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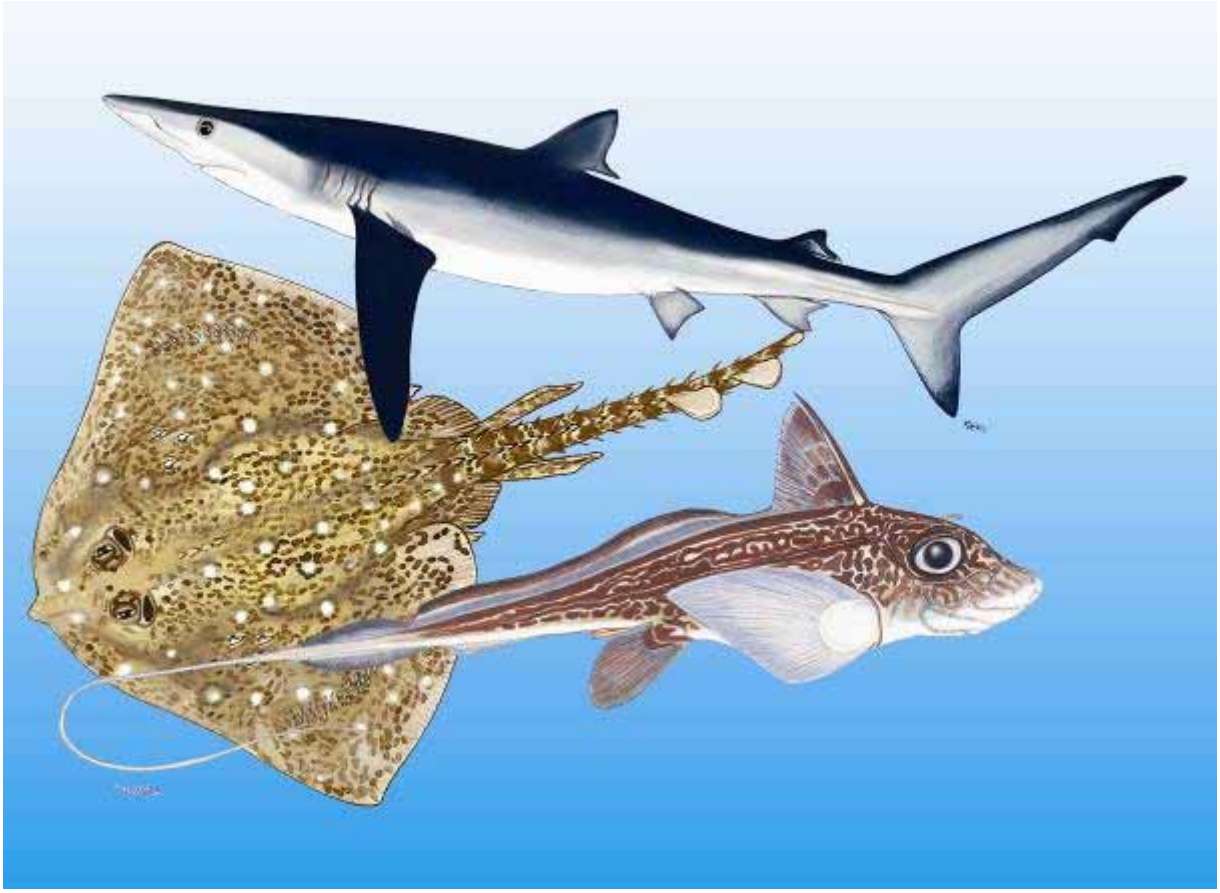
REVIEW OF THE IMPLEMENTATION OF THE INTERNATIONAL PLAN OF ACTION FOR THE CONSERVATION AND MANAGEMENT OF SHARKS



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REVIEW OF THE IMPLEMENTATION OF THE INTERNATIONAL PLAN OF ACTION FOR THE CONSERVATION AND MANAGEMENT OF SHARKS

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Preparation of this document

At its Twenty-ninth Session in 2011, the FAO Committee on Fisheries (COFI) requested that FAO prepare a report on the implementation of the 1999 FAO International Plan of Action for the Conservation and Management of Sharks by FAO Members, and the challenges Members faced when implementing the instrument. This FAO Fisheries and Aquaculture Circular compiles and reviews relevant conservation and management measures of top shark-fishing countries, areas, territories and entities accounting for 84 percent of the total elasmobranch catches reported to FAO. It has been prepared in collaboration with the FAO Development Law Service. An advance copy was presented during COFI in July 2012 encouraging all countries, areas, territories and entities to provide the authors with additional information and corrections. All feedback received by the end of August 2012 was considered for the review. The printing of this document was possible thanks to funds provided to FAO by the Government of Japan.

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Abstract

In 2011, the Conference on Fisheries requested FAO to prepare a report on the implementation of the 1999 FAO International Plan of Action for the Conservation and Management of Sharks by FAO Members, and the challenges Members faced when implementing the instrument. This document provides the requested review and includes information on National Plans of Action (NPOAs), for the Conservation and Management of Sharks, national fisheries regulations in general and measures applicable to sharks including research, data collection and reporting. In addition, membership of relevant regional fisheries management organizations (RFMOs) and status of adopting the Port State Measures Agreement are included.

This review focuses on the 26 top shark-fishing countries, areas and territories determined as those reporting at least 1 percent of global shark catches during the decade from 2000 to 2009: Indonesia, India, Spain, Taiwan Province of China, Argentina, Mexico, the United States of America, Pakistan, Malaysia, Japan, France, Thailand, Brazil, Sri Lanka, New Zealand, Portugal, Nigeria, Iran (Islamic Republic of), the United Kingdom of Great Britain and Northern Ireland, the Republic of Korea, Canada, Peru, Australia, Yemen, Senegal and Venezuela (Bolivarian Republic of). This review also considered shark action plans and measures from the European Union (Member Organization) and ten RFMOs.

Eighty-four (84) percent of the global shark catches reported to FAO from 2000 to 2009 was from the 26 top shark-fishing countries, areas and territories. Overall, global reported annual shark catches during this decade show a significant decline of almost 20 percent from about 900 000 tonnes to about 750 000 tonnes. The review shows that 18 of the 26 top shark fishing countries, areas and territories have adopted an NPOA Sharks and that an additional 5 of these countries are in the process of adopting or developing such a plan.

Among the most commonly adopted management measures for sharks are shark fin measures; but other regulations have also been implemented such as closed areas and season, by-catch/discard regulations, protected species, total allowable catches (TAC) and quotas, special reporting requirements and others. Data collection and research on sharks is lacking in many regions. Overall, the reporting of shark catches to FAO has improved in the last decade. Shark catches reported at species level doubled from 14 percent in 1995 to 29 percent in 2010.

Most of the top shark-fishing countries, areas and territories have taken steps to combat illegal, unreported and unregulated (IUU) fishing, either by signing the FAO Port State Measures Agreement (PSMA) (46 percent) or at least by adopting an NPOA IUU or similar plan (23 percent). Only five (20 percent) of the top 26 shark-fishing countries, areas and territories have not adopted an NPOA Sharks, signed the PSMA or implemented an NPOA IUU. Nonetheless, in quite a few countries the effective implementation of MCS schemes is problematic, often because of a lack of human and financial resources.

All but one of the top shark-fishing countries, areas and territories are members of at least one RFMO. In particular, shark measures adopted by tuna bodies are binding in their areas of competence for all their member States that have not objected to the measure in question.

The array of shark measures adopted by the RFMOs may vary from binding recommendations or resolutions to non-binding measures, as in the case of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). They include shark fin measures, catch and gear regulations, prohibited species, area closures, reporting requirements and research programmes. This means that in all but one area covered by RFBs there are internationally binding shark measures in place for high seas fisheries.

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Abbreviations and acronyms

APFIC	Asia-Pacific Fishery Commission
BOBLME	Bay of Bengal Large Marine Ecosystem
CBD	Convention on Biological Diversity
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCBSP	Convention on the Conservation and Management of the Pollock Resources in the Central Bering Sea
CCMs	Commission Members, Cooperating Non-members, and Participating Territories
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CECAF	Fishery Committee for the Eastern Central Atlantic
CFP	Common Fisheries Policy (European Union [Member Organization])
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CITES Sharks	WG Working Group on the Conservation and Management of Sharks of the CITES Animal Committee
CMS	Convention on Migratory Species
Code	FAO Code of Conduct for Responsible Fisheries
COFI	Committee on Fisheries (FAO)
COP	Conference of the Parties
COPESCAALC	Commission for Inland Fisheries and Aquaculture for Latin America and the Caribbean
CP	Contracting Party
CPCs	Contracting Parties and Cooperating Non-members
CPPS	Permanent Commission for the South Pacific
CSRP	Subregional Fisheries Commission
CTMFM	Comisión Técnica Mixta del Frente Marítimo
EAF	ecosystem approach to fisheries
EC	European Commission
EEZ	exclusive economic zone
EUPOA	European Union Plan of Action
FCWC	Fishery Committee of the West Central Gulf of Guinea
GFCM	General Fisheries Commission for the Mediterranean
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
Ifremer	French Research Institute for Exploitation of the Sea
IOTC	Indian Ocean Tuna Commission
IPOA	international plan of action
IPOA Sharks	International Plan of Action for the Conservation and Management of Sharks
ISSCAAP	International Standard Statistical Classification of Aquatic Animals and Plants
IUCN	International Union for Conservation of Nature
IUU	illegal, unreported and unregulated (fishing)
MCS	monitoring, control and surveillance
NAFO	Northwest Atlantic Fisheries Organization
NASCO	North Atlantic Salmon Conservation Organization
NEAFC	North East Atlantic Fisheries Commission
NEI	not elsewhere included
NGO	non-governmental organization
NPOA	national plan of action
NPOA IUU	national plan of action to combat illegal, unreported and unregulated fishing
NPOA Sharks	National Plan of Action for the Conservation and Management of Sharks
OLDEPESCA	Latin American Organization for Fisheries Development
PERSGA	Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden
PSMA	FAO Port State Measures Agreement

RECOFI	Regional Commission for Fisheries
RFB	regional fishery body
RFMO	regional fisheries management organization
RPOA	Regional Plan of Action
SCMFMCSGG	Sub-Regional Cooperation in Marine Fisheries Monitoring, Control and Surveillance in the Southern Gulf of Guinea on the Harmonisation of Fisheries Laws and Regulations of the Region
SEAFDEC	Southeast Asian Fisheries Development Centre
SEAFO	Southeast Atlantic Fisheries Organization
SIOFA	Southern Indian Ocean Fisheries Agreement
SPRFMO	South Pacific Regional Fisheries Management Organisation
SSG	Shark Specialist Group
SWIOFC	South West Indian Ocean Fisheries Commission
TAC	total allowable catch
TACC	total allowable commercial catch
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea of 10 December 1982
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFSA	United Nations Fish Stocks Agreement
UNGA	United Nations General Assembly
VMS	vessel monitoring system
WCPFC	Western and Central Pacific Fisheries Commission
WECAFC	Western Central Atlantic Fishery Commission

1. INTRODUCTION

1.1 The IPOA Sharks

The International Plan of Action for the Conservation and Management of Sharks[1] (IPOA Sharks) was adopted under the auspices of the FAO Code of Conduct for Responsible Fisheries (the Code) in 1999. At the time of the adoption of the IPOA, knowledge of the status of shark fisheries in the world was limited. Only a few countries had specific management plans in place for their shark fisheries, and owing to the wide-ranging distribution of many highly migratory sharks, it was considered increasingly important to strengthen international cooperation and coordination for the management of sharks.

The objective of the IPOA Sharks is to ensure the conservation and management of sharks and their long-term sustainable use. The IPOA Sharks applies to all species of sharks, skates, rays and chimaeras, and it applies to all types of catches (directed, bycatch, commercial, recreational or others) and waters where such fishing takes place. It also applies to coastal States where sharks are caught in their waters and to flag States where vessels entitled to fly their flags catch sharks on the high seas.

The IPOA Sharks calls on all concerned States to participate in the management of shark stocks. It encourages States to develop and implement national plans of action for the conservation and management of sharks (NPOAs Sharks), and suggests a structure and contents for such a plan. In order to engage efficiently in cooperation with other shark fishing nations, countries should adopt measures to manage the shark species within their territories and should strive to have updated information and data at all times.

The IPOA establishes not only the need to start managing directed shark catches but also calls for improving shark bycatch regulations in multispecies fisheries, in particular in tuna fisheries. The main purpose of the IPOA Sharks consists in facilitating the implementation of NPOAs and, accordingly, it suggests meaningful contents of a shark plan. These include the description of the current state of shark stocks and fisheries as well as a framework, objectives and strategies for the management of sharks. Implementation of the IPOA Sharks is voluntary but the IPOA suggests that FAO Members who have decided against its implementation should regularly review their decision. Furthermore, the IPOA Sharks encourages States to cooperate through regional fisheries management organizations (RFMOs) and to ensure the effective management of transboundary stocks. FAO can assist States in the implementation of the IPOA Sharks; this support may include local technical assistance provided extrabudgetary funds are made available.

In 2000, FAO produced the Technical Guidelines on the Conservation and Management of Sharks[2] (the Guidelines) to support FAO Members in the implementation of the IPOA Sharks. They were designed to raise awareness among governments, fisheries agencies, non-governmental organizations (NGOs) and the fishing industry for the need to conserve and manage sharks effectively.

Progress in implementing the IPOA was slow and, at the Committee on Fisheries (COFI) in 2003, a number of countries indicated that their efforts had not significantly progressed owing to a lack of relevant data and other technical problems.[3] In response, in 2005, FAO convened an Expert Consultation to understand more fully the nature of the problems encountered by Members. The experts noted that fisheries management regimes in many countries did not include shark-specific measures and that the management of elasmobranchs is hampered by the same problems encountered in the management of non-elasmobranch species. According to the Expert Consultation, the main issues in many countries included: a lack of taxonomic guides as well as an absence of scientific assessments and, consequently, there was insufficient information on sharks' biology, stock status and fisheries; a

[1] FAO. 1999. *International Plan of Action for reducing incidental catch of seabirds in longline fisheries. International Plan of Action for the conservation and management of sharks. International Plan of Action for the management of fishing capacity*. Rome. 26 pp.
[2] FAO. 2000. *Fisheries management. 1. Conservation and management of sharks*. FAO Technical Guidelines for Responsible Fisheries No. 4, Suppl. 1. Rome. 37 pp.
[3] FAO. 2003. *Report of the twenty-fifth session of the Committee on Fisheries, Rome, 24–28 February 2003*. FAO Fisheries Report No. 702. Rome. 88 pp.

shortage of funds, human resources and institutional practices; and a low political priority for shark conservation.[4] The experts also expressed concern that the IPOA Sharks was slipping off the agenda, and that there had been confusion because of its voluntary nature, which contrasted with the real need for operational actions.

The slow implementation of the IPOA Sharks during the first ten years raised concerns also beyond FAO. In 2008, the United Nations General Assembly (UNGA) not only encouraged States to implement fully the IPOA Sharks but also requested FAO to "prepare a report containing a comprehensive analysis of the implementation of the International Plan of Action for the Conservation and Management of Sharks".[5] In 2011, TRAFFIC International and the Pew Environment Group published an analysis of shark management measures by the Top 20 shark-fishing nations[6]. They reaffirmed a lack of publicly accessible information on shark fisheries and management and emphasized the need for a more detailed global review of progress by the Top 20 on the principles of the IPOA Sharks.

Other efforts made by FAO to support the Code, in particular the conservation and management of sharks and effective implementation of the IPOA Sharks, are reflected in numerous publications on shark conservation and management issues and in the production of species identification guides (see bibliography). Two FAO workshops are worth mentioning in this context. The first took place in 2008[7] and considered strategies to improve the monitoring of shark fisheries and resulted in a number of recommendations to promote the development of NPOA sharks. The second workshop in 2010 was co-convened by CITES[8] and outlined the strengths and weaknesses of the various shark-related regulatory instruments and regulations and discussed their effectiveness with regard to implementation and stock recovery, as well as their impact on fisheries, livelihoods, food security, markets, trade and government administrations.

In 2009 and 2011 significant progress in the implementation of the IPOA Sharks could be observed[9] indicating that the international attention given to the sustainable use, conservation and management of sharks has had a positive effect on the motivation of governments to take action. Nonetheless, more efforts are required to ensure the effective conservation of sharks. Although global shark catches reported to FAO have decreased by almost 20 percent since 2003, the high level of exploitation of many shark species is still of concern. Therefore, in 2011, COFI echoed the request of the UNGA and asked FAO to compile a report "on the extent of the implementation of the IPOA and the challenges faced by Members".[10]

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[4] FAO. 2006. *Report of FAO Expert Consultation on the Implementation of the FAO International Plan of Action for the Conservation and Management of Sharks, Rome, 6–8 December 2005*. FAO Fisheries Report No. 795. Rome. 24 pp.

[5] United Nations General Assembly. 2010. *Resolution on 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, Sixty-fifth Session, 2010.* A/RES/65/38.

[6] Lack, M. & Sant, G. 2011. *The future of sharks: a review of action and inaction*. Cambridge, UK, TRAFFIC International, and Washington, DC, the PEW Environment Group. 41 pp.

[7] FAO. 2009. *Report of the Technical Workshop on the Status, Limitations and Opportunities for Improving the Monitoring of Shark Fisheries and Trade. Rome, 3–6 November 2008*. FAO Fisheries and Aquaculture Report No. 897. Rome. 152 pp.

[8] FAO. 2012. *Report of the FAO/CITES Workshop to Review the Application and Effectiveness of International Regulatory Measures for the Conservation and Sustainable Use of Elasmobranchs. Genazzano, Italy, 19–23 July 2010*. FAO Fisheries and Aquaculture Report No. 984. Rome. 31 pp.

[9] FAO. 2009. *Progress in the Implementation of the Code of Conduct for Responsible Fisheries, Related International Plans of Action and Strategy* [online]. Committee on Fisheries, Twenty-eighth Session, Rome, 2–6 March 2009. COFI/2009/2. [Cited 20 September 2012]. ftp://ftp.fao.org/docrep/fao/meeting/015/k3833e.pdf and FAO.2011. *Progress in the Implementation of the Code of Conduct for Responsible Fisheries, Related International Plans of Action and Strategy*, Committee on Fisheries, Twenty-ninth Session, Rome, 31 January – 4 February 2011, COFI/2011/2

[10] FAO. 2011. *Report of the Twenty-ninth Session of the Committee on Fisheries. Rome, 31 January –4 February 2011*. FAO Fisheries and Aquaculture Report No. 973. Rome. 59 pp.

This current review describes the main shark conservation and management measures taken by the 26 top shark-fishing nations, areas, territories and RFMOs. It includes summary information on the content of adopted and draft NPOA sharks, on national fishery policies with particular focus on shark regulations and shark research and assessment as well as the reporting on shark catches to FAO. This review also takes note of challenges reported by FAO Members with regard to the effective conservation and management of sharks.

1.2 International legal regime applicable to or relevant for sharks

Shark species are subject to a fragmented international legal regime for conservation and management. Indeed, a number of different sets of binding rules and non-binding principles are relevant to shark species on both a regional and a global level, but not all of these are relevant for the purposes of this review. The following sections provide an overview of the international and regional fisheries instruments considered most relevant for shark conservation and management. The purpose is mainly to put the IPOA Sharks into a larger context. The instruments presented below were highly relevant for the adoption of the IPOA Sharks, and although it is a voluntary instrument, lying within the framework of the Code, it draws from binding instruments. Many of the instruments presented below are also referred to in the NPOAs reviewed.

1.2.1 Binding fisheries instruments

The 1982 United Nations Convention on the Law of the Sea (UNCLOS)

UNCLOS is considered the principal framework convention for the management of the world's oceans and its resources. It sets out rights and obligations mainly of the coastal and flag States relating to the conservation and management of the living resources within the different maritime zones.

Within their exclusive economic zone (EEZ), coastal States have sovereign rights for the purpose of, *inter alia*, conserving and managing living resources. They must take and implement conservation measures to avoid overexploitation, to allow restoration of species if needed, and account must be taken of associated or dependent species. Attention is drawn to incidental bycatch. Coastal States must also promote optimum utilization of living resources within their EEZ.

On the high seas, freedom of fishing by the flag States is restricted by their treaty obligations, the interests of coastal States and by the obligation for the flag States to cooperate in the conservation and management of marine species.

Cooperation is particularly required for the management of straddling stocks and highly migratory species in the EEZs and the high seas. This obligation is relevant for many oceanic sharks that are listed as highly migratory species under Annex I of UNCLOS.

The 1993 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (Compliance Agreement)

The FAO Compliance Agreement (Article III) elaborates the responsibility of flag States for their fishing vessels on the high seas. Such States must take the necessary measures to ensure that vessels flying their flag are not engaging in any activity undermining the effectiveness of conservation and management measures. The FAO Compliance Agreement was completed prior to the 1995 United Nations 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 (UNFSA, below), and some of the provisions in the two agreements overlap. However, there are some important differences. First, UNFSA addresses only straddling fish stocks and highly migratory fish stocks (with some exceptions) whereas the FAO Compliance Agreement applies to all high seas fishing. Second, while there is a parallel obligation in both agreements to establish a record of fishing vessels, and to make the information available on request, only the Compliance Agreement provides for the systematic exchange of information regarding high seas fishing vessels to which the agreement applies.

The 1995 United Nations 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 (UNFSA)

UNFSA mainly applies to the conservation and management of straddling and highly migratory fish stocks in the high seas. It obliges States to cooperate through the RFMOs to conserve and manage straddling and highly migratory fish stocks. It also establishes principles for fisheries conservation and management.

Being an instrument that also implements Article 64 on "Highly Migratory Species" of UNCLOS, UNFSA is highly relevant to this review. Of particular interest is UNFSA Article 5, which obliges Contracting Parties to minimize catch of non-target species, such as sharks, and impacts on associated or dependent species, in particular endangered ones. This article also stipulates that States should apply the precautionary approach to fisheries management, as well as an ecosystem approach for the protection of marine biodiversity.

The 2009 FAO Port State Measures Agreement (PSMA)

The PSMA was adopted in 2009 as a tool to combat illegal, unreported and unregulated (IUU) fishing. It aims to prevent illegally caught fish from entering international markets through ports. Under the terms of the treaty: foreign vessels will provide advance notice and request permission for port entry, countries will conduct regular inspections in accordance with universal minimum standards, offending vessels will be denied use of port or certain port services, and information sharing networks will be created. As IUU fishing is also a threat to vulnerable shark species, implementation of the PSMA can have a positive effect on the conservation of sharks.

1.2.2 Binding non-fisheries instruments/organizations

The 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

CITES regulates international trade in listed species of wild animals and plants, through a system of permits and certificates, in order to ensure that such trade is legal, sustainable and traceable. Key conditions that must be met before a permit is granted are generally that the trade of the specimen will not be detrimental to the survival of the species (non-detriment finding) and that the specimen has been obtained in accordance with the laws of the exporting State (legality finding). Moreover, for specimens of species included in Appendix I of CITES, the State of import must be satisfied that the specimen is not to be used for primarily commercial purposes. Moreover, any living specimen must be so prepared and shipped as to minimize the risk of injury, damage to health or cruel treatment.

"Trade" under CITES means export, re-export, import and introduction from the sea. The term "introduction from the sea" means transportation into a State of specimens of any species that were taken in the marine environment not under the jurisdiction of any State. The introduction from the sea of any specimen of a species included in Appendix I or Appendix II requires the prior grant of a certificate. Parties to CITES have adopted a resolution to guide their application of its provisions on introduction from the sea and are in the process of further clarifying the interpretation and implementation of this type of trade.

International trade in shark species has been regulated under CITES since 2000 and, currently, six species are included in Appendix I (species threatened with extinction, whose international trade is permitted only in exceptional circumstances), four species are included in Appendix II (species not necessarily threatened with extinction, but whose international trade must be controlled in order to avoid utilization incompatible with their survival), and two species included in Appendix III with effect from 25 September 2012 (species not necessarily threatened with extinction globally, listed after one member country has asked other CITES Parties for assistance in controlling trade). Beyond the practical effects of including species in the CITES Appendices, parties have repeatedly called for improved action on conservation and management of sharks since 1994. Resolution Conf. 12.6 (Rev. CoP15) on Conservation and management of sharks (Class Chondrichthyes), initially adopted in 2002, *inter alia* urges COFI and RFMOs to strengthen their efforts to undertake the research, training, data collection, data analysis and shark management plan development outlined by FAO as necessary to implement the

IPOA Sharks. In 2010, the parties expressed their continued concern at unsustainable trade and insufficient progress with implementation of the IPOA Sharks, encouraging enhanced efforts in this regard. They instructed their scientific committee to make species-specific recommendations, if necessary, on improving the conservation status of sharks and to examine information provided by range States on trade and other data and information, and report on activities at meetings of the Conference of the Parties (COP), and the Scientific Committee has established a shark working group to address these issues.

The 1979 Convention on Migratory Species (CMS)

The CMS is aimed at conserving species that cross national boundaries and/or are in areas beyond national jurisdiction. In order to avoid such species from becoming endangered, the principal conservation measures that fall under the CMS are: (i) the prohibition of harvesting of endangered species imposed by range States;[11] and (ii) for range States to enter into agreements for the protection of species within an unfavourable conservation status and their habitats. Parties are called on to promote cooperation and support research related to migratory species and endeavour to take immediate protective action for endangered migratory species.

Endangered migratory species are listed in Appendix I of the CMS. The list includes white sharks and basking sharks. Range States should endeavour to conserve and, where feasible and appropriate, restore important habitats of those species, minimize sources of obstacles on migratory routes, control the introduction of exotic species and prohibit the taking of listed animals.

Migratory species that have an unfavourable conservation status, or would significantly benefit from international cooperation, are listed in Appendix II. White sharks and basking sharks are also listed in Appendix II, together with whale sharks and dogfish sharks. For these species, the CMS acts as a framework convention – it does not provide any specific protection to them, but requires that State parties conclude global or regional agreements on specified species.

A non-legally binding memorandum of understanding on the conservation of migratory sharks was agreed under the CMS in 2010. It applies to whale sharks, basking sharks, great white sharks, longfin and shortfin mako sharks, porbeagle sharks, and Northern Hemisphere populations of spiny dogfish. Recognizing the importance of other institutions for the conservation and management of sharks, the signatories adopted a conservation plan at their first meeting in September 2012.[12]

The Convention on Biological Diversity (CBD)

The CBD came into force in 1993 and promotes the conservation of biological diversity, ensuring the sustainable use of biological components of ecosystems, and the fair and equitable sharing of benefits arising from the use of genetic resources.[13]

The objectives of the CBD are addressed through national frameworks and policies, and meetings are convened every two years to monitor implementation.

Sharks are a focus group of the CBD, and several recommendations for their sustainable conservation and management have been adopted by the parties, in particular with regard to large pelagic sharks.

[11]The CMS defines a range State as "any State that exercises jurisdiction over any part of the range of that migratory species, or a State, flag vessels of which are engaged outside national jurisdictional limits in taking that migratory species".

[12] Annex 3 to the Memorandum of Understanding on the Conservation of Migratory Sharks (www.cms.int/species/sharks/MOS_Mtgs/MoS1/mtg_report_&_outcomes_&_decisions/Outcome_1_2_Annex3_to_MoU_Conservation_Plan_En.pdf).

[13] CBD Web site: www.cbd.int/

1.2.3 Non-binding fisheries instruments

The 1995 FAO Code of Conduct for Responsible Fisheries (Code)

The Code is voluntary and it sets out principles and international standards of behaviour for responsible fishing and fishing activities. Its goals are, *inter alia*, to promote the conservation, management and development of all fisheries and to provide guidance in the formulation and implementation of further instruments in support of the objectives of the Code. The IPOA Sharks is such an instrument, adopted within the framework of the Code.

Several provisions of the Code refer to the need to develop or use selective and environmentally safe fishing gear and to minimize waste, catch of non-target species (both fish and non-fish species), and impacts on associated or dependent species. In addition, measures are to be taken to conserve biodiversity, to protect endangered species, and to allow depleted stocks to recover, or even to be actively restored. Areas of utmost importance to conservation, such as nurseries and spawning areas, should be protected and rehabilitated.

States should assess the impacts of environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks as well as take into account the best scientific evidence to evaluate the current state of fishery resources. The use of a precautionary approach is promoted.

The Code should be interpreted and applied in accordance with the principles, rights and obligations established in the World Trade Organization Agreement[14] – particularly most-favoured-nation treatment, national treatment and non-discrimination. States should also cooperate in complying with relevant international agreements regulating trade in endangered species.

The relevant actors should ensure that their policies and practices related to the promotion of international fish trade and export production do not result in environmental degradation or adversely affect the nutritional rights and needs of people for whom fish is critically important. Trade activities should not undermine the effectiveness of fisheries conservation and management measures.

United Nations General Assembly (UNGA) Resolutions

In its 2008 Resolution on sustainable fisheries,[15] the UNGA recognized the need for measures to promote the long-term conservation, management and sustainable use of shark populations given their vulnerability and the fact that some are threatened with extinction. It further recognized the relevance of the IPOA Sharks. It noted that basic data are still missing, that few countries have adopted an NPOA and that not all RFMOs have adopted measures for shark conservation and management. It called upon States to adopt measures urgently to implement the IPOA Sharks fully and to report regularly on shark catches. It further called on States to improve implementation of and compliance with the existing measures adopted by RFMOs, particularly the ones prohibiting shark finning. It finally requested FAO to report on the national implementation of the IPOA Sharks. In addition, in the 2010 Resolution on sustainable fisheries,[16] the UNGA called upon RFMOs to strengthen or establish precautionary, science-based conservation and management measures for sharks taken in fisheries within their convention areas – this to be done in a manner consistent with the IPOA Sharks.

The United Nations Conference on Environment and Development (UNCED): Agenda 21

Agenda 21 is a non-binding and voluntarily implemented action plan of the UN related to sustainable development, adopted during the UNCED in Rio de Janeiro, Brazil, in 1992. Chapter 17 of Agenda 21 deals with the protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and sees the protection, rational use and development of their living resources as central to

[14]See also: FAO. 2009. *Responsible fish trade*. FAO Technical Guidelines for Responsible Fisheries No. 11. Rome. 23 pp.
[15] UNGA A/RES/63/112.
[16] UNGA A/RES/65/38.

marine fisheries and aquaculture. It includes provisions for: (i) integrated management and sustainable development of coastal areas, including EEZs; (ii) marine environmental protection; (iii) sustainable use and conservation of marine living resources of the high seas; (iv) sustainable use and conservation of marine living resources under national jurisdiction; (v) addressing critical uncertainties for the management of the marine environment and climate change; (vi) strengthening international, including regional, cooperation and coordination; and (vii) sustainable development of small islands.

The International Union for Conservation of Nature (IUCN)

The IUCN was founded in 1948 by the United Nations Educational, Scientific and Cultural Organization (UNESCO). It is a global environmental organization and conservation network with membership comprised of governments and NGOs. Its mission is foremost to conserve biodiversity. The organization has set up a Shark Specialist Group (SSG) consisting of a large number of experts from around the world. The mission of the SSG is to promote the long-term conservation of the world's sharks and related species (rays, skates and chimaeras), the effective management of their fisheries and habitats, and, where necessary, the recovery of their populations.

The SSG assesses the status of sharks and the threats faced by shark species; it produces scientific reports and publications, and gives independent science-based advice, e.g. recommendation for inclusion of sharks on the IUCN Red List.[17] It uses standardized criteria for classifying species at high risk of global extinction.[18] Several shark species are found on the IUCN Red List, among others: scalloped hammerheads, porbeagle sharks, spiny dogfish, great white sharks, and basking sharks.

The IUCN, especially through the SSG, is supportive of the IPOA Sharks and urges States to implement it through NPOAs Sharks.

[17] The IUCN Red List includes plant and animal species at different levels of risk.
[18] The IUCN Red List Categories and Criteria are available at: www.iucnredlist.org/technical-documents/categories-and-criteria

2. NATIONAL AND REGIONAL MEASURES RELATED TO THE CONSERVATION AND MANAGEMENT OF SHARKS

2.1 Introduction

This chapter summarizes the actions and measures for the conservation and management of sharks adopted by important shark-fishing countries, areas, territories, entities and RFMOs. For countries, areas, territories and entities, the information takes account of the reported annual shark catches from 2000 to 2010, an outline of the main points of the NPOAs (if any), the national fisheries management regimes relevant for sharks (including. regulations, data collection and research), the taxonomic level at which sharks are reported to FAO, membership of relevant RFMOs and accession to the PSMA or adoption of a national plan of action to combat illegal, unreported and unregulated fishing (NPOA IUU).

The IPOA Sharks recognizes that NPOAs Sharks need to be flexible to allow them to fit into the different national fisheries management regimes. Appendix A of the IPOA Sharks provides general guidance for a rationale, format, implementation framework and minimum requirements for NPOAs Sharks. Countries, areas, territories and entities have to decide whether they require an NPOA Sharks and such a decision should be based on the assessment of their shark stocks. A decision by a country, area, territory or entity that an NPOA Sharks is not required should be reviewed at regular intervals. A regular review also is a requirement for NPOAs Sharks.

In addition to adopting NPOAs, countries, areas, territories and entities are encouraged to cooperate regionally and subregionally through RFMOs, in particular with regard to transboundary, straddling, highly migratory and high seas stocks, e.g. many elasmobranch species; this can include the development of a subregional or regional plan of action for sharks. Therefore, shark measures taken by relevant RFMOs have been included in this review.

The IPOA Sharks sets forth ten aims that a shark plan should strive to achieve:

- Ensure that shark catches from directed and non-directed fisheries are sustainable.
- Assess threats to shark populations, determine and protect critical habitats and implement harvesting strategies consistent with the principles of biological sustainability and rational long-term economic use.
- Identify and provide special attention, in particular to vulnerable or threatened shark stocks.
- Improve and develop frameworks for establishing and coordinating effective consultation involving all stakeholders in research, management and educational initiatives within and between States.
- Minimize the unutilized incidental catch of sharks.
- Contribute to the protection of biodiversity and ecosystem structure and function.
- Minimize waste and discards from shark catches, in accordance with Article VII.2.2(g) of the Code (e.g. by requiring the retention of sharks from which fins are removed).
- Encourage full use of dead sharks.
- Facilitate improved species-specific catch and landings data and monitoring of shark catches.
- Facilitate the identification and reporting of species-specific biological and trade data.

In 2000, in order to facilitate the implementation of the IPOA Sharks and to support decision-makers and policy-makers, FAO developed the Guidelines.[19] They provide general advice as well as a framework for the development and implementation of national, subregional and regional shark plans. The Guidelines also contain information to assist with the preparation of shark assessment reports. The various necessary conditions and requirements for a successful NPOA Sharks as described by the Guidelines include the development of appropriate legal, institutional and management frameworks, provision of adequate scientific advice, data collection and capacity building as well as basic requirement for monitoring, control and surveillance (MCS) schemes. The Guidelines also propose the

[19] FAO. 2000. *Fisheries management. 1. Conservation and management of sharks*. FAO Technical Guidelines for Responsible Fisheries No. 4, Suppl. 1. Rome. 37 pp.

protection of critical habitats including establishment of closed areas to provide sanctuaries for vulnerable species and encourage the full utilization of sharks while discouraging the dumping of shark carcasses at sea. To diminish unwanted bycatch or discards, the development and use of shark bycatch reduction devices is suggested.

2.2 Methods and approaches

The objective of this review consists of informing FAO Members on the extent of the implementation of the IPOA Sharks and the challenges faced by Members when implementing it as requested by COFI in 2011. For this purpose, the authors have used information already available from FAO and other sources and requested the reviewed States and entities to provide additional information.

Overall, 143 countries, areas, territories and entities report shark catches to FAO. To achieve meaningful results within the relatively short time allocated for the work, it was decided to restrict this review to the top shark-fishing nations, areas, territories and entities based on FAO catch statistics. Reported shark catches[20] by country, area and territory were averaged over the last decade (from 2000 to 2009) and ranked.[21] Those countries, areas and territories that caught at least 1 percent of the shark catches during this period were included in this review. This resulted in a list of 26 top shark-fishing countries, areas and territories that together are responsible for 84 percent of the total reported catches during this period. In the order of their ranking by largest globally reported catches, these are:

1. Indonesia
2. India
3. Spain
4. Taiwan Province of China
5. Argentina
6. Mexico
7. the United States of America
8. Pakistan
9. Malaysia
10. Japan
11. France
12. Thailand
13. Brazil
14. Sri Lanka
15. New Zealand
16. Portugal
17. Nigeria
18. Iran (Islamic Rep. of)
19. the United Kingdom of Great Britain and Northern Ireland
20. the Republic of Korea
21. Canada
22. Peru
23. Yemen
24. Australia
25. Senegal and
26. Venezuela (Bolivarian Rep. of)

Libya would rank twenty-second, having started in 2009 reporting to FAO shark catches at 8 500–9 000 tonnes per year, however, because of the lack of data in the preceding years it was not included in the present analysis.

[20] International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP) code 38, group of species: sharks, rays, chimaeras.
[21] See FishStat Plus (available at www.fao.org/fishery/statistics/software/fishstat/en).

In addition, the following RFMOs were included in this review: Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), Commission for the Conservation of Southern Bluefin Tuna (CCSBT), General Fisheries Commission for the Mediterranean (GFCM), Inter-American Tropical Tuna Commission (IATTC), International Commission for the Conservation of Atlantic Tunas (ICCAT), Indian Ocean Tuna Commission (IOTC), Northwest Atlantic Fisheries Organization (NAFO), North East Atlantic Fisheries Commission (NEAFC), Southeast Atlantic Fisheries Organization (SEAFO), and Western and Central Pacific Fisheries Commission (WCPFC).

As an initial step in this review, FAO asked all 143 shark-reporting countries, areas, territories and entities to indicate whether they had adopted an NPOA Sharks or other legislation or regulation relevant for the conservation and management of sharks including for individual shark species. Relevant RFMOs were asked if they had adopted any measures – including species-specific regulations – relevant for the conservation and management of sharks.

The 26 top shark-fishing countries, areas, territories and entities were requested to respond to ten questions on the implementation of the IPOA Sharks that had been elaborated by the Working Group on the Conservation and Management of Sharks of the CITES Animal Committee (CITES Sharks WG) in 2011[22] (see Appendix 2). The CITES Shark WG also assisted FAO in the initial stage of gathering information. The questions included in the questionnaire refer to the aims set forth in Paragraph 22 of the IPOA Sharks. In 11 cases, country-specific information already available was included in the questionnaire and recipients were asked to review it and provide additional data.[23]

Appendix 3 includes the responses of those countries, areas, territories and entities that have responded to the FAO questionnaire and authorized their publication.

For each of the top shark-fishing countries, areas, territories and entities, this review compiled a summary brief that contains information on shark catches reported to FAO, the existence or development of an NPOA and its main characteristics, a very short description of the national/territorial fisheries management regime including shark regulations, relevant data collection and research activities, the taxonomic levels at which sharks were reported to FAO in the last two decades (as percentages of annual reported catches), membership within relevant RFMOs and whether the country, area, territory or entity had signed or adopted the PSMA.

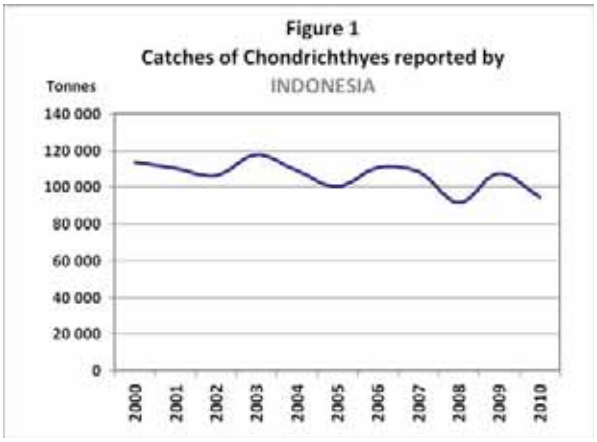
[22] For the four countries of the European Union (Member Organization) concerned, the questionnaire was sent to the European Commission (EC).

[23] Such "pre-filled" questionnaires were sent out to Argentina, Australia, Canada, Malaysia, Mexico, New Zealand, Peru, Senegal, the United States of America, the European Union (Member Organization), and Taiwan Province of China.

2.3 Summaries of regulations and measures

2.3.1 Indonesia[24]

Shark catches: On average, Indonesia reported 109 489 tonnes of shark catches per year during the last decade. This was the highest shark catch reported to FAO and comprises 13% of the shark catches during this period (13 percent). Reported catches have been decreasing slightly since 2003 (Figure 1).



NPOA Sharks: Yes (2010). It states that sharks and rays are mainly caught as bycatch. Main issues and problems mentioned in the NPOA are the identification of species, constraints on fishery data collection, and supplying the high market demand for sharks.

The NPOA includes a brief outline of the shark fisheries in Indonesia, as well as of issues and problems. It concludes with a commitment for annual reviews of the NPOA and an assessment of its implementation after five years. Six key actions are included:

- compilation of methods and data collection process (including data improvement, non-consumptive uses, recording of discards, developing a species identification guide and taxonomic expertise);
- development of shark and ray research (time series, survey strategies, biological/genetic knowledge, ecosystem approach to fisheries [EAF], fishery data, socio-economic data);
- improving management measures (sustainability, biodiversity, habitats and ecosystems, recovery programmes, size regulations);
- building public awareness (including ecotourism);
- institutional strengthening (logistics, training, stakeholder involvement, regional activities).

Fisheries management: The Ministry of Marine Affairs and Fisheries is responsible for the implementation of fishery management measures in Indonesia. The activities and regulations issued by the Ministry of Marine Affairs and Fisheries are based on Fisheries Law No. 31/2004 (amended by Law No. 45/2009) which includes provisions for fishing gear and technical measures, total allowable catches (TACs) and quotas, entry controls and registers, MCS, enforcement, etc. An important by-law is Regulation No. 60/2007 on the Conservation of Fishery Resources, which deals with the conservation of ecosystems, fish species and fish genetics. FAO reports that overfishing and IUU fishing is a major problem in Indonesia because of a lack of human and financial resources for the purpose of MCS.

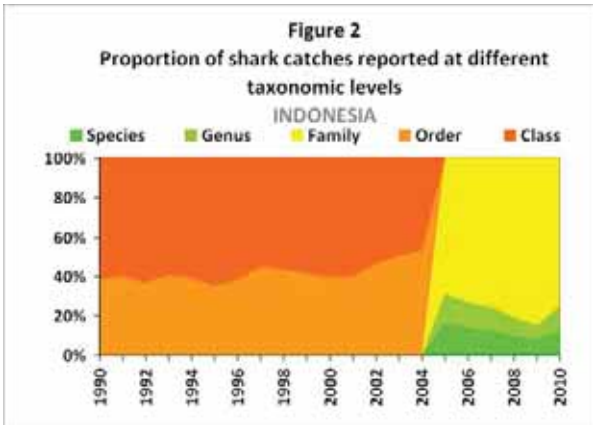
Shark measures: Indonesia has not adopted shark fin measures but the Indonesian NPOA states that all body parts of sharks are being utilized. The 2011 report of the Bay of Bengal Large Marine Ecosystem (BOBLME) Shark Working Group[25] informs that shark fin exports from Indonesia have declined since 2005 and that shark fin exports have not been recorded since 2008. Shark regulations in place are those necessary to conform with international agreements, e.g. trade controls for species listed by CITES (e.g. whale shark), and those prescribed by RFMOs of which Indonesia is a member.[26]

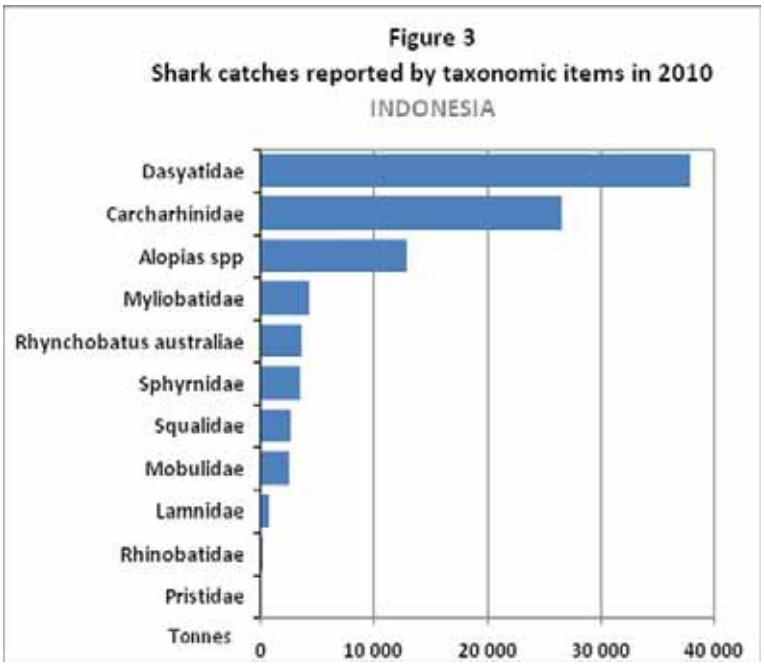
Data collection and research: Fish stock assessments are carried out by MMAF's Agency of Research and Development for Marine and Fisheries. The 2011 report of the BOBLME Shark

[24]The Government of Indonesia did not respond to the FAO questionnaire. Information included here is based on Indonesia's NPOA, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.
[25] Bay of Bengal Large Marine Ecosystem Project.
[26] From the FIRMS Web site at: http://firms.fao.org/firms/fishery/361/en

Working Group identified a lack of basic shark fishery catch and effort data as a serious constraint throughout most of the BOBLME area[27] and recognized that there is little biological information available on the species living within national waters of the BOBLME countries.

Reporting: Until the mid-2000s, Indonesia reported its catches of Chondrichthyes as "rays, stingrays, mantas not elsewhere included (NEI)" or "sharks, rays, skates, etc. NEI". Since 2005, the catches have been reported mainly at family level except the species whitespotted wedgefish (*Rhynchobatus australiae*) and the genus "Thresher sharks NEI" (*Alopias* spp.) (Figures 2 and 3). A field guide on sharks and rays in Indonesia[28] is available to support an improvement in the reporting of shark catches. FAO shark identification products[29] exist for the Western Central Pacific and under development for the Indian Ocean (see bibliography).





