistent data collection procedures and protocols be adopted and published – electronic data reporting systems are preferred. It was also noted that 100 percent observer coverage should be required on vessels in these fisheries.

Similar to issues referred to in the gaps in data, the participants mentioned the importance of gathering historical data from both fisheries and non-fisheries sources, as well as the improvement of catch identification and biological data collection on marine resources through national and international training programmes for fishers and scientific observers.

Also important for the implementation of the FAO Guidelines is the need for better and more relevant data on VMEs and the impact of fishing. Such information could be gathered from fisheries and fisheries independent sources. Further studies should also be undertaken on the impact of various types of fishing gear on VMEs.

The critical need for accurate and complete data was noted, as well as the importance of verifying and comparing information from different sources. Participants called for the collection and reporting of data to be on as fine a temporal and spatial scale as possible, noting that data reporting and analysis should also be as transparent as possible. Arrangements for data submission, where RFMOs exist and where they do not, should be on the finest possible scale and might follow the data reporting schema prepared by participants (Figure 13).

The participants echoed the *Worldwide review of bottom fisheries in the high seas* initiative and recommended its regular updating, as well as a review of data and knowledge available and management approaches. A source of dissemination of information on the status and trends of bottom fisheries in the high seas could be the FAO Fishery Resources Monitoring System (FIRMS) partnership.

FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas

The FAO Guidelines are a voluntary instrument that represents one of the first such tools to address both sustainable fisheries and conservation of marine biodiversity.

The FAO Guidelines are specifically for fisheries that are beyond national jurisdiction and have the follow characteristics: "the total catch (everything brought up by the gear) includes species that can only sustain low exploitation rates; and the fishing gear is likely to contact the seafloor during the normal course of operations". The aim of the instrument is to "facilitate and encourage the efforts of states and RFMO/As towards sustainable use of marine living resources exploited by deep-sea fisheries, the prevention of significant adverse impacts on deep-sea vulnerable marine ecosystems and the protection of marine biodiversity that they contain."

The FAO Guidelines specifically request standardized and consistent data collection procedures; data from all stages of a fisheries development to be reported; socio-economic data from these fisheries; data reported at appropriate scale resolution for stock assessments and evaluation of impacts on VMEs; and monitoring on as close to real time as possible. Training programs for both scientific observers and fishers are recommended to improve catch identification and biological data collection. The importance of adaptive management is noted and information necessary for such information requested. The need for international cooperation on collation of biogeographic information is also noted. Finally, there is a call for transparent processes when analysing and reporting data from these fisheries to facilitate review of management effectiveness.

This report presents a current overview of the fisheries concerned and provides information and guidance for the implementation of the FAO Guidelines. It also highlights the need for better reporting of data on these fisheries and the ecosystems in which they operate.

FUTURE DIRECTIONS

Much remains to be done in terms of developing the state of knowledge that is required for the management of deep-sea fisheries in the high seas. This review should only represent a first step in what should be a comprehensive and regular global process to gather new information, address gaps and develop a full analysis of these fisheries. The report has primarily focused on fishing activities and targeted species, but associated, impacted and related species as well as potential impacts on VMEs have also been discussed. In close collaboration with states and RFMOs, future reviews must address the identified gaps in knowledge, including the gathering of historical information. Future reviews should also include more in depth consideration of VMEs and the management measures adopted by flag states and RFMO/As to sustainably manage deep-sea fisheries in the high seas.

In addition to enhancing the state of knowledge of these fisheries, it is also important to use this knowledge, and the recommendations resulting from further analysis, to promote the implementation of the FAO Guidelines and related "best practices".

APPENDIX A

Questionnaire on deepwater fisheries in the high seas: national information

OBJECTIVES

- The objective of the questionnaire is to contribute to a global review of deepwater benthic, demersal, and bentho-pelagic fisheries in the high seas. The review is to document the main fishing practices from a global perspective.
- The review is intended to assess the main characteristics and trends of these fisheries over the last 3-4 years. This requires information on the fleet and associated fishing effort as well as on catches. This information would be most useful if presented by main fishing grounds.

SCOPE

- Fleet involved in fisheries targeting deepwater benthic, demersal and bentho-pelagic resources in the high seas.
- Resources involved include all deepwater resources centred at depths greater than 200 metres exploited primarily on the high seas.
- As the fleet may include a number of vessels operating on straddling stocks, differentiation between fishing activities occurring in EEZs and high seas is required, as noted in some sections of the questionnaire.

INFORMATION REQUIREMENTS

1. Description of the fleet

*1.1. **Register of fishing vessels.*** For vessels that have been involved in deepwater high seas fishing activity during 2006 (or most recent year available). For each vessel, the following information is required:

- Vessel name
- Registration number
- Call sign
- Vessel type (e.g. trawler, longliner, etc.)
- Fishing gear(s) (e.g. bottom trawl, midwater trawl, shrimp trawl, gillnet, deep water gill net, line, long line, bottom long line, trap/pot, jig, other...)
- Overall length (LOA)
- Gross Registered Tonnage (GRT)
- Engine power (in kW)
- Beam (if available)
- Depth (if available)
- Year and place of construction

Note: Many countries have submitted a list of high seas fishing vessels with similar information to FAO as part of the information requirements under the Compliance Agreement. However, in most instances, it is not possible to identify from this register which are the vessels involved in deepwater fisheries because data on vessel and gear type is not provided.