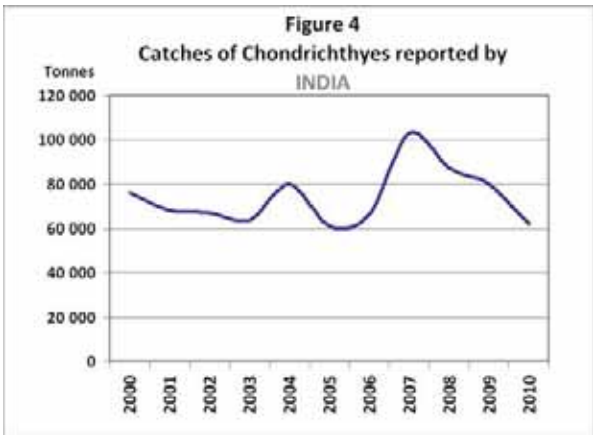
Membership in RFMOs: CCSBT, IOTC and Cooperating Non-member of WCPFC.

Port State Measures Agreement: Signed in 2009 and awaiting ratification.

[27] BOBLME countries are: Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka and Thailand.
[28] White, W.T., Last, P.R., Stevens, J.F., Yearsley, G.K., Fahmi & Dharmadi. 2006. *Economically important sharks and rays of Indonesia*. ACIAR Monograph Series No. 124. Canberra, ACIAR Publishing.
[29] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

2.3.2 India[30]

Shark catches: During thes review period India reported average annual catches of 75 222 tonnes (about 9 percent of the total). These catches usually fluctuated between 60 000 and 80 000 tonnes except in 2007 and 2008 when they were higher (103 246 and 87 254 tonnes, respectively) (Figure 4).



NPOA Sharks: No. An NPOA is currently being developed under the aegis of the Bay of Bengal Programme. India has prepared a road map involving primary stakeholders and the Government. The road map specifies the need to: improve species-specific catch reporting as well as biological and trade data; provide special attention to vulnerable and threatened sharks (vulnerability index); develop consultative procedures involving all stakeholders; minimize incidental/bycatch, wastes and discards; perform a regular stock assessment; prepare an e-atlas; and promote regional cooperation.

Fisheries management: In India, the power to enact laws is divided between the Central Government and the Indian states. The Department of Animal Husbandry, Dairying and Fisheries (Ministry of Agriculture) is responsible for the fisheries in the EEZ. Relevant legislation includes the 1897 Fisheries Act, the 1986 Environment Protection Act, the 1978 Marine Fishing Regulation Act and the 1991 Coastal Regulation Zone Notification. India has developed a comprehensive marine fishing policy on the principle of stakeholder participation (led by an interministerial empowered committee). Measures consist of entry controls and technical measures (including 33 marine protected areas covering about 6 271 km^2). Currently, India is instituting a more effective MCS and enforcement scheme that includes a vessel monitoring system (VMS).

> ***Shark regulations:*** India has not adopted any shark finning regulations but reports that no part of a shark is wasted. Four shark species[31] and six species of sawfishes[32] are protected under Schedule 1 of the Wildlife (Protection) Act of India (1972).
>
> ***Data collection and research:*** Fisheries research is coordinated by the Indian Council of Agricultural Research (under the Ministry of Agriculture), the agricultural universities, and a number of institutes under the Ministry of Agriculture. In addition to the regular and systematic surveys for deepwater fishery resources in the Indian EEZ, a number of exploratory surveys have contributed to the information on shark composition, abundance and behaviour in waters around India.
>
> ***Reporting:*** India only reports sharks under the highly aggregated category "Sharks, rays, skates, etc. NEI". India notes that shark identification in the field is poor and that taxonomists are lacking. Regional FAO fish identification tools (including Chondrichthyes) are available (see bibliography).[33]

Membership in RFMOs: CCAMLR and IOTC.

Port State Measures Agreement: Not signed but intends to join. Indicated that ratification of the agreement is in process. India has developed a national MCS plan.

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[30] The Indian Government responded to the FAO questionnaire (see Appendix 3 for complete response). Information included here is based on its response and draft NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

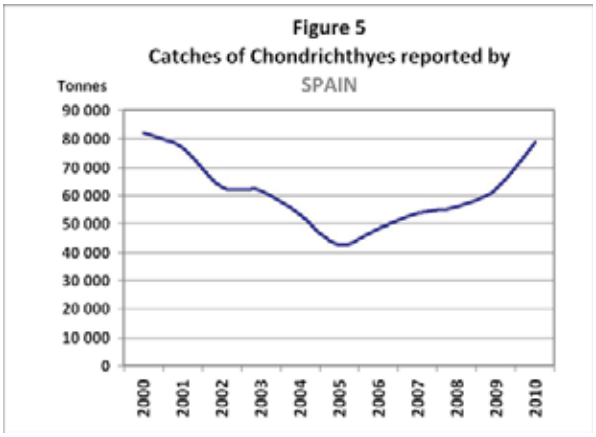
[31] *Carcharhinus leucas, Glyphis gangeticus, G. glyphis, Rhincodon typus.*

[32] *Anoxypristis cuspidatus, Pristis microdon, P. zijsron, Himantura fluviatilis, Urogymnus asperinus, Rhynchobatus dijiddensis.*

[33] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

2.3.3 Spain[34]

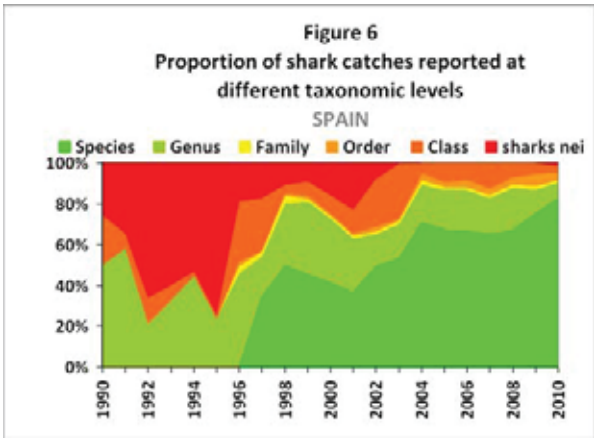
Shark catches: On average, Spain reported 60 042 tonnes of shark catches per year during the last decade and thus accounted for 7.3 percent of the globally reported catches. Reported catches declined considerably during the first half of the decade but have been increasing since 2005 and are now at the same level as in 2001 (Figure 5).



NPOA Sharks: Yes, (see section on European Union [Member Organization]).

Fisheries management: Fisheries in Spain are essentially regulated under Law No. 3/2001.[35] Regulations are implemented under the umbrella of the Common Fisheries Policy (CFP) of the European Union (Member Organization), which includes application of the precautionary principle and is moving towards an EAF. Management is based on TACs complemented by technical conservation measures. Spain has established 17 national and regional marine protected areas and 12 artificial reefs for the protection and regeneration of marine resources.

Shark regulations: A shark finning ban is in place (Orden APA 1126/2002). In addition, a number of shark-specific regulations and prohibitions exist, e.g. Prohibition to catch thresher sharks (Alopiidae) and hammerhead sharks (Sphyrnidae),[36] Regulation on fishing of highly migratory species,[37] Regulation of recreational fisheries,[38] List of Wild Species under Special Protection Rules and of the National Catalogue of Threatened Species.[39, 40]



Data collection and research: Fisheries research in Spain is coordinated by the Instituto Español de Oceanografía and includes investigations on sharks in addition to the programmes of the European Union (see below). Other relevant investigations are carried out under the aegis of the Spanish National Research Council.

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[34] For countries of the European Union (Member Organization), the questionnaire was sent to the EC (see section on European Union [Member Organization] and Appendix 3 for the full response of the EC). Information included here is based on the European Union Plan of Action on Sharks (EUPOA Sharks), the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

[35] Ley de Pesca Marítima del Estado.

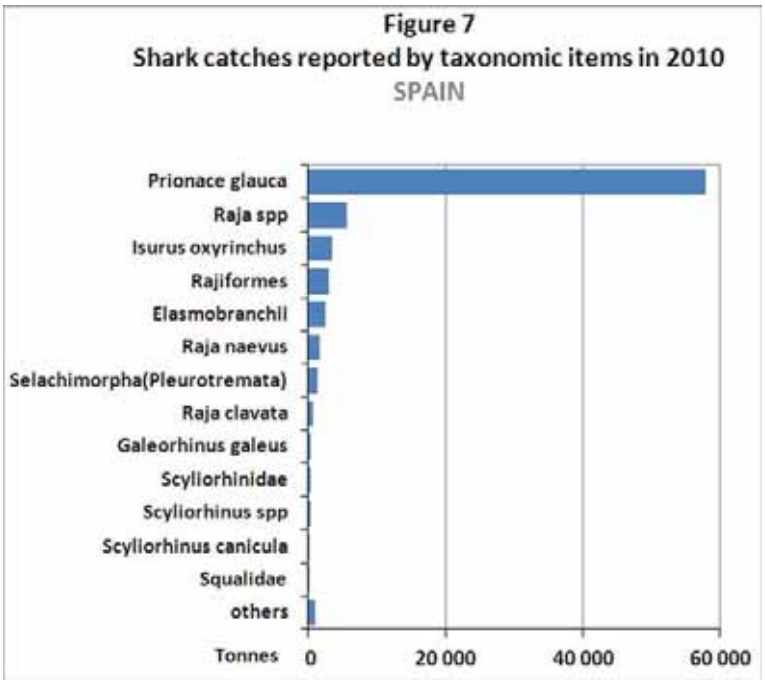
[36] Orden ARM/2689/2009.

[37] Orden ARM/1647/2009; includes fishing ban of *P. glauca*, *I. oxyrinchus* and any other pelagic shark for those vessels not included in the census of surface long liners.

[38] Real Decreto 347/2011; authorized species for recreational capture under this by-law include 12 shark species.

[39] Real Decreto 139/2011; lists Sphyrnidae and Alopiidae, *Carcharodon carcharias* (Mediterranean), *Cetorhinus maximus* (Mediterranean and Atlantic), *Mobula mobular* (Mediterranean).

[40] Orden AAA/75/2012 (Amendment to Real Decreto 139/2011); protects in the Mediterranean Sea: *Carcharias taurus*, *Odontaspis ferox*, *Dipturus batis*, *Rostroraja alba*, *Gymnura altavela*, *Pristis pectinata*, *P. pristis*, *Oxynotus centrina*, *Squatina aculeata*, *S. oculata*, *S. squatina*.



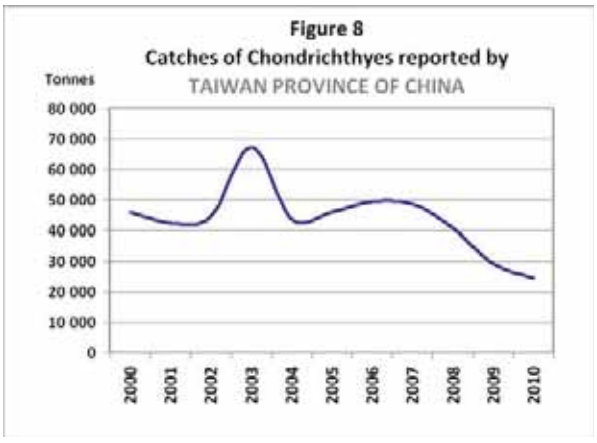
Reporting: In 1996, Spain started to report its shark catches on a species or genus level. In 2010, 83 percent of the catches were reported at species level and only 9 percent on a family, order or class level (Figure 6). The elasmobranch catches of Spain are dominated by blue shark (73 percent) (Figure 7). FAO identification products for Mediterranean fishes (including elasmobranchs) are available and an FAO Identification Guide for North Atlantic Elasmobranchs is under preparation (see bibliography).[41]

Membership in RFMOs: See section on European Union (Member Organization).

Port State Measures Agreement: European Union (Member Organization) signed in 2009 and is awaiting ratification.

2.3.4 Taiwan Province of China[42]

Shark catches: Taiwan Province of China reported almost 46 000 tonnes of shark catches per year from 2000 to 2009, amounting to 5.6 percent of the total reported catches during this period. In 2003, reported catches were well above average with 67 432 tonnes. Since 2008, reported catches have been decreasing with only 24 352 tonnes in 2010 (Figure 8). The plan of action states that 85 percent of shark landings in Taiwan Province of China are by distant water fleets.



Plan of action on sharks: Yes (2006). Although not a member of the UN, Taiwan Province of China recognizes key instruments for shark fisheries, i.e. UNCLOS, CBD, Agenda 21 and the Code.

[41] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en
[42] Taiwan Province of China did not respond to the FAO questionnaire. Information included here is based on its plan of action on sharks and other sources as referenced.

The plan of action on sharks lays down basic principles and objectives and provides brief descriptions of the shark fauna, and fisheries as well as the current status of relevant data collections, utilization, research, stock assessment, and education, and international cooperation and management measures (including the need to introduce a precautionary approach). It concludes with the following four commitments:

- to monitoring shark fisheries via VMS;
- to introducing finning measures, i.e. a fin-to-body weight ratio requirement onboard vessels;
- to reducing fishing effort or introducing TAC-based management for declining species;
- to promoting the full utilization of sharks.

Fisheries management: The Council of Agriculture is the competent authority on agricultural, forestry, fishery, animal husbandry and food affairs in Taiwan Province of China. Fisheries are regulated under the Domestic Fisheries Act and Wildlife Conservation Act (1929, last amendment 2008[43]). The Act deals with entry controls, technical measures, MCS and enforcement schemes and recreational fisheries.

Shark measures: A shark finning measure in the EEZ and territorial waters has gradually been implemented since 2012.[44] In addition, the plan of action states that all parts of sharks landed in Taiwan Province of China are fully utilized. Shark-specific measures of Taiwan Province of China are discussed by the Shark Management Working Group (established in 2001) composed of scientists, administrators and fishers. In 2001, special measures were introduced for whale shark (*Rhincodon typus*) including reporting requirements, TACs, trade measures (CITES) and ecotourism development. A series of workshops for fishers was carried out to promote shark conservation and management as well as the complete utilization of all shark parts. The plan of action notes that the multispecies nature of trawl fisheries is problematic for the setting-up of species-specific management measures.

Data collection and research: The plan of action states that data are collected by vessels, during port inspections, by observers and through scientific surveys. Stock assessments exist for a few pelagic species.[45] A bioenergetic approach is being applied to bamboo sharks (*Chiloscyllium* spp.), and other demersal species are evaluated by their frequency of occurrence and catch following the IUCN criteria. Simpfendorfer *et al*.[46] report that Taiwan Province of China has strengthened shark research since 1995 and that in 2001 an observer programme was initiated to record the shark bycatch of far seas vessels. The plan of action mentions that because sharks are often caught as bycatch it is difficult to obtain accurate estimates of sharks caught by far seas fisheries.

Reporting: Sharks are reported to FAO essentially at the highest level of aggregation (Elasmobranchii) although the plan of action states that since 2003 commercial fishing vessels in Taiwan Province of China are required to report blue shark (*Prionace glauca*), mako shark (*Isurus* spp.) and silky shark (*Carcharhinus falciformis*) separately. A separate reporting requirement also exists for whale shark (see above).

Membership in RFMOs: CCSBT.

Port State Measures Agreement: Not signed.

[43] See Web page: http://db.lawbank.com.tw/Eng/FLAW/FLAWDAT01.asp?lsid=FL014578

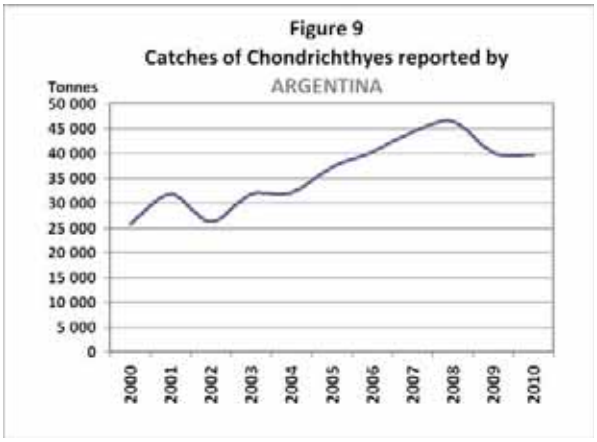
[44] Executive Yuan under Order No. Nung-sou-yu 1011330088, promulgated on 19 January 2012 by Council of Agriculture.

[45] Specifically, these are bigeye thresher (*Alopias superciliosus*), pelagic thresher (*A. pelagicus*) and scalloped hammerhead (*Sphyrna lewini*).

[46] Simpfendorfer, C.A., Cavanagh, R.D., Tanaka, S. & Ishihara, H. 2005. Chapter 7.7 Northwest Pacific. *In* S.L. Fowler, R.D. Cavanagh, M. Camhi, G.H. Burgess, G.M. Cailliet, S.V. Fordham, C.A. Simpfendorfer & J.A. Musick, comps .& eds. 2005. *Sharks, rays and chimaeras: the status of the Chondrichthyan fishes*. Status Survey. IUCN/SSC Shark Specialist Group. Gland, Switzerland and Cambridge, UK, IUCN.

2.3.5 Argentina[47]

Shark catches: Argentina reported an average of 35 602 tonnes of shark catches per year representing 4.3 percent of the shark catches reported globally. During the last decade, the Argentinean shark catches increased by more than 50 percent from 25 750 tonnes in 2000 to 40 199 tonnes in 2009 (Figure 9).

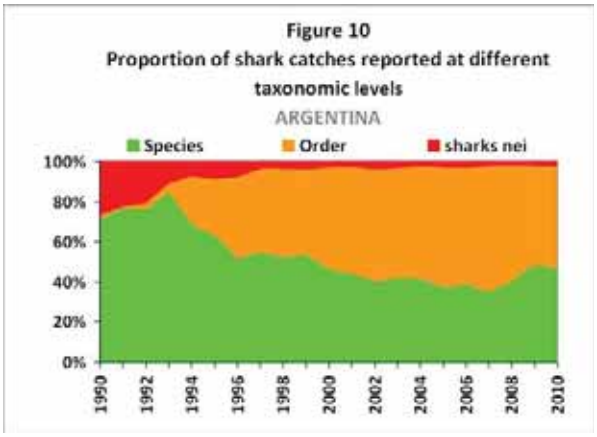


NPOA Sharks: Yes (2009). The NPOA includes a detailed description of shark fisheries and management in Argentina, the biological characterization of relevant species and a number of priority objectives. It foresees an annual intersector review process for the NPOA .

The NPOA lists 11 priority species and a number of species-specific management measures. Specific objectives include:

- assigning priority to Chondrichthyes in scientific research plans;
- deepening the knowledge on Chondrichthyes fisheries under the ecosystem approach;
- contributing to the protection/conservation of biodiversity and ecosystem structure/function;
- promoting the implementation of relevant management measures to ensure the conservation, recovery and/or sustainable use of shark fisheries;
- raising awareness about the importance of Chondrichthyes for the ecosystem.

Fisheries management: The main agency responsible for fisheries management in Argentina is the National Directorate for Fisheries and Aquaculture.[48] Relevant measures are based on the General Law No. 24.922 on Fisheries (1998) and General Law No. 25.675 on the Environment (2002) and include entry controls, technical measures, TACs and quotas as well as MCS and enforcement measures.

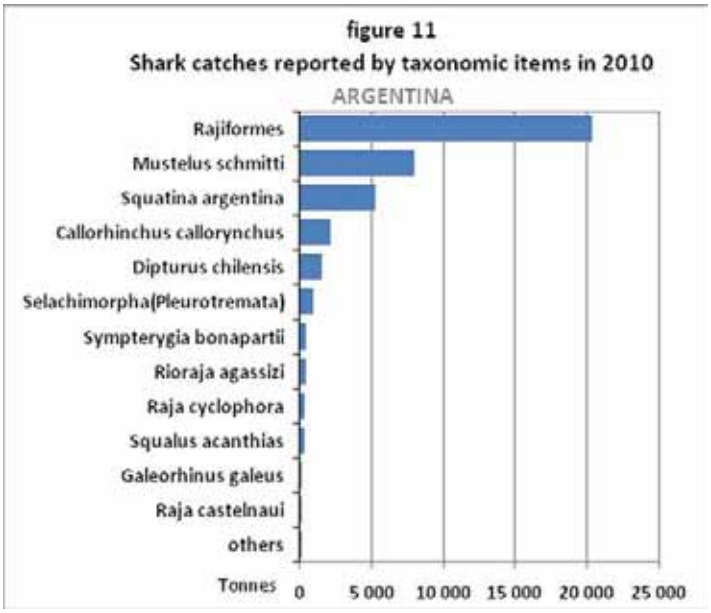


> ***Shark measures:*** Argentina has a shark finning ban in place[49] and encourages the full use of shark bodies. Other shark measures[50] include TACs,[51] moratoria,[52] seasonal area closures; sport fishing regulations for Chondrichthyes, size restrictions as well as reporting requirements.

[47] Argentina responded to the FAO questionnaire (see Appendix 3 for complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.
[48] Dirección Nacional de Pesca y Acuicultura.
[49] Resolución 13/2009 (Source: Boletín Oficial Nº 31.694, 15 de julio de 2009).
[50] Information taken from the Web page of the Programa Conservación de Tiburones de Argentina: http://conservaciondetiburones.blogspot.it/p/links.html
[51] For rays and narrownose smooth-hound (*Mustelus schmitti*).
[52] For sand tiger shark (*Carcharias taurus*), copper shark (*Carcharhinus brachyurus*), broadnose sevengill shark (*Notorynchus cepedianus*), and picked dogfish (*Squalus acanthias*).

Data collection and research: Argentina has promoted research on Chondrichthyes and the collection of information on species of concern; it also has assessed threats and risks for shark populations. The country notes that the quantification of spiny dogfish discards is difficult.

Reporting: Argentina reports to FAO most Selachimorpha (sharks proper) at species level but most Rajiformes (skates and rays) at more aggregated levels (Figures 10 and 11). Argentina mentions that the identification of bycatch species is problematic.

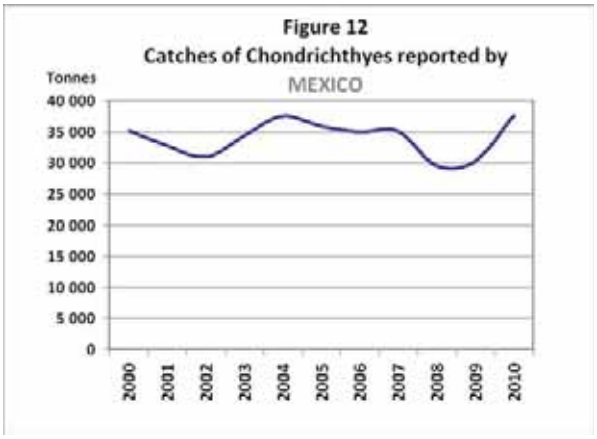


Membership in RFMOs: CCAMLR and Comisión Técnica Mixta del Frente Marítimo (CTMFM).

Port State Measures Agreement: No. Argentina adopted an NPOA IUU.

2.3.6 Mexico[53]

Shark catches: From 2000 to 2009 Mexico reported on average 33 653 tonnes of shark catches per year; reported catches did not vary greatly during this time and show no pronounced upward or downward trend (Figure 12).



NPOA Sharks: Yes (2004). The NPOA is intended as a transparent and flexible instrument with participation of all stakeholders. It includes definitions and objectives, a detailed description of current shark fisheries in Mexico and establishment of a multisector commission for an annual review of the implementation of the NPOA Sharks.

The NPOA lays out a number of programmes focusing on:

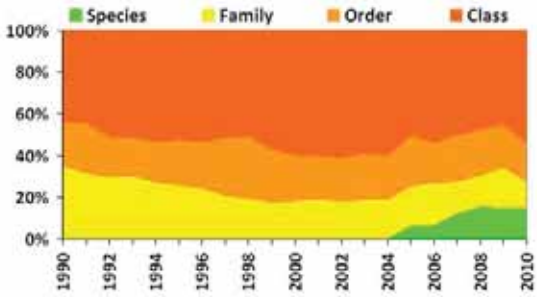
- research;
- establishment of information systems;
- education and training;
- interinstitutional collaboration;
- inspection and surveillance programme.

[53] Mexico responded to the FAO questionnaire (see Appendix 3 for complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

Fisheries management: The agency responsible for fisheries management, monitoring and enforcement is the National Commission of Aquaculture and Fisheries (Comisión Nacional de Acuacultura y Pesca). Fisheries are regulated by Article 27 of the Political Constitution of the United Mexican States, by the 2007 General Fishing Law for Sustainable Fisheries and Aquaculture by the Regulations rooted in its predecessor (1992). The 2007 Law uses an integrated sector development approach; it establishes entry controls, technical measures, TACs and quotas, and MCS and enforcement (recently strengthened, implemented through the National Commission of Aquaculture and Fisheries), etc.

Shark measures: Mexico regulates shark finning and prohibits the exclusive use of shark fins and landing of fins without the bodies on board.[54] Three shark species[55] are listed as threatened by the Rule on Environmental Protection.[56] In addition, the Rule on Responsible Fisheries of Sharks and Rays from 2006[57] prohibits retention of 12 species,[58] and defines protected areas and seasons, gear restrictions and reporting requirements. This rule was amended in 2011 with spatial closures for shark fisheries along the Pacific coast and the Gulf of Mexico. Mexico noted that inspection and surveillance need to be improved[59] and that fishing permits for vessels of small and medium capacity are in need of updating; The verification of data/information on discards requires improvement.

Figure 13
Proportion of shark catches reported at different taxonomic levels
MEXICO



Data collection and research: Investigations are under way to determine and protect critical habitats with emphasis on shark populations. A statistical database on sharks and a national scientific observer programme are being developed. In addition, shark tagging studies have been conducted.

Reporting: In the last decade, Mexico has started to report a few sharks at species level to FAO. However, in 2010 about 80 percent of the catches were reported at aggregated taxonomic categories (order and above), about 10 percent at family level and only about 10 percent at species level (Figures 13 and 14).

Mexico informed FAO about recent efforts to improve shark identification including the production of species identification guides for coastal sharks of the Pacific and the Gulf of Mexico and training workshops for the industry. In addition, reporting requirements for sharks have been strengthened and electronic logbooks have been developed that foresee the recording by species and of the main shark species found in different coastal regions of Mexico. An FAO regional guide for species identification (including sharks) exists for the Western Central Atlantic and the Eastern Central Pacific (see bibliography).[60]

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[54] Norma Oficial Mexicana NOM-029-PESC-2006, Pesca responsable de tiburones y rayas. Especificaciones para su aprovechamiento.

[55] Basking shark (*Cetorhinus maximus*), great white shark (*Carcharodon carcharias*) and whale shark (*Rhincodon typus*).

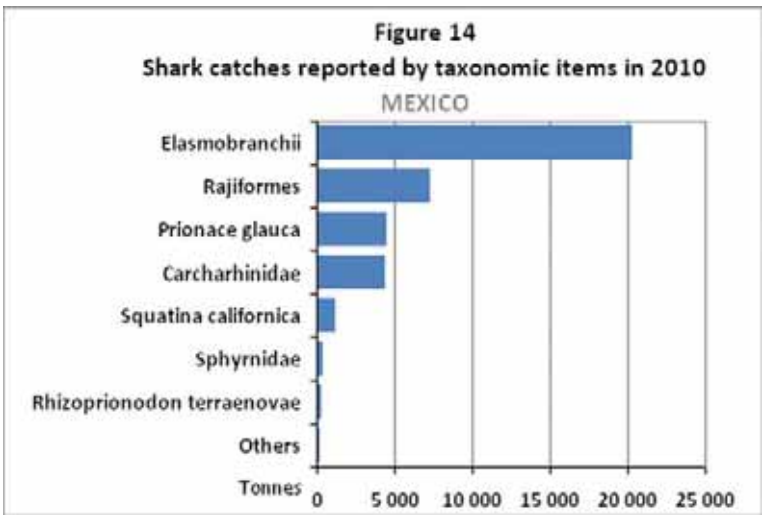
[56] Norma Oficial Mexicana PROY-NOM-059-ECOL-2000, Protección ambiental-Especies de flora y fauna silvestres de México-Categorías de riesgo y especificaciones para su inclusión, exclusión o cambio-Lista de especies en riesgo.

[57] Norma Oficial Mexicana NOM-029-PESC-2006, Pesca responsable de tiburones y rayas. Especificaciones para su aprovechamiento.

[58] *Rhincodon typus*, *Cetorhinus maximus*, *Carcharodon carcharias*, *Pristis perotteti*, *P. pectinata* and *P. microdon*, and *Manta birostris*, *Mobula japanica*, *M. thurstoni*, *M. munkiana*, *M. hypostomata* and *Mobula tarapacana.*

[59] Taking into account the Mexican Rule NOM-029-PESC-2006 on Responsible Fisheries of Sharks and Rays.

[60] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

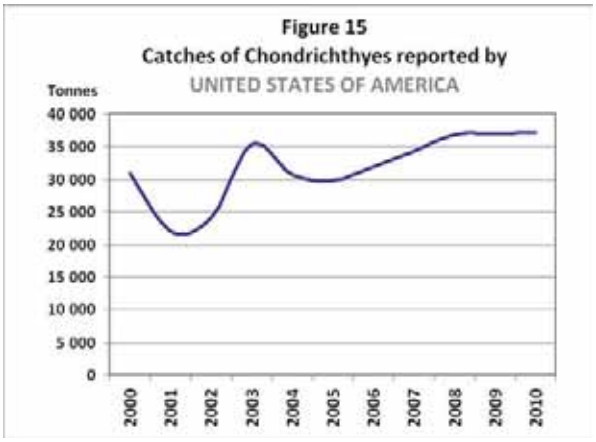


Membership in RFMOs: ICCAT, IATTC, Cooperating Non-contracting Party of WCPFC. Others: Latin American Organization for Fisheries Development (OLDEPESCA).

Port State Measures Agreement: No. Mexico has adopted an NPOA IUU.

2.3.7 The United States of America[61]

Shark catches: From 2000 to 2009, the United States of America reported on average 31 325 tonnes of shark catches per year. During the period, an uptrend in the reported catches can be observed (Figure 15).



NPOA Sharks: Yes (2001). The NPOA includes a general introduction to outline the objectives, overview of the United States fisheries management and international shark-related initiatives. It also includes a description of existing national shark fisheries and management.

The implementation framework of the United States NPOA underlines the need for adoption of the precautionary approach of elasmobranch management, the protection of vulnerable life history stages and vulnerable species, minimization of waste and prioritization of limited resources. It also contains a tabular comparison between the IPOA and the NPOA Sharks. The NPOA calls for actions under the following topics:

- data collection;
- assessment;
- need for management measures;
- research and development of mitigation measures and methods;
- limitation of fishing capacity;
- outreach and education;
- reporting and monitoring.

Fisheries management: The National Marine Fisheries Service is the implementing fisheries agency. The 1996 Magnuson-Stevens Fishery Conservation and Management Act (amended 2006) provides for

[61] The United States of America responded to the FAO questionnaire (see Appendix 3 for complete responses). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

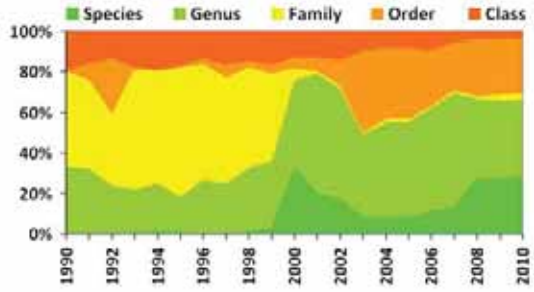
the use of rights-based fisheries management systems called catch shares, and is considered a successful management tool for addressing overfishing and resolving overcapacity. The United States of America involves stakeholders in all aspects of fisheries management. Management measures are comprehensive and include entry controls, technical measures, TACs and quotas, marine protected areas, MCS and enforcement.

Shark measures: Shark finning is regulated (banned) by the Shark Finning Prohibition Act. Apart from this act, the Magnuson-Stevens Fishery Conservation and Management Act provides the framework for sharks management, supplemented by the Shark Conservation Act, the High Seas Driftnet Fishing Moratorium Act, the Endangered Species Act, and the National Marine Fisheries Service By-catch Plan. Each year, the National Marine Fisheries Service adjusts Atlantic shark fishery quotas based on over- and under-harvests from the previous season.[62] The United States of America has undertaken efforts for education and outreach with regard to shark conservation issues. With regard to the implementation of shark measures, the country reported that it experiences some issues with regard to the enforcement of the relevant acts and their implementing regulations, detection of violations of these acts and prosecution there under. Most violations include finning, unauthorized feeding of sharks, and exceeding recreational catch limits.

Data collection and research: Most of the work on marine fisheries of the United States of America is conducted by or for the National Marine Fisheries Service. Since 1871, federal fisheries scientists have collected, researched, analysed and published peer-reviewed data on the nation's living marine resources, marine ecosystems, and the benefits that they provide. Additional investigations on sharks biology, socio-economic aspects and other topics are also conducted by universities and other federal and state agencies. Data on shark stock status, survivorship, mobility, migration, habitat utilization, ecology, and age and growth characteristics are generated by different programmes of biological research, stock assessments and sampling undertaken by government agencies.[63]

Reporting: In the last decade, the United States of America reported about two-thirds of its catches by genus and about one-quarter (less between 2002 and 2007) by species (Figures 16 and 17). The United States of America reported that it developed shark identification tools including taxonomic training materials for resource users. FAO species identification guides including Chondrichthyes are available for the Western Central Atlantic and Eastern Central Pacific; an identification guide for North Atlantic Chondrichthyes is under preparation (see bibliography).[64]

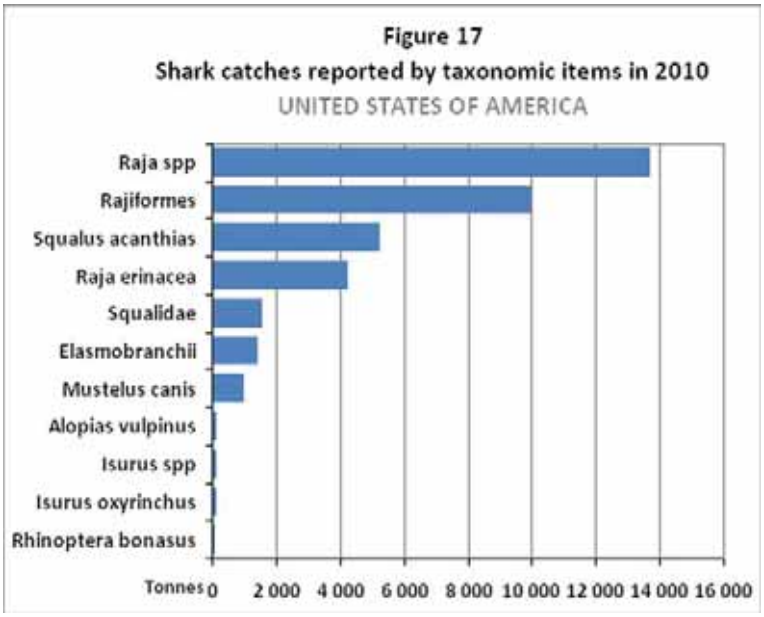
Figure 16
Proportion of shark catches reported at different taxonomic levels
UNITED STATES OF AMERICA



[62] In 2009, the proposed rule considered a range of measures such as commercial quotas, commercial gear restrictions, pelagic shark effort controls, and recreational measures in order to rebuild blacknose shark populations and to stop overfishing of blacknose and shortfin mako sharks. The proposed rule also considered adding smooth dogfish to the Atlantic HMS management unit and a range of measures for this species. A final rule was published on 5 January 2010 (75 FR 250), which established the 2010 fishing season for commercial quotas for sandbar sharks, non-sandbar large coastal sharks, small coastal sharks, and pelagic sharks based on over- or under-harvests from the 2009 fishing year.

[63] A detailed description of the research efforts of the National Marine Fisheries Service regarding sharks can be found in Section 5 of the 2010 Shark Finning Report to Congress.

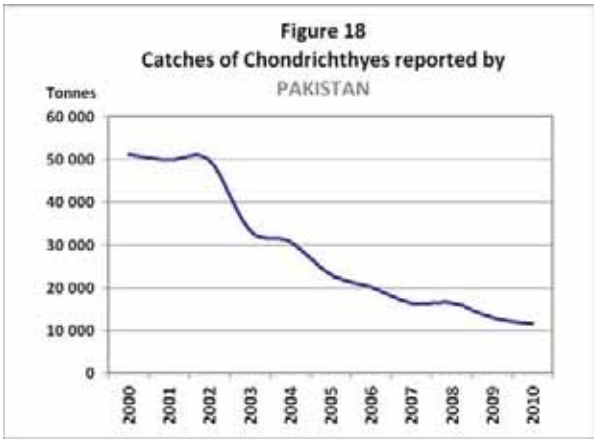
[64] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en



Membership in RFMOs: CCAMLR, IATTC, ICCAT, NAFO, WCPFC.

Port State Measures Agreement: Signed, not yet ratified. The United States of America has adopted an NPOA IUU.

2.3.8 Pakistan[65]



Shark catches: In the last decade, shark catches reported by Pakistan to FAO have declined from about 50 000 tonnes to about 10 000 tonnes. The average annual catches amounted to 30 351 tonnes (Figure 18).

NPOA Sharks: Not known. The 2006 national fisheries plan[66] foresees compliance with international agreements including IPOA Sharks by 2008.

Fisheries management: Management of marine fisheries beyond 12 nautical miles (nm) is a federal responsibility under the Ministry of Food, Agriculture and Livestock. The implementing agency is the Marine Fisheries Department. The 1975 Exclusive Fishing Zone Act (amended 1993) regulates the management of fisheries in the Pakistan EEZ. Together with secondary regulations, the management regime includes entry controls, technical measures, and identification of target species. The provincial administrations have jurisdiction over territorial waters (12 nm) and implement technical management measures. Access regulations only apply to industrial fisheries. Major issues and problems mentioned in the 2006 national fishery plan are: weak interagency coordination, legislation shortcomings, lack of trained personnel and suitable facilities in management organizations and research institutions, inadequacies in research and data sampling, overexploitation of resources, use of harmful fishing methods, increase in pollution and environmental degradation, and lack of infrastructure.

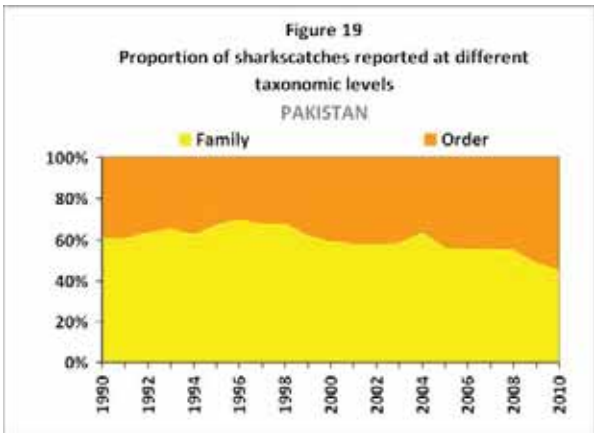
[65] Pakistan did not respond to the FAO questionnaire. Information included here is based on the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

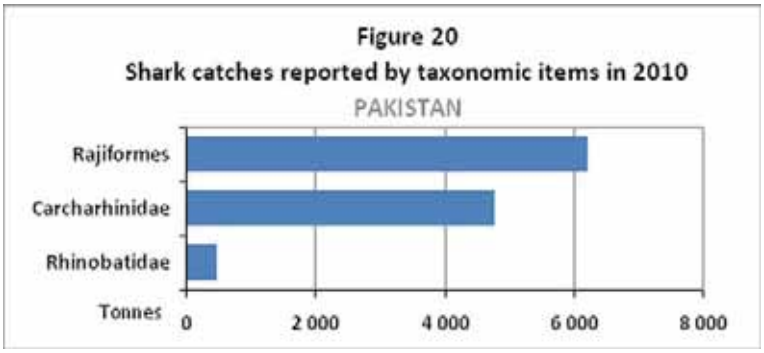
[66] Pakistan Ministry of Food, Agriculture and Livestock. 2006. *Policy framework and strategy for the development of fisheries and aquaculture in Pakistan*.

Shark measures: No measures pertaining to finning. The accessible fishery legislation of Pakistan does not contain any references to sharks.

Data collection and research: Information about available fishery resources was collected using the survey vessel *Dr. Fridtjof Nansen* (2010). The national fisheries plan mentions inadequacies in fishery research and data sampling as a general problem in Pakistan.

Reporting: Pakistan reports about half of its catches of Chondrichthyes to FAO at a high level of aggregation (order Rajiformes) and the other half at family level (mostly Carcharhinidae) (Figures 19 and 20). FAO species identification guides[67] (including sharks, skates and rays) are available on a national and regional level (Western Indian Ocean); an FAO species identification guide to Indian Ocean elasmobranchs is being developed (see bibliography).[68]





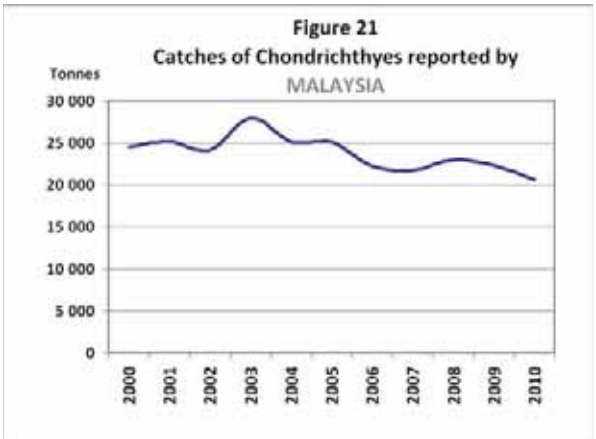
Membership in RFMOs: IOTC. Also a member of the Asia-Pacific Fishery Commission (APFIC).

Port State Measures Agreement: No.

[67] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en
[68] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

2.3.9 Malaysia[69]

Shark catches: From 2000 to 2009, Malaysia reported to FAO annual average catches of 24 133 tonnes. Since 2006 catches have always been below 23 000 tonnes (20 563 tonnes in 2010) (Figure 21).



NPOA Sharks: Yes (2006). The Malaysian NPOA Sharks contains descriptions of national shark fisheries, shark management, data collections, research and trade, and the biological status of relevant sharks and rays. It formulates objectives, explains issues and challenges, and lays out an implementation framework and schedule (up to 2010).

The Malaysia NPOA includes five key actions:

- strengthening of data collection on biology and related habitats;
- strengthening of data collection on socio-economic (aspects) of fishers and traders;
- strengthening of data collection on trades and encouraging the (full) utilization of elasmobranch catches;
- capacity building and coordinated research;
- effective conservation and management.

Fisheries management: Two agencies are responsible for fishery matters in Malaysia: the Department of Fisheries Malaysia and the Fisheries Development Authority of Malaysia. The Fisheries Act 1985 and the regulations adopted under the act provide the legal framework for the management of fishery resources and aquaculture. Marine waters are divided into four fishing zones[70] and access regulations apply. Management of Malaysia's offshore fisheries in the EEZ includes regulation of fishing effort, TACs and individual quotas, MCS and enforcement measures. A series of marine protected areas has been established in the coastal waters.

Shark measures: No shark fin measures are in place but Malaysia reports that all retained sharks are fully utilized. Other relevant regulations are the zoning of fishing areas and a trawling ban in the near-coast Zone A,[71] proposal of prohibition of the landing of two shark and five ray species in recreational fisheries, and prohibition for commercial fisheries to catch whale shark (*Rhincodon typus*) and seven species of sawfishes (Pristidae) listed by CITES. Malaysia reports that it is making an effort to enhance public education and awareness of endangered living marine resources including sharks and rays; this is done in collaboration with the private sector. A problem consists in the lack of control and enforcement officers and of indicators for sustainable exploitation.

Shark data collection and research: Malaysia reports that it monitors its fish stocks but that information on sharks, their habitats and stock structure is limited. Among the issues reported are the lack of bioecological, socio-economic and trade information on sharks as well as poor coordination of shark research.

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[69] Malaysia responded to the FAO questionnaire (see Appendix 3 for complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

[70] Zone A (from the shoreline to 5 nm, reserved for artisanal fisheries); Zone B (5–12 nm, reserved for commercial vessels below 40 GRT); Zone C1 (12–30 nm, reserved for vessels below 70 GRT); Zone C2 (beyond 30 nm, reserved for vessels of 70 GRT and above).

[71] The near-coast zone is a breeding and nursery ground for many sharks and rays.

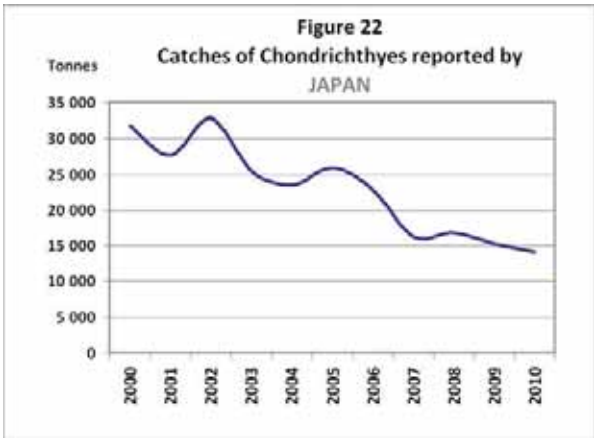
Reporting: Malaysia reports its shark catches on highly aggregated levels. In its response to FAO, the country states that it is conducting annual shark identification training courses for data collection officers in order to record landings by species in the future. FAO species identification guides that include elasmobranchs are available for the Western Central Pacific (see bibliography).[72]

Membership in RFMOs: IOTC. Also a member of Southeast Asian Fisheries Development Center (SEAFDEC) and INFOFISH in the Asia-Pacific (host of Secretariat).

Ratification of Port State Measures Agreement: No. An NPOA IUU is awaiting final adoption.

2.3.10 Japan[73]

Shark catches: On average, Japan reported 23 855 tonnes of annual shark catches to FAO from 2000 to 2009. During this time, the catches declined by about 50 percent, from 31 873 tonnes in 2000 to 15 292 tonnes in 2009 (14 159 tonnes in 2010) (Figure 22).



NPOA Sharks: Yes (2001, revised in 2009). The NPOA outlines basic principles and objectives. With regard to the state of relevant fisheries and species it refers to the biennial "Implementation Report on NPOA Sharks".

The revised version of the NPOA Sharks includes improvements on the collection of data and research as well as management measures. In particular, it includes actions under:

- management measures (e.g. adherence to regional shark conservation measures and regular assessment by scientists, administrators and fishers of shark resources);
- promotion of wise and effective utilization of sharks (shark research including socio-economic aspects and promotion of best uses of shark resources);
- outreach activities to promote sustainable utilization, conservation and management of shark resources by the fishing industry and the public;
- international cooperation to eliminate IUU fishing.

Fisheries management: The Ministry of Agriculture, Forestry and Fisheries is the responsible agency. The Fisheries Law (1949, revised in 1962) regulates fisheries and aquaculture activities in Japan. In 2001, Japan established the new Basic Law on Fisheries seeking to secure sustainable utilization of fishery resources, stable supply of fish and fishery products for the nation and sound development of the Japanese fishing industries as well as improvement and revitalization of fishing communities. Coastal fisheries are comanaged by the industry.[74] Offshore and distant-water fisheries are regulated through a fisheries licensing system. The 1997 Preservation and Management of Living Marine Resources Law introduced the TAC system.[75]

Shark measures: In compliance with measures by RFMOs (tuna), shark finning regulations apply for all Japanese tuna fisheries (including coastal and near shore operations). Japan reports that all parts of sharks are utilized. Fisheries targeting sharks or causing substantive shark bycatch are

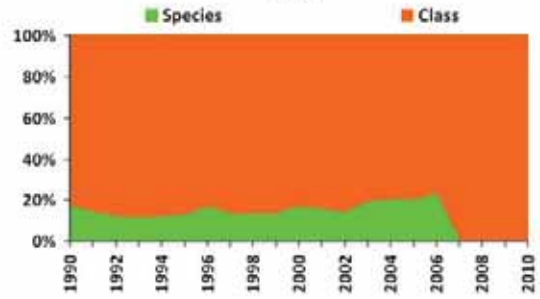
[72] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en
[73] Japan responded to the FAO questionnaire (see Appendix 3 for complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.
[74] Based on a fisheries right system as provided by the Fisheries Resources Conservation Law (1951).
[75] From FAO country brief for Japan.

strictly controlled by a licensing system. No fisheries are targeting sharks listed by CITES.[76] Japan requires the reporting of incidentally caught fish including discards.

Data collection and research: Monitoring of shark fisheries (including bycatch information) is performed by the Fisheries Agency with support from the Fisheries Research Agency. Data sources are trade records, logbooks, fishery observers and research surveys. Japan has contributed with shark data to the ICCAT Scientific Committee. An expert group meets regularly to assess the state of shark resources. According to Moronuki (FAO, 2009), efficient shark research and monitoring of shark fisheries could be improved, especially in view of the lack of a long-term time series of data on catch and bycatch of sharks.

Reporting: Since 2007, Japan has reported its shark catches to FAO only on the class level as Elasmobranchii (which includes sharks, rays and chimaeras) (Figure 23). Before 2007, Japan reported catches of whip stingray (*Dasyatis akajei*) separately. Japan informed that longline tuna vessels are required to report species and/or genus specific catch data on five major shark species for tuna RFMOs. Offshore trawlers in specific areas are required to separately report catches of spiny dogfish (*Squalus acanthias*).

Figure 23
Proportion of shark catches reported at different taxonomic levels
JAPAN



Membership in RFMOs: CCAMLR, CCSBT, GFCM, IATTC, ICCAT, IOTC, NAFO, WCPFC, and Cooperating Non-member of NEAFC.

Port State Measures Agreement: Not signed. Japan has adopted an NPOA IUU.

2.3.11 France[77]

Shark catches: France reported an average of 21 270 tonnes of shark catches from 2000 to 2009. Landings slightly declined from 24 952 tonnes in 2000 to 18 682 tonnes in 2010 (Figure 24).

NPOA: Yes (see section on European Union [Member Organization]).

Fisheries management: The main authority in charge of fisheries and aquaculture is the Agriculture and Food Industry Ministry.[78] Since 1983, French marine fisheries policies have been guided by the CFP, which covers all aspects of the sector including access to fishing areas, technical measures, TACs and quotas, monitoring of resources and fishing activities, control and enforcement, and marketing and international relations.

Figure 24
Catches of Chondrichthyes reported by FRANCE

[76] Sawfish (*Anoxypristis cuspidate*, *Pristis* spp.), basking shark (*Cetorhinus maximus*), whale shark (*Rhincodon typus*) and great white shark (*Carcharodon carcharias*).
[77] For countries of the European Union (Member Organization), the questionnaire was sent to the EC (see section on the European Union [Member Organization] and Appendix 3 for the full response of the EC). Additional information is based on the FAO Fishery Country Brief and Fishery and Aquaculture Country Profile.
[78] Ministère de l'Agriculture et de l'Agroalimentaire.

Shark measures: Shark finning is regulated by EU Regulation (EC) 1 185/2003. For other shark measures see EC regulations (see section on European Union [Member Organization]).

Data collection and research: Government-led fisheries and oceanographic research in France is conducted by the French Research Institute for the Exploitation of the Sea. The French Research Institute for the Exploitation of the Sea has many institutes and stations located along the French coast, including in the overseas departments and territories and contributes to the work of the European Union (Member Organization) (e.g. programmes of the DG Research and the DG Fisheries and at the Marine Board of the European Science Foundation, which includes investigations on sharks.

Reporting: France reports about 70 percent of the landings at species level and 28 percent at genus level (Figures 25 and 26). FAO species identification guides for fishes (including elasmobranchs) for the Mediterranean Sea are available and a FAO species identification guide for North Atlantic Elasmobranchs is under preparation (see bibliography).[79]

Membership in RFMOs: See section European Union (Member Organization) below.

Port State Measures Agreement: European Union (Member Organization) signed in 2009 and is awaiting ratification.

Figure 25
Proportion of shark catches reported at different taxonomic levels

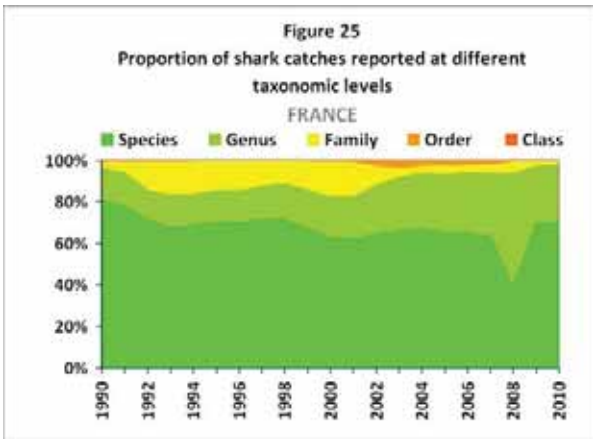
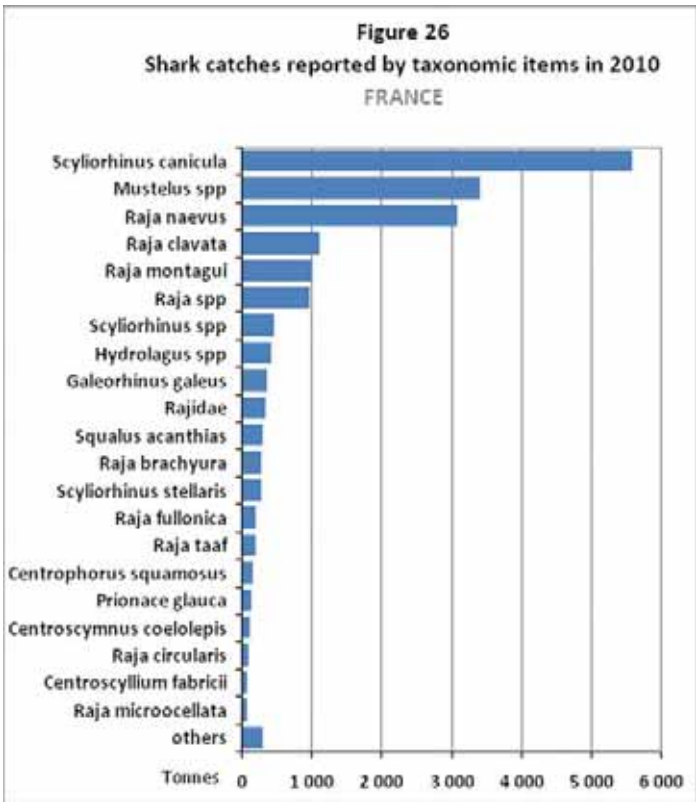


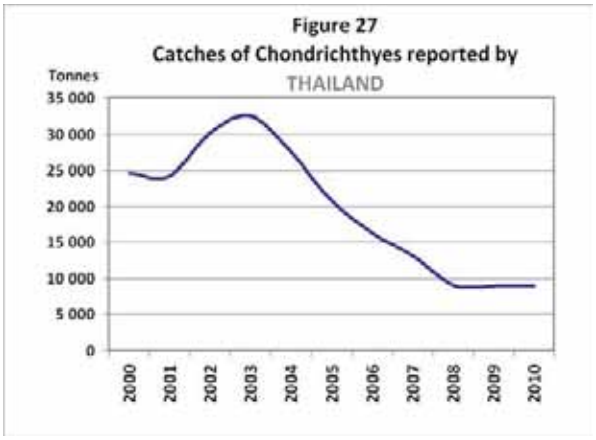
Figure 26
Shark catches reported by taxonomic items in 2010



[79] See also FAO FishFinder at www.fao.org/fishery/fishfinder/publications/en

2.3.12 Thailand[80]

Shark catches: From 2000 to 2009, Thailand reported an average of 20 749 tonnes of shark catches per year to FAO. The reported catches declined considerably from 32 540 tonnes in 2003 to 8 969 tonnes in 2009 (9 025 tonnes in 2010) (Figure 27).



NPOA Sharks: No. However, a draft was developed in 2005. Thailand participates in the BOBLME project, which encourages and coordinates the NPOAs of its members. The NPOA plans on formulating standards for a systematic and continuous data collection and analysis of shark biology, fishery and utilization. It also foresees national and international information exchange, educational activities and consultation with stakeholders. Priority will be given to species at risk.

Fisheries management: Fisheries are managed under the Thai Fisheries Act (1947, revised in 1953 and 1985), which includes technical measures (e.g. area and seasonal closures, gear restrictions) and entry controls. Other relevant pieces of legislation are the Act Governing the Right to Fish in Thai Waters (1939), the Thai Vessel Act (1938), the Wildlife Reservation and Protection Act (1992) and the Enhancement and Conservation of National Environmental Quality Act (1992).

> ***Shark measures:*** No shark finning ban or other fin regulations are in place. The draft NPOA states that in Thailand sharks are mainly caught as bycatch. The whale shark (*Rhincodon typus*, listed by CITES) is protected from fisheries within Thai waters[81]. The BOBLME Sharks Working Group (2010) reports on a lack of data and trained staff, the absence of systematic monitoring and control of shark resources, a lack of cooperation between stakeholders and government officials, and the absence of a baseline assessment on the status of shark populations.
>
> ***Data collection and research:*** Fisheries research is mainly carried out by the Department of Fisheries of the Ministry of Agriculture and Cooperatives. Ecological research is conducted under the Department of Marine and Coastal Resources of the Ministry of Natural Resources and Environment. The research activities are complemented by the programmes and projects of several universities. However, as stated in the draft NPOA, shark-related biological, fishery statistical and trade data are lacking and currently no shark assessments are carried out. The BOBLME (2011) reports on a shark project in 2004 (supported by SEAFDEC) that collected biological and fisheries information.
>
> ***Reporting***: Thailand reports sharks in highly aggregated categories only. FAO Regional Species Identification Guides (including elasmobranchs) are available for the Western Central Pacific and an FAO Guide for deep-sea sharks of the Indian Ocean is under preparation (see bibliography).[82]

Membership in RFMOs: IOTC, Cooperating Non–member of WCPFC. Thailand is also a member of INFOFISH and APFIC.

Port State Measures Agreement: No. Thailand has adopted an NPOA IUU.

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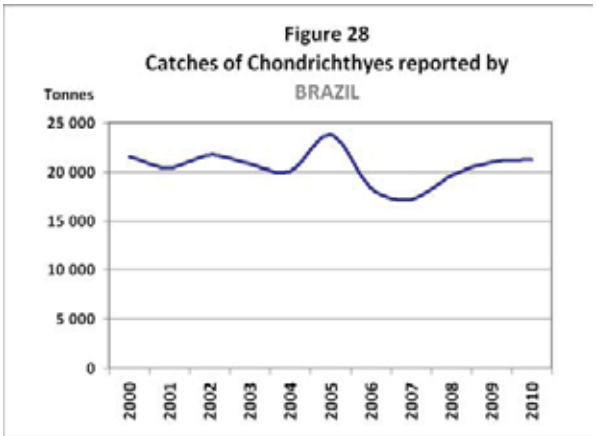
[80] Thailand did not respond to the FAO questionnaire. Information included here is based on its draft NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs and other sources as referenced. Additional information from: BOBLME Sharks Working Group, 5–7 July 2011, Male, Maldives.

[81] Ministerial Proclamation of 28 March 2000.

[82] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

2.3.13 Brazil[83]

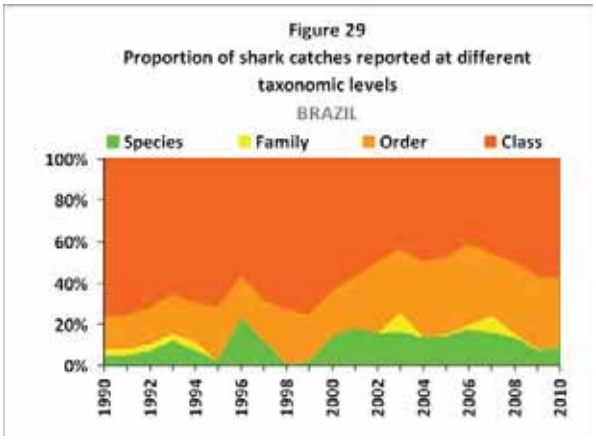
Shark catches: Annual shark catches reported by Brazil in the last decade have averaged 20 468 tonnes and have oscillated around 20 000 tonnes throughout the decade without showing an upward or downward trend (Figure 28).



NPOA Sharks: A draft is available but not yet approved. The draft NPOA includes a description of the context (e.g. conceptual, legal and institutional, possible measures), shark biology and fisheries in Brazil. It also proposes species-specific measures for eight overexploited or threatened elasmobranchs including particular reference points and strategies to reach the reference points. The draft also develops actions related to awareness programmes, participation and review.

Fisheries management: Fisheries management in Brazil is based on the federal 1967 Fishing Code,[84] which has since been amended several times. With regard to fisheries, almost all of the legislative powers are federal: while access to fisheries is regulated by the Secretaria Especial de Aquicultura e Pesca da Presidência de la Républica, fisheries management is under the jurisdiction of the Institute for the Environment and Natural Renewable Resources (a subdepartment of the Ministry of the Environment). Common fisheries regulations include technical measures, TACs for some species and MCS. A participatory management approach has been initiated in some fisheries. A National Coastal Management Plan has been in force since 1988 (revised in 1997). Winter[85] mentions conflicts between industrial and artisanal fisheries in coastal areas, issues with regard to federal, state and municipal responsibilities, conflicting competences of the Secretaria Especial de Aquicultura e Pesca da Presidência de la Républica and the Institute for the Environment and Natural Renewable Resources, and low participation of fishing sector and the public.

Shark measures: Brazil regulates shark finning[86] and requires a 5 percent fin-to-body weight ratio when landing sharks. Sharks are indirectly affected by laws restricting the length of pelagic gillnets[87] and banning trawl fishing at a distance of less than 3 nautical miles from shore.[88]



Data collection and research: There are several research programmes for assessing marine resources (including sharks), e.g. the Programme for the Evaluation of the Sustainability Potential of Living Resources in the EEZ (the REVIZEE Programme).

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[83] Brazil did not reply to the FAO questionnaire. Information included here is based on its draft NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs. Other sources as referenced. Additional information from: Mauro Figuereido. 2009. Promotion and management of marine fisheries in Brazil. *In* G. Winter, ed. *Towards sustainable fisheries law. A comparative analysis.* Gland, Switzerland, IUCN.

[84] Decree Law No. 221 of 1967.

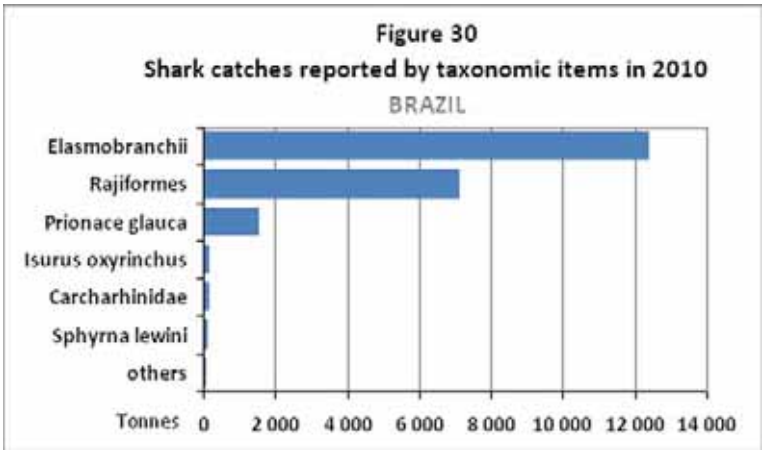
[85] Winter, G. 2009. Towards a legal clinic for fisheries management. *In* G. Winter, ed. *Towards sustainable fisheries law. A comparative analysis.* Gland, Switzerland, IUCN.

[86] Portaria IBAMA Nº 121-N, 24 August 1998.

[87] Ibid.

[88] Portaria No. 26, 28 June 1983.

Reporting: About 90 percent of the shark catches are reported by Brazil in very broad categories (at class and order levels) (Figure 29). Very few species (mainly blue shark [*Prionace glauca*], shortfin mako [*Isurus oxyrinchus*] and scalloped hammerhead [*Sphyrna lewini*] as well as sharks of the family Carcharhinidae) are reported separately (Figure 30).

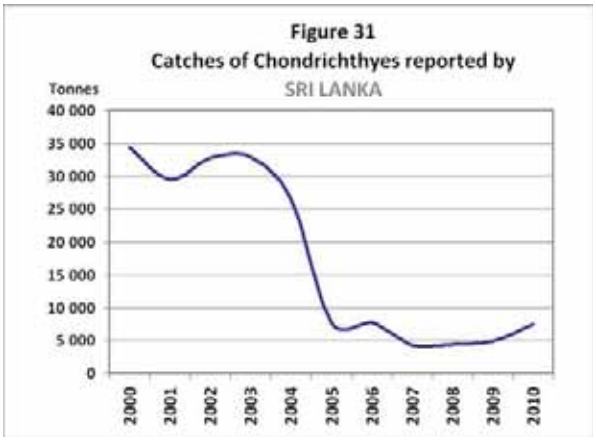


Membership in RFMOs: CCAMLR and ICCAT. Also a member of WECAFC.

Port State Measures Agreement: Signed and awaiting ratification.

2.3.14 Sri Lanka[89]

Shark catches: Sri Lanka reported an average of 18 476 tonnes of shark catches per year from 2000 to 2009. However, catches experienced a steep decline after 2004 from more than 30 000 to under 10 000 tonnes (Figure 31).



NPOA Sharks: No but in preparation under the BOBLME; FAO was approached for technical assistance.

Fisheries management: The Ministry of Fisheries and Aquatic Resources is the responsible agency for fisheries management, which is based on the Fisheries and Aquatic Resources Act No. 2 of 1996. It provides for entry controls, technical measures, fishing reserves and export/import regulations. The management of fisheries resources includes community participation.

Shark measures: A shark finning ban[90] is the only measure explicitly directed at sharks. According to the 2011 Report of the BOBLME Sharks Working Group, Sri Lanka has developed awareness programmes for stakeholders on shark conservation and management.

Data collection and research: (from FAO[91]): The National Aquatic Resources Agency is responsible for offshore stock assessments for 36 species, including 8 species of sharks. The monitoring of coastal (artisanal) fisheries is conducted by fishery inspectors from the Department

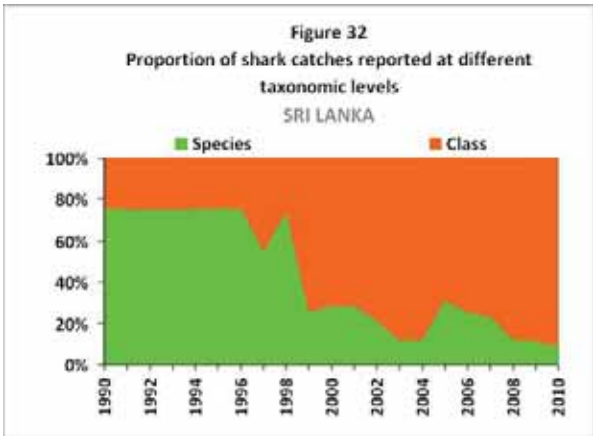
[89] Sri Lanka responded to the FAO questionnaire (see Appendix 3 for complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

[90] Regulation of the Landings of Fish (Species of Shark and Skates), from 2001.

[91] FAO. 2009. *Report of the Technical Workshop on the Status, Limitations and Opportunities for Improving the Monitoring of Shark Fisheries and Trade, Rome, 3–6 November 2008.* FAO Fisheries and Aquaculture Report No. 897. Rome. 152 pp.

of Fisheries. Taxonomy and biology of sharks are poorly studied mainly because of a lack of human and financial resources.

Reporting: Until the late 1990s, the majority of Chondrichthyes reported by Sri Lanka were silky sharks (*Carcharhinus falciformis*). Since then, however, most catches have been reported at highly grouped level (Figure 32). Regional FAO fish identification tools (including Chondrichthyes) for the Western Central Pacific and an FAO Field Guide are available (see bibliography).[92]

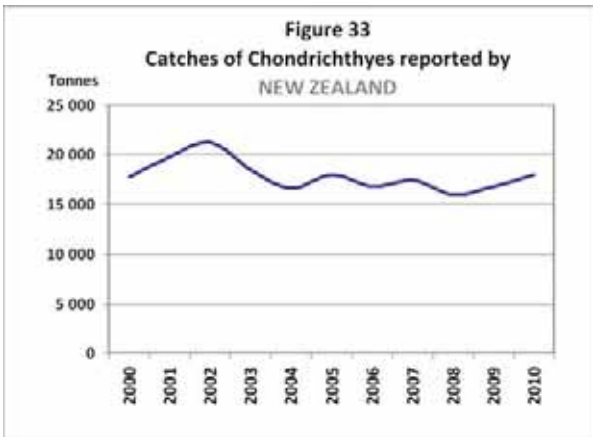


Membership in RFMOs: IOTC. Also a member of the Bay of Bengal Programme and INFOFISH.

Port State Measures Agreement: Signed and ratified.

2.3.15 New Zealand[93]

Shark catches: From 2000 to 2009, New Zealand reported to FAO an annual average catch of 17 879 tonnes of sharks to FAO. The level of catches reported was fairly stable in this period (Figure 33).



NPOA Sharks: Yes (2008). A review in 2012 is foreseen in the plan. The NPOA includes an outline of purpose, scope and background, a description of New Zealand shark species and shark management, and alignment with the IPOA Sharks.

The NPOA includes reviewing requirements and focuses on 11 actions under the following topics:

- fish identification guide;
- generic codes;
- strengthening of existing research and monitoring programmes;
- participation in relevant RFMOs and other relevant international fora;
- development and implementation of a Prohibited Utilisation Process Standard;
- protection of basking sharks;
- ensuring that fishers are aware that live shark finning constitutes ill treatment.

Fisheries management: The Fisheries Management Directorate of the Ministry of Primary Industries is responsible for managing fishery resources based on the Fisheries Act 1996. It provides the framework for the New Zealand Quota Management System under which transferable quotas are allocated to individuals based on the proportion of the total allowable commercial catch (TACC) they own. In addition, a number of technical measures are implemented for different fisheries. New Zealand also has in place a comprehensive MCS and enforcement scheme.

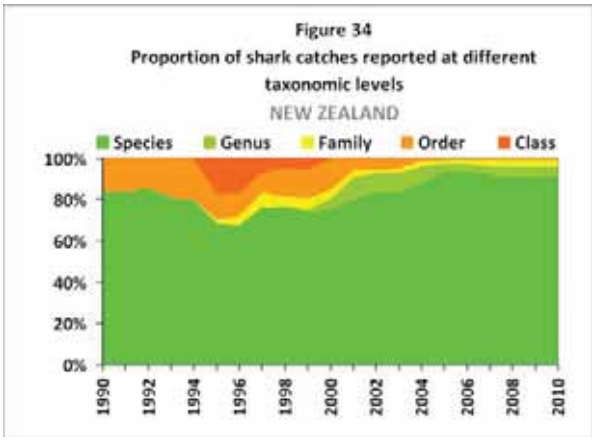
Shark measures: Shark finning is banned by the Animal Welfare Act 1999. Incentives to encourage full utilization of sharks are being discussed. The Wildlife Act 1953 provides full or

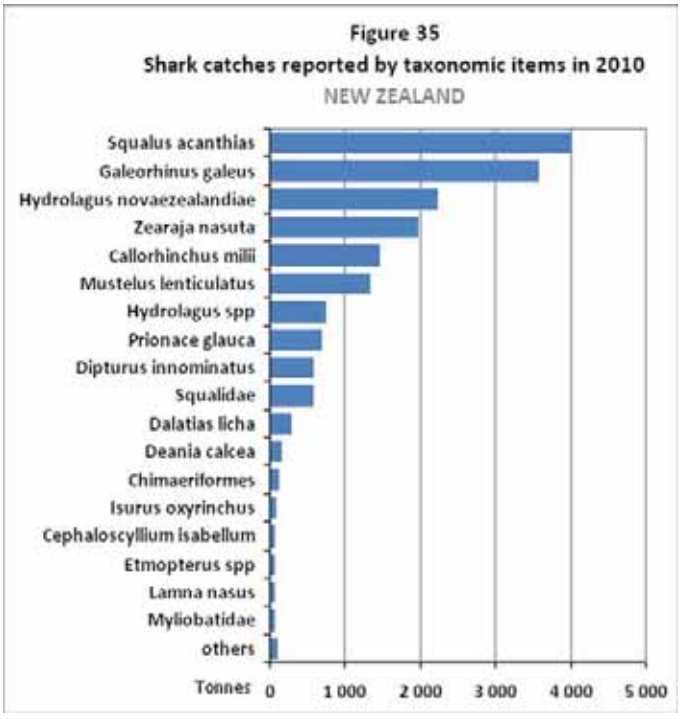
[92] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

[93] New Zealand responded to the FAO questionnaire (see Appendix 3 for the complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

partial protection of particular species, including some sharks.[94] Eleven species (comprising 85 percent or more of total shark catches) are managed under catch limits set in the quota management system.[95] In addition, a number of fisheries plans are relevant for sharks, in particular for deepwater, inshore and highly migratory species. A code of practice (2001, updated 2010) codifies the safe handling, processing and unloading of sharks in the tuna fishery. New Zealand has a relatively high level of observer coverage in a range of shark-targeted and bycatch fisheries generating information on sea fishing practices.

Data collection and research: Most shark (and fisheries) research in New Zealand is not performed by government scientists but awarded by the Ministry of Primary Industries Fisheries to qualified registered organizations following a competitive tendering for projects. The seafood industry invests more than 2 percent of gross returns into its own research and development. Data are generated by observers, verified catch reports from fishers and others. The NPOA Shark states that shark research in New Zealand includes scientific trawl surveys, analysis of commercial catch and effort data, stock assessments, biological productivity studies, reproductive biology of porbeagle shark, characterization of fisheries, tagging programmes for rig and school shark and skates, and recreational tagging programmes for shortfin mako and blue sharks.





[94] Whale shark (*Rhincodon typus*), basking shark (*Cetorhinus maximus*), deepwater nurse shark (*Odontapsis ferox*), white pointer shark (*Carcharodon carcharias*), manta ray (*Manta birostris*) and spinetail mobula (*Mobula japonica*).

[95] School shark (*Galeorhinus galeus*), pale ghost shark (*Hydrolagus bemisi*), dark ghost shark (*Hydrolagus novaezealandiae*), mako shark (*Isurus oxyrinchus*), porbeagle shark (*Lamna nasus*), rig (*Mustelus lenticulatus*), blue shark (*Prionace glauca*), spiny dogfish (*Squalus acanthias*), northern spiny dogfish (*Squalus griffin*), smooth skate (*Raja innominata*) and rough skate (*Raja nasuta*).

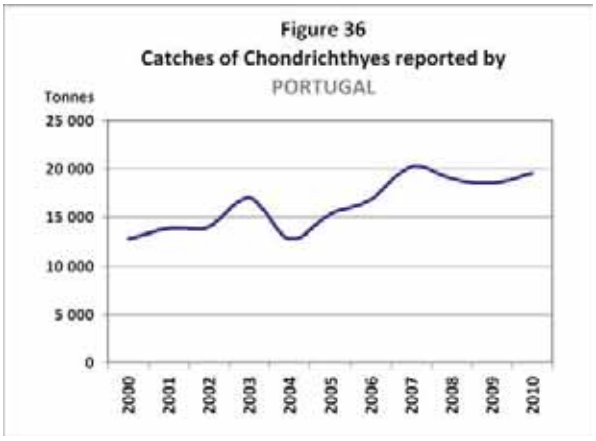
Reporting: New Zealand largely reports its shark catches to FAO at a species level (Figure 34 and 35). Nonetheless, the country reports that the action taken to reduce the use of generic shark reporting codes is ongoing, as is the production of field identification guides for sharks and other species targeted or caught incidentally in New Zealand. To address problems with the identification of detached fins, New Zealand is considering the development of DNA-based identification technologies.

Membership in RFMOs: CCAMLR, CCSBT, WCPFC, APFIC and Cooperating Non-Contracting Party to NEAFC.

Port State Measures Agreement: Signed, not yet ratified.

2.3.16 Portugal[96]

Shark catches: The landings of sharks declared by Portugal have steadily increased in the last decade. The rise has mainly been due to the increase in catches of blue shark, up from 4 195 tonnes in 2000 to 14 251 tonnes in 2010 (Figure 36).

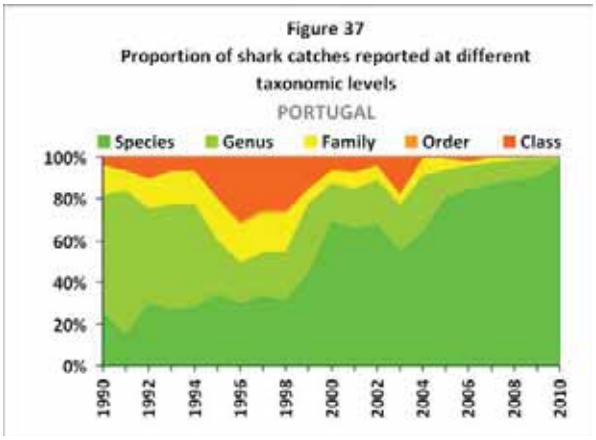


NPOA Sharks: Yes, see section on the European Union (Member Organization).

Fisheries management: Mainly responsible for fisheries management is the Directorate-General of Natural Resources, Security and Marine Services under the Ministry of Agriculture, Sea, Environment and Spatial Planning. Regulations are implemented under the umbrella of the CFP, which includes application of the precautionary principle and is moving towards an EAF. Management is based on TACs complemented by technical measures.

Shark measures: A shark finning measures applies according to the Regulation (EC) 1185/2003. Beyond this and other commitments under relevant regulations (see section on European Union [Member Organization]), national regulations include a seasonal closure for skates and rays in May.[97]

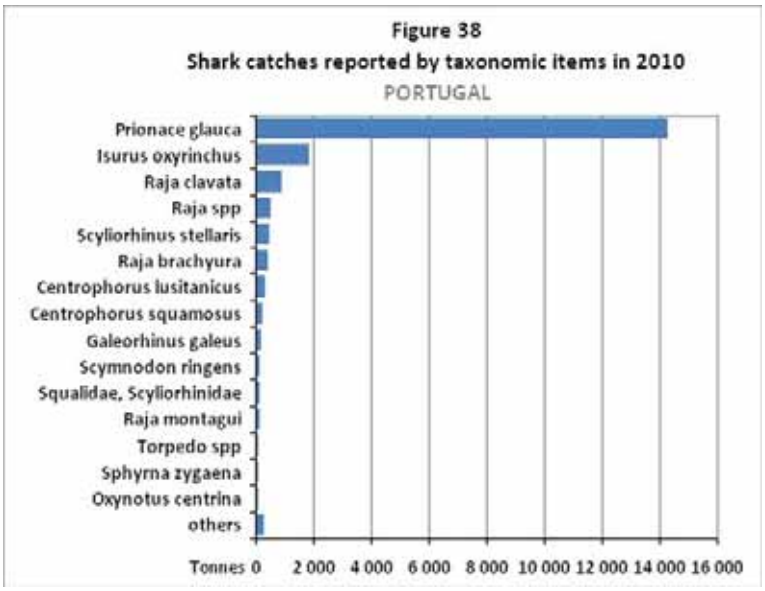
Data collection and research: The National Institute of Agriculture Research and Fisheries is responsible for fish stock assessments within the International Council for the Exploration of the Sea (ICES) and NAFO. It uses information collected during research surveys and in fishing ports. Catch statistics are provided by the Directorate-General of Fisheries and Aquaculture. Data collection for fisheries is ongoing in support of the Data Collection Framework of the European Union (Member Organization). Research is also being conducted on pelagic, demersal and deep-water elasmobranchs under several scientific projects.



[96] For countries of the European Union (Member Organization) the questionnaire was sent to the EC (see section on the European Union [Member Organization] and Appendix 3 for the full response of the EC). Information here is also based on FAO Fishery and Aquaculture Country Profiles and Briefs.

[97] Portaria No. 315/2011. In May, all skates and rays are to be released unharmed to the sea after capture, being possible only to land skates representing 5 percent in weight of the whole catch.

Reporting: 97 percent of the landings declared by Portugal are reported at species level (blue shark being by far the most common species) (Figure 37 and 38). Some problems have been reported with regard to the identification of shark species or even generic shark categories owing to a misapplication of common names or codes or taxonomic issues.[98] An FAO Identification Guide for North Atlantic Elasmobranchs is under preparation (see bibliography).[99]

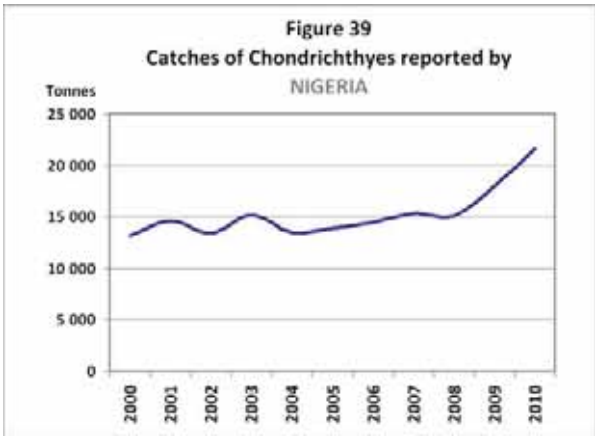


Membership in RFMOs: See section on the European Union (Member Organization).

Port State Measures Agreement: The European Union (Member Organization) signed in 2009 and is awaiting ratification.

2.3.17 Nigeria[100]

Shark catches: Shark catches reported to FAO by Nigeria averaged 14 677 tonnes per year between 2000 and 2009 without any upward or downward trend. In 2010, however, Nigeria reported an increased catch of 21 625 tonnes (Figure 39).



NPOA Sharks: No.

Fisheries management: The Federal Department of Fisheries is responsible for marine fisheries. Measures adopted include technical and input controls, and, to some extent, output controls and economic incentives. Fishing 5 nm from the coast is reserved for artisanal boats. Relevant laws are the Sea Fisheries Decree No. 71 of 1992, the Sea Fisheries (Licensing) Regulations of 1992 and

[98] Serra-Pereira, B., Moura, T., Farias, I., Maia, C., Lagarto, N., Veiga, N. & Figueiredo, I. 2011. Information on sharks, rays and skates landings from mainland Portugal. Working document presented at the ICES Working Group on Elasmobranch Fishes, Copenhagen, Denmark, 20–24 June 2011.
[99] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en
[100] Nigeria did not respond to the FAO questionnaire. Information included here is based on the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

others. Serious conflicts have ensued between the small-scale and industrial fleets requiring the intervention and arbitration of the MCS Division of the Federal Department of Fisheries.

Shark measures: Nigeria prohibits the dumping of shark carcasses at sea and encourages full utilization of sharks[101]. The country also has programmes to raise awareness regarding the conservation and management of sharks. Shark finning by foreign vessels fishing illegally in Nigerian waters has been reported (Fowler et al. 2005).

Data collection and research: Fishery research (bioecology, technology and socio-economy) is conducted by the Nigerian Institute for Oceanography and Marine Research, Universities of Lagos and of Calabar; and three Federal Colleges of Fisheries at Lagos, New Bussa and Baga-Maiduguri.

Reporting: Nigeria reports its catches of Chondrichthyes to FAO only in highly aggregated categories, i.e. as Elasmobranchii and Rajiformes. Regional FAO fish identification tools (including Chondrichthyes) for the Eastern Central Atlantic are available (see bibliography).[102]

Membership of Fishery Bodies: ICCAT. Also a member of CECAF, Regional Convention on Fishery Cooperation among African States Bordering the Atlantic Ocean, Fishery Committee of the West Central Gulf of Guinea (FCWC), and Sub-Regional Cooperation in Marine Fisheries Monitoring, Control and Surveillance in the Southern Gulf of Guinea on the Harmonisation of Fisheries Laws and Regulations of the Region (SCMFMCSGG).

Port State Measures Agreement: No.

2.3.18 Iran (Islamic Republic of)[103]

Shark catches: The Islamic Republic of Iran has submitted catch statistics since 1997. Reported catches of sharks peaked in 2004 at 18 000 tonnes and have then declined to about 13 000 tonnes per year in recent years (Figure 40).

NPOA Sharks: Yes.[104]

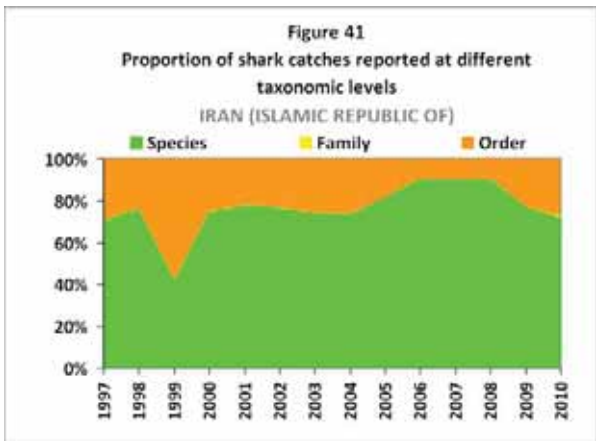
Fisheries management: The legal framework for the Iranian Fisheries Organization (Shilat Iran) is based on the Protection and Exploitation of Natural Aquatic Resources Law approved in 1995.

Figure 40
Catches of Chondrichthyes reported by
IRAN (ISLAMIC REPUBLIC OF)

Shark measures: The Islamic Republic of Iran has not adopted shark fin measures. The country reported that it respects the IOTC Resolution 10/12 on the conservation of thresher sharks. A seasonal closure (September to March) was established to control the fishing pressure on sharks stocks [105] Moreover, bottom trawlers have been banned in the Persian Gulf since 1993, and are only allowed to operate in the Sea of Oman for about five months a year. Some marine nearshore

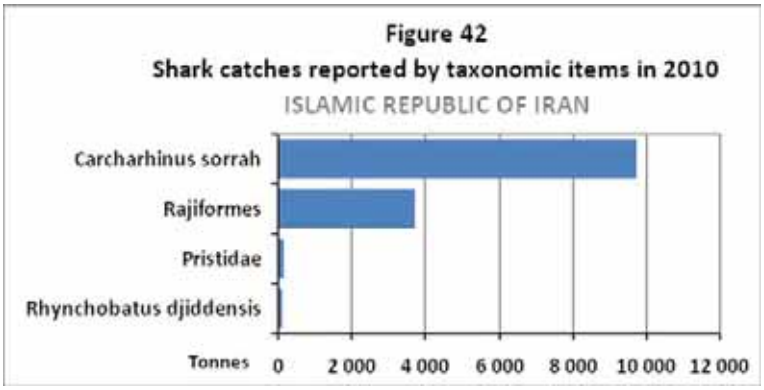
[101] Nigeria Sea Fisheries Act 2011 (Abiodun Oritsejemine Cheke, Assistant Director of the Federal Department of Fisheries in Nigeria, personal communication, June 2012)
[102] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en
[103] The Islamic Republic of Iran responded to the FAO questionnaire (see Appendix 3 for complete response). Information included here is based on its response, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.
[104] The Islamic Republic of Iran verbally informed FAO of its NPOA sharks during COFI 2012. The authors of this review have not been able to access the Iranian NPOA Sharks and, therefore, cannot include a summary description.
[105] Moore, A.B.M. 2011. Elasmobranchs of the Persian (Arabian) Gulf: ecology, human aspects and research priorities for their improved management. *Reviews in Fish Biology and Fisheries*, 22: 35–61.

habitats protected through the Ramsar Convention on Wetlands of International Importance[106] are considered to be of potential importance for sharks as nurseries (such as lagoons, seagrass, tidal flats and estuaries).



Data collection and research: The Iranian Fisheries Research Organization, with its six affiliated centres along the coasts, is responsible for fisheries research including fish stock assessment and environmental studies. Results are disseminated through the training centres of the Iranian Fisheries Research Organization. In addition, shark research is being undertaken by universities. Shark catches are being assessed in the Persian Gulf and the Sea of Oman with about 35 sampling stations.[107] The Islamic Republic of Iran is also investigating the biomass of benthic species in the Persian Gulf and the Sea of Oman, including some important shark species such as *Carcharhinus dussumieri*. In addition, surveys for heavy-metal contamination and parasites of major shark species are being carried out.

Reporting: The Islamic Republic of Iran has reported catch statistics since 1997. In 2010, *Carcharhinus sorrah* represented 70 percent of the landings declared by the country, followed by Rajiformes (Figures 41 and 42) Regional FAO fish identification tools (including Chondrichthyes) are available for the Western Indian Ocean, and an FAO guide for deep-sea Chondrichthyes of the Indian Ocean is being developed (see bibliography).[108]



Membership in RFMOs: IOTC. Also a member of the Regional Commission for Fisheries (RECOFI).

Port State Measures Agreement: No.

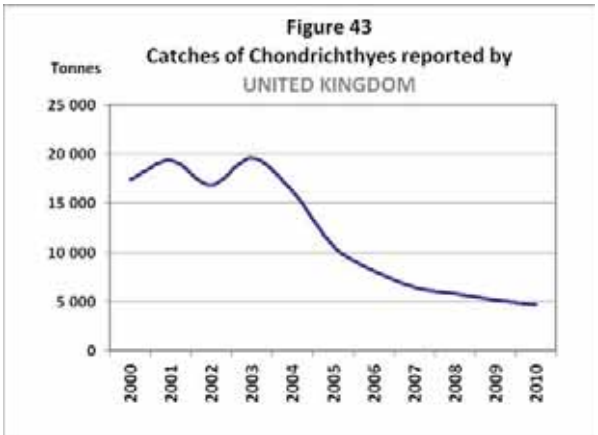
[106] The Ramsar Web site: www.ramsar.org

[107] FAO, 2009. *Report of the Technical Workshop on the Status, Limitations and Opportunities for Improving the Monitoring of Shark Fisheries and Trade, Rome, 3–6 November 2008*. FAO Fisheries and Aquaculture Report No. 897. Rome. 152 pp.

[108] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

2.3.19 The United Kingdom of Great Britain and Northern Ireland[109]

Shark catches: From 2003 to 2010, shark landings reported by the United Kingdom declined by 20 000 tonnes to 5 000 tonnes. The decrease was mainly due to declining landings of spurdog (*Squalus acanthias*) and skates (Rajidae) (Figure 43).



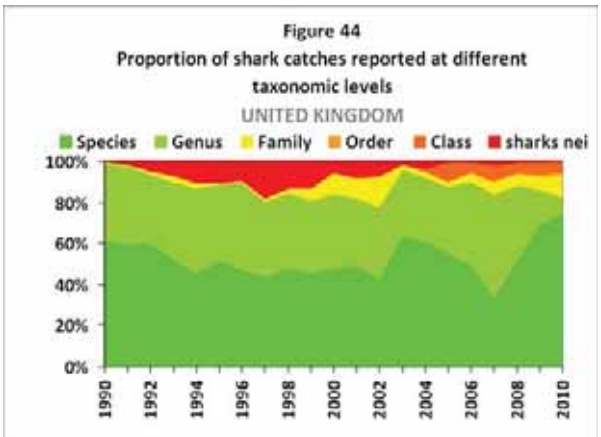
NPOA Sharks: Yes (2011[110]) and through the European Union (Member Organization) (see section on the European Union [Member organization]).

The main aim of the United Kingdom Shark, Skate and Ray Conservation Plan is to manage elasmobranch stocks sustainably so that depleted stocks recover and that those faring better are fished sustainably. The main policy objectives address:

- sustainable catches and action to protect species most at risk;
- improve knowledge on elasmobranch fisheries and species;
- international conservation measures;
- increased understanding, education and awareness of elasmobranch issues.

Fisheries management: The Department of Environment, Food and Rural Affairs is responsible for policy and regulations on the marine environment, biodiversity and fisheries. The fisheries policy and management of the United Kingdom of Great Britain and Northern Ireland are implemented under the umbrella of the CFP, which includes application of the precautionary principle and is moving towards an EAF. Management is based on TACs complemented by technical conservation measures.