1.1. Aggregated information on deepwater high seas fishing fleets:

Number and total GRT of fishing vessels that have been involved in deepwater high seas fishing activity, by year and vessel type

Vessels type		**2003**	**2004**	**2005**	**2006**
Trawlers	*Nb. vessels*				
	Total GRT				
Gillnetters	*Nb. vessels*				
	Total GRT				
Long liners	*Nb. vessels*				
	Total GRT				
Trap setters	*Nb. vessels*				
	Total GRT				
Other types or multi-purpose fishing vessels	*Nb. vessels*				
	Total GRT				

List of vessel types included in the category "Other types": _____
_____

2. Location of main high seas fishing areas and fishing grounds for the fleet involved in deepwater fishing activity (as described in section 1)

Minimum requirement:

For 2006 (or most recent year available):

- FAO fishing area and fishing grounds (e.g. reference to seamounts, banks, ridges, continental slopes, seas, etc...)
- Number of fishing vessels by vessel type that have been involved in deepwater fishing activity in this area during the reporting year

Additional information if available:

Same information by year for the period 2003 - 2005

Year: _____

Fishing Area	Fishing areas and fishing grounds		EEZs overlapping the fishing ground (e.g. Azores, Ireland)	Number of fishing vessels				
	FAO Fishing area (e.g. area 27 – North East Atlantic)	**Specific fishing grounds (e.g. mid Atlantic ridge; Hatton bank)**		**Trawlers**	**Gillnetters**	**Longliners**	**Trap setters**	**Other types or multi-purpose vessels**
1								
2								
3								
4								
5								

Note: if more than 5 fishing areas, please add rows to the table

List of vessel types included in the category "Other type or multi-purpose": _____

3. Catches of the fleet involved in high seas deepwater fishing activities (as described in section 1)

3.1 Total catches by fishing area

Minimum requirement:

For 2006 (or most recent year available): fishing area, catches of deepwater demersal and bentho-pelagic species, % of catches in high seas and within EEZs when the fishing area overlap the 2 zones

Additional information if available:

Same information by year for the period 2003–2005

Year: _____

FAO Fishing area or sub-areas	Total catches of the fleet (in mt)	% in the high seas	% within EEZs
Area 1:			
Area 2:			
Area 3:			
Area 4: ...			
Area 5: ...			
TOTAL for all areas:			

Note: if more than 5 fishing areas, please add rows to the table

3.2 Catches by species

Minimum requirement:

For 2006 (or most recent year available):
– Catches by main targeted species, with % of catches in high seas and within EEZs
– Catches of minor species, with % of catches in high seas and within EEZs

Additional information if available:

Same information by year for the period 2003 - 2005

Year: _____

Species name (up to 10)	Catches (in mt)	% in the high seas	% within EEZs
1 -			
2 -			
3 -			
4 -			
5 -			
6 -			
7 -			
8 -			
9 -			
10 -			
Other deepwater species			
TOTAL catch of the fleet			

List of species included in the category “Other deepwater species”:

_____

4. Fishing effort of deepwater fishing fleet

4.1 Fishing effort by fishing area

Minimum requirement:

For 2006 (or most recent year available) by fishing area: number of fishing days for vessels involved in deepwater demersal and bentho-pelagic fisheries in the high seas, with % of effort in high seas and within EEZs when the fishing area overlaps the 2 zones.

Additional information if available:

Same information by year for the period 2003 - 2005

Year: _____

FAO fishing area or sub-area	Effort (Number of fishing days)	% in the high seas	% within EEZs

Note: if more than 5 fishing areas, please add rows to the table

4.2 Fishing effort by gearl type

Minimum requirement:

For 2006 (or most recent year available): number of fishing days by fishing gear type for vessels involved in deepwater demersal and bentho-pelagic fisheries in the high seas, with % of effort in high seas and within EEZs when their fishing areas overlap the 2 zones

Additional information if available:

Same information by year for the period 2003 - 2005

Year: _____

Type of fishing gear	Number of fishing days	% in the high seas	% within EEZs
Bottom Trawl			
Midwater trawl			
Gillnet			
Long line			
Traps/pots			
Other gear type			

APPENDIX B

List of countries that replied to the FAO Questionnaire on deep-sea fisheries in the high seas

Country	Type of reply
Australia	Formal
Bahamas	Formal – no vessel involved
Belize	Formal
Cambodia	Formal – no vessel involved
Canada	Formal
China	Formal
Cook Islands	Formal
Estonia	Formal
France	Formal
Germany	Formal
Guinea	Formal
Honduras	Formal
Japan	Formal
Lithuania	Informal
Namibia	Formal
New Zealand	Formal
Norway	Formal
Republic of Korea	Formal
Russian Federation	Formal
Spain	Informal
Thailand	Formal – no vessel involved
Togo	Formal
Ukraine	Formal
United Kingdom	Formal
Unites States of America	Formal – no vessel involved

This document, the *Worldwide review of bottom fisheries in the high seas*, 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. This review contains information on the fleets and their fishing activities across nine major oceanic areas. It also informs 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 information.

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