Shark measures: Shark finning is regulated under laws of the European Union (Member Organization) (see section on the European Union [Member organization]) and national laws.[111, 112] Beyond commitments under EC regulations for sharks (including TAC and quota, see EUPOA), at the national level the United Kingdom Wildlife and Countryside Act 1981,[113] in its periodic reviews, currently protects basking shark,[114] angel shark[115] and white skate,[116] The tope shark has been regulated since 2008,[117] when a moratorium for this species was established. Additional



[109] For countries of the European Union (Member Organization), the questionnaire was sent to the EC (see section on the European Union [Member Organization] and Appendix 3 for the full response of the EC).
[110] Available at: http://archive.defra.gov.uk/environment/marine/documents/interim2/shark-conservation-plan.pdf
[111] Sea Fishing (Prohibition on the Removal of Shark Fins) Order 2007 came into force on 1 October 2007 (available at www.legislation.gov.uk/uksi/2007/2554/pdfs/uksi_20072554_en.pdf).
[112] Sea Fishing (Prohibition on the Removal of Shark Fins) (Scotland) Amendment Order 2009 came into force on 1 January 2010 (available at www.legislation.gov.uk/ssi/2009/413/pdfs/ssi_20090413_en.pdf).
[113] Wildlife and Countryside Act 1981 (available at www.legislation.gov.uk/ukpga/1981/69/pdfs/ukpga_19810069_en.pdf).
[114] *Cetorhinus maximus*; Wildlife and Countryside Act 1981 (Variation of Schedules 5 and 8) Order 1998.
[115] *Squatina squatina*; Wildlife and Countryside Act 1981 (Variation of Schedule 5) (England) Order 2008.
[116] *Rostroraja alba*; Wildlife and Countryside Act 1981 (Variation of Schedules 5 & 8) (England & Wales) Order 2011.
[117] *Galeorhinus galeus*; Tope (Prohibition of Fishing) Order 2008 (available at www.legislation.gov.uk/uksi/2008/691/pdfs/uksi_20080691_en.pdf).

measures are in place at the local level for different fisheries districts around the country including minimum landings sizes for skates and rays and voluntary closed areas for the protection of juvenile elasmobranchs.

Data collection and research: Government research is largely commissioned to the Centre for Environment, Fisheries and Aquaculture Science (an Executive Agency of the Department of Environment, Food and Rural Affairs) and Marine Science Scotland (formerly the Fisheries Research Services), and a range of contractors, universities and research institutes. Regarding structural and conservation policy, the policy of the United Kingdom of Great Britain and Northern Ireland is dictated by the CFP. Data collection for fisheries is continual and ongoing in support of the EC's Data Collection Framework. The Department of Environment, Food and Rural Affairs is funding several research projects on elasmobranches, including the evaluation of the potential survival of skates caught in fishing gear and on the potential fisheries-induced mortality on porbeagle and spurdog populations.

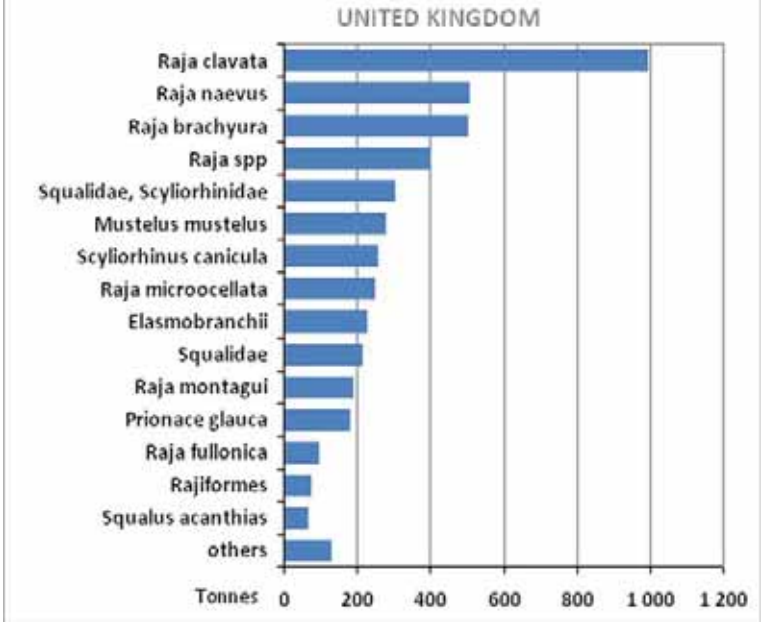
Reporting: In 2010, more than 70 percent of the landings were reported to species level (Figure 44). Skates represented the main part of the reported landings, with around 2 000 tonnes of *Raja clavata*, *L. naevus* and *R. brachyura* landed in 2010 (Figure 45). An FAO identification guide for North Atlantic Elasmobranchs is under preparation (see bibliography).[118]

Membership in RFMOs: See section on the European Union (Member Organization).

Port State Measures Agreement: The European Union (Member Organization) signed the PSMA on 22 November 2009, and deposited on 7 July 2011.

Figure 45

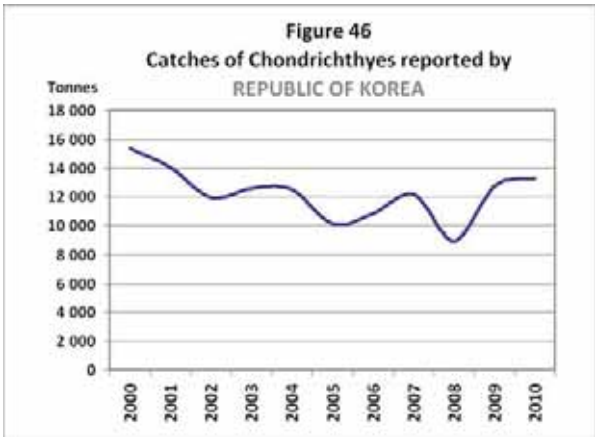
Shark catches reported by taxonomic items in 2010



[118] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

2.3.20 The Republic of Korea[119]

Shark catches: In the last decade, the Republic of Korea has reported an average catch of 12 242 tonnes of sharks and caught 1.8 percent of the globally reported catches in 2010 (Figure 46).



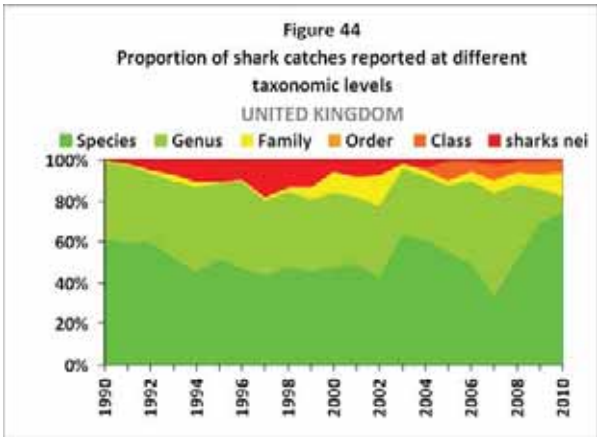
NPOA Sharks: Yes (2011). The NPOA describes the country's shark fisheries and catches, domestic and international trade of sharks and management of sharks. It includes a commitment for biennial review.

The NPOA Sharks is intended to be applied initially to distant-water fisheries and be subsequently extended to the EEZ. The main actions foreseen are:

- enhancement of the current observer training programmes;
- stock assessments on major shark species;
- surveys on the trade of sharks;
- management of the CITES-listed shark species;
- creation of a "distant water sharks management committee" for better management of incidentally caught sharks.

Fisheries management: The Ministry for Food, Agriculture, Forestry and Fisheries is the responsible authority for the management of fisheries in the Republic of Korea. Management is based on the 2009 Fisheries Act and the 2009 Fisheries Resources Management Act. Measures applied include entry controls, technical measures, TACs and quotas; emphasis is given to an effective MCS and enforcement scheme and a participatory, community-based fisheries management approach. Relevant regional and international obligations are implemented through the 2008 Distant Water Fisheries Development Act. In 2005, the Republic of Korea established the ecosystem-based Fish Stock Rebuilding Plan.

Shark measures: The Republic of Korea has not adopted finning measures in its EEZ but complies with relevant high seas regulations. Sharks listed in the CITES Appendices are protected.[120] The 2004 Wild Fauna and Flora Protection Act of the Republic of Korea and its Enforcement Regulations ensure that CITES provisions are implemented. A management regime (including TAC, seasonal restrictions and size limitations) has been set up for the mottled skate (*Raja pulchra*). Area restrictions for purse seine fisheries are intended to minimize incidental catches of sharks.



Data collection and research: The National Fisheries Research and Development Institute conducts fisheries research and development activities such as data collection, stock assessments, and fishing technology. Distant-water fishing vessels are required to collect data on blue shark, porbeagle shark, mako shark, oceanic white tip shark, hammerhead shark and thresher

[119] The Republic of Korea responded to the FAO questionnaire (see Appendix 3 for the complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.
[120] Ministerial Directive No. 2010-71 (30 June 2010) of the Ministry of Environment

shark.[121] Scientific observers on board high seas vessels collect biological data of a wider range of shark species. In the EEZ, so-called "fishery resources management enforcement agents" collect shark-related data. For mottled skate, a biological and fisheries research programme has been devised that includes regular stock assessments to calculate allowable catches. In addition, the National Fisheries Research and Development Institute collects shark bycatch data for stock assessment purposes of RFMOs.

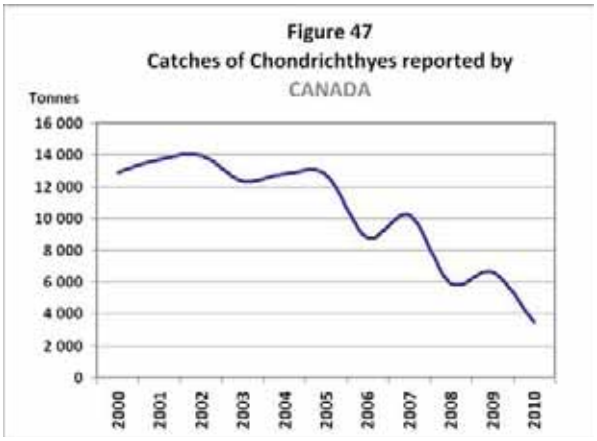
Reporting: Landings of sharks are reported to FAO on highly aggregated taxonomic levels as Rajiformes (78 percent) and Elasmobranchii (20 percent). The remaining 2 percent represent mottled skate, which is currently being managed under a TAC system. Recently, the government has prioritized the identification of shark species and has provided crew of the distant water fleets of the Republic of Korea with a field guide on bycatch species (from 2008).

Membership in RFMOs: WCPFC, ICCAT, IATTC, IOTC and CCSBT.

Port State Measures Agreement: No.

2.3.21 Canada[122]

Shark catches: Landings of sharks reported by Canada have declined considerably in the last decade, reaching the value of 3 475 tonnes in 2010. The decrease has mainly been due to declining landings of the picked dogfish (*Squalus acanthias*) (Figure 47).



NPOA Sharks: Yes (2007). Canada's NPOA Sharks and legislative instruments incorporate ecological considerations, integrated fisheries management, and the precautionary approach to ensure the long-term sustainability of sharks within Canadian directed and non-directed fisheries. Provisions for a regular review are included as well as the following:

- promotion of, *inter alia*, data collection and research, standardized reporting and management plan process, bycatch reduction and reporting of discard mortality;
- species-specific management measures;
- effective research and consultation mechanisms through, e.g. a regional advisory process that includes stakeholders and scientists for all Canadian coasts.

Fisheries management: The federal Department of Fisheries and Oceans is responsible for management of all of Canada's fishery resources. The primary pieces of federal fisheries legislation are: the 1985 Fisheries Act, which governs domestic fisheries; the 1985 Coastal Fisheries Protection Act, which applies to foreign vessels; and the 1997 Oceans Act, which implements the relevant provisions of UNCLOS in Canada. The Department of Fisheries and Oceans uses a variety of management measures to achieve the stated objectives, including input controls, technical measures, TACs and (transferable individual) quotas as well as an effective MCS and enforcement scheme. Fisheries are managed through "Integrated Fisheries Management Plans." These plans are prepared by the Department of Fisheries and Oceans in collaboration with stakeholders through lengthy, formal consultation processes, including species advisory committees and regional advisory processes.

[121] Regulations on the Reporting of Fishing Operations in the Korean EEZ and Distant Waters (Ministerial Decree No. 119).

[122] Canada responded to the FAO questionnaire (see Appendix 3 for the complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

Shark measures: Canada regulates shark finning by stipulating a specific weight ratio between the separated fins and the carcasses.[123] Domestically, Canada restricts or bans the trade, possession or sale of shark products from species that are listed as protected under the Canadian Species at Risk Act, i.e. white sharks (Atlantic Ocean), basking shark and bluntnose six-gill sharks (Pacific Ocean). Canadian fishers have been encouraged to practise, and are practising, the live release of shortfin mako sharks caught incidentally in other directed fisheries in the Atlantic Ocean, thereby cutting Canada's annual harvest of this stock significantly.

Data collection and research: The Department of Fisheries and Oceans is also responsible for biological and socio-economic fisheries research and data collections including fish stock assessments. Shark-related research and data collection have been undertaken on all Canadian coasts, in particular with regard to pelagic sharks,[124] spiny dogfish, skates and chimaeras.

All shark landings in Canada, directed and/or bycatch, are monitored at sea by observers (100 percent coverage) and enforcement officers. In addition, shark landings in Canada are monitored and weighed at dockside by an independent third-party contractor to ensure that the fin-to-body weight ratio is respected. Scientific investigations have been performed for pelagic sharks, picked dogfish, skates and chimaeras. Canada also plans to determine new sustainable catch quotas that allow for discards of porbeagle sharks and discard mortality reference for blue sharks.

Reporting: In 2010, 57 percent of shark catches were reported by Canada at species level (mainly picked dogfish). An additional 12 percent were reported at genus level (*Raja* spp.). The remaining 31 percent is composed of undefined species of the order Rajiformes[125, 126] (Figures 48 and 49). Canada informed FAO that species-specific data reporting and monitoring of catches landings and the trade of sharks are limited because very few of the listed species are part of commercial shark fisheries and that most species are caught instead as bycatch and are discarded at sea. Therefore, Canada has enhanced its engagement and communications programmes to improve the quality of biological data collecting. An FAO identification guide for North Atlantic Elasmobranchs is under preparation (see bibliography).[127]

Figure 48
Proportion of shark catches reported at different taxonomic levels

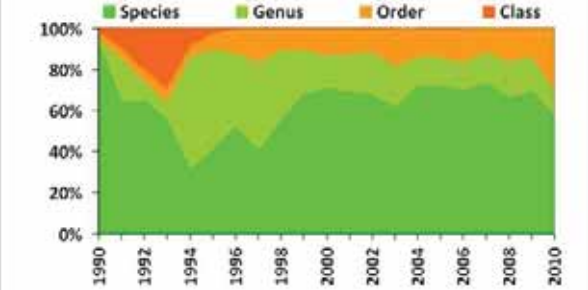
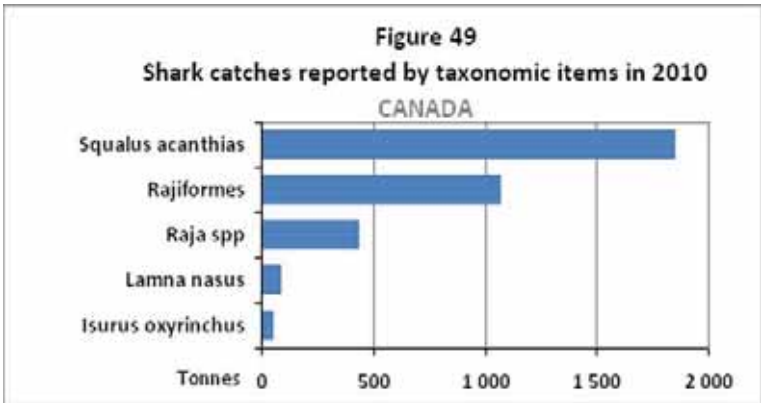


Figure 49
Shark catches reported by taxonomic items in 2010



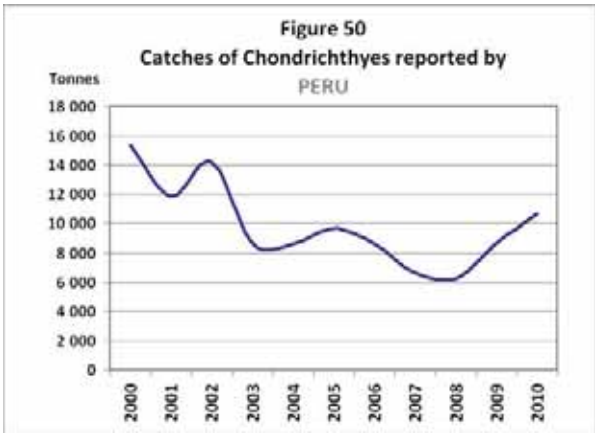
[123] 'For enforcement purposes, shark fins cannot make up more than 5 percent of the overall weight of sharks onboard a Canadian fishing vessel (5 percent rule).
[124] For example, porbeagle shark, blue shark, shortfin mako, basking shark and black dogfish.
[125] In 2009, the reporting of sharks by Canada was superior (69 percent at species level and 17 percent at genus level) and it is possible that FAO will receive corrections for the 2010 data that could improve the current 2010 reporting.
[126] It was noted that vessels fishing under NAFO regulations do not report shark catches at species level.
[127] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

Membership in RFMOs: IATTC, ICCAT, NAFO, WCPFC and Cooperating Non-Contracting Party to NEAFC.

Port State Measures Agreement: Signed, not yet ratified.

2.3.22 Peru[128]

Shark catches: In the decade from 2000 to 2009, Peru reported average catches of sharks at 9 866 tonnes per year. There was a decline from 15 405 tonnes in 2000 to 6 238 tonnes in 2008. Since then, reported catches have shown an increase and were at 10 715 tonnes in 2010 (Figure 50).



NPOA Sharks: Peru has adopted the 2009 Regional Plan of Action (RPOA) for Sharks by the Comisión Permanente del Pacífico Sur (CPPS).[129] This plan aims at: developing sustainable EAF-based fisheries; establishing measures for management and administration; ensuring complete utilization of shark bodies; and implementing MCS and enforcement measures. It proposes five strategic actions to strengthen: scientific assessment; shark fisheries management and protection of species and ecosystems; control of shark fisheries; socio-economic aspects; and capacity building and public education.

In addition, Peru drafted an NPOA Shark in 2005 (with assistance from FAO), which is awaiting adoption by the Government. This draft NPOA specifies ten specific objectives (addressing sustainable fisheries, threats, habitats, baselines, complete utilization, biodiversity, biological and catch data, information system) and six programmes to enhance and strengthen: research; scientific investigations; information systems; capacity building and public education; collaboration among institutions; and MCS.

Fisheries management: Fisheries management is the responsibility of the Ministry of Production through the Office of the Deputy Minister of Fisheries. It is mainly based on the General Fisheries Law – Decree Law No. 25 977 and numerous by-laws. Measures deal with fishery entry regimes, fleet and processing capacities, technical measures, TACs, scientific assessments and MCS.

> ***Shark measures:*** Shark finning is not prohibited in Peru. The draft NPOA contains the objective of complete utilization of shark bodies. Peru has in place a number of shark-specific regulations.[130] These regulations established: minimum sizes for six elasmobranchs[131] and mesh size for catching coastal rays and sharks;[132] bycatch for three Chondrichthyes;[133] a permanent Multi-sector Working Group on Oceanic Matters comprised of representatives from

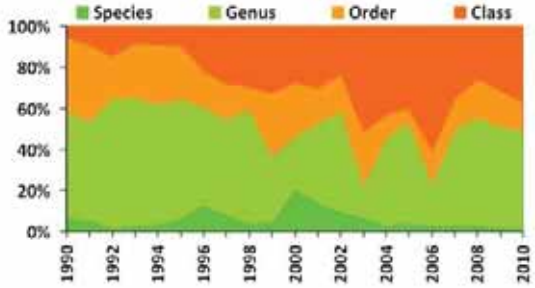
[128] Peru responded to the FAO questionnaire (see Appendix 3 for the complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.
[129] In addition, OLDEPESCA (of which Peru is a member) is also developing an RPOA Sharks (see www.oldepesca.com/userfiles/file/INFORME_REGIONAL_TIBURONES_AGOSTO_2011.pdf).
[130] CCPS. 2012. *Cuarta reunión del Comité Técnico Científico – CTC del Plan de Acción Regional – PAR – para la Conservación y Manejo de Tiburones, Rayas y Quimera en la Región del Pacífico Sudeste – CTCPARTiburón.*
[131] *Carcharhinus* spp., *Prionace glauca*, *Isurus oxyrinchus*, *Mustelus whitneyii*, *Mustelos mento* and *Triakis maculata.*
[132] Resolución Ministerial No. 209-2001-PE.
[133] Resolución Ministerial No. 236-2001-RE (the three species are *Hydrolagus* sp. (quimera), *Bathyraja* sp. (raya de profundidad) and *Somniosus pacificus* (tiburón de profundidad o fume).

environmental protection NGOs[134] to advise on and coordinate relevant obligations under the UN system; the relation between highly migratory resources and national fishing opportunities;[135] and fisheries management of tuna and similar species.[136]

In addition, Peru has started early implementation of the draft NPOA Sharks, e.g. through random inspections of shark cargos, an increase in the number of national fishery inspectors and a decentralized fishery training workshop.[137] The draft NPOA mentions that activities related to public awareness and capacity building are hampered by a lack of funds.

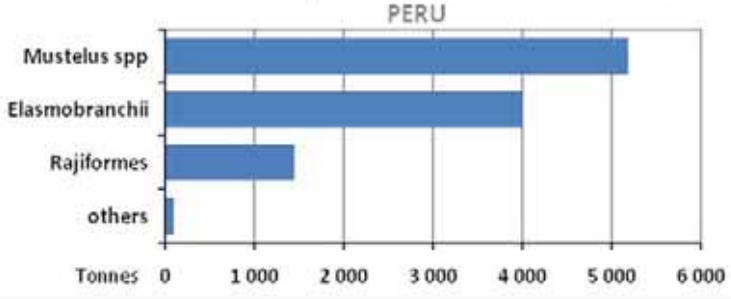
Data collection and research: The Marine Fisheries Institute of Peru is responsible for scientific research on marine and inland water living resources, ecological factors, oceanography and limnology, and the quality of aquatic environment.[138] Recent activities related to sharks have included two workshops on the identification of endangered species and marine protected areas in Peru, the publication of a checklist on freshwater fishes (which include freshwater rays); and a national assessment of the status of shark stocks in Peru (for CITES in 2011).[139]

Figure 51
Proportion of shark catches reported at different taxonomic levels
PERU



Reporting: A large proportion of the catches reported to FAO consists of smooth-hounds (*Mustelus* spp.), which are reported at genus level. Other Chondrichthyes are reported mainly by highly aggregated categories (Figures 51 and 52). In its response to FAO, Peru informed that sharks are only targeted by artisanal fisheries and that the artisanal shark captures are recorded at species level at the main landing ports. Preparation of an identification guide for commercial shark species is under way.

Figure 52
Shark catches reported by taxonomic items in 2010
PERU

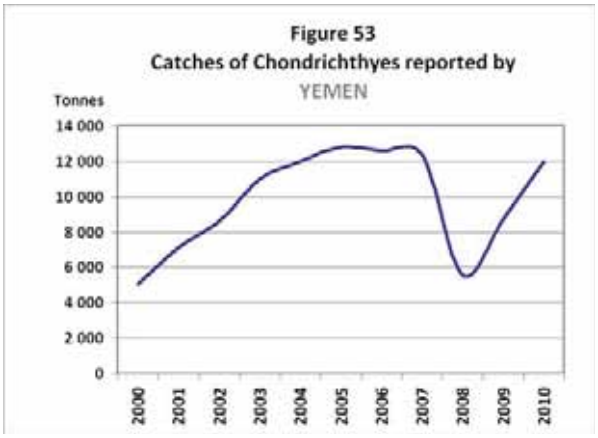


[134] Resolución Suprema No. 269-2001-RE.
[135] Resolución Ministerial No. 058-2002-PE. This resolution considers the following species: *Carcharhinus falciformis* (cazón o tiburón), *C. galapagensis* (cazón), *C. limbatus* (cazón volador), *C. longimanus* (cazón o tiburón oceánico), *Prionace glauca* (tiburón azul o tintorera), *Isurus oxyrinchus* (tiburón bobito, diamante o mako), *Sphyrna zygaena* (tiburón martillo), *Heterodontus quoyi* (tiburón gato o suño), *Alopias vulpinus* (tiburón zorro) and *Galeorhinus galeus* (tiburón de aleta).
[136] Decreto Supremo No. 032-2003-PRODUCE. The Norm includes ten sharks: *Carcharhinus falciformis*, *C. galapagensis*, *C. limbatus*, *C. longimanus*, *Prionace glauca*, *Isurus oxyrinchus*, *Sphyrna zygaena*, *Heterodontus quoyi*, *Alopias vulpinus* and *Galeorhinus galeus*.
[137] CCPS. 2012. *Cuarta reunión del Comité Técnico Científico – CTC del Plan de Acción Regional – PAR – para la Conservación y Manejo de Tiburones, Rayas y Quimera en la Región del Pacífico Sudeste – CTCPARTiburón.*
[138] FAO Country Profile Peru 2012.
[139] CCPS. 2012. *Cuarta reunión del Comité Técnico Científico – CTC del Plan de Acción Regional – PAR – para la Conservación y Manejo de Tiburones, Rayas y Quimera en la Región del Pacífico Sudeste – CTCPARTiburón.*

Membership in RFMOs: IATTC, CCAMLR. Peru is also a member of the regional fishery bodies (RFBs) Comisión de Pesca Continental y Acuicultura para América Latina (COPESCAAL), OLDEPESCA, and CPPS.

Port State Measures Agreement: Signed, not yet ratified.

2.3.23 Yemen[140]



Shark catches: Annual shark catches reported by Yemen from 2000 to 2009 averaged 9 577 tonnes. Catches peaked at more than 12 000 tonnes from 2004 to 2007 and dropped steeply to 5 544 tonnes in 2008. The catches in 2010 showed an increase to 12 000 tonnes (Figure 53).

NPOA Sharks: No.

Fisheries management: Yemen's fisheries are regulated within the framework of Law No. 2/2006 for the Regulation, Conservation and Exploitation of the Marine Organisms. Regulations (or by-laws) set out the details concerning fishing activities and restrictions including entry controls, technical measures and MCS. A 6-mile coastal zone is reserved for artisanal fisheries. Monitoring of the predominantly artisanal landings is reported to be efficient.[141] However, according to one report,[142] there are problems with regard to effort controls and law enforcement.

Shark measures: Yemen has adopted shark fin measures and requires a fin-to-body weight ratio of 5 percent on board vessels.[143] Moreover, Yemen encourages the complete utilization of sharks.

Data collection and research: Fisheries research in Yemen is carried out by the Marine Science and Resources Centre, which was established in Aden in 1983. Its research programmes have been designed to provide relevant fishery data and information. Shaher[144] reports on annual shark surveys conducted in 2003, 2004 and 2005, noting "a lack of funds for monitoring, research and sound fishery management of sharks and other chondrichthyans".

Reporting: Yemen reports to FAO almost all the landings of sharks at class level (Elasmobranchii). Shark identification tools for the Red Sea and Gulf of Aden are available from FAO.[145]

Membership in RFMOs: Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA), the Southwest Indian Ocean Fisheries Commission (SWIOFC).

Port State Measures Agreement: No.

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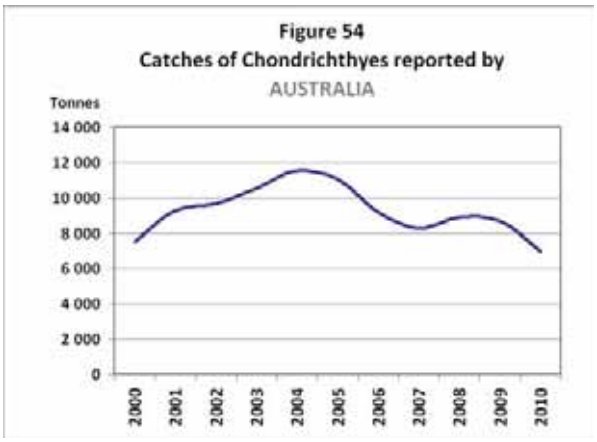
[140] Yemen did not respond to the FAO questionnaire. Information included here is based on the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.
[141] FAO/SWIOFC. 2008. *Report of the first Working Party on Fisheries Data and Statistics. Mombasa, Kenya, 24–27 April 2007*. FAO Fisheries and Aquaculture Report No. 852. Rome, FAO. 92 pp.
[142] Saher, S. 2007. *Biology and status of shark's fishery in Yemen.* UNEP/CMS/MS/Inf/11. Yemen Ministry of Fish Wealth, Marine Science and Biological Researches Authority.
[143] Ibid.
[144] Ibid.
[145] Bonfil, R. & Abdallah, M. 2004. *Field identification guide to the sharks and rays of the Red Sea and Gulf of Aden*. FAO Species Identification Guide for Fishery Purposes. Rome, FAO. 71 pp.; 12 colour plates.
FAO. 2007. *Sharks and rays of the Red Sea and the Gulf of Aden*. FAO Species Identification Cards. Rome.

2.3.24 Australia[146]

Shark catches: Average annual landings of sharks reported by Australia have been about 9 000 tonnes in the last ten years. Catches exceeded 11 000 tonnes in 2004 and in 2005, then steadily decreased to 6 963 tonnes in 2010 (Figure 54).



NPOA Sharks: Yes, 2004 (new version under review). Responsibility for implementing actions under the NPOA Sharks, as well as broader responsibility for shark conservation and management, lies with each jurisdiction (i.e. the states, the Northern Territory and the Commonwealth of Australia).

The objectives of Australia's NPOA Sharks are identical to those of the IPOA Sharks. The NPOA also highlights issues in the conservation and management of sharks (including species identification, data, research and stock assessments, markets and trade, management, and review of management measures). The shark plan identifies 6 themes containing a total of 43 actions (each of which is assigned a priority value). It also establishes a subcommittee under the Marine and Coastal Committee with members from all stakeholder groups and sectors to monitor and review the implementation of the plan against defined performance indicators. The six themes of actions of the NPOA are:

- review existing conservation and management measures;
- improve management and conservation measures;
- improve data collection and handling;
- targeted research and development;
- undertake education and awareness raising;
- improve coordination and consultation.

Fisheries management: Australian fisheries resources within the Australian Fishing Zone are managed under both commonwealth and state/territory legislation. The Commonwealth of Australia has jurisdiction over foreign fisheries, offshore fisheries or fisheries extending to waters adjacent to more than one state or territory or fisheries by agreement with individual states. The Australian Fisheries Management Authority manages all commonwealth fisheries under the Fisheries Management Act 1991. At both the state and the commonwealth levels, management is highly participatory with various joint industry/government bodies being established to advise on fisheries management issues. These bodies also often include community, indigenous and/or conservation representatives. Specific management strategies used by the Australian Fisheries Management Authority and the states are based on publicly available Fishery Management Plans that have been developed through these various management advisory committees and consultative committees. Commonwealth policies are based on an ecosystem approach, and fisheries management measures include access controls, technical measures, TACs and quotas, as well as an MCS and enforcement scheme that incorporates logbook reporting and routine surveillance.

> ***Shark measures:*** The Commonwealth of Australia has imposed a shark finning ban in waters under its jurisdiction; some Australian states and territories follow this policy or require a shark fin-to-body weight ratio or prohibit the dumping of finned carcasses at sea; others (e.g. South Australia and Victoria) allow the removal of non-dorsal fins.[147]
>
> Additional commonwealth and state/territory measures include gear regulations, spatial closures, prohibited species and size limitations for all or specific shark fisheries as well as catch

[146] Australia responded to the FAO questionnaire (see Appendix 3 for the complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

[147] Pelvic fins, claspers and the caudal fin at the subterminal notch.

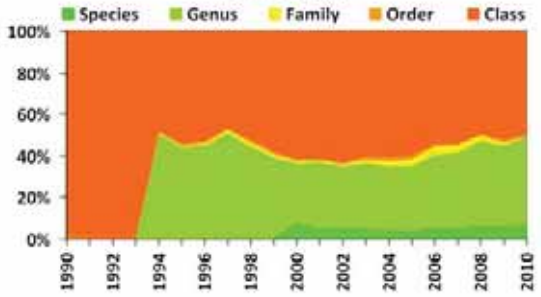
limitations within and outside the Australian EEZ. The Environment Protection and Biodiversity Conservation Act lists 11 shark species as endangered or vulnerable and it is automatically updated following CMS and CITES listings. For some threatened species, the Commonwealth of Australia has devised dedicated rebuilding strategies. Conservation advice or national recovery plans are in place for a number of high-risk species and others are currently under development or review.

Data collection and research: The Fisheries Research and Development Corporation is Australia's leading agency concerned with planning, investing in and managing fisheries research, development and extension. It involves the government and the fishing industry. In the last eight years, more than AUD10 million (about US$10 million) has been invested into shark research led by the Fisheries Research and Development Corporation, and additional funds have been spent on shark research by other government and private institutes. The research activities vary between states and include fishery monitoring programmes, gear technology, biological and habitat investigations, and stock assessments.[148]

High-risk sharks are being identified through ecological risk assessments. In 2009, a comprehensive shark assessment report[149] was prepared in support of the upcoming review of the NPOA; it highlighted the need for improved data verification methods. The Fisheries Research and Development Corporation also commissioned a Sharks Research and Development Framework (Shark Futures, completed in 2010) as a basis for the allocation of funds.

Reporting: In 2010, about 50 percent of the Australian shark catches were reported to FAO at highly aggregated levels, 42 percent were reported at genus level (*Mustelus* spp. and *Pristiophorus* spp.) and only 7 percent at species level (Figures 55 and 56). In its response to FAO, Australia informed that "for target shark fisheries, logbooks usually provide for the recording of catch and effort information at a species or species-group level". However, "catch data for Commonwealth fisheries are ... derived from logbook data (...) or catch disposal records" and "many species are grouped together into generic categories ... for catch reporting". Australia also reported on recent efforts by North Australia to improve the identification of sharks. FAO species identification guides that include elasmobranchs are available for the Western Central Pacific, and a guide on deep sea Chondrichthyes is under preparation (see bibliography).[150]

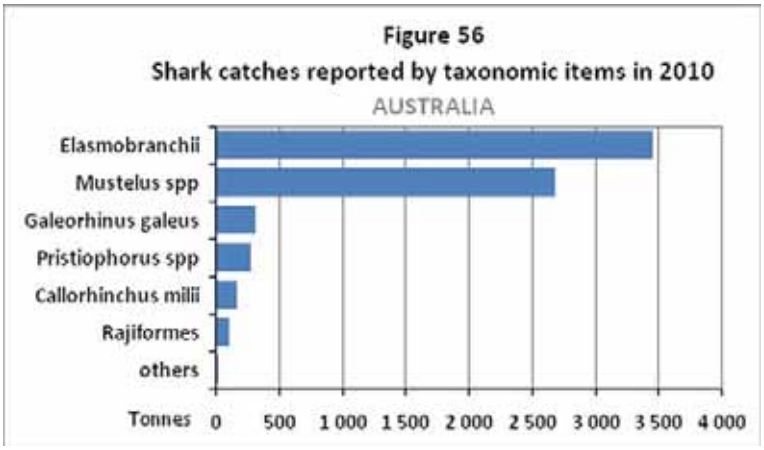
Figure 55
Proportion of shark catches reported at different taxonomic levels
AUSTRALIA



Membership in RFMOs: CCAMLR, CCSBT, IOTC and WCPFC.

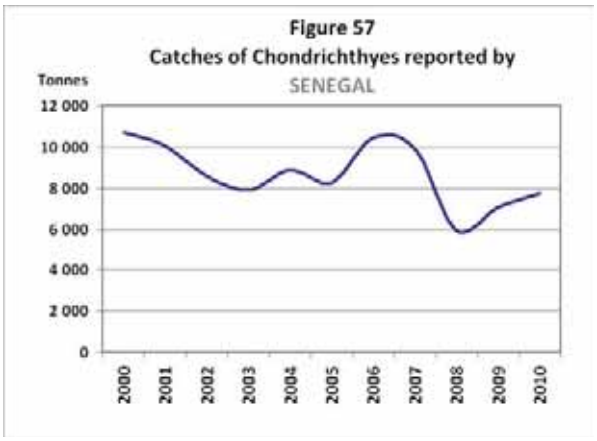
Port State Measures Agreement: Signed, not yet ratified. Australia has adopted an NPOA IUU. IUU fishing by foreign shark fishing vessels in Australian waters is reported as a problem that is being addressed through increased MCS and enforcement activities. The South East Asia RPOA IUU from 2007 contributes to the effort to reduce the take, mortality and/or trade of vulnerable threatened shark species.

[148] For more detailed information, see Appendix 3.
[149] Available at: http://adl.brs.gov.au/data/warehouse/pe_brs90000004188/NPOA_Shark2009_ap14.pdf
[150] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en



2.3.25 Senegal[151]

Shark catches: Landings of sharks reported by Senegal from 2000 to 2009 averaged 8 785 tonnes per year, representing 1 percent of the globally reported catches of sharks in this period. The reported catches exceeded 10 000 tonnes in 2000, 2001 and 2006 and then decreased to 7 098 tonnes in 2009 (7 758 tonnes in 2010) (Figure 57).



NPOA Sharks: Yes (2005). In 2007, the implementation of the NPOA Sharks was reviewed, resulting in several recommendations regarding the improvement of capacity building, data collection and assessments, and regional cooperation.

The NPOA Sharks consists of three parts. The first part reviews the national shark fisheries, the available biological and socio-economic information on sharks, the existing national fisheries management framework and the main problems related to the sustainable management of sharks. The second part outlines the objectives of the NPOA, and the third part describes 12 activities to be implemented from, 2005 to 2009 (deadlines are included) under 5 strategic options:

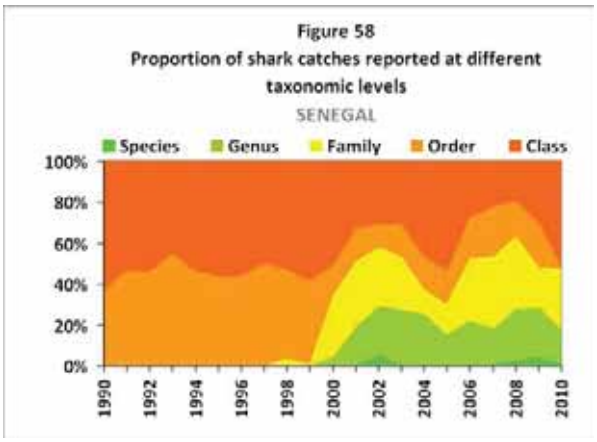
- strengthening the stakeholders' technical and management capacities;
- promoting consultation among the stakeholders (includes raising public awareness);
- improving the information on shark resources and fisheries;
- creating and implementing conservation and management measures;
- strengthening the subregional, regional and international cooperation for shark conservation and management.

Fisheries management: The Ministry of Maritime Economy supervises the activities of the Direction des pêches maritimes (Directorate for Maritime Fishing), which is in charge of technical and administrative aspects of maritime fishing. Fishery policies in Senegal are based on the 2001 Strategy for the Sustainable Development of Fisheries and Aquaculture, the 2007 Letter of Fishery Sector Policy, the 2007 Action Plan and the Code of Maritime Fisheries[152] (currently under review). Fisheries management in Senegal gives emphasis to participatory management for coastal fisheries and access rights for all fishers. On a local level, the ministry works with local fishers councils and local artisanal fishers' councils to co-manage coastal resources in each particular area.

[151] Senegal responded to the FAO questionnaire (see Appendix 3 for the complete response). Information included here is based on its response and NPOA Sharks, the FAO Fishery and Aquaculture Country Profiles and Briefs, and other sources as referenced.

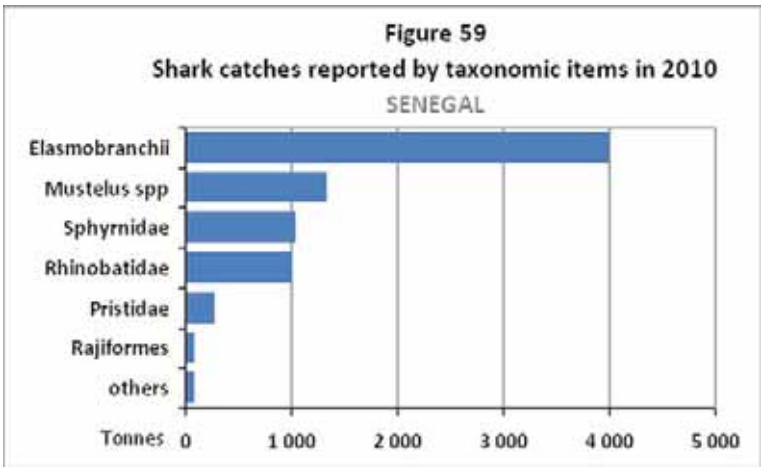
[152] Law 98-32 of 14 April 1998 and its implementing decrees.

Shark measures: The revised but not yet adopted Code of Maritime Fisheries foresees a prohibition of shark finning and introduction of an export tax for shark fins (although Senegal states that its sharks are mainly caught as bycatch only). The code also proposes to prohibit the catch of sawfishes and several other endangered sharks species,[153] to introduce size restrictions for the blackchin guitarfish (*Rhinobatos cemiculus*) and scalloped hammerhead (*Sphyrna lewini*), to establish a biological recovery period, to designate seasonally closed areas for industrial fisheries, and to introduce bycatch reducing devices for shrimp trawlers.



Data collection and research: The Centre for Oceanographic Research of Dakar-Thiaroye is responsible for the monitoring of fishery resources and operations. Following the adoption of the NPOA, observers have been recruited to collect eco-biological and socio-economic data on shark fisheries at landings sites. In addition, several training workshops were organized as part of the action plan for fisheries officers; as a result, the species of sharks have been increasingly specified in statistical reports.

Reporting: Since 2000, reporting on sharks to FAO by Senegal has much improved. In 2010, about 50 percent of the shark catches were reported at highly aggregated levels, about one-third at family level and almost one-fifth at genus level (Figures 58 and 59). An FAO regional species identification guide (including elasmobranchs) for the Eastern Central Atlantic and an FAO Field Guide are available (see bibliography).[154]



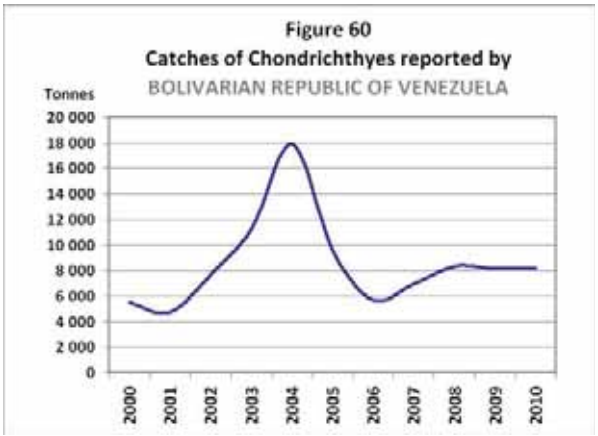
Membership in RFMOs: ICCAT, Cooperating Non-contracting Party to IOTC, and Cooperating Non-member to WCPFC. In addition, Senegal is part of the Sub-Regional Fisheries Commission (CSRP) that groups together seven member States. The CSRP adopted a Shark Sub-Regional Plan of Action in 2001 that promotes subregional cooperation for the conservation and management of sharks that are shared resources among the member States of the commission.

Port State Measures Agreement: No.

[153] *Rhynchobatus luebberti*, *Sphyrna mokarran*, *Squatina aculeata*, *Squatina oculata* and *Squatina squatina*.
[154] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

2.3.26 Venezuela (Bolivarian Republic of)[155]

Shark catches: The Bolivarian Republic of Venezuela reported an average of 8 536 tonnes of shark landings per year, representing 1.1 percent of shark landings reported globally. In the last decade, the trend in landings reached a peak of 17 907 tonnes in 2004 (Figure 60).



NPOA Sharks: Yes (2006). The NPOA gives an overview of the status of major shark species and fisheries in the Bolivarian Republic of Venezuela. It describes the relevant legal fisheries regime of the country and formulates a number of objectives.

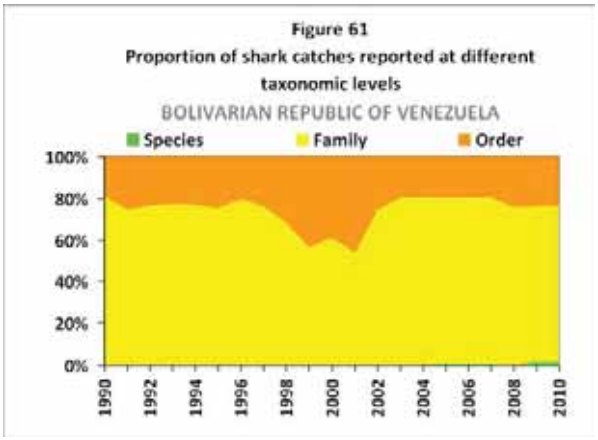
The NPOA foresees the establishment of a multidisciplinary and multisector National Council for Sharks (Consejo Nacional de Tiburones) for the regular review of the NPOA, including a biennial stock assessment of commercial sharks. It also provides for MCS measures to enforce shark conservation and management measures. The plan identifies a number of priority actions including:

- development of shark species identification guides;
- creation of a national information system for the NPOA;
- creation of programmes for improving shark monitoring at ports and on board vessels;
- creation of research programmes on shark fisheries (fleet composition, gear, database), shark biology and stock assessment.

Fisheries management: The Socialist Institute of Fisheries and Aquaculture is responsible for fisheries management, which is rooted in the Fisheries and Aquaculture Law.[156] Management is based on the precautionary approach and includes entry controls, technical measures, TACs and quotas and MCS measures. Moreover, the Bolivarian Republic of Venezuela was the first country that banned the activities of industrial trawling in the territorial sea and EEZ (in 2009).

Shark measures: The Bolivarian Republic of Venezuela is considering the adoption of a shark finning ban. It is also considering other actions such as closing the Roques archipelago – an important breeding and reproduction ground for sharks – to fisheries.

Data collection and research: The Fisheries and Aquaculture Law (Articles 73 and 74) requires the collection of data on catch and effort of commercial species, including more detailed information for large vessels. According to the NPOA Sharks, commercial shark stocks are assessed every two years. In addition, the NPOA Sharks foresees the monitoring of sharks catches at landing sites and implementation of a 10 percent observer coverage on board.



Reporting: Shark catches are reported to FAO at high levels of aggregation (75 percent of landings are from the family Carcharhinidae, and 24 percent of the order Rajiformes) (Figure 61). However, the NPOA Sharks includes detailed descriptions of shark landings by species, indicating a greater capacity for species

[155] The Bolivarian Republic of Venezuela did not respond to the FAO questionnaire. Information included here is based on the FAO Fishery and Aquaculture Country Profiles and Fishery Briefs and other sources as referenced.
[156] Official Gazette No. 37727, 8 July 2003.

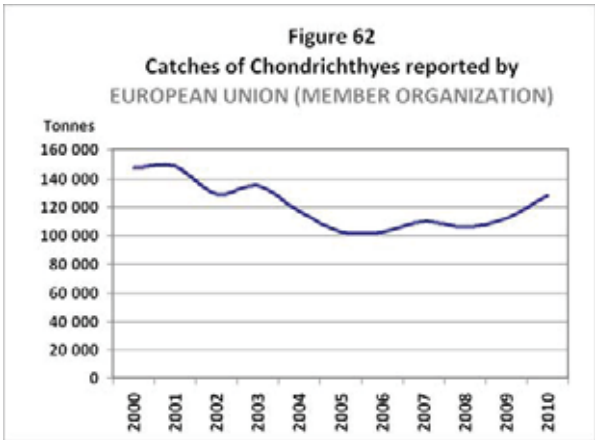
identification in the country than is evident from the reports to FAO.[157] The development of shark identification tools is included in the NPOA Sharks. FAO species identification guides that include elasmobranchs are available for the Western Central Atlantic and for the northern coast of South America (see bibliography).[158]

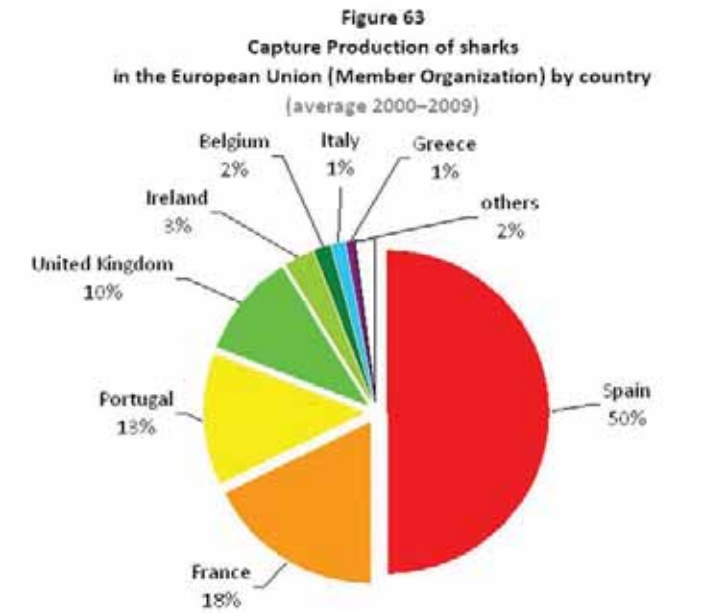
Membership in RFMOs: IATTC and ICCAT.

Port State Measures Agreement: No.

2.4 European Union (Member Organization)[159]

Shark catches: In 2010, member countries of the European Union (Member Organization) together reported shark catches of almost 130 000 tonnes, representing 17 percent of the reported global catches in that year. From 2000 to 2005, the total shark catches of the European Union (Member Organization) declined by almost one-third, from more than 147 000 tonnes to about 102 000 tonnes. Since then, a slow increase in the data can be observed to more than 128 000 tonnes in 2010 (Figure 62). Almost half of these shark catches in 2010 were reported by Spain with 61 760 tonnes, followed by France with 21 270 tonnes, Portugal with 16 365 tonnes and the United Kingdom of Great Britain and Northern Ireland with 11 828 tonnes. The other countries of the European Union (Member Organization) together account for less than 10 percent of its reported shark catches (Figure 63).





NPOA Sharks: Yes, European Union Plan of Action (EUPOA Sharks) adopted by the EC in February 2009.[160] The EUPOA Sharks describes EC shark fisheries and shark markets as well as the legislative framework applicable to sharks in the European Union (Member Organization).

[157] The NPOA also observes that while the industrial trawl fishery reports shark catches at highly aggregated levels, observers on board pelagic longline fishing vessels provide much better information about the species composition of catches.
[158] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en
[159] The European Union responded to the FAO questionnaire (see Appendix 3 for the complete response)

Under the guiding principles of sound scientific evidence, regional cooperation, and an integrated framework of actions, the EUPOA proposes concrete actions (including timetables) under the following three specific objectives:

- to broaden the knowledge both on shark fisheries and on shark species and their role in the ecosystem;
- to ensure that directed fisheries for sharks are sustainable and that bycatch of shark resulting from other fisheries is properly regulated;
- to encourage a coherent approach between the internal and external Community policy for sharks.

Fisheries management: Countries of the European Union (Member Organization) manage their fisheries in collaboration through the CFP,[161, 162] which was formally created in 1983. The core principles on which the CFP currently rests are clearly stated in the legal text commonly known as the "Basic Regulation". Since its adoption in 2002, the CFP has provided the main legal basis for all subsequent fisheries legislation at the level of the European Union (Member Organization). According to this text, agreed by the fisheries ministers of the then 15 member nations, the aim of the CFP is to promote sustainable fisheries and aquaculture in a healthy marine environment that can support an economically viable industry providing employment and opportunities for coastal communities. On 13 July 2011, the EC presented its proposals for the reform of the CFP. The reform will contribute to making the CFP more efficient in ensuring the economic viability of the European fleets, conserving fish stocks, integrating with the maritime policy and providing good-quality food to consumers.[163]

Shark measures: The European Union (Member Organization) prohibits the dumping of finned shark carcasses at sea in its waters and for its vessels wherever they may fish.[164] Currently, a 5 percent fin-to-body weight ratio is required for sharks landed with separated fins, but the shark finning measure from 2003 is under revision with the objective to ban the finning of sharks on board vessels (landing of sharks with fins attached). The European Union (Member Organization) also prohibits fishing for, retaining on board, transshipping or landing several sharks, skates and rays, both in the waters of the of the European Union (Member Organization) and in international waters. A number of sharks are under TAC and quota regulation, and a TAC of zero was set for 2011 in certain areas for spurdog and porbeagle sharks.[165, 166]

Deep-sea sharks are protected by various measures.[167] For 2012, a zero TAC has been adopted for all deep-sea sharks. In the Mediterranean countries, a number of gear regulations for the conservation of vulnerable sharks are in place, including a ban on driftnets and prohibition of bottom set gear for several groups of sharks as well as exclusion of trawling in coastal areas. In the Skagerrak and the North Sea, TACs for demersal elasmobranchs have been agreed since 1999 and were set at zero for common skate and porbeagle in 2011.[168]

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[160] COM(2009)40final. 05.02.2009.
[161] Council Regulation (EC) No 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the CFP.
[162] See: http://ec.europa.eu/fisheries/cfp/index_en.htm
[163] COM(2011) 417 final.
[164] Council Regulation (EC) No. 1185/2003.
[165] Council Regulation (EU) No. 43/2012 of 17 January 2012, fixing for 2012 the fishing opportunities available to EU vessels for certain fish stocks and groups of fish stocks that are not subject to international negotiations or agreements.
[166] Council Regulation (EU) No. 44/2012 of 17 January 2012, fixing for 2012 the fishing opportunities available in EU waters and, to EU vessels, in certain non-EU waters for certain fish stocks and groups of fish stocks that are subject to international negotiations or agreements.
[167] Council Regulation (EU) No. 1225/2010 of 13 December 2010, fixing for 2011 and 2012 the fishing opportunities for EU vessels for fish stocks of certain deep-sea fish species.
[168] Both are prohibited species, requiring that, if caught, they be promptly released unharmed to the extent practicable.

Data collection and research: The multiannual Community programme for the period 2011–13[169] provides for the collection, management and use of data on sharks in addition to the data already required in the programming period 2009–2010.[170, 171]. The EC has signed a contract with an external contractor for the provision of scientific advice for the purpose of the implementation of research tasks deriving from the EUPOA.

Reporting: In 2010, the countries of the European Union (Member Organization) reported 81 percent of the landings at species level (Figure 64). Their sharks catches are dominated by blue shark (57 percent, reported mainly by Spain), followed by the genus *Raja* (7 percent) and by the small-spotted catshark (5 percent) (Figure 65). An FAO identification guide for North Atlantic Chondrichthyes is being prepared with support from the EC, and FAO identification tools for sharks in the Mediterranean and Black Sea are available (see bibliography).[172]

Figure 64
Proportion of shark catches reported at different taxonomic levels
EUROPEAN UNION (MEMBER ORGANIZATION)

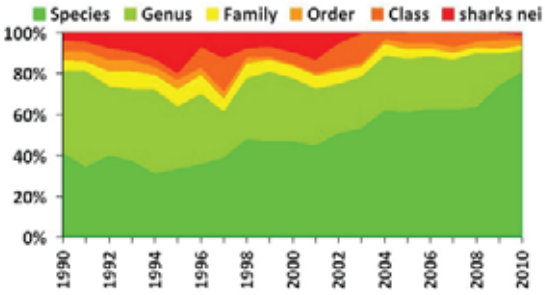
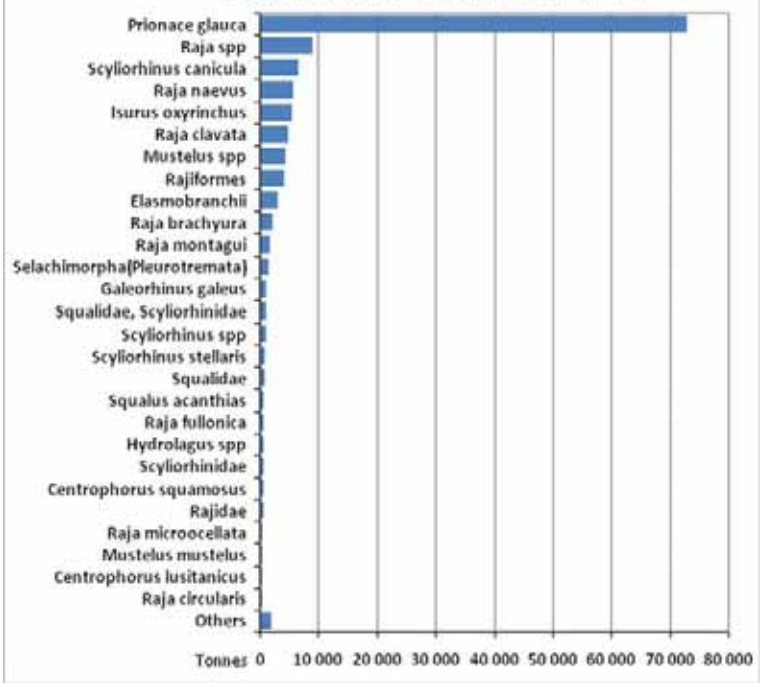


Figure 65
Shark catches reported by taxonomic items in 2010
EUROPEAN UNION (MEMBER ORGANIZATION)



[169] Commission Decision of 18 December 2009 adopting a multiannual Community programme for the collection, management and use of data in the fisheries sector for the period 2011–2013.
[170] Council Regulation (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the CFP.
[171] Commission Decision of 6 November 2008 adopting a multiannual Community programme pursuant to Council Regulation (EC) No 199/2008 establishing a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the CFP.
[172] See also FAO FishFinder at: www.fao.org/fishery/fishfinder/publications/en

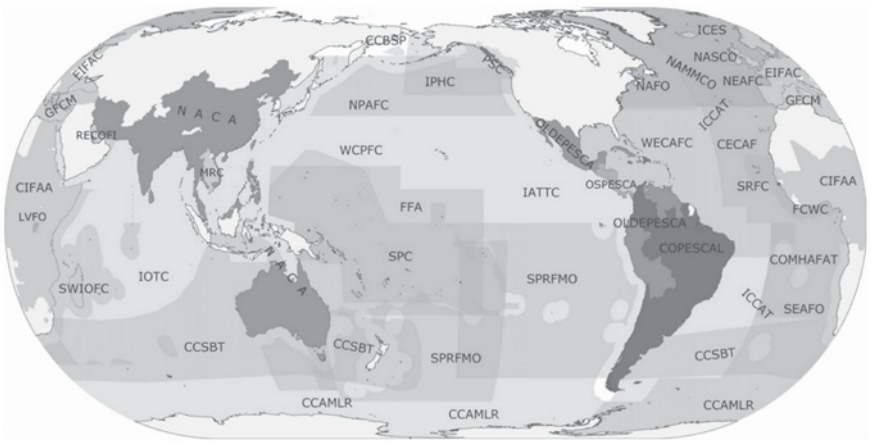
Membership in RFMOs: The European Union (Member Organization), through the EC, is active in CCAMLR, CCSBT, GFCM, IATTC, ICCAT, IOTC, NAFO, NEAFC, North Atlantic Salmon Conservation Organization (NASCO), SEAFO, South Indian Ocean Fisheries Agreement (SIOFA), South Pacific Regional Fisheries Management Organisation (SPRFMO), WCPFC, and the Convention on the Conservation and Management of the Pollock Resources in the Central Bering Sea (CCBSP). It has advisory status in the Fishery Committee for the Eastern Central Atlantic (CECAF) and Western Central Atlantic Fishery Commission (WECAFC).

Port State Measures Agreement: Signed and ratified.

2.5 Regional shark measures

Almost all States subject to this review are involved in regional or subregional cooperation for sustainable fisheries through RFMOs or other international organizations (Figure 66). A number of RFMOs have adopted measures relevant for the conservation and management of sharks. These are summarized below. In addition, there exist a number of Regional Plans of Action for the conservation and management of sharks (RPOAs Sharks) in addition to the one from the European Union (Member Organization) described above. Examples for such RPOAs Sharks are the 2003 United Nations Environment Programme (UNEP)/IUCN Action Plan for the Conservation of Chondrichthyes in the Mediterranean Sea, the 2010 CPPS RPOA for the Conservation of Sharks, Rays and Chimeras in the South East Pacific, the 2012 shark finning ban by the Central American Integration System, the 2009 Pacific Island RPOA (collaborative effort by the Pacific Islands Forum Fisheries Agency, Secretariat of the Pacific Regional Environmental Programme, Secretariat of the Pacific Community and WCPFC), the CSRP and International Foundation for the Banc d'Arguin subregional Plan of Action on the Conservation and Sustainable Management of Shark Populations in West Africa (SRPA Sharks), the draft OLDEPESCA RPOA and the regional support and planned RPOA by the BOBLME, including a regional sharks working group.

Figure 66
Indicative RFB areas



Source: FAO.

The role that RFMOs should play in conservation and management of vulnerable species including sharks has been highlighted by the UNCLOS, the UNFSA and the Code. The UNFSA has declared RFMOs as the most important and relevant forum for cooperation on straddling and highly migratory fish stocks. According to these international instruments, RFMOs should not only have the interest of the exploited stocks at heart but they should also consider the effects of fisheries on other species belonging to the same ecosystem and adopt the EAF.

Many of the constituting agreements or conventions for the RFMOs relevant to this review were established before the adoption of the above-mentioned principles and requirements of the UNCLOS, the UNFSA and the Code.[173] As a consequence, the precautionary approach and the ecosystem approach were originally not embedded in all such conventions. Nonetheless, today, all RFMOs have recognized the obligation to introduce mitigation measures for adverse effects of fisheries on the environment and associated species, in particular on vulnerable species.

2.5.1 Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

Objective: The objective of the Convention on the Conservation of Antarctic Marine Living Resources is the conservation of the species under its responsibility, i.e. fin fish, molluscs, crustaceans and all other species of living organisms, including birds, found south of the Antarctic Convergence. The Contracting Parties establish and agree to maintain the CCAMLR and the function of the commission shall be to give effect to the objective and principles set out in Article II of the Convention (Article IX.1).

Members (Contracting Parties**):** Argentina, Australia, Belgium, Brazil, Chile, China, France, Germany, India, Italy, Japan, New Zealand, Norway, Poland the Republic of Korea, the Russian Federation and the European Union (Member Organization).

Measures relevant for shark conservation and management:

Catch measures: In 2006, the CCAMLR prohibited directed fishing on shark species in the Convention Area for purposes other than scientific research.[174]

Bycatch measures: The CCAMLR requires that any bycatch of shark, especially juveniles and gravid females, taken accidentally in other fisheries, shall, as far as possible, be released alive.[175] The CCAMLR also adopted guidelines for releasing skates to minimize damage and quotas for the bycatch of skates and rays[176] and adopted a measure to minimize incidental mortality of non-target species including sharks.[177]

2.5.2 Commission for the Conservation of Southern Bluefin Tuna (CCSBT)

Objective: The objective of the CCSBT is to ensure, through appropriate management, the conservation and optimum utilization of southern bluefin tuna (Article 3 of the Convention for the Southern Bluefin Tuna).

Members (Contracting Parties): Australia, Indonesia, Japan, New Zealand, the Republic of Korea. The CCSBT has created an Extended Commission, which provides for the participation of the Fishing Entity of Taiwan Province of China. The Philippines, South Africa and the European Union (Member Organization) are Cooperating Non-members.

Measures relevant for shark conservation and management: To date, the CCSBT has not adopted any binding measures for the conservation and management of sharks. However, it has recommended[178] that its members implement the IPOA Sharks and comply with shark measures adopted by the IOTC, WCPFC and ICCAT in their Convention Areas irrespective of whether the member or cooperating non-member concerned is a member of the relevant commission or otherwise cooperates with it. In this context, the CCSBT encourages its members to collect and provide data on ecologically related species and to conduct an assessment of the risks to ecologically related species posed by fishing for southern bluefin tuna. The commission has established a Working Group on Ecologically Related Species.

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[173] Except the WCPFC, which was established in 2000.
[174] Conservation Measure 32-18 (2006) Conservation of sharks.
[175] Ibid.
[176] CM 33-02 (2010) Limitation of by-catch in Statistical Division 58.5.2 in the 2011/12 season; CM 33-03 (2010) Limitation of by-catch in new and exploratory fisheries in the 2011/12 season.
[177] Conservation Measure 26-01 (2008).
[178] Recommendation to Mitigate the Impact on Ecologically Related Species of Fishing for Southern Bluefin Tuna (CCSBT recommendations are not binding on contracting parties).

2.5.3 General Fisheries Commission for the Mediterranean (GFCM)

Objective: The purpose of the GFCM is to promote the development, conservation, rational management and best utilization of living marine resources, as well as the sustainable development of aquaculture in the Region (Article III of the Agreement for the establishment of the General Fisheries Commission for the Mediterranean). The GFCM has competence on all living marine resources in the area covered by it, i.e. the Mediterranean Sea, the Black Sea and connecting waters.

Members: Albania, Algeria, Bulgaria, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Japan, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Romania, Slovenia, Spain, the Syrian Arab Republic, Tunisia, Turkey and the European Union (Member Organization).[179]

Measures relevant for shark conservation and management:[180]

***Fin measures**:* The GFCM has adopted ICCAT Recommendation 04-10 that prohibits the dumping of shark carcasses at sea and requires a 5 percent fin-to-body weight ratio for sharks on board vessels.[181]

***Prohibited species**:* The GFCM has adopted all ICCAT recommendations regarding thresher sharks, shortfin mako sharks and hammerhead sharks.[182]

***Gear measures**:* To improve the protection of vulnerable demersal species, the GFCM has set gear requirements for demersal fisheries and banned trawling at depths greater than 1 000 m.[183]

***Reporting requirements**:* The GFCM requires that numbers and species of highly migratory sharks caught are recorded in the logbooks.[184]

Data collection and research: A three-year working programme was initiated in 2010 to improve the knowledge and assess the status of elasmobranchs, including development of a standardized protocol to promote the collection of basic data on elasmobranch species in the Mediterranean Sea and the Black Sea.

2.5.4 Inter-American Tropical Tuna Commission (IATTC)

Objective: The objective of the 2010 Antigua Convention, which replaced the 1949 Convention establishing the IATTC, is to ensure the long-term conservation and sustainable use of the fish stocks covered by the Convention, in accordance with the relevant rules of international law. Fish stocks covered by the Convention means stocks of tunas and tuna-like species and other species of fish taken by vessels fishing for tunas and tuna-like species in the Convention Area.

Members: Belize, Canada, China, Colombia, Costa Rica, Ecuador, El Salvador, France, Guatemala, Japan, Kiribati, Mexico, Nicaragua, Panama, Peru, the Republic of Korea, the United States of America, Vanuatu, Venezuela (Bolivarian Republic of), European Union (Member Organization), and Taiwan Province of China.[185]

Measures relevant for shark conservation and management:[186]

***Plan of Action for Sharks**:* The IATTC requires that members and cooperating non-members (CPCs) establish and implement an NPOA Sharks.

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[179] Web page: www.gfcm.org/gfcm/about/en#Org-OrgsInvolved
[180] GFCM recommendations are binding on its members.
[181] GFCM/2005/3 (E).
[182] GFCM 34/2010/4 (C); GFCM/35/2011/7 (B); GFCM/35/2011/7 (C) and others in previous years.
[183] Recommendations GFCM/2005/1, GFCM/31/2007/1, GFCM/31/2007/3, GFCM/33/2009/1, and GFCM/33/2009/2.
[184] Recommendation GFCM/35/2011/1.
[185] Web page: www.iattc.org/HomeENG.htm
[186] Where not referenced otherwise, measures are included in Resolution C-05-03 (2005).

***Fin measure**s:* The IATTC adopted shark finning measures requiring that CPCs fully utilize retained sharks and apply a 5 percent fin-to-body weight ratio for sharks on board vessels.

Discard measures: The release of live sharks, especially juveniles, that are caught incidentally and are not used for food and/or subsistence is encouraged. Whitetip sharks should be released alive.[187]

***Prohibited species**:* Targeting and retaining oceanic whitetip sharks is prohibited.[188]

Gear measures: CPCs shall, where possible, undertake research to identify ways to make fishing gear more selective.

Reporting requirements: Annual reports are required for catches, effort by gear type, landing and trade of sharks by species. Discards and releases of oceanic whitetip sharks with indication of status (dead or alive) have to be recorded and reported.[189]

Data collection and research: In 2005, the IATTC resolved to provide preliminary advice on the stock status of key shark species and proposed a research plan for a comprehensive assessment of these stocks in 2006. CPCs are encouraged, where possible, to conduct research to identify shark nursery areas.

2.5.5 International Commission for the Conservation of Atlantic Tunas (ICCAT)

Objective: ICCAT is responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and adjacent seas. Its objective is the cooperation in maintaining the populations of these fishes at levels that will permit the maximum sustainable catch for food and other purposes.

Members: (Contracting Parties, and Cooperating Non-contracting Parties, Entities or Fishing Entities [CPCs]): Albania, Algeria, Angola, Barbados, Belize, Brazil, Canada, Cape Verde, China, Côte d'Ivoire, Croatia, Egypt, Equatorial Guinea, France, Gabon, Ghana, Guatemala, Guinea, Honduras, Iceland, Japan, Libya, Mauritania, Mexico, Morocco, Namibia, Nicaragua, Nigeria, Norway, Panama, the Philippines, the Republic of Korea, the Russian Federation, Saint Vincent and the Grenadines, Sao Tome and Principe, Senegal, Sierra Leone, South Africa, the Syrian Arab Republic, Trinidad and Tobago, Tunisia, Turkey, the United Kingdom (Overseas Territories), the United States of America, Uruguay, Vanuatu, Venezuela (Bolivarian Republic of) and the European Union (Member Organization).

Measures relevant for shark conservation and management:[190] ICCAT adopted Resolution 03-10 on the shark fishery in 2003 and a number of species-specific measures in subsequent years.

IPOA Sharks: ICCAT has resolved that each CPC should fully implement an NPOA Sharks.[191]

Shark fin measures: ICCAT regulates shark finning by requiring a 5 percent fin-to-body weight ratio for finned sharks on board vessels and demands that CPCs fisheries fully utilize their entire catches of sharks.[192]

Discard measures: Live discard of unwanted sharks (especially juveniles) is encouraged.

Prohibited species: ICCAT prohibits catches and trade of thresher sharks (*Alopias superciliosus*),[193] oceanic whitetip sharks (*Carcharhinus longimanus*)[194] and hammerhead sharks of the family *Sphyrnidae* (except for the *Sphyrna tiburo*).[195]

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[187] Resolution c-11-10 (2011).
[188] Ibid.
[189] Ibid.
[190] Recommendations are mandatory for ICCAT CPCs; resolutions are strongly encouraged.
[191] Resolution 03-10 on shark fishery (2003).
[192] Recommendation 04-10 concerning the conservation of sharks caught in association with fisheries managed by ICCAT (2004.)
[193] Recommendation 09-07 on the Conservation of Thresher Sharks Caught in Association with Fisheries in the ICCAT Convention Area (2009).
[194] Recommendation 10-07 on the Conservation of Oceanic Whitetip Sharks caught in Association with fisheries in the ICCAT Convention Area (2010).

Reporting requirements: CPCs are required to report shark catches in accordance with ICCAT data reporting requirements. In particular, discards or releases (dead or alive) of oceanic whitetip sharks (*Carcharhinus longimanus)* and hammerhead sharks have to be reported.

Data collection and research: The ICCAT Standing Committee on Research and Statistics has conducted a stock assessment for shortfin mako (*Isurus oxyrinchus*) in 2012.[196] In addition, ICCAT encourages research towards improved gear selectivity and for the identification of shark-nursery areas. In 2003, ICCAT requested that its members report on their shark catches, effort by gear type, landings and trade of shark products by 2004.

2.5.6 Indian Ocean Tuna Commission (IOTC)

Objective: The objective of the IOTC is to promote cooperation among its members with a view to ensuring, through appropriate management, the conservation and optimum utilization of stocks covered by the IOTC Agreement and to encouraging sustainable development of fisheries based on such stocks. The species covered by the IOTC Agreement are 16 tuna and tuna-like species.[197]

Members: (Contracting Parties and Cooperating Non-contracting Parties[CPCs]): Australia, Belize, China, Comoros, Eritrea, France, Guinea, India, Indonesia, Iran (Islamic Republic of), Japan, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Oman, Pakistan, the Philippines, the Republic of Korea, Seychelles, Sierra Leone, Sri Lanka, the Sudan, Thailand, the United Kingdom of Great Britain and Northern Ireland, the United Republic of Tanzania, Vanuatu and the European Union (Member Organization).[198]

Measures relevant for shark conservation and management: The IOTC adopted a number of measures for the conservation and management of sharks in 2005;[199] these are the main reference for the measures described below unless noted otherwise.

Shark fin measures: The IOTC requires that fishers fully utilize their entire catches of sharks and has adopted a 5 percent fin-to-body weight ratio for sharks on board vessels up to the first point of landing.

Discard measures: In fisheries that are not directed at sharks, CPCs shall encourage the release of live sharks, especially juveniles and gravid females, to the extent possible, that are caught incidentally and are not used for food and/or subsistence.

Prohibited species: Fishing, landing and trade of thresher sharks is prohibited; discard and reporting requirements apply.[200]

Reporting requirements: Shark catches have to be reported annually, in accordance with IOTC data reporting procedures, including available historical data. Particular reporting requirements apply to thresher sharks (see above).

Data collection and research: Since 2006, the Scientific Committee has provided regular information and advice on key shark species (including assessment of the implementation of IPOA Sharks among CPCs in 2011). The IOTC encourages CPCs in undertaking research towards more selective fishing gear and to identify shark nursery areas. The IOTC Working Party on Ecosystem and By-catch also addresses sharks.

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[195] Recommendation 10-08 on Hammerhead Sharks (family Sphyrnidae) Caught in Association with Fisheries Managed by ICCAT (2010).
[196] Recommendation 10-06 on Atlantic Shortfin Mako Sharks Caught in Association with ICCAT Fisheries.
[197] Yellowfin tuna, skipjack, bigeye tuna, albacore tuna, southern bluefin tuna, longtail tuna, kawakawa, frigate tuna, bullet tuna, narrow barred Spanish mackerel, narrow barred Spanish mackerel, Indo-Pacific blue marlin, black marlin, striped marlin, Indo-Pacific sailfish and swordfish.
[198] Web page: www.fao.org/fishery/rfb/iotc/en
[199] Resolution 05/05 Concerning the Conservation of Sharks Caught in Association with Fisheries Managed by IOTC.
[200] Resolutions 10/12 (2010) and 12/09 (2012) on the Conservation of Thresher Sharks (Family Alopiidae) Caught in Association with Fisheries in the IOTC Area of Competence.

2.5.7 Northwest Atlantic Fisheries Organization (NAFO)

Objective: According to the 2007 Convention on Cooperation in the Northwest Atlantic Fisheries[201] (adopted but implemented on a voluntary basis until the ratification process is concluded), the objective is "to ensure the long term conservation and sustainable use of the fishery resources in the Convention Area and, in so doing, to safeguard the marine ecosystems in which these resources are found". The Convention applies to all fishery resources of the Convention Area, with certain exceptions: salmon, tunas and marlins, cetacean stocks managed by the International Whaling Commission or any successor organization, and sedentary species of the Continental Shelf (Article I.4).

Members (Contracting Parties [CPs]: Canada, Cuba, Denmark, France, Iceland, Japan, Norway, the Republic of Korea, the Russian Federation, Ukraine, the United States of America and the European Union (Member Organization).

Measures relevant for shark conservation and management: Since 2006, NAFO has adopted measures for the conservation and management of sharks (the descriptions below are based on the 2012 measures[202]).

Shark fin measures: NAFO has prohibited the discard of shark carcasses at sea and adopted a 5 percent fin-to body weight ratio for sharks on board vessels, up to the first point of landing.

Discard measures: In fisheries that are not directed at sharks, each CPs shall encourage every vessel entitled to fly its flag to release live sharks, especially juveniles, that are not intended for use as food or subsistence.

Catch measures: Skates (Rajidae) are managed through a TAC and quotas based on biennial stock assessments of thorny skate (*Amblyraja radiata*).

Reporting requirements: CPs are required to report all catches of sharks, including available historical data.

Gear measures: Gear requirements apply for the skate fishery.

Data collection and research: CPs are encouraged to undertake research towards more selective fishing gear for the protection of shark and to identify shark nursery areas.

2.5.8 North East Atlantic Fisheries Commission (NEAFC)

Objective: According to the new "Convention on Future Multilateral Co-operation in North-east Convention on Future Multilateral Co-operation in Northeast Atlantic Fisheries" from 2007 (adopted but implemented on a voluntary basis until ratification process is concluded), the objective is "to ensure the long-term conservation and optimum utilisation of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits". The fisheries resources are fish, molluscs, crustaceans and including sedentary species, and excluding, insofar as they are dealt with by other international agreements, highly migratory species listed in Annex I of the UNCLOS, and anadromous stocks.

Members (Contracting Parties [CPs]): Denmark (in respect of Faroe Islands and Greenland), Iceland, Norway, the Russian Federation and the European Union (Member Organization).

Measures relevant for shark conservation and management:[203]

Shark fin measures: In 2006, the NEAFC adopted a 5 percent shark fin-to-body weight ratio on board vessels up to the first point of landing.[204]

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[201] Amending the 1979 "Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries".
[202] Conservation and Enforcement Measures (2012) NAFO/FC Doc. 12/1 – Article 12 – Conservation and Management of Sharks.
[203] Unless otherwise indicated, measures are based on NEAFC Recommendation s from 2012.
[204] Report of the 25th Annual Meeting of the North-East Atlantic Fisheries Commission, 13–17 November 2006.

Discard measures: Live release is required for spurdog (*Squalus acanthias*) and porbeagle (*Lamna nasus*).

Prohibited species: Directed fisheries are prohibited for 17 deep-sea shark species as well as for basking sharks (*Cetorhinus maximus*), spurdog (*Squalus spp.*) and (*Lamna nasus*).

Reporting requirements: Specific reporting requirements apply to 17 deep-sea shark species as well as spurdog and porbeagle.[205]

Data collection and research: CPs are encouraged to submit all data on deep-sea sharks available to the ICES for further evaluation of the state of the stocks.

2.5.9 Southeast Atlantic Fisheries Organization (SEAFO)

Objectives: The Convention on the Conservation and Management of Fishery Resources in the South-East Atlantic Ocean was signed on 20 April 2001 and entered into force on 13 April 2003. The objective of the Convention is to ensure the long-term conservation and sustainable use of the fishery resources in the Convention Area. It applies to fishery resources, taking due account of the impact of fishing operations on ecologically related species such as seabirds, cetaceans, seals and marine turtles.

Members (Contracting Parties [CPs]): Angola, Namibia, Norway and the European Union (Member Organization).

Measures relevant for shark conservation and management: In 2006, SEAFO adopted a number of shark measures.[206]

Shark fin measures: SEAFO requires the retention of shark carcasses on board vessels to the point of first landing and has adopted a 5 percent fin-to-body weight ratio.

Discard measures: Live release of incidentally caught sharks, especially juveniles, that are not used for food and/or subsistence is encouraged.

Prohibited species: Prohibition of directed fisheries for deep-water shark fishes.

Reporting requirements: CPs are required to report shark catches.

Data collection and research: CPs are encouraged to undertake research to make fishing gear more selective and to identify shark nursery areas.

2.5.10 Western and Central Pacific Fisheries Commission (WCPFC)

Objective: The objective of the WCPFC is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks (which means all fish stocks of the species listed in Annex 1 of the UNCLOS) in the western and central Pacific Ocean in accordance with UNCLOS Article 2.[207]

Members (Commission Members, Cooperating Non-members, and Participating Territories [CCMs]): Australia, Canada, China, the Cook Islands, Federated States of Micronesia, Fiji, France, Japan, Kiribati, the Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, the Philippines, the Republic of Korea, Samoa, Solomon Islands, Tonga, Tuvalu, the United States of America, Vanuatu, European Union (Member Organization) and Taiwan Province of China.[208]

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[205] Recommendation 08 2011, 06 2011 and 07 2011.
[206] Conservation Measure 04/06 on the Conservation of Sharks Caught in Association with Fisheries Managed by SEAFO.
[207] Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean.
[208] Web page: www.fao.org/fishery/rfb/wcpfc/en

Plan of Action for Sharks: In 2010, the WCPFC requested that CCMs implement the IPOA Sharks and that NPOAs Sharks or other relevant shark policies should include measures to minimize waste and discards from shark catches and should encourage the live release of incidental catches of sharks.[209]

Measures relevant for shark conservation and management:[210] Measures for the conservation and management of sharks were first adopted in 2005 (fully applied since 2007).[211] The following is based on the Conservation and Management Measures 2010-07.

Shark fin measures: Full utilization of any retained catches of sharks is required and a 5 percent fin-to-body weight ratio applies up to the first point of landing.

Discard measures: In fisheries for tunas and tuna-like species that are not directed at sharks, the live release of incidentally caught sharks is encouraged, in particular whitetip sharks.

Prohibited species: From 2013, fishery and landing of whitetip shark (*Carcharhinus longimanus*) is prohibited. Special reporting and discard requirements apply.[212]

Reporting requirements: An annual reporting requirement for key shark species[213] including retained and discarded catches applies.

Data collection and research: CCMs are encouraged to support research and development of strategies for the avoidance of unwanted shark captures (e.g. chemical, magnetic and rare earth metal shark deterrents). The Scientific Committee has been tasked with provision of preliminary advice on the stock status of key shark species and proposal of a research plan for the assessment of the status of these stocks. In 2012, special data collection and research measures were adopted for whitetip sharks including support with regard to species identification and safe release for Small Island Developing States and Territories.[214]

[209] Conservation and Management Measure for Sharks, CMM 2010-07.
[210] Resolutions describe non-binding statements and recommendations addressed to members of the Commission and Cooperating non-members.
[211] Conservation and Management Measure for Sharks, CMM 2006-05.
[212] Conservation and Management Measure for Oceanic Whitetip Sharks, CMM 2011-04.
[213] The key shark species are blue shark, silky shark, oceanic whitetip shark, mako sharks, and thresher sharks, porbeagle shark (south of 20°S, until biological data shows this or another geographic limit to be appropriate) and hammerhead sharks (winghead, scalloped, great, and smooth shark).
[214] Conservation and Management Measure for Oceanic Whitetip Shark, CMM 2011-04.

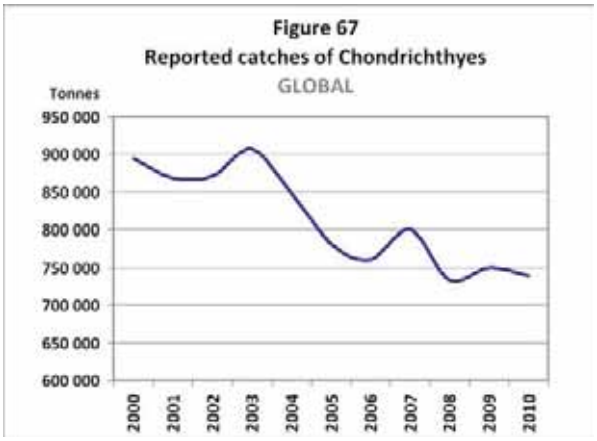
3. SYNOPSIS AND CONCLUSIONS

This review focuses on the 26 top shark-fishing countries, areas and territories determined as those reporting at least one percent of global shark catches during the decade from 2000 to 2009: Indonesia, India, Spain, Taiwan Province of China, Argentina, Mexico, the United States of America, Pakistan, Malaysia, Japan, France, Thailand, Brazil, Sri Lanka, New Zealand, Portugal, Nigeria, Iran (Islamic Republic of), the United Kingdom of Great Britain and Northern Ireland, the Republic of Korea, Canada, Peru, Australia, Yemen, Senegal and Venezuela (Bolivarian Republic of). This review also considered shark action plans and measures from the European Union (Member Organization) and ten RFMOs.

The top shark-fishing countries, areas and territories were requested to inform FAO on the status of their NPOA Sharks as well as their shark-related management measures and research, and related subjects. About two-thirds of the countries, areas, territories and entities replied[215] and their responses were considered in this review; for the remaining countries, areas and territories, other sources of information were used.

3.1 Reported shark catches from 2000 to 2009

Eighty-four percent of the global shark catches reported to FAO from 2000 to 2009 was from the 26 top shark-fishing countries, areas and territories. Overall, global reported annual shark catches during this decade show a significant decline of almost 20 percent from about 900 000 tonnes to about 750 000 tonnes (Figure 67). Such a downward trend was experienced by eight of the top shark-fishing countries, areas and territories, i.e. Canada, France, Japan, Pakistan, Sri Lanka, Taiwan Province of China, Thailand and the United Kingdom of Great Britain and Northern Ireland. However, other top shark-fishing countries, areas and territories reported increasing shark catches in this period, in particular Argentina and – to a lesser extent – the United States of America and Portugal.



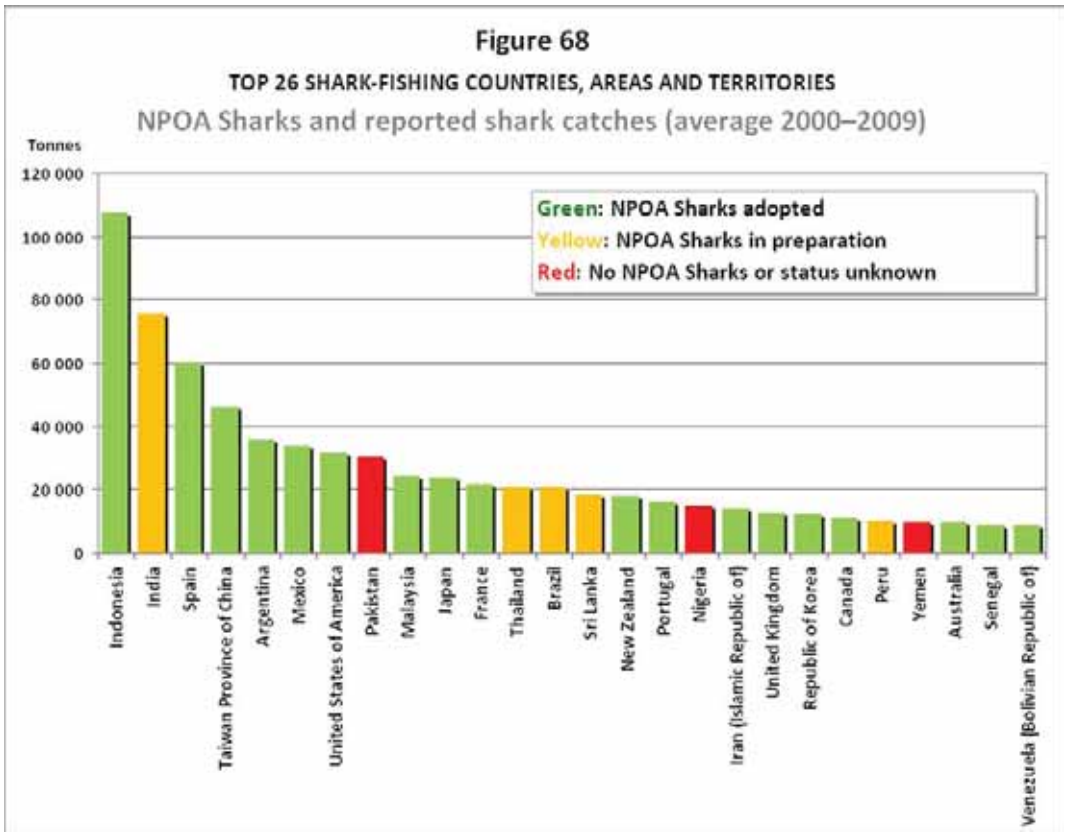
3.2 National plans of action for the conservation and management of sharks

In the last decade, FAO has received reports of shark catches from 143 countries, areas and territories (countries of the European Union [Member Organization] were counted individually), of which 48 (34 percent) have adopted an NPOA Sharks.[216] Of these, 30 NPOAs pertain to countries, areas and territories reporting less than one percent of shark catches from 2000 to 2009[217] and 18 NPOAs pertain to the 26 top shark-fishing countries, areas and territories.[218] This means that more than two-thirds of the countries, areas and territories responsible for 84 percent of global shark catches have adopted an NPOA Sharks (Figure 68).

[215] Argentina, Australia, Canada, India, Iran (Islamic Republic of), the Republic of Korea, Japan, Malaysia, Mexico, New Zealand, Peru, Senegal, Sri Lanka, the United States of America, and the European Union (Member Organization) (for Spain, France, Portugal and the United Kingdom of Great Britain and Northern Ireland).
[216] Appendix 1 provides an overview of the countries, areas and territories that have adopted an NPOA Sharks.
[217] Chile, Colombia, Costa Rica, Ecuador, Gambia, Guatemala, Guinea-Bissau, Mauritania, Panama, Seychelles, Sierra Leone, South Africa, Uruguay and 17 countries of the European Union (Member Organization).
[218] Indonesia, Spain, Taiwan Province of China, Argentina, Mexico, the United States of America, Malaysia, Japan, France, New Zealand, Portugal, Iran (Islamic Republic of), the United Kingdom of Great Britain and Northern Ireland, the Republic of Korea, Canada, Australia, Senegal and Venezuela (Bolivarian Republic of).

Three of the remaining top shark-fishing countries, areas and territories have completed a draft NPOA that is awaiting adoption by parliament[219] and two have initiated drafting of their NPOA.[220] However, three (12 percent of the top shark fishing countries, areas and territories) have not yet addressed an NPOA Sharks. The following deliberations are based on the 21 NPOAs of the top shark-fishing countries, areas and territories that have been finalized, even if three of them have not yet been formally adopted (and thus are included under the draft NPOAs [yellow] in figure 68).

Appendix A of the IPOA Sharks illustrates with examples how States could develop strategies for achieving the objectives they have set for their NPOA Sharks. In most cases, the examined NPOA Sharks have not deviated much from the suggestions put forward in the IPOA Sharks. Nonetheless, the individual NPOA Sharks differ considerably with regard to their comprehensiveness. This is perhaps most visible in the background chapters and the parts outlining the status of the sharks fisheries in the country, area or territory.



All NPOAs Sharks of the top shark-fishing countries, areas and territories contain objectives and definitions as suggested in Appendix A of the IPOA Sharks. The overall objective of IPOA Sharks "to ensure the conservation and management of sharks and their long-term sustainable use" is reiterated in most NPOAs Sharks. Some countries, areas and territories have also included additional objectives based on the particular situation of their shark fisheries or expanded the objectives to include the reduction of any negative impacts on the marine ecosystem (e.g. Argentina and Senegal). Others have complemented the general objective with a "purpose", such as in the EUPOA, which is to "ensure the rebuilding of stocks fished by Union fleets within and outside the Union waters".

The extent to which the top shark-fishing countries, areas and territories have elaborated on the current status of their shark fisheries, including biology, catch and effort, socio-economy and trade, and relevant fisheries management regimes, varies considerably. Moreover, although all NPOAs refer to national legislation that applies to the conservation and management to sharks, not all explain how the plan is integrated or linked to their already existing legal and fisheries management systems. A few countries

[219] Brazil, Peru and Thailand.
[220] India and Sri Lanka.

(e.g. New Zealand and the United States of America) have integrated the plan into a larger policy statement on shark conservation and management. In these cases, the actual NPOA Sharks is added in one of the parts of the overall documents.

Most of the NPOAs Sharks of the top shark-fishing countries, areas and territories have included measurable targets and time lines for achieving the stated objectives. This is an important requirement to ensure that the NPOAs Sharks can be implemented and reviewed in an appropriate manner and it distinguishes them from general policy documents.

Setting up a regular review of the success of the NPOAs Sharks is one of the actions called for in the IPOA Sharks. A few of the NPOA Sharks (e.g. Australia, New Zealand, Malaysia and the European Union [Member Organization]) include measurable actions and time frames to enable such a review and have set up a competent review body composed of, or closely consulting with, all relevant stakeholders (fishing industry, environmental and research organizations, fishery managers) that is tasked to meet at regular intervals or on a set date and examine the progress made with regard to the conservation and management of sharks. For example, Australia, Japan and New Zealand have already started or concluded such a review of their NPOA Sharks and adjusted their plan according to the findings of these reviews.

3.3 Shark measures implemented by the top shark-fishing countries, areas and territories

As a tool for the conservation and management of sharks, the NPOA Sharks should outline the strategies and processes to manage the species sustainably. This requires that countries, areas and territories find or develop legally binding provisions relevant to sharks in their legislation for fisheries, environment or wildlife. This can be challenging as often the existing legislation does not contain specific stipulations for sharks and existing measures need to be amended based on the suggestions formulated in the NPOAs Sharks. Although not many of the top shark-fishing countries, areas and territories have a comprehensive management regime for sharks in place, all except have at least adopted a few specific provisions for the conservation and management of sharks in their EEZs.

3.3.1 Shark fin measures

Shark finning is the practice of removing the shark fins and discarding the remainder of the carcass into the sea. The IPOA Sharks demands that waste and discards from shark catches be minimized and, while not stipulating shark fin measures, suggests that shark plans require the retention of sharks from which fins are removed. Shark fin measures have been widely promoted and adopted by many countries, areas, territories and RFMOs, making them the most common of shark measures found today.

The most commonly adopted shark fin measure consists in the prohibition of dumping shark carcasses at sea and the application of a 5 percent fin-to-body weight ratio for sharks on board vessels until the first point of landing. In these cases, shark fins can be removed from the body as can guts and skins (the latter may be discarded at sea). A second measure that is gaining popularity and has already been adopted by a few countries, areas and territories requires that sharks are landed with their fins attached – this is much easier to monitor and control. In all cases, sanctions are imposed on those who do not comply with such measures, but the effectiveness of MCS schemes varies greatly from country to country (e.g. level of observer coverage, at-sea inspections, port inspections, VMS). The United States of America has adopted an act entirely devoted to shark finning, the 2000 Shark Finning Prohibition Act.

Fifteen of the top shark-fishing countries, areas, territories and entities have adopted shark fin measures[221] and two more intend to introduce them in the near future[222]. The remainder are parties to at

[221] Argentina, Australia, Brazil, Canada, Mexico, New Zealand, Nigeria, Sri Lanka, the United States of America, Yemen, the European Union (Member Organization) (for France, Portugal, Spain and the United Kingdom of Great Britain and Northern Ireland), and Taiwan Province of China.
[222] Senegal and Venezuela (Bolivarian Republic of).

least one RFMO with shark fin measures in place[223] and are bound by the measures in the areas of competence of these RFMOs.

The IPOA Sharks encourages the full use of dead sharks, i.e. the consumption of shark meats and various uses for other shark parts, e.g. skin, teeth and cartilage. This goal is shared by the top shark-fishing countries, areas, territories and entities for which information is available, including those that have not adopted shark fin measures.[224]

Minimizing waste and discards from sharks is one of the ten explicit aims of the IPOA. For the most part, countries refer to shark finning as an objective for their NPOAs. However, most countries have also integrated this objective in their national legislation by banning shark finning and determining sanctions for the violation of the ban.

3.3.2 Other shark measures

Over 75 percent (20) of the top shark-fishing countries, areas and territories have adopted specific shark conservation measures other than fin regulations[225] and three more are developing such measures.[226] However, the type of measures applied varies considerably among countries. They include technical measures as well as protected species, TACs and quotas, licences and permits, reporting and research requirements as well as MCS measures, capacity building and the promotion of public awareness for shark conservation issues.

Over 50 percent (15) of the top shark fishing countries, areas and territories have adopted technical measures for sharks[227] and three are in the process of doing so.[228] Among these measures, the most frequently implemented are area closures, followed by bycatch/discard regulations, size limitations and gear requirements. Not in all cases have area closures been designed specifically for sharks, but the ones counted here are believed to have beneficial effects on the conservation of sharks.

Another common measure is the prohibition to fish or protection of certain shark species which has been adopted by 14 (54 percent) of the top shark-fishing countries, areas and territories.[229] In many cases, these measures concern species listed in the appendixes of CITES or the CMS but a number of countries have developed additional comprehensive lists of vulnerable and protected shark species in their waters.

Almost half (12) of the top shark-fishing countries, areas and territories have adopted a TAC and quota management scheme for certain shark species.[230] Specific reporting requirements for sharks have also been adopted by twelve of the top shark-fishing countries, areas and territories[231]. Eleven of them also conveyed having taken special measures to enhance public awareness of the necessity to conserve and manage sharks.[232]

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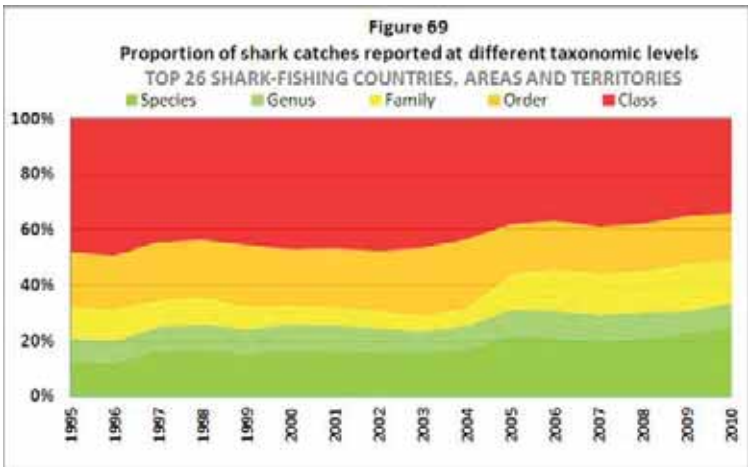
[223] All except the CCAMLR, which prohibits all shark fisheries, and the CCSBT, which as yet has not adopted binding shark measures.
[224] For example, India, Indonesia, Japan, Malaysia and Peru
[225] All except Indonesia, Pakistan, Brazil, Yemen, Senegal and Venezuela (Bolivarian Republic of)
[226] Brazil, Senegal and Venezuela (Bolivarian Republic of)
[227] By ranking, these are: Spain, Argentina, Mexico, United States of America, Malaysia, Japan, France, New Zealand, Portugal, Iran (Islamic Republic of), United Kingdom, Republic of Korea, Canada, Peru and Australia.
[228] Brazil, Senegal and Venezuela (Bolivarian Republic of).
[229] India, Spain, Argentina, Mexico, United States of America, Malaysia, France, Thailand, New Zealand, Portugal, United Kingdom, Republic of Korea, Canada, Australia
[230] Spain, Taiwan Province of China, Argentina, United States of America, Malaysia, France, New Zealand, Portugal, United Kingdom, Republic of Korea, Canada, Australia
[231] Spain, Taiwan Province of China, Argentina, Mexico, United States of America, Japan, France, New Zealand, Portugal, United Kingdom, Republic of Korea, Canada
[232] Spain, Taiwan Province of China, United States of America, Malaysia, France, Sri Lanka, Portugal, Nigeria, United Kingdom, Peru, Australia

3.3.3 Data collection and research

Data collection and research on sharks varies considerably. Some countries have made enormous efforts to improve the scientific and fishery information on sharks up to regular stock assessments for commercial elasmobranchs. Then again, many countries suffer from a lack of scientific and fishery data, which is an important hindrance to sound shark management. In many countries, there is a need for more shark experts, better coordination between research institutions and additional funding.

3.4 Reporting of shark catches to FAO



Overall, the reporting of shark catches to FAO has improved in the last decade. Shark catches reported at species level doubled from 14 percent in 1995 to 29 percent in 2010 (Figure 69). However, our analysis shows a pronounced disparity in the reporting details among the top 26 shark-fishing countries, areas and territories. While in recent years eleven (42 percent) of these have been reporting most or at least about half of their shark catches at genus and species levels,[233] an equal number are still reporting most or all of their shark catches at highly aggregated levels (order or class). Four countries (16 percent) report mainly at family level; among these, Indonesia and Senegal have made noticeable efforts to improve their reporting of shark catches in the last decade. Reporting is still hampered by a lack of taxonomists or trained scientists and officers for the monitoring and assessment of sharks, as well as by poor accessibility to or lack of basic shark identification tools.[234] A number of respondents reported on recent efforts to improve the shark identification in their waters through the production of identification guides and relevant training, e.g. Indonesia, Malaysia, Mexico, Peru, Senegal, the United States of America, and the European Union (Member Organization). Also, FAO has produced numerous regional and local species identification guides which include sharks (see bibliography).

3.5 Adoption of the Port State Measures Agreement

Illegal, unreported and unregulated (IUU) fishing poses a significant threat to vulnerable sharks. Therefore, it is a positive sign that most (70 percent) of the top 26 shark-fishing countries, areas and territories have taken steps to combat IUU fishing, either by signing the PSMA (46 percent)[235] or at least by adopting an NPOA IUU or similar plan (23 percent).[236] Nonetheless, in quite a few countries the effective implementation of MCS schemes is problematic, often because of a lack of human and financial resources. Only five (20 percent) of the top 26 shark-fishing countries, areas and territories

[233] Argentina, Australia, Canada, France, Iran (Islamic Republic of), New Zealand, Peru, Portugal, Spain, the United Kingdom of Great Britain and Northern Ireland, and the United States of America.
[234] In this context, it should be noted that FAO (through the FishFinder Programme) has produced numerous global, regional and national identification guides that are available online. The global catalogue of sharks is currently in the process of being updated. A regional catalogue and pocket guide to North Atlantic sharks will become available later in 2012, and a guide to deep-water sharks in the Indian Ocean is in its initial preparatory stages.
[235] Australia, Brazil, Canada, Indonesia, New Zealand, Peru, Sri Lanka (ratified), the United States of America, and the European Union (for France, Portugal, Spain and the United Kingdom of Great Britain and Northern Ireland).
[236] NPOA IUU: Argentina, Mexico, Japan, the Republic of Korea, and Thailand. India has a national MCS plan.

have not adopted an NPOA Sharks, signed the PSMA or implemented an NPOA IUU.[237] However, two of these have adopted shark finning measures (Nigeria and Yemen), and India is in the process of adopting an NPOA Sharks.

3.6 Issues and problems when implementing the IPOA Sharks

The successful implementation of the IPOA Sharks is hindered by a number of problems and issues. In 2005, FAO convened an Expert Consultation on the Implementation of the IPOA Sharks. It focused on the challenges encountered by FAO Members with regard to the conservation and management of sharks. The experts listed nine areas of particular concern:

- lack of appropriate taxonomic guides to identify species;
- lack or insufficient information on the population biology of elasmobranch species, both targeted and bycatch species;
- lack of funds for management;
- lack of human resources;
- competition from other management imperatives;
- lack of effective policy and institutional practices;
- scarce or lacking data, particularly for catch and fishing effort, to inform management decision-making;
- weak or non-existent capacity of many developing countries;
- low political priority accorded to elasmobranch fisheries.

Although progress has been achieved since 2005, the main findings of the Expert Consultation are still valid in 2012 as evidenced by pertinent remarks of many respondents to the present review questionnaire and from other recent sources.[238] Most problems encountered with the conservation and management of sharks are linked to problems with fisheries management in general, such as institutional weaknesses, lack of trained personnel, and deficits in fisheries research and MCS. A lack of shark data, e.g. on biological characteristics and fisheries, was observed by almost half of the respondents, in particular in developing countries. In addition, many countries require more trained officers for fisheries monitoring and control, and, in some countries, there is also a need for institutional strengthening.

Many of the top shark-fishing countries, areas and territories also experience difficulties in shark species identification, which considerably affects the reporting of shark catches and discards. In response, a number of countries, areas, territories and entities[239] are supporting improved species identification through training workshops for fishery officers or by creating shark species identification guides (see also NPOAs). FAO can assist with this task through its FishFinder Programme, which has produced a large number of regional and national species guides that include commercially exploited sharks. In addition, FAO FishFinder is currently finalizing an update of the comprehensive three-volume catalogue of sharks of the world, has published a guide for sharks of the Mediterranean Sea and a guide for North Atlantic sharks and is developing a species identification guide for deep-water sharks of the Indian Ocean. Relevant regional and national identification tools are referenced in the descriptions of the countries, areas and territories.

3.7 Summary of the implementation of IPOA Sharks and related measures

Table 1 provides a summary of the implementation of IPOA Sharks and related measures by the top shark-fishing countries, areas and territories.

[237] India, Iran (Islamic Republic of), Nigeria, Pakistan and Yemen.
[238] Referenced under descriptions of the countries, areas, territories and entities.
[239] For example Australia, Indonesia, Malaysia, Mexico, New Zealand, Peru, the Republic of Korea, the United States of America, Venezuela (Bolivarian Republic of) and the European Union (Member Organization).

Table 1

Implementation of IPOA Sharks and related measures

Country, area or territory (by ranking)	IPOA Sharks	Shark fin measures in EEZ	RFMO	Port State Measures Agreement
Indonesia	2010	No	CCSBT, IOTC	Signed
India	Under development	No	CCAMLR, IOTC	NPOA MCS
Spain	2009 (European Union [Member Organization])	Yes	ICCAT, IOTC, WCPFC, IATTC, CCSBT, NEAFC, NAFO, NASCO, SIOFA, SPRFMO, CCAMLR, GFCM, CCBSP	Signed (European Union [Member Organization])
Taiwan Province of China	2006	Yes	CCSBT	No
Argentina	2009	Yes	CCAMLR, CTMFM	IPOA IUU
Mexico	2004	Yes	ICCAT, IATTC	NPOA MCS
United States of America	2001	Yes	CCAMLR, IATTC, ICCAT, NAFO, WCPFC	Signed
Pakistan	No	No	IOTC, APFIC	No
Malaysia	2006	No	IOTC	No
Japan	2001 (2009)	No	CCAMLR, CCSBT, GFCM, IATTC, ICCAT, IOTC, NAFO, WCPFC	NPOA IUU
France	2009 (European Union [Member Organization])	Yes	ICCAT, IOTC, WCPFC, IATTC, CCSBT, NEAFC, NAFO, NASCO, SIOFA, SPRFMO, CCAMLR, GFCM, CCBSP	Signed (European Union [Member Organization])
Thailand	Draft	No	IOTC, SEAFO	NPOA IUU
Brazil	Draft	Yes	CCAMLR, ICCAT	Signed
Sri Lanka	Under development	Yes	IOTC	Ratified
New Zealand	2008 (2012)	Yes	CCAMLR, CCSBT, WCPFC, APFIC	Signed
Portugal	2009 (European Union [Member Organization])	Yes	ICCAT, IOTC, WCPFC, IATTC, CCSBT, NEAFC, NAFO, NASCO, SIOFA, SPRFMO, CCAMLR, GFCM, CCBSP	Signed (European Union [Member Organization])
Nigeria	No	Yes	ICCAT, CECAF	No
Iran (Islamic Republic of)	Yes	No	IOTC	No
United Kingdom	2004 and 2009 (European Union [Member Organization])	Yes	ICCAT, IOTC, WCPFC, IATTC, CCSBT, NEAFC, NAFO, NASCO, SIOFA, SPRFMO, CCAMLR, GFCM, CCBSP	Signed (European Union [Member Organization])
Republic of Korea	2011	No	WCPFC, ICCAT, IATTC, IOTC, CCSBT	NPOA IUU
Canada	2007	Yes	IATTC, ICCAT, NAFO, WCPFC	Signed
Peru	Draft	No	IATTC	Signed
Yemen	No	Yes	–	No
Australia	2004	Yes	CCAMLR, CCSBT, IOTC, WCPFC	Signed
Senegal	2005	In preparation	ICCAT	No
Venezuela (Bolivarian Republic of)	2006	In preparation	IATTC, ICCAT	No

3.8 Shark measures of RFMOs

All but one of the top shark-fishing countries, areas and territories are members of at least one RFMO. In particular, shark measures adopted by tuna bodies are binding in their areas of competence for all their member States that have not objected to the measure in question.

The array of shark measures adopted by the RFMOs may vary from binding recommendations or resolutions to non-binding measures, as in the case of the CCSBT. They include shark fin measures, catch and gear regulations, prohibited species, area closures, reporting requirements and research programmes. This means that in all but one area covered by RFBs there are internationally binding shark measures in place for high seas fisheries. The first joint meeting of tuna RFMOs in Kobe in 2007 provided a comprehensive overview of shark measures implemented by the tuna RFMOs.[240]

Table 2

Binding shark measures adopted by RFMOs

RFMOs	Fin measures	Discard/bycatch measures	Catch measures (TACs)	Reporting requirements	Gear measures	Prohibited species	Shark-related research	NPOAs requested
CCAMLR*		✓				✓		
CCSBT**								
GFCM	✓			✓	✓	✓	✓	
IATTC	✓	✓		✓	✓	✓	✓	✓
ICCAT	✓	✓		✓	✓	✓	✓	✓
IOTC	✓	✓		✓		✓	✓	
NAFO	✓	✓	✓	✓	✓		✓	
NEAFC	✓	✓	✓	✓		✓		
SEAFO	✓	✓		✓	✓	✓	✓	
WCPFC	✓	✓		✓		✓		✓
Total	**8**	**8**	**2**	**8**	**5**	**8**	**6**	**3**

* The CCAMLR prohibits all shark fisheries except for research purposes.
** The CCSBT does not yet have any binding shark regulations in place.

With the exception of the CCAMLR (which prohibits all shark fisheries in its Convention Area) and the CCSBT (which has not yet adopted any binding measures for sharks), all RFMOs have adopted a 5 percent fin-to-body weight ratio for shark on board vessels until the first point of landing (Table 2). Other frequently adopted measures include bycatch and discard requirements, prohibited species and reporting requirements for sharks. Most RFMOs encourage their members to conduct shark-related research, in particular to develop more selective fishing gear and to identify nursery areas for sharks; a number of RFMOs also receive scientific advice on shark species from their research bodies. Only a few RFMOs have adopted catch regulations (i.e. TACs and quotas) for elasmobranch species, and among these only one tuna RFMO (ICCAT). Finally, three tuna RFMOs require their members to adopt an NPOA Sharks.

[240] Kobe II Bycatch Workshop Background Paper on Sharks (2007). (available at: www.tuna-org.org/Documents/Aus/Kobe_II_Bycatch_Workshop_Paper_Sharks_FINAL_ENG_rev.pdf).

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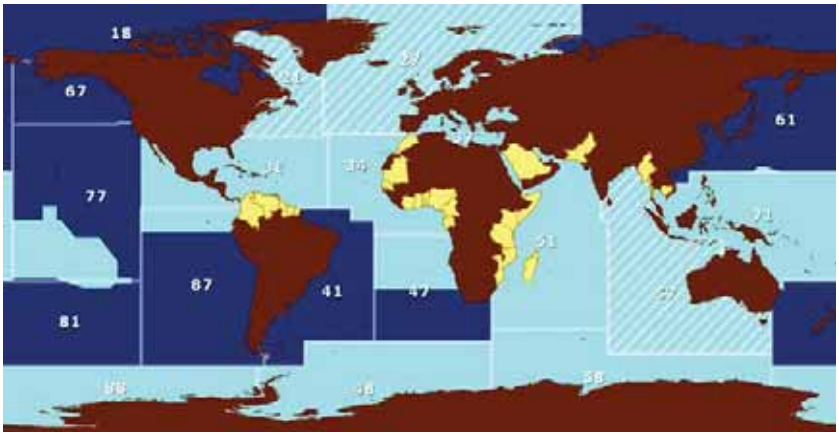

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Appendix 1

Shark-fishing countries, areas and territories that have adopted an NPOA Sharks

Albania (European Union [Member Organization])
Argentina
Australia
Belgium (European Union [Member Organization])
Bulgaria (European Union [Member Organization])
Canada
Chile
Colombia
Costa Rica
Denmark (European Union [Member Organization])
Ecuador
Estonia (European Union [Member Organization])
Faroe Islands (Associate Member)
France (European Union [Member Organization])
Gambia
Germany (European Union [Member Organization])
Greece (European Union [Member Organization])
Guatemala
Guinea-Bissau
Indonesia
Iran (Islamic Republic of)
Ireland (European Union [Member Organization])
Italy (European Union [Member Organization])
Japan
Lithuania (European Union [Member Organization])
Malaysia
Malta (European Union [Member Organization])
Mauritania
Mexico
Netherlands (European Union [Member Organization])
New Zealand
Panama
Poland (European Union [Member Organization])
Portugal (European Union [Member Organization])
Republic of Korea
Romania (European Union [Member Organization])
Senegal
Seychelles
Sierra Leone
Slovenia (European Union [Member Organization])
South Africa
Spain (European Union [Member Organization])
Sweden
Taiwan Province of China
United Kingdom (European Union [Member Organization])
United States of America
Uruguay
Venezuela (Bolivarian Republic of)

Appendix 2

FAO questionnaire sent to the 26 top shark-fishing countries, areas and territories

Questionnaire on the status of implementation of FAO IPOA Sharks by the top shark fishing Member states/Entities

Please provide a brief response (less than 200 words) to the questions below which correspond to the aims set out in Section 22 of the IPOA Sharks.

Measures

- Ensure that shark catches from directed and non-directed fisheries are sustainable.
- Improve and develop frameworks for establishing and coordinating effective consultation involving all stakeholders in research, management and educational initiatives within and between states.
- Do you have national measures directed towards this goal (e.g a NPOA-Shark, any other law/regulation relevant for shark conservation and management) ? If so, please summarize these measures and the status of implementation and, if applicable, any review.
- Are you a member of any Regional Fishery Management Organizations (RFMOs) that have adopted measures for the conservation and management of sharks? If so, please summarize your implementation of or any difficulties with these measures.
- Have you signed or ratified the Agreement on Port State Measures to Prevent Deter and Eliminate Illegal, Unreported, and Unregulated Fishing? What is the status of implementation of the agreement?
- With regard to fisheries enforcement activities, describe the problems that you are observing.
- Identify and provide special attention, in particular to vulnerable or threatened shark stocks.
- What measures do you have in place to reduce or eliminate take, mortality and/or trade of vulnerable or threatened shark species?
- Minimize the unutilised incidental catches of sharks.
- Minimize waste and discards from shark catches, in accordance with Article VII.2.2(g) of the Code of Conduct for Responsible Fisheries (for example, requiring the retention of sharks from which fins are removed).
- Encourage full use of dead sharks.
- Have you taken any measures and regulations towards these goals? If so, please summarize. What is the status of implementation?
- Do you regulate shark finning (i.e., the removal and retention of fins from the shark and the discard at sea of the remainder of the carcass, live or dead)? If so, how?

Assessment

- Assess threats to shark populations, determine and protect critical habitats and implement harvesting strategies consistent with the principles of biological sustainability and rational long-term economic use.
- Contribute to the protection of biodiversity and ecosystem structure and function.
- What data collection and research measures have you undertaken towards these goals?

Reporting

- Facilitate improved species-specific catch and landings data and monitoring of shark catches.
- Facilitate the identification and reporting of species-specific biological and trade data.
- To what extent do you require species-specific data reporting and monitoring of catches, landings, and trade of sharks? Please specify which taxa (family, genus, or species) of sharks are reported.
- Please specify which product codes are used for the trade of sharks.

Appendix 3

Responses received to the FAO questionnaire sent to the 26 top shark-fishing countries, areas and territories[1]

[1] The responses to the FAO Questionnaire have not been edited by FAO.

ARGENTINA

Measures

1. Argentina has had an NPOA-Shark since 2009, based on a participative approach and on the ecosystem approach, and whose objective is to guarantee the sustainable conservation and management of Chondrichthyes in the waters under the jurisdiction of the Republic of Argentina, following the guidelines of the Code of Conduct on Responsible Fisheries. Specific objectives have been indicated in the NPOA, such as assigning a priority nature to these species in scientific research plans; deepening the knowledge on Chondrichthyes fisheries; contributing to the protection and conservation of biodiversity and ecosystem structure and function; promoting the implementation of relevant management measures; raising awareness about the importance of Chondrichthyes for the ecosystem.

   Other legislation has been adopted, such as the General Law No. 24.922 on Fisheries (1998) and its regulations and the General Law No.25.675 on the Environment (2002).

2. As a Member of CCAMLR, Argentina has to comply with Conservation Measure 32-18 (2006)-Conservation of sharks. The CTMFM (Mixed Technical Commission of the Rio de la Plata Maritime Front) adopted best practices for the shark catching in the Common Fishing Zone between Argentina and Uruguay.

3. No.

4. The main problem is the identificacion of by-catch species. Need to quantify discards of spiny dogfish, an unwanted species for creates difficulties during onboard fish processing.

5. Argentina has listed 11 species as priority species in Annex IV of the NPOA-Shark and has increased the number of species specific management measures. Argentina has increased the number of species with specific catch, landing and trade reporting.

6. –

7. Shark finning has been prohibited in Argentina since 2009 through the adoption of Resolution 13/2009.

Assessment

8. Argentina has promoted research campaigns specifically on Chondrichthyes and has intensified the obtention of information on these species. Argentina has also promoted the collect of information on the species on which an international concern exists about their conservation and has assessed the threats and risks associated on shark populations.

Reporting

9. The following species are included in the landing reports:

LOCAL NAME	Species	FAO_COD	FAO_ENG
Cazón	Galeorhinus galeus	GAG	Tope shark
Gatuzo	Mustelus schmitti	SDP	Narrownose smooth-hound
Pez ángel	Squatinidae	ASK	Angelsharks, sand devils nei
Rayas nep	Rajiformes	SRX	Rays, stingrays, mantas nei
Tiburones nep	Elasmobranchii	SKH	Various sharks nei
Chucho	Myliobatiformes	EAG	Eagle rays nei
Torpedo	Torpedos spp	TOF	Electric rays, etc.nei
Tiburón bacota	Carcharhinus brachyurus	BRO	Copper shark
Tiburón moteado	Notorhynchus cepedianus	NTC	Broadnose sevengill shark
Tiburón escalandrún	Carcharias taurus	CCT	Sand tiger shark
Tiburón espinoso	Squalus acanthias	DGS	Picked dogfish

Bathyraja	Bathyraja spp.	BHY	Bathyraja rays nei
Chucho Dasyatis	Dasyatis centroura, Dasyatis h	STI	Stingrays nei
Chucho Myliobatis	Myliobatis goodei, Myliobatis	MWX	
Guitarra chica	Zapteryx brevirostris	RBE	Lesser guitarfish
Guitarra grande	Rhinobatos horkelii	RBK	Brazilian guitarfish
Manta	Mobula hypostoma	RMH	Lesser devil ray
Mariposa	Gymnura altavela	RGL	Spiny butterfly ray
Psammobatis	Psammobatis spp	XMB	Psammobatis sand skates nei
Raya cola corta	Bathyraja brachyurops	BZB	Broadnose skate
Raya de círculos	Atlantoraja cyclophora	JRY	Eyespot skate
Raya espinosa	Bathyraja macloviana	BZM	Patagonian skate
Raya hocicuda / picuda	Dipturus chilensis	DPV	Yellownose skate
Raya lisa	Rioraja agassizi	RRW	Rio skate
Raya marmolada	Sympterygia bonapartii	YBQ	Smallnose fanskate
Raya marrón oscuro	Sympterygia acuta	YAW	Bignose fanskate
Raya pintada	Atlantoraja castelnaui	JRT	Spotback skate
Torpedo Discopyge	Discopyge tschudii	TNY	
Torpedo puelcha	Torpedo puelcha	TZP	Argentine torpedo
Tiburón gris	Hexanchus griseus	SBL	Bluntnose sixgill shark
Tiburón martillo	Sphyrna zygaena	SPZ	Smooth hammerhead
Tiburón peregrino	Cetorhinus maximus	BSK	Basking shark
Tiburón pintaroja	Schroederichthys bivius	SHV	Narrowmouthed catshark
Tiburón sardinero	Lamna nasus	POR	Porbeagle
Tiburón azul	Prionace glauca	BSH	Blue shark
Pez gallo	Callorhynchus callorhynchus	CHJ	Plownose chimaera

10. What follows are the Tariff Positions used in Argentina in accordance with the Mercosur Nomenclator Custom Codes.

Productos frescos/Fresh fish:

0302.65.00 Escualos/sharks
0302.65.00.1 En envases inmediatos de contenido neto inferior o igual a 1 Kg/In packages of 1 kg or less
0302.65.00.110K Gatuzo (Mustelus schmitti)/smooth hound
0302.65.00.120N Cazón (Galeorhinus galeus)/tope shark
0302.65.00.130R Tiburón espinoso (Squalus acanthias)/spiny dog fish
0302.65.00.190L Los demás/the rest
0302.65.00.9 En envases inmediatos de contenido neto superior a 1 Kg/in packages over 1 kg
0302.65.00.910D Gatuzo (Mustelus schmitti)
0302.65.00.920G Cazón (Galeorhinus galeus)
0302.65.00.930K Tiburón espinoso (Squalus acanthias)
0302.65.00.990E Los demás

Productos congelados/Frozen fish:

0303.75.00 Escualos
0303.75.00.1 En envases inmediatos de contenido neto inferior o igual a 1 Kg.
0303.75.00.110T Gatuzo (Mustelus schmitti)
0303.75.00.120W Cazón (Galeorhinus galeus)
0303.75.00.130Z Tiburón espinoso (Squalus acanthias)

0303.75.00.190U	Los demás
0303.75.00.9	En envases inmediatos de contenido neto superior a 1 Kg.
0303.75.00.910L	Gatuzo (Mustelus schmitti)
0303.75.00.920P	Cazón (Galeorhinus galeus)
0303.75.00.930T	Tiburón espinoso (Squalus acanthias)
0303.75.00.990M	Los demás

Filetes congelados/frozen fillets:

0304.29.90.9	Los demás filetes de pescado congelado
0304.29.90.910V	Gatuzo (Mustelus schmitti)
0304.29.90.920Y	Cazón (Galeorhinus galeus)
0304.29.90.930B	Tiburón espinoso (Squalus acanthias)
0304.29.90.990W	Los demás

Pescado seco, incluso salado, sin ahumar/dried fish, including salted, not smoked:

0305.59.20	Aletas de tiburón/shark fins
0305.59.20.100Q	De gatuzo (Mustelus schmitti)
0305.59.20.200W	De cazón (Galeorhinus galeus)
0305.59.20.300B	De tiburón espinoso (Squalus acanthias)
0305.59.20.900J	Los demás

Pescado seco, incluso salado, sin ahumar:

0305.59.90.1	Los demás productos de tiburón/all other shark products
0305.59.90.110M	Gatuzo (Mustelus schmitti)
0305.59.90.120Q	Cazón (Galeorhinus galeus)
0305.59.90.130U	Tiburón espinoso (Squalus acanthias)
0305.59.90.190N	Los demás

AUSTRALIA

Measures

1. Measures for shark conservation and management are implemented in Australia by Commonwealth and state and territory legislation. Australia leads in the use of high standards for shark conservation and management through the implementation and enforcement of the following management measures for shark fishing:

   - Commonwealth regulations allow for sharks to be landed processed (trunked – headed and gutted), but must have their dorsal, pectoral and caudal (tail) fins attached to the carcass. The caudal lobe must be left attached.
   - Commonwealth regulations prohibit the use of wire traces in Commonwealth fisheries.
   - In Western Australia, the government has established a permanent spatial closure to 'shark fishing' in the northwest and there is a maximum size limit (interdorsal fin length of 70cm) for dusky sharks taken in the temperate demersal gillnet and demersal longline fisheries.
   - In Victoria, the government has established a permanent spatial closure to shark fishing using gillnets and long lines inside 3 nautical miles.

   There are also a range of measures in place for specific Commonwealth fisheries. For example:

   - A ban on the use of wire traces on longlines was implemented in the Western and Eastern Tuna and Billfish Fisheries (WETBF) in 2001. This minimises shark retention, incidental catch of all sharks and the number of sharks that die on the longline.
   - The WETBF have set a maximum of catch 20 sharks per vessel per trip fishing within the Australian exclusive economic zone. They have also set a maximum catch of 100 pelagic sharks per vessel per trip outside the Australian exclusive economic zone upon approval of an application. Of those 100 sharks, a maximum of 80 may be blue whaler sharks (Prionace glauca) and a maximum of 20 sharks or rays from the species list (crocodile shark (Psuedocarcharias kamoharai), silky shark (Carcharhinus falciformis), oceanic whitetip shark (Carcharhinus longimanus), smooth hammerhead shark (Sphyrna zygaena), pelagic stingray (Dasyatis violacea), shortfin mako (Isurus oxyrinchus), porbeagle shark (Lamna nasus) and thresher shark (Alopias vulpinus).

   In addition, the table below outlines the laws and regulations at the Commonwealth and State and Territory level that are relevant for sustainable shark conservation and management.

Jurisdiction	Principal fisheries management and conservation legislation or policy
Commonwealth	*Fisheries Management Act (FMA) 1991* • Includes objectives to minimise bycatch *Fisheries Administration Act 1991* *Torres Strait Fisheries Act 1984* *Commonwealth Policy on Fisheries Bycatch, 2000* • A review is proposed to commence in 2012 *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* • Sharks listed under the EPBC Act include: o grey nurse shark – east coast population (critically endangered) o speartooth shark (critically endangered) o northern river shark (endangered) o maugean skate (endangerd) o grey nurse shark – west coast population (vulnerable) o whale shark (vulnerable) o white shark (vulnerable) o green Sawfish (vulnerable) o dwarf Sawfish (vulnerable) o freshwater Saw fish (vulnerable) o school shark (conservation dependant). • Sharks listed as migratory under the EPBC Act include:

	○ white shark ○ whale shark ○ basking shark ○ shortfin mako shark ○ porbeagle ○ longfin mako shark. • Commonwealth Recovery Plans are also legislated under the EPBC Act *Commonwealth Fisheries Harvest Strategy Policy and Guidelines* *The Australian National Plan of Action for the Conservation and Management of Sharks (Shark Plan 1)*, 2004 • A Shark Assessment Report was prepared in 2009 to support the review of Shark Plan 1 • A draft of Shark Plan 2 has been released for public consultation *Australia's Oceans Policy, 1998* *Great Barrier Reef Marine Park Act 1975*
New South Wales	*Fisheries Management Act 1994* • Sharks listed as threatened species under this Act include: ○ grey nurse shark (critically endangered) ○ white shark (vulnerable) ○ green sawfish (presumed extinct in this state). ○ All other unlisted sharks are subject to strict harvesting arrangements, e.g. daily catch reporting by species and weights, no finning at sea, trip limits, circle hooks, limits on hook numbers, restrictions on the use of wire trace, access via shares, reporting targeted shark fishing trips to compliance officers before leaving port, and a total annual cap of shark landings in the primary shark fishery (~125 tonnes). *Environment Planning and Assessment Act 1979* *Threatened Species Conservation Act 1995* *Marine Parks Act 1997*
Victoria	*Victorian Fisheries Regulations 2009* *Victorian Fisheries Act 1995* *Victorian Flora and Fauna Guarantee Act 1988*
Queensland	*Queensland Fisheries Act 1994* *Queensland Nature Conservation Act 1992* *Queensland Marine Parks Act 2004* *Great Barrier Reef Marine Park Act 1975*
Western Australia	*Fish Resources Management Act 1994* *Fish Resources Management Regulations 1995* *Wildlife Conservation Act 1950*
South Australia	*Fisheries Management Act 2007* • white shark (Carcharodon carcharias) listed as a protected species under this Act *Fisheries (General) Regulations 2007* • Restrictions on berleying, use of bait and use of wire trace with large hook • Prohibit mutilation (finning) of sharks before landing *Fisheries Management (Marine Scalefish Fisheries) Regulations 2006* *National Parks and Wildlife Act 1972*
Northern Territory	*Northern Territory Fisheries Act 1988* *Territory Wildlife and Conservation Act 2000*

Tasmania	Prescribes: • restrictions on fishing gear that is used for targeting shark (nets) • restrictions on soak times of gear and requirements for attending • restrictions on the taking and possessing of shark species • bag / possession/boat limits for shark species • shark refuge areas and restrictions on fishing in shark refuge areas; • prohibition on shark finning. *Fisheries (General and Fees) Regulations 2006* • Prescribes prohibition on the taking of: o white shark (Carcharodon carcharias) o basking shark (Cetorhinus maximus) o grey nurse shark (Carcharias taurus) o megamouth shark (Megachasma pelagios) o whale shark (Rhincodon typus) *Living Marine Resources Management Act 1995* • Licensing framework for fisheries in Tasmanian state waters • Principles of sustainable development

2. Australia is a member of a number of RFMOs which have adopted the following measures for the conservation and management of sharks:

   - The Western and Central Pacific Fisheries Commission adopted the "Conservation Management Measure for Sharks in the Western and Central Pacific Ocean" 2006 which was revised in 2010 (2010-07).
   - At the ninth session of the Indian Ocean Tuna Commission (IOTC), Resolution 05/05 "Concerning the conservation of sharks caught in association with fisheries managed by the IOTC" was adopted. IOTC has also adopted Resolution 10/12 on the Conservation of Thresher Sharks (Family Alopiidae) caught in association with fishers in the IOTC area of competence.
   - The Commission for the Conservation of Antarctic Marine Living Resources adopted Conservation Measure 32-18 in 2006.
   - While the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) has not adopted shark-specific or bycatch-specific conservation measures, CCSBT authorized vessels operating in the convention areas of IOTC or WCPFC abide by the shark measures adopted by the respective Commissions.

   The following implementation issues have been identified by the Commonwealth:

   - There is substantial scientific evidence demonstrating the effectiveness of prohibiting wire traces as a shark bycatch mitigation method. This type of management measure has an impact on all shark species and is likely to be more effective and easier to enforce than single-species based approaches. For example, the Commonwealth has prohibited the use of wire leaders (traces) on longline fishing gear in its Eastern Tuna and Billfish Fishery since 2002. This has reduced the incidental mortality of sharks by about 50 per cent (Bureau of Rural Sciences 2007).
   - There is scope to improve present RFMO Conservation and Management Measures to ensure that shark carcasses are not discarded at sea. The definition of an appropriate ratio for shark fin weight to body weight as an effective conservation measure remains a contentious issue. Adoption of compatible regional and international measures would be preferable in the future to ensure the long-term conservation of shark populations and the sustainable use of shark protein for food.

3. Australia signed the FAO Agreement on Port State Measures on 27 April 2010 and intends to ratify the Agreement during 2012, subject to its domestic processes. Australia has already implemented many of the provisions of the Agreement through its National Plan of Action on Illegal, Unreported and Unregulated Fishing (IUU) and other restrictions limiting access by foreign-fishing vessels to Australian ports. While it is not anticipated that new legislation will be required to implement the

Agreement, some administrative changes will need to be implemented to enable relevant data collection and information sharing.

4. Australia has in place a range of enforcement activities to ensure compliance with fisheries arrangements.

   Illegal fishing activity by Indonesian vessels increased in northern Australian waters until 2004–05. Sharks were a primary target for these vessels, particularly for fins. The Australian Government responded with a major increase in the level of surveillance and policing, as well as collaborative programs in Indonesia, which resulted in a substantial decrease in the level of illegal fishing. Customs and Border Protection and the Australian Fisheries Management Authority (AFMA) reported an 82.7 per cent reduction in sightings from 2007–08 to 2008–09. In 2009–10, 23 foreign fishing vessels apprehended in northern Australian waters (compared with 27 in 2008–09 and 156 in 2007–08), declining from a peak of 367 in 2005–06. There were no legislative forfeitures in 2009–10, in which vessels had catch and gear confiscated (compared with 9 in 2008–09 and 13 in 2007–08). A recent study of IUU catch in Northern Australian waters indicated that catches by illegal Indonesian vessels included seven high risk shark species, with these species constituting more than half the total catch.

   Fisheries enforcement activities in regard to sharks have different aims when dealing with sharks as protected species, compared to the take of sharks as target species. For protected species the aim is to increase compliance in the recording of interactions of identified threatened, endangered and protected species through a targeted monitoring and response program. For target species the aim is to decrease the incidence of, and therefore the risk associated with, quota avoidance and evasion through a targeted surveillance and enforcement program. Australia deals with sharks in both capacities and has to balance the requirements of two programs with different objectives.

   Addressing the issue of shark finning at sea raises further challenges. Shark fins are a high valued commodity that can be easily hidden on fishing boats making detection very difficult. It should be noted that that when foreign IUU vessels are apprehended it is difficult to identify the species by their shark fins given that most bodies are discarded (it should be noted that research is being conducted to identify species from recovered shark fins). As Australia is a federal system there are also jurisdictional issues that can make enforcement more challenging.

   Similar measures are in place at a jurisdictional level, noting that issues vary across Australia. For example, Tasmania has noted that scope for wholesale out of quota fishing is less given that it has only shark bycatch fisheries. More minor issues such as bycatch or bag limit provisions would benefit from proper enforcement. Ensuring the integrity of nursery areas is also important.

5. There are a range of laws and policy measures to manage and conserve threatened shark species. For example:

   - The Convention on the Conservation of Migratory Species (CMS) Appendix listings are automatically incorporated into domestic legislation and protected under the EPBC Act. As a result, it is an offence to kill, injure, take, trade, keep or move protected species in Commonwealth waters. Migratory shark species protected under the EPBC Act include: white shark; whale shark; basking shark; shortfin mako shark; porbeagle; longfin mako shark; and spiny dogfish (noting that on 15 July 2010, an amendment was made to the EPBC Act to allow recreational fishing of longfin and shortfin mako and porbeagle sharks to occur in Commonwealth waters). For CMS Appendix II listed species, shortfin and longfin makos and porbeagle, commercial fishers may retain these sharks if they a caught dead, and must release them if caught alive.
   - Trade in shark species listed in the appendices of the Convention on International Trade in Endangered Species (CITES) is also highly regulated, and requires non-detriment findings to demonstrate sustainability of harvest before trade will be permitted. The shark species for which trade is regulated include the: basking shark; white shark; whale shark; and Family Pristidae sawfishes.
   - Ecological Risk Assessments (ERAs) have been conducted in all Commonwealth fisheries to identify high-risk species including sharks on which to formulate priorities and associated

management responses. The results of the assessments are being integrated into ecological risk management frameworks being developed by AFMA.

- Dedicated rebuilding strategies are in place in Commonwealth fisheries for some threatened shark species including gulper and school sharks.
- Several sharks have been assessed under the threatened species provisions of Australia's EPBC Act and found to warrant listing. Conservation advice or national recovery plans are in place for a number of these species and others are currently under development or review.
- Australia adopted the Regional Plan of Action to Promote Responsible Fishing Practices including Combating IUU Fishing in the Region (RPOA) in May 2007 with ten other countries from the south east Asia region. An effective International Monitoring, Control and Surveillance (MCS) system is a key component of a robust fisheries management regime. Australia continues to work with member countries to develop effective MCS networks and to identify areas where members can work together to deter IUU fishing in the region. Given that one of the primary targets for IUU fishing ventures were (and continues to be) shark fin, the RPOA contributes to the effort to reduce the take, mortality and/or trade of vulnerable threatened shark species.

Australian states and the Northern Territory also have complementary measures as outlined in the table below.

Victoria	• Total protection of white shark - listed as protected aquatic biota (PAB) under Fisheries Act 1998. • Total closure on the use of shark monofilament gillnets and longlining in open coastal waters. • Requirement to land shark carcasses with the fins attached. • Daily trip limits of two school and gummy sharks for commercial/recreational fishers. • Daily bag limit of one elephant shark (Callorhinchus milii) and all other shark species for recreational fishers. • A person must not in, on or next to Victorian waters, land or cause to be landed shark or elephant fish in any form other than in the form of a carcass.
Western Australia	• Shark species which are listed as 'totally protected fish' are prohibited from take and carry significant penalties. These sharks include the white shark, speartooth shark and whale shark. • Regulations that prohibit shark finning. • Significant permanent spatial closure to commercial 'shark fishing' in the northwest of Western Australia. • Restrictions on longline hook sizes and prohibition on the use of metal wire traces on lines.
Northern Territory	• All pristidae (sawfish)and glyphis species are protected from fishing in Northern Territory (NT) waters. • Performance measures and trigger limits are in place for all NT Fisheries, including the Offshore Net and Line Fishery (ONLF) which harvests sharks. The performance of the fishery against these limits and measures is reviewed annually. • An ecological risk assessment has been conducted for the ONLF. • Stock assessments of those species harvested by the ONLF are conducted every three years. • In those fisheries that are permitted to harvest shark there are specific trip limits and shark fin ratio requirements. • There are strict effort limits – including restrictions on individual fishing days permitted per operator and specific gear limitations. • The commercial fishing industry has implemented an environmental management system for the shark fishery which includes comprehensive information on release strategies for protected species including sawfish. • All commercial fishermen are required to attend a fisheries interview where they are advised of the reporting and release requirements for protected species.

South Australia	• Ecologically sustainable development risk assessments as part of the development of all fishery management plans. • Legislation (Fisheries Management Act 2007) prohibiting taking, injuring, harming protected species. • Restrictions on gear to avoid capture (e.g. wire trace used with certain hook size) and promote survival (e.g. attendance, soak time). • Minimum legal size limits and daily recreational bag and boat limits (e.g. for school shark).
New South Wales	• It is an offence to harm or possess threatened species of sharks (e.g. white and greynurse shark) or parts thereof. Protection measures have been in place in various forms since the 1980s. These measures and recovery building strategies continue to be an effective means of reducing mortality of threatened sharks and to recover their depleted stocks.
Queensland	Measures include: • No take of white shark, grey nurse shark, sandtiger shark, sawfish, speartooth shark. • Restricted take (in-possession limits) of grey reef shark, white tip reef shark, guitarfish and shovelnose rays. • A total allowable commercial catch for sharks and rays and limited licensing of authorities to take commercial quantities of shark and ray. • Maximum size limit on sharks and net mesh restrictions that limit bycatch of large sharks. • Net attendance rules (ie. by law, net fishers are required to be 'in attendance' at the net while fishing). • Anti-finning regulations (i.e. no discarding of finned carcasses at sea).

6. The following measures minimise the unutilized incidental catches of sharks and encourages the full use of dead sharks:

    - The FMA and the EPBC Act include requirements to address the goals outline above. Depending on the fishery, these actions are assessed regularly.
    - The Commonwealth Policy on Fisheries Bycatch provides a policy mandate to all Australian fishing agencies to manage the impact of fishing on non-target species and in particular to address the level of bycatch (including sharks) in Commonwealth fisheries.
    - Shark finning at sea is banned in Commonwealth waters and similar arrangements exist in state and territory fisheries. Measures are also in place to encourage the full utilisation of landed sharks.
    - Further, a range of measures listed in Question 5 address these goals.

7.

    - Shark finning at sea is banned in Commonwealth waters. South Australia and Victoria have also banned this practice, noting the exception is the removal of pelvic fins, claspers and the caudal fin at the sub-terminal notch. Shark finning at sea is also an offence in New South Wales. Queensland has anti-finning regulations in place (i.e. no discarding of finned carcasses at sea) for all species of shark and ray and fins must remain attached to limited take species.
    - Other Australian states and territory jurisdictions have similar anti-finning measures in place. For example, some jurisdictions have shark fin to carcass ratios and programs to monitor compliance.

      Commonwealth fisheries have a range of measures in place including logbook reporting and a dedicated compliance program that undertakes routine surveillance. Sharks are considered a high priority.

Assessment

8. The Commonwealth is committed to pursuing an ecosystem-based approach to fisheries management (EBFM) in all Commonwealth fisheries. The principles of an EBFM approach require a move away from the traditional target species driven management focus to consider a wider range

of impacts such as bycatch, and impacts on habitats and the broader ecosystem. The current marine bioregional planning process is an integral part of this approach.

Risk assessments are increasingly being used in Australia to identify shark species in need of fisheries and/or conservation management attention. All jurisdictions use risk-based approaches to assess and manage shark resources. The risk assessment methodologies employed can vary considerably both within and across fisheries and jurisdictions.

Australia is aware of the need for carefully defined research development and extension (RD&E) priorities, and projects that can drive strong sustainability outcomes for shark associated fisheries. Accordingly, the Fisheries Research and Development Corporation (FRDC) commissioned development of a practical RD&E framework to guide development of highly targeted and relevant shark related RD&E proposals, and enable the corporation to evaluate those proposals in a transparent, rigorous and efficient way. The evaluation will form the basis for prioritising proposals for FRDC funding. The project was completed in 2010 and is known as Shark Futures.

While there have been improvements in data collection and research, the Shark Assessment Report highlights that there is a need for an improved application of data verification methods (observer programs, targeted research and analysis, etc.) in target and non-target shark fisheries.

Since 2004, the FRDC has funded A$3.7 million to support shark conservation and management research in Australia. This has been complemented by in kind support of approximately A$7 million. Additional research funds are directed to targeted shark and bycatch research through a range of additional government and private institutions.

Please refer to the table below for further information on state-specific data collection and research measures.

State	Comments and measures
Tasmania	• All commercial fisheries have mandatory catch effort collection systems. For quota fisheries, this data is supported by quota reconciliation docket and monitoring systems. For recreational fishing, generalized surveys are supplemented by targeted surveys of key sectors (e.g. boat sector where most shark fishing occurs). • Targeted research is underway on key species such as mako, thresher and seven gilled shark. Research on key habitat/nursery areas is also supported.
Victoria	• Logbooks for export fisheries include a generic form for reporting fishery interactions with protected species (including white shark) to formalise data collection/ monitoring. • Monitoring school and gummy shark catches by Victoria operators in the Bays and Inlets Fishery (40 tonne global total allowable catch). Results have indicated that Victorian fishers are close to that limit. • Victoria convened National Mako Shark Fishery workshop in May 2010 aimed at the objective of improving data collection for mako sharks. This was attended by all states and Commonwealth fishery managers, recreational fishers and government representatives.
Western Australia	• Research monitoring of the temperate demersal gillnet and demersal longline fisheries and the northern shark fisheries which involves analysis of fishing returns data and periodic biological sampling of commercial and fishery-independent catches. • Introduction of the state-wide Recreational Fishing from a Boat Licence in March 2010 has provided a database of boat-based recreational fishers across the state. • Other research projects underway include: o Spatial and Temporal Dynamics of Western Australia's Commercially Important Sharks o Shark Monitoring Network Project o Ecosystem Based Monitoring and Management.
Northern	• The Northern Australian Fisheries Committee — which includes representatives

Territory	from the Australian, Queensland, Northern Territory and Western Australian governments — aims to facilitate complementary management and research across the jurisdictions for shared stocks. A Shark Action Plan is currently being developed to facilitate this goal and includes the development of a Shark Harvest Strategy for Northern Australian Fisheries.
South Australia	• Stock status reports for key harvested shark species. • Recreational fishing surveys.
New South Wales	• Since 2007 New South Wales has undertaken two separate scientific observer programs examining the targeted and incidental catch of sharks in its Ocean Trap and Line Fishery. Extensive data has been collected on the numerous species that are caught in New South Wales waters and will underpin stock assessments for most of those species over the coming years. • The state has also identified critical habitats and key aggregation areas for the critically endangered grey nurse shark and has established a series of 'no fishing' zones and other marine protected areas to provide additional protection for grey nurse sharks. New South Wales is also one of the primary contributors to the Commonwealth's Recovery Plan for both grey nurse and for white sharks.
Queensland	• Commercial fishery logbooks (species-based), quota monitoring system (overall catch), and commercial Species of Conservation Interest logbooks. • Recreational fishing surveys are undertaken periodically. • Charter fishing licence logbooks (species-based). • Oberver data on commercial catch, effort and biology of catch, bycatch and incidental interactions. • Literature research to develop a matrix of species biology, ecology and fishery characteristics that feeds into risk assessments.

Reporting

9. The effective management and conservation of species requires an understanding of all major sources of mortality. All Australian commercial fisheries that catch shark employ some form of mandatory logbook system to record commercial catch and effort information. The level of information required in logbooks varies between fisheries and jurisdictions. The degree to which shark catch data are recorded and validated is dependent on the fishery and objectives of monitoring programs in place. For target shark fisheries, logbooks usually provide for the recording of catch and effort information at a species or species-group level. Additional information is also collected though mandatory observer programs.

   Catch data for Commonwealth fisheries are provided to the Australian Bureau of Agricultural and Resource Economics (ABARES) by the AFMA. The data are derived from logbook data (catch data recorded by operators, generally at sea) or catch disposal records (catch data recorded in port by fishers and fish receivers/buyers). Many species are grouped together into generic categories such as 'shark other' or 'skates or rays' for catch reporting (see examples below). In the absence of suitable data validation protocols, analyses of shark 'group' data can be limited or biologically meaningless for many species.

Catch category	Scope of species
Ray	Batoidea
Catsharks	Scyliorhinidae
Blacktip shark	Carcharhinus, Loxodon & Rhizoprionodon spp
Skate	Rajidae
Guitarfish	Rhynchobatidae, Rhinobatidae & Rhinidae
Greeneye dogfish	Squalus spp
Ghostshark	Chimaeridae
Wobbegong	Orectolobidae
Mackerel sharks	Lamnidae

Sawfishes	Pristidae
Hammerhead sharks	Sphyrnidae
Angel shark	Squatina spp
Sawshark	Pristiophorus spp
Sharks - other	Chondrichthyes (sharks, rays, skates, chimaeras)

Shark Assessment Report, Bureau of Rural Sciences, 2010

Stock assessment processes are typically overseen by expert-based and fishery-specific resource assessment groups. In Commonwealth-managed fisheries, this role is undertaken by advisory groups/bodies such as the Southern and Eastern Scalefish and Shark Fishery and the Shark Resource Assessment Group (SharkRAG). Other jurisdictions have a mix of research and management groups to provide assessment-related advice on fisheries.

Joint authorities in Australia also contribute to research and development efforts. For example, support from the Northern Australian Fisheries Committee recent Fisheries Research and Development Corporation (FRDC) projects have improved species identification of the catches and increased observer coverage in these fisheries.

Current reporting requirements may not be adequate to capture trade data. Broad reporting categories are typically used that can, at times, bear little resemblance to fisheries reporting categories and species, taxa or products being traded. This results from the aggregation of data under a small number of broad reporting categories.

Queensland also requires specific-specific data recording. Queensland fisheries taking shark commercially (as opposed to under in-possession limits) record high resolution taxonomic data about their catch. Key species or species complexes include scalloped hammerhead shark, blacktip whaler / graceful shark complex, spottail shark, spinner shark, pigeye / bull shark complex, and the restricted take species.

10. Fisheries trade data are sourced from the Australian Bureau of Statistics (ABS) and are derived using the harmonised system of tariff codes, which forms the basis for administering Australia's imports and exports and the collection and dissemination of detailed international trade statistics. ABARES collates and summarises ABS data into, for example product, export destination and origin of import categories.

    Reports on trade in the current product categories mask some of the trends in the most popular exported and imported shark products such as shark trunk pieces, shark fin and shark liver oil. Both the ABS and ABARES aggregate some shark product data into broad categories. For example, there is no specific category for shark liver oil. Instead, imports of shark liver oil may be classified under a more generic category such as ‘fish-liver oils and their fractions’.

CANADA

Measures

1. Canada's 2007 NPOA-Shark summarizes management measures by species. Canada intends to provide a progress report for its 2007 NPOA-Sharks at the 2012 Committee on Fisheries (COFI) meeting.

   There are a number of legislative instruments that are relevant to managing and maintaining the long-term sustainability of shark populations and fisheries. These legislative instruments include:

   - Department of Fisheries and Oceans Act;
   - Oceans Act;
   - Fisheries Act;
   - Coastal Fisheries Protection Act; and
   - Species at Risk Act.

   Canada's NPOA-Sharks and legislative instruments incorporate ecological considerations, integrated fisheries management, and the precautionary approach to ensure the long-term sustainability of sharks within Canadian directed and non-directed fisheries.

   Concerning effective consultation, research and consultation mechanisms have been put in place, e.g. a regional advisory process and a Committee on the Status of Endangered Wildlife in Canada.

   The Regional Advisory Process provides peer-reviewed reports on the status of the fisheries and marine mammal resources on the Atlantic coast, as well as the Pacific and Arctic coasts. The process engages industry, stakeholders and outside scientific expertise, along with science experts from the Department of Fisheries and Oceans. It also engages fisheries management officials and policy experts in an extensive review of a full range of resource management issues. These technical reviews are fully documented through the production of stock status reports, fisheries status reports, and habitat status reports. These reports have reviewed and documented the populations of porbeagle, shortfin mako, blue shark, spiny dogfish, thorny skate, and winter skate in Atlantic Canada.

   The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was established in 1977 as panel of experts that accesses and designates which wildlife species or subspecies are in danger of extinction or extirpation. The body operates under the auspices of the Species at Risk Act and uses the best available scientific, Aboriginal and community knowledge to assess species that might be at risk in Canada and reports its assessment, including the rationale and any uncertainties, to the Canadian Endangered Species Conservation Council and to the Canadian public. Based on the assessment, COSEWIC assigns one of several designations to a species. The Minister of Environment, in close consultation with the Minister of Fisheries and Oceans, then considers the assessment and may or may not recommend that the species be added to the List of Wildlife Species at Risk. The Minister of Environment may also refer the matter back to COSEWIC for further consideration, especially if an assessment is deemed to be incomplete or erroneous.

   Moreover, the actions of NPOA-Shark refer, inter alia, to a standardized reporting and the management planning process in which consultations with shark industry representatives review and guide the fisheries. The goal of this forum is also to enhance and engage the public, using the following measures to:

   - Increase public awareness in Canada about shark species, risks to their survival, their importance within the ecosystem, and the fact that they are often a global resource requiring international research and conservation efforts;
   - Encourage commercial and recreational fishers, and other industries to be more aware of the shark species present in Canadian fisheries waters, their biology, risks these species face, and catch-and-release practices through the advisory committee processes;
   - Enhance efforts to classify and record rarer species of sharks and skates by promoting better identification in existing observer programs and through enhanced reporting by fishers.

2. Canada has been a Contracting Party to ICCAT since 1968. In this respect, Canada has had to comply with Resolution 03-10 on the shark fishery (2003), Recommendation 04-10 concerning the conservation of sharks caught in association with fisheries managed by ICCAT (2004),Recommendation 07-06 Supplemental Recommendation concerning Sharks (2007), Resolution 08-08 on Porbeagle Shark *(Lamna nasus)* (2008), Recommendation 09-07 on the conservation of Thresher Sharks caught in association with fisheries in the ICCAT Convention Area (2009), Recommendation 10-07 on the conservation of Oceanic White tip Sharks caught in association with fisheries in the ICCAT Convention Area (2010), Recommendation 10-08 on Hammerhead Sharks (family Sphyrnidae) caught in association with fisheries managed by ICCAT (2010), Recommendation 10-06 concerning Atlantic shortfin mako sharks caught in association with ICCAT fisheries, and Recommendation 11-08 concerning silky sharks caught in association with ICCAT fisheries.

   As a Member of North Atlantic Fisheries Organization (NAFO), Canada has to comply with Article 12.3 “By-Catch Requirements”, Article 13 “Gear Requirements” and Article 17 “Conservation and Management of Sharks” of NAFO Conservation and Enforcement Measures.

   As a member of Western and Central Pacific Fisheries Commission (WCPFC), Canada has to comply with Conservation and Management Measure (CMM) 2010-07 (2010). Regarding the implementation of WCPFC CMM 2010-07, Canada has no directed fishery for sharks in the Western and Central Pacific Ocean and is not aware of any interactions with sharks in the Western Central Pacific Ocean (WCPO).

   In terms of the IATTC, Canada has to comply with Resolution C-05-03 (Conservation of Sharks Caught in Association with fisheries in the Eastern Pacific Ocean) and Resolution C-11-10 (Conservation of Oceanic White tip Sharks). As is the case in the Western Central Pacific Ocean, Canada has no directed fishery for sharks nor is it aware of any interactions with sharks in the Eastern Pacific Ocean.

3. Canada signed the Agreement on Port State Measures to Prevent Deter and Eliminate Illegal, Unreported, and Unregulated Fishing on 19 November 2010, and is working towards ratification.

4. The Conservation and Protection Branch (C&P) of Fisheries & Oceans Canada enforces all regulations and conditions of licence that pertain to fisheries activities including the shark fishery. It should be noted that since the taking of sharks, as a by-catch, is permitted in a number of fisheries such as groundfish, swordfish and tuna, some enforcement requirements for sharks are addressed through at-sea and on-land surveillance of these fisheries.

   The directed shark fisheries in the Canadian coastal waters are significantly small in comparison to other nations, the instances of non-compliance and by catch of sharks are minimal. It has been noted that there is a lack of species-specific reporting of sharks caught in association with North West Atlantic Fisheries Organization (NAFO) related fisheries. While vessels report shark landings, they often do not identify what type of shark species and thus the catch is registered as “shark unspecified”.

5. Canada, as party to Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), aims to ensure that international trade in specimens of wild animals and plants, and does not threaten the species’ long-term survival. Canada takes seriously its legal obligation to prevent the import of products from shark species that are currently listed under Appendix II of the Convention: Great White, Whale and the Basking sharks.

   Domestically, Canada restricts or bans the trade, possession or sale of shark products from species which are listed as protected under the Canadian Species at Risk Act (SARA). The Canadian Species at Risk Act was created to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened. This Act protects species at risk, their residence and their critical habitats. In the Atlantic Ocean, White sharks have been listed under SARA and in the Pacific Ocean, Basking shark and Bluntnose six-gill sharks are protected.

Canadian fishermen have been encouraged to, and are practicing the live release of Shortfin mako sharks caught incidentally in other directed fisheries in the Atlantic Ocean cutting Canada's annual harvest of this stock significantly.

Canada is developing a national policy on managing bycatch. This policy is being developed as part of Canada's Sustainable Fisheries Framework, an overarching policy framework for the management of fisheries in Canada, which provides the foundation of an ecosystem-based and precautionary approach to fisheries.

6. For enforcement purposes, shark fins cannot make up more than 5 per cent of the overall weight of shark onboard a Canadian fishing vessel (5% rule). Canadian regulations allow the onboard removal of fins from carcasses, but stipulate a specific weight ratio between the separated fins and the carcasses.

   It is important to note that the NPOA-Shark refers to bycatch reduction and reporting of discard mortality. As such, Canada will move ahead with additional measures to:

   - Improve the reporting of discarded bycatch and the associated mortality rates in domestic fisheries through better data collection and species identification by at-sea fisheries observers, as well as through mandatory reporting of all bycatch for the commercial and recreational fishing industry;
   - Canada plans to incorporate discard estimates into existing porbeagle population models and use these models to calculate new sustainable catch quotas so discards can be incorporated into the next stock assessment;
   - Canada also plans to determine new sustainable catch quotas which allow for discards for porbeagle sharks and discard mortality reference for blue sharks,
   - Continue awareness-raising efforts among commercial and recreational fishers and other resource users about the risks facing certain shark and shark-like species (e.g., dogfish caught in the Pacific sports salmon fishery) and promote conservation-based release practices to reduce discard mortality;
   - Encourage the strengthening of regulations of relevant RFMOs with regard to both the handling and release of shark bycatch species and to improve the identification and reporting of bycatch and associated mortality.

7. Shark finning has been prohibited in Canada since 1994 by regulation under its 'Fisheries Act' through fishing license conditions and as part of the Integrated Fisheries Management Plan for Atlantic sharks. All shark landings in Canada, directed and/or bycatch, are monitored at-sea by observers and enforcement officers. In addition, approximately 100 percent of all shark landings in Canada are monitored and weighed at dockside by an independent third party contractor to ensure that the fin to carcass ratio is respected.

   On the Pacific coast, the main harvested shark species is the spiny dogfish which is harvested for its meat and not its fins. All groundfish fisheries in the Pacific have 100% at-sea monitoring of the fishery and all landings are verified at dockside.

Assessment

8. Canada has undertaken research measures and data collection on the Atlantic, Pacific and Arctic coasts for pelagic sharks, spiny dogfish, skates and chimaeras.

   In this respect, Canada has promoted research of particular importance that includes:

   - Recovery potential assessment for porbeagle shark with implications for the future of the directed shark fishery and identification of pupping grounds for possible management measures;
   - Population dynamics of blue sharks, including assessment of mortality due to commercial discarding and shark derbies;
   - Recovery potential assessments for shortfin mako and basking sharks, with implications for new management measures;
   - Completion of a five-year study on the shared population of spiny dogfish in the Atlantic waters of Canada and the United States, production of the first joint, Canada-US stock assessment for

this shared and highly migratory population, and proposal of possible management measures for this population;
- Assessment of a potential pupping ground for black dogfish in the Laurentian Channel;
- Assessment of Pacific dogfish was completed in 2010. The report can be found at: http://www.dfo-mpo.gc.ca/CSAS/Csas/publications/sar-as/2010/2010_057_e.pdf;
- Ongoing research on the skate complex (14 species) off Newfoundland and Labrador (including detailed information on age and growth, reproduction, morphometrics and meristics, food and feeding, for the first time for many of the species);
- Growth and reproductive potential of winter, little and thorny skates on the Scotian Shelf; and Completion of tagging research on big skate (Pacific), which will quantify seasonal migration patterns and provide information on species growth and age composition;
- Smooth skate and thorny skate are under review for COSEWIC and these data are being used in their assessments.

Reporting

9. Canada's NPOA emphasizes a precautionary approach to management and conservation practices; however species-specific data reporting and monitoring of catches landings and the trade of sharks are limited because very few of the listed species are part of a commercial shark fisheries. Most species are caught instead as bycatch and are discarded at sea. Canada has therefore enhanced its engagement and communications programs to improve the quality of biological data collecting.

   Canada has listed the species-specific landings reported from 2001 to 2005.

   Atlantic coast landings:

   SHARKS

   - Porbeagle shark (Lamna nasus): directed fishery
   - Blue shark (Prionace glauca): directed fishery
   - Spiny Dogfish (Squalus acanthias): directed fishery
   - Shortfin Mako Shark (Isurus oxyrinchus): bycatch

   SKATES

   - All (Rajidae): directed and bycatch

   Pacific coast landings:
   SHARKS

   - Spiny Dogfish (Squalus acanthias): directed fishery
   - Brown Cat Shark (Apistururs brunneus): bycatch
   - Pacific Sleeper Shark (Somniosus pacificus): bycatch

   SKATES

   - All (Rajidae): directed and bycatch
   - Bigskate (Raja binoculata): directed fishery
   - Longnose (Raja rhina): directed fishery
   - Deepsea skate (Bathyraja abyssicola): bycatch
   - Sandpaper skate (Bathyraja interrupta): bycatch
   - Roughtail Skate (Bathyraja trachura): bycatch
   - Alaska skate (Bathyraja parmifera): bycatch

   CHIMAERAS

   - Spotted Ratfish (Hydrolagus colliei): bycatch

10. Current Harmonized System Codes Current Canadian Customs Tariff 2012 Harmonized System Codes
    - Dogfish and other sharks (fresh) 0302.65

- Dogfish (fresh) 0302.81
- Dogfish and other sharks (fresh) 0302.65.00.10
- Sharks other than dogfish (fresh) 0302.65.00.90
- Dogfish and other sharks (frozen) 0303.75
- Shark fin (frozen) 0303.75.00.10
- Dogfish and other sharks (frozen) 0303.81
- Shark other than shark fin (frozen) 0303.75.00.90
- Dogfish of the species (Squalus acanthias) 03037520
- Dogfish of the species (Scyliorhinus spp) 03037550
- Porbeagle Shark (Lamna nasus) 03037560

EUROPEAN UNION (MEMBER ORGANIZATION)

Measures

1. The conservation of sharks and rays is addressed within the framework of the EU Plan of Action (EUPOA) adopted by the European Commission in February 2009[2]. This Plan identifies the measures deemed necessary both at EU level (TACs, technical measures, effort and capacity limits) and under international management regimes (measures taken in the framework of RFMOs, CITES, CMS and the Barcelona Convention). A wide range of measures for shark management were in place in the EU before the adoption of the EUPOA and implementation of the EUPOA is progressing well. The Commission is working with FAO on a project for the preparation of a regional catalogue of sharks and rays of the North Atlantic and two Shark and Rays pocket guides.

   Following the adoption of the EUAP the EU has actively participated at the negotiation of an instrument on the conservation of migratory sharks under the aegis of the Convention on the Conservation of Migratory Species (CMS), which led to the adoption in February 2010 of a Memorandum of Understanding on the conservation of migratory sharks. The EU signed the Sharks MoU in November 2011. It has also presented a proposal at CITES CoP 15 to list spiny dogfish and porbeagle in Appendix II of CITES.

2. The EU, represented by the Commission, plays an active role in five tuna organizations and 9 non-tuna organizations. However, not all of these non-tuna organizations are involved in managing shark species. Recommendations and other instruments adopted by RFMOs are complied with by the EU and its Member States as soon as they become binding. No particular difficulties have been encountered with these measures.

   In the EUPOA the EU emphasizes the need to support the work of the RFMOs, strengthen the RFMOs that are in place and work for establishment of RFMOs in areas not yet covered. This commitment is confirmed by the Commission Communication on the External Dimension of the Common Fisheries Policy[3].Currently there is an increasing number of binding management recommendations adopted by RFMOs to which the Union is a party. The EU presented several proposals in different RFMOs annual meetings, to protect a number of shark species most of them having been adopted, such as thresher sharks, hammerhead sharks and silky shark.

   The Commission has signed a contract with an external contractor for the provision of scientific advice for the purpose of the implementation of research tasks deriving from the EUPOA. The budget for this project is 250.000 €.

   Following the availability of scientific advice, notably through the substantial improvement of data collection on sharks, it can be expected that the Commission will be in an even better position to make further and more ambitious proposals at subsequent meetings of RFMOs.

3. The EU signed the PSM Agreement on 22 November 2009, and deposited on 7 July 2011 its instrument of approval with the General Director of the FAO. The EU will implement it as soon as it enters into force.

4. Enforcement is ensured by Regulation Council Regulation (EC) No 1224/2009[4] of 20 November 2009.

   The European fisheries control system aims at ensuring compliance with the rules of the common fisheries policy (CFP) throughout the production chain – i.e. from the boat to the retailer. The

[2] COM(2009)40final. 05.02.2009.
[3] COM(2011)424 final. 13.07.211.
[4] Council Regulation (EC) No 1224/2009 of 20 November 2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy. OJ L 343 of 22.12.2009.

control system applies to all fishing activities in Community waters, and to the fishing activities of Community vessels and European Union nationals in Community and non-Community waters. It also applies to the processing and marketing of fishery products, recreational fishing involving sensitive stocks, and aquaculture. Member States are to carry out inspections of activities throughout the production chain for fishery products, in particular landing, processing, transport and marketing.

Under the CFP, control and enforcement fall within the exclusive jurisdiction of Member States. The Regulation also reaffirms the distinct roles of the Commission and Member States in order to avoid overlapping and to ensure that the Commission concentrates its efforts on its main activities – controlling and verifying the implementation of CFP rules by Member States.

5. At the EU level, it is prohibited for EU vessels to fish for, retain on board, to tranship or to land several shark, skates and rays, both in EU and in international waters. The species shall be promptly released unharmed to the extent of possible. In addition, a 0 TAC has been set for 2011 in certain areas for some sharks (spurdog, porbeagle). The EU will keep these measures in place as long as they are deemed appropriate by scientists to protect these species.

   Deep sea sharks are protected by various measures. Fishing opportunities in most EU Atlantic waters and international waters are fixed for 2011 and 2012 by Council Regulation 1225/2010. For 2012 a zero TAC is fixed for all deep-sea sharks. The regime for fishing deep-sea stocks (deep-sea sharks included) in the NE Atlantic (EU and NEAFC waters) is under revision.,The Mediterranean Regulation contains various measures that protect various shark and ray species. These include the prohibition to use driftnets, the prohibition to use bottom set nets to catch several groups of sharks, the protection of the coastal zone from trawling, as well as gear requirements such as maximum net dimension and low twine thickness for bottom-set nets that further help to reduce unwanted by-catches of sharks.

   In the Skagerrak and North Sea TACs for demersal elasmobranchs have been agreed since 1999. Since 2009 the TAC has been gradually reduced.

   In 2011 TACs were set at zero for common skate and porbeagle in the Skaggerak and the North Sea. Both are prohibited species, requiring that if caught they be promptly released unharmed to the extent practicable.

6. See above.

7. On 21 November 2011 the Commission adopted a proposal for the amendment of Council Regulation (EC) 1185/2003[5] on the removal of fins on board vessels. The new proposal would oblige operators to land all sharks with their fins attached. This would automatically eliminate the issue of special fishing permits which allow processing on board, the use of the 5% fin-to-carcass weight ratio, and the landings of fins and carcasses in separate ports. These changes would facilitate control and eliminate the existing loophole that could allow finning to go undetected. In order to facilitate on-board storage and handling and to ensure safety, operators would be allowed to slice partly through the fins and fold them against the carcass to create a cylindrical shape, as is practiced in several other countries. This proposal is currently subject to the ordinary legislative procedure.

Assessment

8. The multi-annual Community programme for the period 2011-2013 provides for the collection, management and use of data on sharks in addition to the data already required in the programming period 2009- 2010 under Commission Decision 2008/949/EC.

[5] Council Regulation (EC) No 1185/2003 of 26 June 2003 on the removal of fins of sharks on board vessels.

The Commission has signed this year a contract with an external entity for the provision of scientific advice for the purpose of the implementation of research tasks deriving from the EUPOA [see also point 2 before].

Reporting

9. Under the multi-annual Community programme indicated in the previous point sharks have been included within the mandatory sampling schemes for data collection. National programmes for data collection include catch, length sampling, sex ratio and maturity information from a list of key species.

10.

0302 65 20	Dogfish of the species Squalus acanthias, fresh/chilled
0302 65 50	Dogfish of the species Scyliorhinus spp., fresh/chilled
0302 65 60	Porbeagle shark (Lamna nasus), fresh/chilled
0302 65 90	Other sharks, fresh /chilled
0302 65 95	Other sharks, fresh /chilled
0303 75 20	Dogfish of the species Squalus acanthias, frozen
0303 75 50	Dogfish of the species Scyliorhinus spp., frozen
0303 75 60	Porbeagle shark (Lamna nasus), frozen
0303 75 90	Other sharks, frozen
0303 75 95	Other sharks, frozen
0304 29 61	Dogfish (Squalus acanthias and Scyliorhinus spp.), frozen fillets
0304 29 65	Porbeagle shark (Lamna nasus), frozen fillets
0304 29 68	Other sharks, frozen fillets
0304 29 69	Other sharks, frozen fillets

INDIA

Measures

1. India is a member of the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO), a regional fisheries advisory body. A programme has been initiated under the aegis of the Organisation to formulate National Action Plan and Regional Action Plan for conservation and protection of sharks in the BOBP-IGO member-countries (Bangladesh, India, Maldives, Sri Lanka). In this regard, India has prepared a road map involving the primary stake holders and concerned Ministries/Departments of the Government. The objectives of the roadmap are: (i) to facilitate improved species-specific catch, landings, biological and trade data; (ii) to identify and provide special attention, in particular, to vulnerable and threatened sharks and to prepare a vulnerability index; (iii) to improve and develop frameworks for establishing and coordinating effective consultation involving all stakeholders in research, management and educational initiatives within and between maritime States/Union Territories; (iv) to minimize incidental/by-catch, wastes and discards; and (v) to ensure that shark fisheries are sustainable through regular stock assessment and preparation of e-atlas and promoting regional cooperation. The scientific research partners in this roadmap are the Fishery Survey of India (FSI) and the Central Marine Fisheries Research Institute (CMFRI). The Ministry of Agriculture (Department of Animal Husbandry, Dairying and Fisheries), Government of India is coordinating the programme.

2. India is a member of the Indian Ocean Tuna Commission (IOTC) and is observing regulations adopted by the parties regarding shark fishing. During the l5th Session of the IOTC in Colombo, Sri Lanka, it was agreed that no quantitative stock assessment was currently available for any shark species in the Indian Ocean. In general, the life history characteristics and biology of sharks make them vulnerable to overfishing. As there was no improvement in the available catch statistics for sharks in 2010, the stock status for all species remains highly uncertain and stock indicators need to be developed as a matter of urgency. Noting this uncertainty, the Scientific Committee agreed that Resolution 08/04 concerning the recording of the catch by longline fishing vessels in the IOTC area be amended in order to improve data collection and statistics on sharks that would allow the development of stock status indicators. India is cooperating with the IOTC Secretariat.

3. Ratification of the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing by India is under process.

4. Availability of enough taxonomists for on-field identification of shark species is a problem.

5. Under the Schedule I of Wildlife (Protection) Act, 1972, catching, trading or possession of the following species is prohibited: *Carcharinus hemiodon, Glyphis gangeticus, G. glyphis, Rhiniodon typus, Anoxypristis cuspidatus, Pristis microdon, P. zijsron, Himantura fluviatilis, Urogymnus asperinus,* and *Rhyncobatus djiddensis*. Killing or unauthorized possession of the prohibited species is a non·bailable offence. Other measures contributing to protection of sharks include seasonal and spatial closure of mechanized fishing and fixing of minimum codend mesh size of trawls under the Marine Fishing Regulation Act enacted by the coastal states/Union Territories of India. These measures help in reducing chance of incidental shark catch. In addition, Marine Protected Areas (MPAs) have been established under the Wildlife (Protection) Act, 1972. India has a total of 33 marine sanctuaries and national parks, which cover an area of about 6 271.21 sq. km. Provisions exists under the Maritime Zones of India (Regulation of Fishing by Foreign Fishing Vessels) Act, 1981, and also under the Guidelines for fishing operation in the Indian Exclusive Economic Zone (EEZ). The said Guidelines were issued on 01.11.2002, and amended on 06.9.2004 are earmarking restricted areas for fishing by deep·sea fishing vessels as below:

   a) Between the coast line and the line joining the following points:

      i. Off Orissa. West Bengal Coast: (i) 19' 20' N·85'30' E; (ii) 20'·86'S6'E; (iii) 20'42' N·8S'E; (iv) 21'8' N·S9'7'E; (v) 21'16' N·S9'14 'E.

      ii. Off Maharashtra and Gujarat Coast line (i) 22' 54' N - 67' 33'E; (ii) 21' 33' N - 6S' 56'E; (iii) 19' 2' N - 72' E; (iv) lS' 33' N - n' E; (v) lS' N - 72' 31 E

iii. Off Kerala and Tamil Nadu Coast line (i) 7' 4S' N - 77' E; (ii) 7' 45' N - 7S' E; (iii) 7' 30' N - 78' E; (iv) 7' 30' N - 77' E.

b). Fishing permitted only beyond 24 nautical miles between the Nizampatnam (Andhra Pradesh) and Paradeep Port (Orissa).

The above·mentioned area restrictions provide conservational support to many shark species, especially those available in the coastal waters.

6. No part of shark is wasted in India. Shark meat is salted or sold in fresh condition in the domestic market. The main markets are in the coastal States of Kerala and Tamil Nadu. The shark meat is consumed fresh in many coastal areas, especially by the poor. Salted and dried shark is also popular in certain areas. Shark liver oil is extracted by local methods and used for oiling wooden canoes as well as for pharmaceutical purposes. Shark liver oil is also used in tanning and textile industries.

7. As mentioned in the response to the earlier question, no part of shark is wasted in India.

Assessment

8. The Fishery Survey of India carries out systematic and regular surveys for deeper and oceanic fishery resources in the Indian EEZ. The exploratory surveys conducted during 1983-87 by two tuna longliners have revealed that sharks constitute 53 percent by number of the total catch on the east coast. In the Andaman and Nicobar waters it is comparatively less than that of the east coast with about 44 percent. Subsequently, during the period 1989 to 1998, two survey vessels carried out surveys in the Andaman and Nicobar waters by deploying continuous multifilament longline gear with 5 hooks per basket. These vessels operated about 0.485 million hooks by making 804 sets in the areas between latitude 4'N-15'N and longitude 89·E-96·E. The average hooking rate of sharks obtained during the period was 1.1 percent as against the aggregate hooking rate of 2.3 percent.

During the survey a total of 5 211 sharks were caught which formed 45.5 percent of total catch by number and 58 percent by weight. The hooking index was found to be relatively high in the Nicobar waters between latitude 6'N-I0'N and longitude 91'E-94·E. The analysis of catch rates separately for near shore and distant waters indicated marginally higher hooking rates in the inshore waters.

The seasonal pattern of abundance of sharks indicated that the hooking rate varied from 0.6 percent to 1.7 percent during different months. The high hooking rate in the range of 1.5 percent to 1.7 percent was recorded during October to November when sharks formed 63 to 68 percent of the total catch. During February to March, the sharks accounted for over 50 percent of the catch.

During 2005-06, about 62 253 hooks were operated and the total number of sharks hooked was 41.

The hooking rate was 0.1 percent against the aggregate hooking rate of 0.4 percent, which formed about 25 percent of the total catch. In the year 2006-07, about 80 102 hooks were operated and the hooking rate was 0.03 percent against 0.6 percent of aggregate hooking rate, which constituted about 5 percent of the total catch. The following shark species were recorded in the exploratory surveys: Family *Carcharhinidae: Carcharhinus longimanus, C. limbatus, C. dussumieri, C. melanopterus, C. sorrah, C. maclati, C. albimarginatus, Prionace glauca, Galeocerdo cuvier; Family Alopidae: Alopius vulpinus, Alopius pelagicus; Family lamnidae: Isurus oxyrinchus; Family Sphyrnidae: Sphyrna lewini, Sphyrna zygaeno.*

Apart from FSI, the CMFRI and the Department of Fisheries of the Coastal States/Union Territories collect data regularly based on a scientific sampling methodology on species and landings of shark species.

Reporting

9. The records available with the CMFRI show that several oceanic sharks which were rarely noticed in the landings about two decades ago, are regularly recorded in recent years. For instance, 13 species of sharks were recorded in the landings (613.5 tonnes) during 1986 and 1987 at Cochin Fisheries Harbour. The dominant species were scalloped hammerhead, Sphyrna lewini (27.1%), blacktip shark, *Carcharinus limbatus* (24.5%), milk shark *Rhizoprionodon acutus* (15.4%) and

spottail shark C. *sorrah* (11.1%). Two decades later (2006 and 2007), the quantity of landings remained almost the same (699.8 tonnes), but 24 species were recorded in the catch. The dominant species were blacktip shark, *C. limbatus* (29.7%), bigeye thresher, *Alopia superciliosus* (23.9%), bramble shark, *Echinorhinus brucus* (17.2%) and scalloped hammerhead, *S. lewini* (11.0%).

However, taxonomical aspects in relation to identification of sharks remain weak and need further strengthening.

10. The following codes (Indian Trade Classification· Harmonized Codes) are used for export of sharks and shark products from India:

    03042020 - HS Classification of Sharks

    03037992· HS Classification of Shark fins of wild life.

IRAN (ISLAMIC REPUBLIC OF)

Measures

1. First of all Iran does not issue licenses for family of shark fishing as a target species in the Persian Gulf and Oman Sea and they are caught only as by-catch in gillnet and trawl but limited by-catch in Purse Seine Fishing. Also Iran is a member of 1995 agreement related to highly migratory species and binding to all fishery legislations about those fish stocks and is taking appropriate conservation and management measures in this field.

   Secondly, Iran is a member of Indian Ocean Tuna Commission and according to IOTC Resolution 10/12 of which a Persian Translation of the resolution was delivered to the fisheries Headquarters in southern provinces of Iran, we have informed them to ban any kind of catch from the Thresher Shark from Allopiidae Family. Shark is not a target species for any fishing activity in Iran.

2. Iran respects 1995 agreement on Fisheries Code of Conduct and is a member of IOTC from 2001 and this regional fisheries management organization has recently requested all member countries to take necessary steps regarding fishing of Thresher Sharks. According to IOTC guidelines, all fishing data and information in this regard should be sent to IOTC.

3. We have not ratified it, but joining to this agreement is under developing by Iran fisheries organization.

4. Since shark has not been considered as target species which has always their own regulations, and it is part of by-catch so there is no special problem in this regard. Iran suggests developing a plan to reduce amount of by-catch with the help and support of FAO or any other authority.

5. Since we do not issue any fishing license for sharks as targeted fish and all the catch (except Thresher Species) are exploited.

6. Because of IOTC resolution we have communicated to all fisheries cooperatives abut protection of thresher shark. The IUU activities are reviewed for further actions in IUU fishing combat commissions. In these commissions which are for fishing of banned species, the sanctions and penalties would be announced but there have been no records as yet.

7. We have no regulation in this regard.

Assessment

8. Research activities and measures include:

   a) "Biomass determination of demersal fishes in the Persian Gulf and Oman Sea of which Shark is a target species and all data out of this project can be offered for purposes like determination of shark species in bottom trawl fishing, preparing the distribution of shark by species (like some important species like *Carcharhinus dussumieri*) and calculation of catch per unit area – CPUA;

   b) Carrying out surveys on determination of heavy metals in main shark species;

   c) Carrying out parasitological surveys in main shark species;

   d) Helping Iran Fisheries Organization for any ban if needs be.

      In addition, one of Fisheries research personnel (Dr. Valinassab) is officially the member of IUCN Shark Specialists Group and also participated in FAO- Rome shark technical workshop in 2008.

Reporting

9. We have field samplers in some landing places where they can record the data of by-catch species including sharks.

10. There are two codes: 03026500 and 03037500 but Iran do not catch and export shark.

JAPAN

Measures

1. Japan adopted an NPOA in 2001, with a revised version 2009. The state of the fisheries and species are subjected to the NPOA Sharks, analyses have been carried out yearly based on updated information. An ”implementation report on NPOA-Sharks” has been submitted to FAO by Japan every two years since the adoption of NPOA.

   As described in the paragraph 3 of the NPOA, in accordance with the Fisheries Law and Fisheries Resources Conservation Law, most of the fisheries in Japan are under control ofthe Government and prefectural governments, and entry into fisheries is limited by the license systems. Especially, the fisheries which directly target sharks or cause substantial by-catch of sharks are subject to the license system under the Minister of Agriculture, Forestry and Fisheries or the governors. Fishing pressures on shark resources will not increase in the future, because Japan has no intention to expand the scale of fisheries where sharks are either directly or incidentally caught and Japan strictly controls such fisheries by the fishing licenses system.

2. Japan is member of all relevant RFMOs for areas where sharks are assumed to be targeted or caught incidentally in longline fishing. Japan has introduced government regulations for respective license of longline vessels to ensure compliance with management measures adopted by RFMOs.

3. Japan has not yet signed the PSM Agreement.

4. –

5. In Japan, there are no fisheries targeting shark species which is listed in the CITES Appendices; Sawfish (*Anoxypristis cuspidate, Pristis* spp.), Basking Shark (*Cetorhinus maximus*), Whale Shark (*Rhincondon typus*) and Great White Shark (*Carcharodon carcaharias*).

6. In accordance with the paragraph 4 of the NPOA, Japan has been promoting effective utilization of sharks caught by fishing vessels. In Japan, shark species caught are exhaustively used; meats and fins are processed into food, skins into materials for leather products and vertebrae into medicines or supplements. Furthermore, a variety of studies on the utilization of formerly discarded shark species are conducted and a variety of new products including jerky are contributing to the regional development, especially to the development of local industries and small-scale fisheries in remote areas including small islands.

7. In accordance with the paragraph 3 of the NPOA, all tuna-fishing longline vessels under the control by the Government are required to retain onboard until landing whole bodies of sharks caught, except for heads, guts and skins, pursuant to the resolutions adopted by RFMOs covering tuna species in respective regions.

Assessment

8. In accordance with the paragraph 2 of the NPOA, Japan has been extensively collecting information regarding shark stocks and has been monitoring the state of the stocks through auction records at wholesale markets at landing sites, logbooks of fishing vessels and reports by the scientific observer onboard. An expert group consisting of Japanese scientists and experts meets regularly to assess the state of shark resources concerned.

Reporting

9. In accordance with the regulations introduced under the Fisheries Law and Fisheries Resources Conservation Law, each fishing vessel of distant-water longline tuna fishery and near-shore longline tuna fishery, which catches relatively large amount of sharks, reports species and/or genus-specific catch data of five major shark species for the contribution to the proper conservation and management of shark species under relevant tuna RFMOs. Similarly, each fishing vessels of offshore trawl fishery operating in the area where considerable amount of Spiny Dog Fish (*Squalus acanthias*) are caught should report species-specific catch data of Spiny Dog Fish (*Squalus acanthias*).

10. The HS codes, which used for the trade of sharks, are as follows:

Import	0302.65-000	dogfish and other sharks (fresh or chilled)
	0303.75-000	dogfish and other sharks (frozen)
	0304.99-920	fish meat of dogfish and other sharks (frozen)
Export	0302.65-000	dogfish and other sharks (fresh or chilled)
	0304.29-100	fillets of dogfish and other sharks (frozen)
	0305.59-920	fins of dogfish and other sharks (dried)

REPUBLIC OF KOREA

Measures

1. Korea's distant water fisheries do not target shark species. However, sharks are sometimes caught by distant water tuna longliners and purse seiners as bycatch. The handling of such bycatch is subject to the 'Distant Water Fisheries Development Act' of Korea, which requires distant water fishing vessels flying the flag of Korea to comply with shark-related conservation and management regulations adopted by RFMOs. If and when there are allegations of non-compliance, an inspector is dispatched to sift the evidence and if the allegation turns out to be true, sanctions, including confiscation, are imposed accordingly.

   RFMOs which adopted shark-related measures include the WCPFC, ICCAT, IATTC, IOTC and CCSBT. Some of these RFMOs are prohibiting the discard of dead sharks and requiring the weight of retained shark fins to be less than 5 percent of the weight of the carcasses on board. Korea's distant water fishing fleets are fully complying with these measures.

   To keep pace with international efforts to conserve and manage shark species, Korea established its National Plan of Action for the Conservation and Management of Sharks in August, 2011.

   To manage shark species in Korea's EEZ, the government set up the Fishery Resources Management Plan in accordance with the 'Fishery Resources Management Act.' A 'Fishery Resources Management Committee' reviews and evaluates the implementation of this plan. Under this plan, a TAC system is applied to certain species and/or areas that need to be conserved or managed. The mottled skate (Raja Pulchra) is currently being managed under such TAC system. The government is also taking other necessary measures including harvest prohibition and mandatory release of certain species to keep in line with the CITES regulations.

2. Korea is a member of the aforementioned five tuna RFMOs and is fully complying with shark conservation and management regulations adopted by these RFMOs. To assist the crew of Korea's distant water fishing fleets in identifying bycatch species, the Korean government published a guidebook on bycatch species. The government is also making continuous efforts to address on-the-job challenges such as identifying different shark species and recording shark bycatches.

3. Korea is currently in preparation of acceding the Port State Measures Agreement. The Korean government secured the services of a team of experts to conduct a study on the implementation and implications of the FAO Port State Measures Agreement in 2010 and 2011. The final result of the study came out in April, 2011.

4. Korea so far has not observed substantial problems in conducting fisheries enforcement activities. Korea's distant water fishing vessels are required to comply with the relevant shark-related regulations adopted by RFMOs. They are keeping and maintaining catch records and releasing incidentally caught shark species to the extent possible. For example, the fishing vessels, as required, are releasing prohibited shark species including thresher sharks, oceanic white tip sharks, silky sharks, hammerhead sharks and whale sharks.

   When shark species subject to management are incidentally caught alive in Korea's EEZ, fisheries enforcement agents see to it that those species are released unharmed. Failure to comply with these requirements will result in a correctional fine of up to KRW 3 million. Also, considering that seiners frequently cause incidental catches, the use of such gears is currently being managed under area-based restrictions.

5. Capturing threatened or endangered marine species is prohibited under the relevant regulations of CITES, the Wild Fauna and Flora Protection Act and the Fishery Resources Management Act of Korea and such species should be released immediately when incidentally captured. When trading the species listed on the Annexes of CITES, relevant certificates are required. Violations of these requirements are sanctioned accordingly.

   As a responsible member of the five tuna RFMOs that govern shark bycatches, Korea is fully complying with shark-related conservation and management measures of each RFMO and established its National Shark Plan in August, 2011.

The mottled skate (Raja Pulchra) is being managed not only under a TAC system but also under seasonal (June 15 to July 15) and size (disc width less than 45cm) restrictions.

In Korea, virtually all parts of skates and shark bycatches are utilized and thus there is not much waste from shark and skate catches.

6. National laws and regulations: the Wild Fauna and Flora Protection Act; the Fishery Resources Management Act and the Distant Water Fisheries Development Act.

   International and regional regulations: CITES regulations and conservation, and management measures of the five tuna RFMOs

   The status of implementation has been outlined in Question 5.

Assessment

7. As a contracting party to the five tuna RFMOs, Korea is encouraging its distant water fishing vessels to fully comply with shark-related conservation and management regulations (e.g. fin-carcass ratio of less than 5 %) adopted by RFMOs. If and when there are allegations of non-compliance, an inspector is dispatched to sift the evidence and if the allegation turns out to be true, sanctions, including confiscation, are imposed in accordance with the Distant Water Fisheries Development Act.

   All fish and fish products caught outside Korea's EEZ should be declared to Customs prior to arrival at the port in Korea. Even when the catches are landed in ports outside Korea's jurisdiction, relevant certificates and documents should accompany the consignments in accordance with Korea's Customs Act.

   There is no specific regulation prohibiting shark finning in Korea's EEZ fisheries since there is no known 'finning' activity carried out by Korean fishing vessels. As part of the country's culinary culture, all edible parts of sharks and virtually all parts of skates, including organs, are utilized.

Reporting

8. As the shark conservation and management measures adopted by the five tuna RFMO require, Korea's distant water fishing vessels are recording the species, length and other biological data of incidentally caught sharks in their log sheets. Scientific observers are also placed on board the vessels to collect further scientific data.

   Korea's National Fisheries Research and Development Institute (NFRDI) collects shark bycatch data from Korea's fishing vessels and submits those data to scientific bodies and ecosystem-related species (ERS) working groups of RFMOs. Korea's scientists and policy makers are also participating in stock assessments and management efforts to contribute to the conservation and management of shark species. The government is also providing the masters and crew of Korea's fishing vessels with relevant trainings.

   For sharks and skates caught in the EEZ of Korea, relevant data are collected in accordance with the Fishery Resources Management Act. The mottled skate (*Raja Pulchra*) is subject to a regular stock assessment to calculate proper TACs and ABCs. The mottled skate is landed, sold and traded in designated ports and markets so that the management of the species can be more efficient. The president of the NFRDI oversees the monitoring of the stock status on a yearly basis through which TACs are set and room for improvement is identified and addressed.

9. In accordance with shark-related regulations of RFMOs, distant water fishing vessels are required to collect data on blue sharks, porbeagle sharks, mako sharks, oceanic white tip sharks, hammerhead shark and thresher sharks. Scientific observers are also placed on board the fishing vessels to collect biological data of a wider range of shark species.

   In the EEZ fisheries, observers (fishery resources management enforcement agents) collect shark-related data. For the mottled shark, data on the stock's status and biological information are collected by areas and gear types.

Korea's official statistics on sharks are categorized as sharks and rays except for certain species that are currently being managed under a TAC system.

10. Based on the International Convention on the Harmonized Commodity Description and Coding System (HS Convention), Korea is using Harmonized System of Korea (HSK) in trading of sharks.

As of 2011:
* sharks (live 0301.99.9099, refrigerated 0302.65.0000. frozen 0303.75.0000...)
* skates (live 0301.99.9099, refrigerated 0302.69.9090, frozen 0303.79.9093...)
* rays (live 0301.99.9099, refrigerated 0302.69.9090, frozen 0303.79.9096...)

→ In line with the fifth amendment of the HS Convention of the World Customs Organization (WCO), the commodity codes for sharks will be changed as follows:

As from 2012:
* sharks (live 0301.99.9099, refrigerated 0302.81.0000, frozen 0303.81.0000...)
* rays and skates (live 0301.99.9099, refrigerated 0302.82.0000, frozen 0303.82.0000...)

MALAYSIA

Measures

1. Malaysia adopted an NPOA-Shark in 2006 which draws the synopsis of Malaysian fisheries, including the status of sharks and rays. It refers to general fisheries laws and regulations and to the general fisheries management plan that apply to sharks and rays as well: limit fishing effort through the issuance of fishing gear and fishing vessel licenses; restrictions of fishing gears and methods (the locally known pukat pari, a drift net with a mesh size of more than 25.4 cm (10 inches), which was once used to catch large sized sharks and rays has been banned since 1990); management of a zoning system based on the tonnage of fishing vessels, type of fishing gears used and ownership patterns; registration of fishers; conservation and rehabilitation of the marine ecosystems through the establishment of marine parks and construction of artificial reefs.

   Although other existing management measures are not directly aimed towards the conservation and management of the shack fisheries, their implementation, nevertheless, does provide some benefits for these resources.

   The NPOA further refers to the few regulation adopted specifically for the conservation and management of sharks. For instance, the Fisheries (Control of Endangered Species of Fish) Regulations 1999 and Regulation 2008 list the whale shark (*Rhincodon typus*) and seven species under the Sawfish group (Family Pristidae) which include i) *Anoxypristis cuspida*; ii) *Pristis clavata*; iii) *Pristis microdon*; iv) *Pristis pectinata*; v) *Pristis perotteti*; vi) *Pristis pristis*; and vii) *Pristis zijsron* as endangered marine animals in Malaysia. The regulation stipulates that no person shall fish or, disturb, harass, catch, kill, take, posses, sell, buy, export or transport any endangered species or any part of it except with the written permission from Director-General of Fisheries Malaysia.

   The proposed Marine Recreational Fishing Regulations state that recreational fishing shall only be allowed after the Director General of Fisheries has issued a license. For the purpose of resource conservation, fish species incidentally caught by anglers and listed are prohibited from being landed. Only catch-and-release fishing is allowed for these species. There are 2 species of sharks and 5 species of rays in the Schedule as listed below:

   - *Atelomycterus marmoratus*-Coral catshark
   - *Rhincodon typus*- Whale shark
   - *Anoxypristis cuspidata* -Narrow sawfish
   - *Pristis microdon* - Largetooth sawfish
   - *Pristis zijsron* - Longcomb sawfish
   - *Pristis pectinata* - Smalltooth sawfish
   - *Himantura chaophraya* – Giant Freshwater whipray.

2. Malaysia has been a member of the IOTC since 1998. By virtue of its membership, Malaysia has to comply with IOTC Resolution 05/05 concerning the conservation of sharks caught in association with fisheries managed by IOTC and Resolution 10/12 on the conservation of Thresher Sharks (Family Alopiidae) caught in association with fisheries in the IOTC area of competence.

3. Have not signed or ratified the Agreement on PSM to prevent deter and eliminate IUU Fishing.

4. The main problems observed are the:

   - Biological Information of Sharks and Related Habitats: the lack of information on stock structure limits the quality on information for stock assessment.
   - Socio-economic Information of Fishers and Traders involved in sharks and rays fisheries are still inadequate.
   - Utilisation, Marketing and Trade Information.
   - Coordinated Research and Expertise on Shark: no networking among experts and researchers is yet available.

- Conservation and Management: lack of enforcement to conserve vulnerable or threatened sharks and rays stocks, no identification and use of indicators for sustainable exploitation.

5. See supra question 1- whale shark (*Rhincodon typus*) and seven species under the Sawfish group which include i) *Anoxypristis cuspida*; *Pristis clavata*; *Pristis microdon*; *Pristis pectinata; Pristis perotteti*; *pristis pristis*; and *Pristis zijsron* listed under the Fisheries (Control of Endangered Species of Fish) Regulations 1999 and Regulation 2008; and also the proposed Marine Recreational Fishing Regulations. Being an endangered species it must not be caught. If caught incidentally it must also be released immediately.

   Whale shark and saw fishes were protected in Malaysia under two Acts namely Fisheries Act 1985; Fisheries (Control of Endangered Species of Fish) Regulations 1999, and International Trade in Endangered Species Act 2008 (Act 486).

   Fisheries Act 1985; Fisheries (Control of Endangered Species of Fish) Regulations 1999:

   Whale sharks (*Rhincodon typus*) and all sawfishes (family Pristidae) are listed as endangered marine animals in Malaysia under Fisheries (Control of Endangered Species of Fish) Regulations 1999. The regulation stipulates that no person shall fish or, disturb, harass, catch, kill, take, posses, sell, buy, export or transport any endangered species except with the written permission from Director- General of Fisheries Malaysia. Any person who contravenes the regulations is committing an offence under Section 25(b) Fisheries Act 1985 and can be fined not exceeding RM 20,000 or a term of imprisonment not exceeding two years or both.

   International Trade in Endangered Species Act 2008 (Act 686):

   This is an Act to implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in Malaysia and to provide for other matters connected therewith. CITES listed species (Appendix I, II and II) under this Act including basking shark *Cetorhinus maximus*, great white shark *Carcharodon carcharias*, whale shark *Rhincodon typus* and all sawfishes species under family Pristidae. The Act has six parts. Part I (Preliminary), Part II (Authorities), Part III (Trade of scheduled species), Part IV (Permit certificate and registration), Part V (Power relating to enforcement, seizure, arrest, etc and Part VI (General).

6. Additional measures and regulations are not required as all retained sharks are fully utilized.

7. Malaysia does not require regulating shark finning. Please refer to the answer of question 6.

   Enhancing public education and awareness through private sector collaboration to educate public, especially the next generation, on the importance of endangered living marine resources, including sharks and rays.

Assessment

8. The fisheries management has always taken into account the relevant biological, technological, economical, social, environmental and commercial aspects, towards ensuring the effective conservation, management and development of all living aquatic resources. The achievement of the resources, socio-economy and ecology parameters to be evaluated and assessed using sustainable indicators. Determining the current stock biomass or resource potential in the form of Maximum Sustainable Yield has always been an important tool for fisheries managers in Malaysia. Sustainable indicators such as fisheries performance indicators (catch rate and exploitation rate), reference points (MSY, MEY and optimum effort) and trigger points (the catch above MSY) have always been used to monitor the status of the stocks.

   There is still a need for a comprehensive understanding of the biology and ecology of sharks and rays especially in the areas pertaining to their population dynamics, critical habitat requirements during their life cycles and conservation needs. These are crucial factors for the successful management of sharks and rays resources.

Reporting

9. The present statistical data collection does not record landings by species. This does not indicate the status of the resources either by abundance, vulnerable or endangered. Malaysia reports its catches by groups of sharks and rays but not by species.

   Malaysia is conducting annual training on taxonomy and species identification of major shark species landed in the country. The aims of the training are to enable the enumerators to identify species of sharks and to do the landings records for sharks by species.

10. PRODUCT CODES USED FOR THE TRADE OF SHARKS

HS	SITC	DESCRIPTION
030265000	034183000	DOGFISH AND OTHER SHARKS, EXCLUDING LIVERS AND ROES, FRESH OR CHILLED
030375000	034283000	DOGFISH AND OTHER SHARKS, EXCLUDING LIVERS AND ROES, FROZEN
030559001	035130010	OTHER SHARKS' FINS, IKAN BILIS/FISHMAW'S/SHARKS'FINS OTHER THAN MARINE FISH
030559300	035130300	SHARK'S FINS, DRIED, WHETHER OR NOT SALTED BUT NOT SMOKED
030569200	035299200	SHARKS' FINS, SALTED BUT NOT DRIED OR SMOKED AND IN BRINE
160420001	037160010	SHARKS' FINS, PREPARED & READY FOR USE, IN AIRTIGHT CONTAINERS
160420002	037160030	SHARKS' FINS, PREPARED & READY FOR USE, OTHER THAN IN AIRTIGHT CONTAINERS
160420910	037160910	SHARKS' FINS PREPARED OR PRESERVED FISH IN AIRTIGHT CONTAINERS

MEXICO

Measures

1. Mexico has had a NPOA-Shark since 2004 which consists of guidelines and programmes, such as the research programme, the information system programme, the programme for education and training, the inter-institutional collaboration programme, the inspection and surveillance programme with the general objective of ensuring the regulation, the sustainable use and the conservation of sharks and rays on the long term in the waters under the jurisdiction of the United States of Mexico. The NPOA is a transparent and flexible instrument that takes into account the participation of all stakeholders interested in the sustainable use and conservation of the resources, as well as in the spreading of knowledge and in the implementation of regulations.

   Other measures have been adopted, such as the:

   - General Law on Sustainable Fisheries and Aquaculture.
   - General Law on Ecological Balance and Environment Protection: in this context, the Mexican Official Rule NOM-059-ECOL-2000 on Environmental protection- Mexican Native Flora and Fauna Species-Risk Categories and Specification for their inclusion, exclusion or modification-List of endangered species was issued. It states that the basking shark, the great white shark and the whale shark are threatened species in the Republic of Mexico.
   - Mexican Official Rule NOM-029-PESC-2006 on Responsible fisheries of sharks and rays-Specifications for their use: in force since 2007, the objective of the rule is to promote the sustainable use of sharks and rays caught in directed fisheries, as well as to contribute to the conservation and protection of these species caught as by catch. The compliance with this Rule is mandatory for the holders of a shark and rays fishing license and for those who incidentally catch those species in other fishing operations.

   All the measures above mentioned promote sustainable fisheries and comply with the principles established in the Code of Conduct for Responsible Fisheries.

2. Mexico has been a Member of ICCAT since 2002. In this respect, Mexico has to comply with Resolution 03-10 on the shark fishery (2003), Recommendation 04-10 concerning the conservation of sharks caught in association with fisheries managed by ICCAT (2004), Recommendation 07-06 Supplemental Recommendation concerning Sharks (2007), Resolution 08-08 on Porbeagle Shark (*Lamna nasus*) (2008), Recommendation 09-07 on the conservation of Thresher sharks caught in association with fisheries in the ICCAT Convention Area (2009), Recommendation 10-07 on the conservation of Oceanic Whitetip sharks caught in association with fisheries in the ICCAT Convention Area (2010), Recommendation 10-08 on Hammerhead sharks (family Sphyrnidae) caught in association with fisheries managed by ICCAT (2010).

   As a Member of the IATTC, Mexico has to comply with Resolution C-05-03 (2005) on the conservation of sharks caught in association with fisheries in Eastern Pacific Ocean and with Resolution C-11-10 (2011) on the conservation of the Oceanic whitetip sharks caught in association with fisheries in the Antigua Convention area.

   As a Cooperating Non-Member of WCPFC, Mexico has to comply with Conservation and Management Measure 2010-07 (2010).

3. No.

4.
   - Es necesario mejorar y fortalecer los programas de Inspección y Vigilancia, ya que permitirá verificar que se respecten las disposiciones regulatorias de la NOM-029-PESC-2007; así como verificar el porcentaje de pesca incidental de las especiesreservadas a la pesca deportiva.
   - Es necesario regularizar los permisos de pesca para embarcaciones menores y certificar que el esfuerzo nominal efectivamente no se ha incrementado en los últimos años.
   - Es necesario regularizar los permisos de embarcaciones de mediana altura, las cuales a la fecha se encuentran realizando actividades de pesca amparadas bajo un permiso de pesca para embarcaciones menores.

- Otro aspecto que la autoridad pesquera debe mejorar es la verificación de las descargas de tiburones y rayas en todos los puertos donde existen permisos de pesca dirigida de este recurso.

5. See supra- the Official Mexican Rule NOM-059-ECOL-2000 on Environmental protection-Mexican Native Flora and Fauna Species-Risk Categories and Specification for their inclusion, exclusion or modification- List of endangered species: the Rule NOM-029-PESC-2006 prohibits the capture and retention of the whale shark, the basking shark, the white shark, the sawfish and the giant manta ray. Retention of any part or the whole of these species, alive or dead, is prohibited; and consequently, trade and human consumption of these species is prohibited (Rule 4.2.2).

   Moreover, Mexico has identified the threatened species of sharks and rays or that are at risk and has listed them in Annex 2 of the NPOA-Shark: *Carcharodon carcharias, Cetorhinus maximus, Mobula japonica, Manta birostris, Mobula tarapacana, Mobula thurstoni, Pristiophorus schroederi, Pristis microdon, Pristis pectinata, Pristis perotteti, Pristis pristis, Rhincodon typus*.

6. The NPOA-Shark and the Rule NOM-029-PESC-2006 on Responsible fisheries of sharks and rays-Specifications for their use both promote the full use of sharks, encourage to minimize the unutilized incidental catches of sharks as well as to minimize waste and discards.

   Moreover, the Research programme of the NPOA-Shark promotes the development of technologies for the full use of sharks; the Inspection and Surveillance programmed ensures that the discards and the level of full use of sharks correspond to the rules in force.

7. Rule NOM-029-PESC-2006 prohibits shark finning.

Assessment

8. One of the objectives of the Mexican NPOA-Shark is to determine and protect the critical habitats. The guidelines and programmers of the NPOA state that the evaluation of shark populations if of priority. The Information System programmed mentions that a statistical database will be created and will include, inter alia, information to logbooks, the onboard scientific observer programmed. This will allow a better storage and use of data related to sharks and rays. Moreover, under the Research programmed, there are two sub-programmers: the first one deals with shark tagging which has led to the collection of new scientific data; the second sub-programmed deals with the establishment of a national scientific observer programmed.

Reporting

9. Asimismo, en junio de 2011, Mexico ha presentado y emitido el "Dictamen Técnico sobre considerar zonas específicas para la aplicación de las vedas de tiburones y rayas en el Pacífico mexicano" y el "Dictamen técnico propuesta de veda de la pesquería de tibur6n en el litoral del Golfo de México; que tiene como base la mejor información técnico-científica disponible, y su propósito es proteger a las hembras grávidas y recién nacidos de las principales especies que sostienen a las pesquerías en cada región del litoral del Pacifico mexicano y del Golfo de México y el Mar Caribe en la Zona Económica Exclusiva de México.

10.

- Se han elaborado guías de identificación de tiburones para los litorales del Pacífico mexicano y Golfo de México; para su aplicación se han realizado tal/eres de capacitación hacia el sector productivo dedicado a la pesca de tiburón.
- Se han elaborado bitácoras específicas para la colecta de la información por flota pesquera; las cuales consideran el registro por especie de las principales especies registradas en las diferentes regiones de ambos litorales de México".

NEW ZEALAND

Measures

1. The New Zealand NPOA Sharks was approved on 13 October 2008. A full review and revision will be undertaken in 2012.

   Other NZ legislation relevant for the conservation and management of sharks:

   - The Fisheries Act 1996 provides for the sustainable utilisation of fisheries (taking into account environmental and international obligations) and provides the framework for the New Zealand Quota Management System. The protection of marine species, if required, is addressed through regulation made under the authority of this Act.
   - The Animal Welfare Act 1999 recognizes inter alia that finning of live sharks is an offence.
   - The Wildlife Act 1953 provides full or partial protection of particular species in NZ fisheries waters, including some shark species.

   There are also fisheries management related policy initiatives, some with direct relevance to sharks. They form three broad groups: fisheries plans; standards; and environmental policies. Fisheries plans have been developed, or are under development, for fisheries for deepwater, inshore and highly migratory species through which fishery specific management objectives are developed. Actions to achieve these objectives are implemented as part of an annual cycle of review. Fisheries plans will guide the implementation of any future national actions required for the conservation and management of sharks. There is active stakeholder engagement both in the development and implementation of these fisheries plans.

2. New Zealand is a member of the Western and Central Pacific Fisheries Commission (WCPFC) which has adopted a conservation and management measure (CMM) for sharks taken in fisheries for highly migratory species (CMM 2009-04). New Zealand has fully implemented the relevant provisions of this measure. New Zealand also provides detailed reporting of shark catches and fishing effort to the Scientific Committee of WCPFC in support of its shark research plan.

   New Zealand is also a member of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). This Commission has no specific measures related to the conservation and management of sharks but its members (including New Zealand) have agreed to abide by the measures of other RFMOs which have a geographically specified convention area (CCSBT does not). In New Zealand's case this means the measures adopted by WCPFC.

3. New Zealand signed the PSM Agreement on 15 December 2009. NZ plans to ratify the Agreement in the first half of 2012.

4. In general shark catches are considered to be well reported and monitored through general monitoring processes in place for all quota management stocks (including separate reporting from fishers and fish receivers; attribution of catches against quota; and fisheries observers). Vulnerable and threatened species are considered to be well protected by existing legislative provisions. One of the common problems faced by enforcement officers relates to the difficulties that arise in attempting to identify species when only the fins are present. A number of tools are being considered to address this issue, including a greater use of DNA based identification technology.

   In New Zealand fisheries the ability to monitor at-sea activities is largely dependent on the level of government observer coverage, which varies between fisheries.

5. NZ recognizes an obligation to provide protection for basking shark in NZ waters, and from NZ vessels on the high seas. Basking shark and great white shark (white pointer) are protected under both the Wildlife Act and Fisheries Act. Deepwater nurse shark, whale shark, manta ray, and spinetail devil ray are protected under the Wildlife Act. CITES provisions, where they apply, are administered by the New Zealand Department of Conservation.

6. New Zealand requires vessels fishing for highly migratory species on the high seas to retain sharks from which fins have been removed and to have these fins attached to the shark carcass. Within New Zealand fisheries waters all significant shark fisheries are subject to catch limits which are individually allocated to fishers. There are strong incentives for individuals to maximise their financial return by landing both carcasses and fins of sharks caught. By far the majority of New

Zealand shark catches are landed with the shark body as the primary landed state. New Zealand also provides an exemption from the general rule that all catch of quota species must be landed to allow the live release of a number of shark species in order to encourage the release of live incidental bycatch and juveniles.

The efficacy of management measures to provide for full utilization will be determined through the collection and analysis of data from various sources as part of the review of the New Zealand NPOA sharks planned for 2012.

7. It is an offence under the New Zealand Animal Welfare Act 1999 to remove the fins of a shark while it is alive and then return the body to the sea. The application of this Act can extend to such offences committed by fishing vessels operating in the EEZ and on the high seas. A code of practice was developed in 2001 to codify the safe handling, processing and unloading of sharks in the tuna fishery, and was updated in 2010. The Code advises fishers of the provisions of this legislation. New Zealand has a relatively high level of observer coverage in a range of fisheries in which sharks are taken as a target or as a bycatch and observer information is routinely assessed to examine at sea fishing practices. The New Zealand Government has recently taken steps that will integrate Animal Welfare and Fisheries inspectorates which will improve the monitoring of at sea compliance.

   The incentives to encourage full utilization of sharks are discussed in the response to the previous question.

Assessment

8. Research and monitoring measures are considered an integral part of the New Zealand fisheries management regime and ensure that appropriate action is taken when sustainability concerns arise. As indicated all significant target and bycatch fisheries for sharks are subject to the quota management system (QMS). New Zealand legislation requires catch levels to be set with reference to maximum sustainable yield (MSY) and to take into account of environmental factors and the interests of future generations. It also provides for areas of importance to fisheries management to be protected.

   Existing research and monitoring measures/programmes are targeted at ensuring that catch levels are maintained at sustainable levels. Observer coverage to verify fisher reporting and at sea activity is routinely assessed. The management framework of the New Zealand QMS provides for verification of fisher reporting of landed catch. The monitoring and management framework will be strengthened, as required, through research projects and management action advanced through the Fisheries Planning processes. Such actions may include instigating improved management measures for a particular shark species within its existing management framework; the movement of a shark species from non-QMS to QMS management in response to sustainability and/or utilisation concerns; or prohibiting utilisation when no or only limited take is considered sustainable.

   Action has been taken (and is ongoing) to reduce the use of generic shark reporting codes, as well as recent production of field identification guides for all QMS and other fish species, including sharks, commonly caught in commercial and non-commercial fisheries.

Reporting

9. For commercially caught shark species (including rays, skates and chimaeras) NZ has 64 individual species codes, which fishers are required to use to identify and report their catch. A variety of guides to identification have been produced. In cases where identification is difficult there are 12 group codes available that are based on Order, Family or Genus. Typically, about 95% of the overall NZ shark catch is reported using a species-specific code.

10. New Zealand Commodities are classified according to the New Zealand Harmonised System Classification (NZHSC), which is aligned to the New Zealand Customs Tariff. The NZHSC was revised, from the January 2007 reference month, to incorporate changes promulgated by the World Customs Organisation. The NZHSC is aligned to the Standard International Trade Classification (SITC) designed by the FAO. This is an output classification (using HS codes at the 6-digit level as

building blocks), designed by the United Nations as an analytical tool for economic analysis, which includes some simple implications regarding level of processing.

PERU

Measures

1. Peru has elaborated a NPOA-Shark but that has not yet been formally approved by the Peruvian Government. The provisional NPOA contains 9 specific objectives and 6 programmes to ensure the management and conservation of sharks. Ensuring the sustainability of shark catches from directed and non-directed fisheries is one of the specific objectives of the NPOA-Shark of Peru. The promotion of researches is one of the programmers and includes technology, species identification sub-programmers. Concerning consultation, the NPOA contains programmers dealing with training and dissemination of information, as well as inter-institutional collaboration.

   Further fisheries legislation has been adopted:

   The General Fisheries Law – Decree-Law No. 25977

   Regulation on the General Fisheries Law- Supreme Decree No. 012-2001-PE

   In addition, specific rules dealing with shark fisheries have been adopted, such as the:

   - Ministerial Resolution No. 209-2001-PE (June 2001) that establishes minimum size for catches of juveniles, including for 6 species of elasmobranches (Carcharhinus spp, Prionace glauca, Isurus oxyrinchus, Mustelus whitneyi, Mustelus mento,Triakismaculata).
   - Ministerial Resolution No. 236-2001-PE (July 2001) that approves the Deep-sea Cod Fishing Ordinance which lists chimera Hydrolagussp, deep-sea ray Bathyrajaspy and deep-sea shark Somniosuspacificus as by-catch species in cod fisheries.
   - Supreme Decree No. 032-2003-PRODUCE (November 2003) that approves the Regulation of the tuna and tuna-like species Fishing Ordinance in which 10 species of sharks are considered to be by-catch species in tuna fisheries. The objective of this Decree is to ensure the rational and sustainable use of tuna and tuna-like stocks.

2. As a Member of the IATTC, Peru has to comply with Resolution C-05-03 (2005) on the conservation of sharks caught in association with fisheries in Eastern Pacific Ocean and with Resolution C-11-10 (2011) on the conservation of the Oceanic whitetip sharks caught in association with fisheries in the Antigua Convention area.

   Peru is furthermore a Member of the Permanent Commission for the South Pacific (CPPS) that adopted a Regional Plan of Action for the Conservation and Management of Sharks, Rays and Chimeras in 2008.

3. Peru signed the Agreement on 3 March 2010.

4. –

5. Identifying and providing special attention to vulnerable shark stocks is one of the specific objectives of the NPOA-Shark of Peru.

6. Minimize the unutilized incidental catches of sharks and promoting the full use of dead sharks are specific objectives mentioned in the NPOA-Shark of Peru. The biologic research programme encourages the development of processing technologies for the full use of dead sharks.

7. No law or regulation that prohibits shark fining in Peru was found. However, the programmed “Actions for monitoring, control and surveillance” plans to control the catches in order to avoid shark finning. In Peru no finning is carried out and an integral use of the sharks catches is in place.

Assessment

8. In Peru, shark fishery is artisanal there is no industrial fishery for catching these species. The statistics of artisanal fishery landings are taken at species level, as well as, the information about rays, chimaeras is taken. The gathering of this information is carried out in the main ports of the country.

Reporting

9. The identification and determination of shark populations are a requirement for the assessment and management those fisheries. So it is important to get information about shark species of commercial interest. In Peru, landing data of the artisanal fishery, in the main landing ports are reported at species level, including sharks, rays and chimaeras.

   This information was useful to prepare the Peruvian National Report to CITES (Convention on International Trade in Endangered Species) about shark conservation in Peru, in 25th Meeting Fauna Committee which will be held in July 2011.

10. According to the information of the National Superintendency of Tax Administration of Peru (Superintendencia Nacional de Administración Tributaria ¬– SUNAT) the codes of products of sharks commercialized by Peru worldwide are: 0305591000, 0303750000, 0302650000.

SENEGAL

Reporting

1. Dans le cadre de la révision du code de la pêche maritime, des mesures spécifiques sur les Requins ont été proposées. Ceci grâce au Plan d'Action National de gestion et de conservation des populations de raies et de Requins. En effet, dans le cadre de ce plan, des données biologiques et socioéconomiques ont été collectées pendant six ans. Ces données traitées et analysées ont permis de proposer des mesures suivantes:

   a) L'inscription sur la liste des espèces interdites à la pêche du poisson scie menacé d'extinction

   b) L'instauration d'une taille de première capture des espèces jugées dont les stocks sont dans un état de surexploitation très avancé

      Rhinobatos cemiculus
      Sphyrna lewini

   D'autres mesures générales sont prises et qui ont des effets positifs sur certains stocks de Requins. Il s'agit du repos biologique tous les ans pour la pêche industrielle au mois d'octobre.

   Des dispositifs d'évitement de poissons dont les Requins (comme la grille Normord) sont entrain être testés en vue de les introduire dans la pêcherie crevettière profonde.

   Senegal has had a NPOA-Shark since 2005 whose main objective is to ensure the conservation and management of sharks, as well as their long term sustainable use. The NPOA refers to five strategies options: strengthening the stakeholders' technical and management capacities; promoting consultation between the different stakeholders involved (including raising public awareness on the importance of shark conservation and management); improving the collect of information on shark resources and their systems of exploitation; elaborating and implementing conservation and management measures; strengthening the sub-regional, regional and international cooperation on shark conservation and management.

   Moreover, the Senegalese legislative and regulatory framework on sharks comprises the Fisheries Code (Law 98-32 of 14 April 1998) and its implementing decrees.

2. Le Sénégal est membre de la Commission Sous Régionale des Pêches (CSRP) abrite le Coordonnateur du Plan Sous Régionale d'Action de gestion et de conservation des populations de raies et Requins. Dans ce cadre des concertations sont menées pour la prises de mesures de gestion à l'échelle sous régionales. Mais elles ne sont pas encore effectives.

   Senegal has been a Contracting Party of ICCAT since 2004. In this respect, Senegal has to comply with Recommendation 04-10 concerning the conservation of sharks caught in association with fisheries managed by ICCAT (2004), Recommendation 07-06 Supplemental Recommendation concerning Sharks (2007), Resolution 08-08 on Porbeagle Shark (Lamna nasus) (2008), Recommendation 09-07 on the conservation of Thresher Sharks caught in association with fisheries in the ICCAT Convention Area (2009), Recommendation 10-07 on the conservation of Oceanic Whitetip Sharks caught in association with fisheries in the ICCAT Convention Area (2010), Recommendation 10-08 on Hammerhead Sharks (family Sphyrnidae) caught in association with fisheries managed by ICCAT (2010).

   As a Cooperating Non-Contracting Party to IOTC, Senegal has to comply with IOTC Resolution 05/05 (2005) concerning the conservation of sharks caught in association with fisheries managed by IOTC and Resolution 10/12 on the conservation of Thresher Sharks (Family Alopiidae) caught in association with fisheries in the IOTC area of competence (2010).

   As a Cooperating Non-member to WCPFC, Senegal has to comply with Conservation and Management Measure 2010-07 (2010).

   Moreover, Senegal is part of the Sub-Regional Fisheries Commission (CSRP) that regroups seven Member States. This Commission adopted a Shark Sub-Regional Plan of Action (PSRA-Requins) in

2001 that promotes sub-regional cooperation for the conservation and management of sharks which are shared resources between the Member States of the Commission.

3. No.

   Le Sénégal n'a pas encore signé, ni ratifié l'accord relatif aux mesures de l'état du port. Le Sénégal voudrait d'abord s'assurer que toutes les conditions sont réunies pour le faire.

4. Le principal problème auquel le Sénégal est confronté est la non régulation de l'accès aux différentes ressources surtout au niveau de la pêche artisanale qui représente 70% des débarquements. Des mesures sont entrain d'être prises pour réguler l'accès notamment avec l'introduction du permis de pêche artisanale et l'immatriculation informatisée des pirogues.

   Concernant la pêche industrielle, le système de licence est en vigueur. Toutefois, la capacité de pêche autorisée par type de pêche n'est pas compatible forcément avec le potentiel exploitable du stock ciblé.

5. Les stocks de Requins se trouvent dans une situation plus sérieuse car une attention particulière ne lui avait pas été accordée du fait qu'ils ne sont pas consommés localement. C'est grâce au plan Requins qu'une y a eu une prise de conscience de l'importance des Requins dans la régulation de l'écosystème marin et du point de vue socioéconomique.

   Senegal agrees that specific measures should be adopted to protect vulnerable or threatened shark species. For instance, fishing, transport and trade of saw fish (Pristis spp) and straw fish (*Rhinchobatos lübertii*) which are endangered species in Senegal should be prohibited.

   The 2007 Report on the Implementation of the NPOA-Shark recommends that endangered shark species (*Rhynchobatus luebberti, Sphyrna mokarran, Squatina aculeata, Squatina oculata, Squatina squatina*) be added to the list of species prohibited from fishing in the Fisheries Code.

   Seules les espèces citées plus haut ont fait l'objet de mesures spécifiques dans le code en révision.

   Comme indiqué plus haut, des tests de dispositifs d'évitement de poissons sont en cours dans la pêcherie crevettière profonde.

   Dans le code en révision, il est également interdit le « fining »

6. The total fishing effort in Senegal (targeted or incidental catches) is very uncertain as little information exists in this respect. One of the strategies of the NPOA consists into deepening the knowledge of the national total shark fishing effort and learning how to estimate it.

   Concernant les unités de pêche spécialisées ciblant les Requins, elles ont été toutes identifiées en 2009 dans le cadre de la mise en œuvre du plan d'action du Sénégal avec un recensement exhaustif. Ainsi, 144 unités ont recensées en 2009 au niveau de la pêche industrielle.

   Pour ce qui concerne la pêche accessoire, l'effort de pêche est difficile à mesurer.

7. Both the NPOA-Shark and the 2007 Report on the Implementation of the NPOA-Shark recommend to amend the Fisheries Code by adding an article that would specifically prohibit shark finning.

   Moreover another proposal was to tax shark fins meant for exportation.

   Please explain what the situation is now.

   Il a été retenu dans le cadre de la révision du code de la pêche d'interdire le « fining ». Mais, puis que la loi n'est pas encore promulguée, l'application de cette mesure n'est pas encore effective.

Assessment

8. The NPOA refers to the strategic option "Improving the collect of information on shark resources and their systems of exploitation". In order to achieve this strategic option, different actions have been identified, such as modifying the data system and the use of these data to correctly assess shark populations; identifying the sub-regional shark chain and better understanding its socio-economic importance to the stakeholders; studying and identifying spawning areas; establishing criteria and indicators for the assessment.

Des enquêteurs ont été recrutés dans le cadre du plan d'action et au niveau des centres de débarquement où se trouvent les unités de pêche spécialisées. Ces enquêteurs sont chargés de collecter des données écobiologiques et socioéconomiques relatives à la pêcherie de Requins.

Reporting

9. En fait, il est collecté les données de toutes les espèces de Requins débarquées. Les espèces qui sont le plus débarquées sont évidemment celles qui se retrouvent le plus dans la base de données.

   La liste des espèces débarquées au Sénégal est indiquée dans le plan d'action.

   The lack of information about shark populations is one of the main issues impeding their conservation and management. The agents and inspectors on the field know little about shark species, hence they are reported under the generic name "sharks" without distinguishing the landings by species.

   The NPOA-Sharks strives to improve the knowledge of actors involved in shark conservation and management by ensuring training and capacity building.

   Plusieurs ateliers de formation ont été organisés dans le cadre du plan d'action à l'intention des agents des pêches qui sont sur le terrain. Grâce à ces formations, les espèces de Requins sont de plus en plus spécifiées dans les rapports statistiques.

10. Les codes suivants sont utilisés pour la commercialisation des produits issus des Requins :

    - Squales frais : 030265
    - Autres frais : 030269
    - Squales congelés : 030375
    - Autres congelés : 030379

SRI LANKA

Sharks have been exploited for the last 4-5 decades by various fisheries, especially the shark long lines. At present shark long lines are operated at very insignificant levels where majority of the catch come from the incidental catches of tuna long lines and the by-catch of gill net fishery. There is a strong demand for shark fins for export while salted and dried flesh has a considerable demand for local consumption. In addition cleaned shark teeth and jaws are available for sale, mainly for tourists and export to other countries. This emphasise the optimum use of the shark catches in Sri Lanka.

Regulation of the landing of species of sharks and Rays with the fins attached to the body has been gazetted, published and being enforced from year 200 I under Fisheries and Aquatic Resources Act No.2 of 1996. Further Whale shark (*Rhincodon typus*) has been listed under Appendix 1l of Conservation of Migratory Species (CMS) and Convention of International trading of Endangered species (CITES).

There is no National Plan of Action for Sharks (NPOA- Shark). Bay of Bengal Large Marine Ecosystem Project has agreed to provide assistance for preparation of NPOA-Sharks. It is going to be a combined work of Department of Fisheries and Aquatic Resources (DFAR) and National Aquatic Resources Research and Development Agency (NARA) during the year of 20 12. Sri Lanka is a member of Indian Ocean Tuna commission (lOTC). IOTC has taken initiative in 2005 to manage Indian Ocean sharks under resolution 05/05& 1 01l2.As such Sri Lanka has the responsibility of providing required data to IOTC to implement regional conservation and managements measures for sharks. Difficulties in species identification is a major challenge for species wise data recording of sharks. The recently published shark identification guide by FAO will improve data recording of sharks in future.

Sri Lanka has signed and ratified the agreement of Port State measures to Prevent Deter and Eliminate IUU fishing. The designated port has been publicised and reported to IOTC. Port Inspectors have been appointed and under training. The Formal port inspections to be start from January 2012.

Insufficiency of the field staff and the lack of physical resources such as patrolling boats are some of the issues on fisheries enforcement difficulties. Shark finning is not regulated. Although species wise recording is a requirement of resolution 05/05, still the shark catches are recorded as a lump in log books. NARA has initiated a Molecular based taxonomic study on sharks for species identification under technical and financial assistance of BOBLMEP. Usually species level identification is required for data reporting and monitoring of catches. The product code used for trade of shark fins in Sri Lanka is 03055930.

THE UNITED STATES OF AMERICA

Measures

1. The United States has national measures to ensure sustainable shark catches and has mechanisms in place to involve stakeholders in research, education, compliance/enforcement, and management initiatives. The Magnuson-Stevens Fishery Conservation and Management Act (MSA) forms the basis for fisheries management in Federal waters and adjacent highs seas and requires the National Marine Fisheries Service (NMFS) and the eight regional fishery management councils to take specified actions. State agencies and interstate fishery management commissions are bound by State regulations and, in the Atlantic region, by the Atlantic Coast Fisheries Cooperative Management Act. Additional information on shark management in the United States can be found in sections 2.1 through 2.3 of the attached 2010 Shark Finning Report to Congress.

   In 2001, NMFS published a formal United States NPOA-Sharks. The NPOA outlines the conservation and data management processes needed to sustainably manage shark species in U.S. territorial waters. It also emphasizes the need for the precautionary approach in the management of all elasmobranchs, due to their vulnerability to rapid population decline.

   As part of the effort to implement the NPOA, NMFS and other U.S. shark management entities have developed training tools and programs in elasmobranch identification (such as identification posters and color guidebooks). NMFS has also developed information and materials to raise awareness among recreational fishermen, commercial fishermen, fishing associations, and other relevant groups about the need and methods to reduce bycatch mortality and increase survival of released elasmobranchs where bycatch occurs. In addition, NMFS has attempted to raise awareness among the non-fishing public about the ecological benefits from elasmobranch populations, detrimental effects of habitat destruction (e.g., coastal development and coastal pollution), and appropriate conservation measures to avoid, minimize, or mitigate adverse effects on necessary habitats. Additional information on our education and outreach efforts can be found in Section 2.5 of the attached 2010 Shark Finning Report to Congress.

2. The United States is party to a number of RFMOs which have adopted conservation and management measures for sharks, including full utilization and finning bans[6], and the United States has implemented those measures through legislation and regulations. Two of these RFMOs, the Inter-American Tropical Tuna Commission (IATTC), and the International Commission for the Conservation of Atlantic Tunas (ICCAT), have recently adopted measures for the conservation and management of specific shark species. In 2009, ICCAT members agreed to prohibit retention of bigeye thresher sharks. A prohibition on retention of this species was already in place for U.S. Atlantic fisheries. In 2010, ICCAT adopted prohibitions on the retention of the oceanic whitetip shark and six species of hammerhead sharks caught in association with ICCAT fisheries. The United States implemented these recommendations through a final rule that published in August 29, 2010 (76 FR 53652). At its November 2011 meeting, ICCAT adopted a prohibition on retention of silky sharks caught in association with ICCAT fisheries. This will be implemented in the United States through proposed and final rulemaking as soon as feasible. IATTC established zero retention measures for oceanic whitetips in 2011. The United States implemented the IATTC measure prohibiting the retention of oceanic whitetip sharks in the eastern Pacific Ocean in a rule that published on November 4, 2011 (76 FR 68332); these measures become effective on December 5, 2011.

3. As of October 2011, the U.S. Government has signed, but not ratified, the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. In

[6] Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), the International Convention for the Conservation of Atlantic Tunas (ICCAT), the Northwest Atlantic Fisheries Organization (NAFO), the Inter-American Tropical Tuna Commission (IATTC), and the Western and Central Pacific Fisheries Commission (WCPFC)

November 2011, the Obama administration submitted the treaty and accompanying implementing legislation to the Congress for advice and consent.

In January 2011, NOAA issued a rule under the High Seas Driftnet Fishing Moratorium Protection Act (Moratorium Protection Act) implementing identification and certification procedures to address IUU fishing activities and bycatch of protected living marine resources (PLMRs).

4. NOAA Office for Law Enforcement (OLE) has responsibility for enforcing the MSA, Shark Finning Prohibition Act (SFPA), the SCA, and their implementing regulations. During calendar year 2009, most violations of the SFPA were detected, investigated, and prosecuted in the Southeast, Alaska, and Pacific Islands Enforcement Divisions. In addition, during 2009, the United States Coast Guard detected several violations of the SFPA and referred them to NOAA for further disposition. Violations which were investigated included finning, the unauthorized feeding of sharks, as prohibited by the MSA, and exceeding recreational catch limits. Additional information can be found in Section 2.4 of the attached 2010 Shark Finning Report to Congress.

5. Current measures and legislation with the capacity to provide special attention to vulnerable shark species in the United States include the Endangered Species Act (ESA)[7], the NMFS Bycatch Plan, the United States' NPOA-Sharks, the MSA, the Moratorium Protection Act, and the 2010 SCA. Additional information on shark management in the United States can be found in sections 2.1 through 2.3 of the attached 2010 Shark Finning Report to Congress.

6. Information on shark management in the United States can be found in sections 2.1 through 2.3 of the attached 2010 Shark Finning Report to Congress.

7. Shark finning practices for U.S. fishermen have been banned in the United States since the SFPA of 2000. On December 21, 2000, President Clinton signed into law the SFPA out of concern for the status of shark populations and the effects of fishing mortality associated with finning on shark populations. The SFPA prohibits any person under U.S. jurisdiction from: (i) engaging in the finning of sharks, (ii) possessing shark fins aboard a fishing vessel without the corresponding carcass, and (iii) landing shark fins without the corresponding carcass. It also contains a rebuttable presumption that any shark fins landed from a fishing vessel or found on board a fishing vessel were taken, held, or landed in violation of the Act if the total weight of shark fins landed or found on board exceeds 5 percent of the total weight of shark carcasses landed or found on board. This is commonly referred to as the "5 percent rule."

   In 2011, President Obama signed the 2010 Shark Conservation Act (SCA). The SCA gives the Secretary of Commerce authority to identify a nation if that nation's vessels catch sharks on the high seas and the nation has not adopted a regulatory program for the conservation of sharks comparable to that of the United States, taking into account different conditions. If a nation is identified but fails to take the necessary corrective actions and does not receive a positive certification for shark catch on the high seas, the United States may prohibit the importation of certain fish and fish products from that nation into the United States. The SCA also strengthens the SFPA by requiring all sharks, with an exception for smooth dogfish, be landed with their fins naturally attached. This practice has been required for almost all shark fisheries in the Atlantic Ocean since 2008. NMFS is in the process of implementing rulemaking to apply the statute to the rest of the shark fisheries in the United States. In cases of violation of any such laws, appropriate enforcement and legal actions are taken to sanction the individuals and deter such activities in the future.

Assessment

8. Numerous research studies undertaken by NMFS Science Centers and Regions have produced valuable information on shark stock status, survivorship, mobility, migration, habitat utilization, ecology, and age and growth characteristics—all of which will be incorporated into effective shark

[7] The scalloped hammerhead shark is currently a candidate for listing.

fishery management decisions. A detailed description of NMFS' research efforts regarding sharks can be found in Section 5 of the attached 2010 Shark Finning Report to Congress.

Reporting

9. NMFS requires fishermen to submit logbook data and dealers to submit their reports with species-specific data. The majority of landings are reported and the corresponding monitoring of quota is done by species complex. Certain fisheries also have observer requirements. For detailed information on reporting requirements, please see Section 2 of the attached 2010 Shark Finning Report to Congress.

   Trade in specimens of species listed under CITES is reported at the species level. The U.S. Fish and Wildlife Service regulates imports, exports, re-exports, and introductions from the sea of CITES species. Trade in the following CITES-listed taxa have been reported: basking shark (*Cetorhinus maximus*), great white shark (*Carcharodon carcharias*), whale shark (*Rhincodon typus*), and sawfish (Family Pristidae, *Pristis microdon*, *Pristis zijsron*, *Pristis clavata*, and *Anoxypristis cuspidate*).[8]

10. The United States reports catch to FAO in 30 categories, including 22 species. "Forty-eight percent of catch is reported as "raja rays, nei," 25% as "rays, stingrays, mantas, nei," and 11% as picked dogfish." Additionally the United States reports exports to FAO in six categories, with "frozen and fresh/chilled dogfish" making up about two-thirds of shark exports since 2000. For additional information on trade of shark products, please see Section 3 of the attached 2010 Shark Finning Report to Congress.

[8] The sawfish family Pristidae was listed in CITES Appendix I on 09/13/2007, except for *Pristis microdon*, which was listed in Appendix II on 09/13/2007 (for the exclusive purpose of allowing international trade in live animals to appropriate and acceptable aquaria for primarily conservation purposes).

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